Epidemiology of Gambling and Depression in a Random Adult Sample

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EPIDEMIOLOGY OF GAMBLING AND DEPRESSION IN AN ADULT SAMPLE

JAMES A. THORSON, F. C. POWELL, AND MICHAEL HILT

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Summary.—As a relationship has been reported between pathological gambling and depression, the objective of this study was to explore whether there was a relationship between gambling and depression in a sample of 400 adults. No relationship was found.

It is not difficult to make a bet in America. To enhance revenues, some states have gone into the gambling business. Most states presently have an officially sanctioned or state-sponsored lottery. Headlines tout the multimillion-dollar payoffs of state lotteries, and it is not uncommon to read of people flying into big-lottery states when the "payoff" is high for the sole purpose of purchasing tickets. This is in addition to state-sanctioned (and taxed) thoroughbred horse- and dog-racing tracks, high-stakes bingo, keno, and other betting opportunities and games of chance. Casinos sponsored by Indian tribes are proliferating, and business in Atlantic City and Nevada casinos seems not to suffer. And, several types of illegal gambling, particularly sports betting with bookmakers, continue as a multibillion-dollar industry.

While it is evident that compulsive gambling represents a major addiction and thus a serious community mental health problem, there is surprisingly little information that differentiates normal gambling from pathological gambling. To use the "addiction" paradigm, it is apparent that only a small percentage of social drinkers actually have an alcohol addiction, yet alcoholism represents a major national public health problem. Since pathological gambling disrupts many lives in the USA, it is important to know what proportion of gamblers have an addiction or a pathological compulsive gambling problem.

In an extensive, recent review, Murray (1993) pointed out that estimates of the extent of pathological gambling vary widely (from 1.1 to 6 million in the USA), that most research has focused on sociological and economic aspects (especially its effect on family structure and divorce), that opportunities for gambling have greatly increased, and that an addictive behavior is cause for concern. Personality profiles have not yielded significant differences between gamblers and nongamblers, but pathological gamblers have been shown to have high rates of depression as well as stomach ulcers, elevated blood pressure, alcoholism, and other substance abuse.

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The presence of considerable depression in pathological gamblers has been well-documented. Virtually every study that investigated relationships of depression and pathological gambling has yielded a significant correlation (Lesieur, 1989). Whether depression is causal or symptomatic of gambling is a question that has not been resolved (McCormick, Russo, Ramirez, & Taber, 1984). Taber, McCormick, and Ramirez (1987) noted major traumatic events in histories of 23% of pathological gamblers seeking treatment.

Pathological gamblers have consistently recorded higher depression scores than control groups (Moravec & Munley, 1983; Zimmerman, Meeland, & Krug, 1985; Blaszczynski, Wilson, & McConaghy, 1986; Blaszczynski & McConaghy, 1988, 1989), and depression has reached critical significance in some cases (Linden, Pope, & Jonas, 1986; Taber, McCormick, & Ramirez, 1987). Some research has indicated increased depression among pathological gamblers after treatment (Taber, McCormick, Russo, Adkins, & Ramirez, 1987). Other research (Blaszczynski, McConaghy, & Frankova, 1990) showed that pathological gamblers obtained significantly higher boredom proneness and depression scores than control groups.

While most of the research in the field of gambling and depression has focused on the compulsive gambler, there has been some research on the occasional gambler. Social gamblers include the majority of people who gamble (Lowenkopf, 1991). The casual gambler engages in an occasional card game, buys a lottery ticket, or bets on a favorite sport from time to time. The individual can take it or leave it and can fill time spent gambling with other pursuits. Livingston (1974) suggested that gamblers may be as healthy as nongamblers and that gambling should be studied in a social context rather than focusing on "abnormal" gambling behaviors.

Dickerson (1984) identified the problems inherent in generalizing from laboratory risk-taking tasks to real-life gambling. The greater the interaction between the player and the gambling environment, the greater the arousal. We found this to be the case with "lethal people," those willing to gamble with their lives for the thrill of it (Thorson & Powell, 1990). Studies in laboratories cannot recreate the gambling environment. Dickerson speculated that compulsive gamblers may be different from other gamblers only in terms of the amount of money spent and the size of their debts.

Lesieur (1989) called for research to help define gamblers so that it might be possible to know if someone "has gone over the line." Lesieur said that research might be directed toward examinations of gambling activities and then we could generalize to the compulsive gambler. And, the role of depression in gambling needs to be explored (Blaszczynski & McConaghy, 1988). If a reduction in depression is not associated with a reduction in gambling, then one could argue that other factors operate in pathological and social gambling behavior. Further research is called for to clarify the relationship between gambling and depression.

Since addictive gamblers have been shown to have higher depression (Blaszczynski & McConaghy, 1989), it would be interesting to find out whether depression is a correlate of gambling in a nonaddictive population. Further, it would be informative to see what gambling behaviors are self-reported in a community sample and to make an assessment of just what proportion of the adult population gambles at a level that might be considered to be excessive. The objective of the present study, then, was to survey a random sample of adults of sufficient size to give an indication of what levels of gambling behaviors are typical and atypical and to test that adult sample with a standardized instrument to assess depression. Then, we would be able to assess whether depression and gambling behaviors are related in a community sample.
METHOD

A local governmental agency contracted with the authors to examine gambling behavior among adult residents of Omaha, Nebraska. Interested in the growth of gambling, particularly of casino gambling, the agency asked us to survey a community sample of sufficient size to be able to estimate gambling behaviors and attitudes within reasonable limits of confidence.

Omaha is the largest city in the state; it is a retail market that draws from Iowa and South Dakota plus portions of Missouri as well as the state of Nebraska. It is a metropolitan area of about 650,000. Because it represents a demographic microcosm of the USA, Omaha is often used as a test market by various commercial organizations, and such studies are perhaps somewhat more generalizable to the nation as a whole than surveys in some other parts of the country might be.

Although a state lottery has only recently been legalized in Nebraska, the lottery sponsored by the state of Iowa derives much of its revenues from Omaha residents. There also is a major dog-racing track just across the Missouri River in Council Bluffs, Iowa. Omaha has a well established thoroughbred horse-racing track with parimutuel betting and simulcasting of races from other racetracks throughout the country. The city hosts a large number of legal keno parlors, and high-stakes bingo has been legal for many years. Las Vegas-style casinos exist on the Omaha and the Winnebago Indian reservations that are sixty and seventy-five miles from the city, respectively. And, riverboat gambling is available in Sioux City, Iowa, ninety miles to the north. And, it is reputed that it is not difficult in Omaha to find a bookmaker to take illegal sports bets.

The sample for the present study was drawn from all residential telephone subscribers living in Douglas County, Nebraska, and was prepared by a national research firm. Use of this procedure purged all business, government, institutional, and other nonresidential telephone numbers. Professional operators used this list of random, residential telephone numbers to contact households.

Respondents within households were selected by use of a template that reflected the following: one vertical column labeled male, a second vertical column labeled female; four age categories in each column labeled 18-30 yr., 31-45 yr., 46-60 yr., and 61 yr. plus. Quotas were assigned to these categories relative to the population of Douglas County as obtained from current U.S. census data. All calls were made between 2:00 and 9:00 p.m.

The shift supervisor randomly selected a category as a starting point for each operator. The operator then asked to speak with a subject who fell in the selected category, e.g., female between 46 and 60 years of age. If no subject who fitted that category was present in the household, the operator went on to the next category.

The initial telephone sweep (one call) yielded the following results: 59% of the sample completed the interview, 11% were answering machines, 27% were no answer, and 3% refused to participate. To complete sampling, messages were left on answering machines and a callback was requested; if necessary, up to three additional calls were made to the "no answer" telephone numbers. After three days these steps yielded an aggregate of 75% completed interviews, 9% answering machine callbacks, 5% refusals, and 10% no answer. At this point 100 new numbers were added to the list as replacements. A final round of calling thus provided a sample of 400 complete interviews.
In addition to the usual demographic items, a number of questions were asked on how well the respondents liked the city and its amenities. The questions then turned to gambling behaviors and attitudes, followed by the items that make up the Center for Epidemiologic Studies-Depression scale (CES-Depression).

The CES-Depression (Radloff, 1977) contains 20 items designed to assess major elements of depression found in clinical studies and in factor-analytic studies of previous depression instruments: depressed mood, guilt and worthlessness, apathy, helplessness, loss of appetite, and sleep disturbances. Scored on a Likert format of 0 = never to 3 = frequently, Radloff (1991) reported a mean for 2440 young adults on the CES-Depression of 9.0 (SD= 8.5). She recommended that the top-scoring five percent in studies be considered to have the most problems with depression; alternatively, she has also recommended that those with a score of 16 or above might be considered to be depressed. Designed as a survey instrument to be used with large populations, Radloff has made no claims for the CES-Depression as a clinical tool for individual diagnosis. The scale has been shown to be similar to the Beck Depression Inventory (Zich, Attkisson, & Greenfield, 1990) and to have acceptable validity and reliability (Husaini, 1980).

RESULTS

A total of 400 respondents ranging in age from 18 to 86 years were interviewed; their mean age was 46.7 (SD=17.0). There were 201 female respondents and 199 males; about 10% represented racial minorities. CES-Depression scores ranged from 0 to 45, with an over-all sample mean of 6.8 (SD= 7.7), which is comparable to an older adult sample reported by Radloff and Teri in 1986. A principal components factor analysis of the data with a varimax rotation yielded five factors: (1) depressed affect, (2) somatic disturbance, (3) interpersonal conflict, (4) positive affect, and (5) worthlessness. The Cronbach alpha of reliability for the CES-Depression in this analysis was .81.

Gambling behaviors for this sample are reported in Table 1. Buying a lottery ticket had the highest frequency among the self-reported gambling behaviors listed, with 46% of the respondents reporting having done so in the previous year. Sixteen percent said they had purchased a lottery ticket during the previous month. A no-risk activity, entering magazine contests, had the next highest frequency with 35% of the respondents reporting engaging in this activity during the preceding year. Almost as many (158 of 400) reported purchasing stocks or bonds during the prior year. This might also be considered a low-risk activity, but it certainly involves some element of risk-taking.
TABLE 1
FREQUENCY OF GAMBLING BEHAVIORS AND CORRELATION BY AGE AND SEX (N = 400)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Frequency</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ever</td>
<td>nfreq</td>
</tr>
<tr>
<td>During the past year</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Played bingo for prizes?</td>
<td>62</td>
<td>0</td>
</tr>
<tr>
<td>Bet on a football game?</td>
<td>32</td>
<td>3</td>
</tr>
<tr>
<td>Entered a magazine contest?</td>
<td>60</td>
<td>07</td>
</tr>
<tr>
<td>Purchased stocks or bonds?</td>
<td>42</td>
<td>5</td>
</tr>
<tr>
<td>Played poker?</td>
<td>34</td>
<td>5</td>
</tr>
<tr>
<td>Bet on a baseball game?</td>
<td>74</td>
<td>2</td>
</tr>
<tr>
<td>Bet on a horse race?</td>
<td>40</td>
<td>1</td>
</tr>
<tr>
<td>Bet on a dog race?</td>
<td>30</td>
<td>9</td>
</tr>
<tr>
<td>Gambled at a casino?</td>
<td>93</td>
<td>8</td>
</tr>
<tr>
<td>Played keno?</td>
<td>91</td>
<td>9</td>
</tr>
<tr>
<td>Bought a lottery ticket?</td>
<td>16</td>
<td>20</td>
</tr>
<tr>
<td>Total gambling activities</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<.05. tp<.01.

A traditional, legal form of gambling, bingo, had only four weekly participants, and only another one percent of the sample reported gambling at bingo during the previous month. Nine respondents had bet on a horse race during the previous month. It should be noted that these data were gathered at least one full month prior to the season opening of Omaha’s thoroughbred track, so these individuals either had traveled to another racetrack, attended simulcast wagering available in the off-season, or used the services of a bookmaker to gamble on a horse race. At any rate, they took some pains to bet on a horse race. Only eleven respondents had bet on a dog race at least monthly; this opportunity had been available at the local dog track at the time the data were gathered.

Illegal betting correlated positively with legal forms of betting (r = .41, p < .001). Football betting was
the likeliest illegal gambling activity, and self-reports indicated that slightly over six percent of respondents bet on football at least monthly. The less frequent football and baseball bettors may have engaged in office pools at World Series or Super Bowl time; the more frequent sports bettors, however, were the likeliest to patronize bookies.

Baseball gambling was the least frequent gambling activity over-all (93.5% did not engage in it during the previous year), followed by bingo (90.5% did not), horse-race betting (85% did not), and poker playing (83.5% did not engage in it during the prior year). Two state-sponsored gambling activities, keno and lotteries, were among the most frequent gambling behaviors; however, 72.5% of this sample had not played keno during the previous year and 54% had not purchased a lottery ticket.

There were several significant correlates of gambling activities and demographics. Younger respondents were more likely to play poker, bet on baseball, bet on dog races, and play keno. Composite gambling activity went down as age went up ($r = - .24, p < .01$). We coded females= 0 and males= 1 for purposes of analysis. There were a number of significant correlations of gambling activity by gender. Males were more likely than females to bet on football games, purchase stocks or bonds, and play poker. Males’ over-all gambling was higher as well ($r = .14, p = .01$).

There was no significant correlation between scores on the depression scale and any of the gambling behaviors, either individually or composite ($r = - .03$). The only significant correlations of questionnaire items with the CES-Depression were with "Omaha is a nice place to live" ($r = - .37, p < .001$), income ($r = - .14, p < .01$), and age ($r = - .15, p < .01$).

DISCUSSION

There was no relationship between gambling and depression in this random sample of 400 adults. Depression was most closely related to dissatisfaction with one's living environment and somewhat less related to low income and advanced age. If Radloff's cut-off of 16 or higher on the CES-Depression were used, then 12.7% of this sample were depressed. Alternatively, if her 5% criterion were to be applied, then the score for depressed persons in the present sample would be 22 or higher, which probably is more reasonable.

A distinction probably needs to be made between habitual gambling and problem gambling. Gambling addiction that disrupts people's lives, is obsessive, and causes family crisis really is different from the kind of gambling, such as spending five dollars on lottery tickets each week, that some of these respondents reported. That is, it may be a habit, but it is under control and most likely causes no real interpersonal problems for the individual. Unfortunately, these data did not reflect amount wagered or personal problems resulting from gambling behaviors. Further research might probe in this area. Given the nature of the problem, however, self-report of pathological gambling might not be useful in a community survey. Denial and social desirability factors would not produce straightforward answers to questions such as "Are you a problem gambler?" or "Do you consider yourself to be addicted to gambling?" For this reason, we can only estimate an approximation of those whose gambling is a problem in their lives. Perhaps the 14 in this sample who were weekly football bettors or the 12 (who may have been some of the same individuals) who took some pains to bet on a horse race when the local racetrack was closed might be seen as those likeliest to have a problem.
However, compulsive gamblers might also be found among the frequent keno players or those who purchase many lottery tickets. One need not be a sophisticated gambler to be a problem gambler.

Over-all, though, it was surprising that there was such a small amount of gambling behavior reported. Fewer than half of these respondents gambled, even occasionally, and less than a quarter of them gambled even monthly. This is well below levels reported by the Gallup organization in a 1989 survey (Hugick, 1989). It may be that gambling, which appears to be somewhat youth-related, may decline as the general population ages. It is evident, however, that from one to three percent of the population gambles at a rate that might be seen as excessive. It probably is an individual matter at what point frequent gambling becomes problem gambling.

Finally, the frequency of government-sponsored or -sanctioned gambling no doubt is on the increase. Other research confirms relatively positive attitudes toward increased legal gambling opportunities (Abbott & Cramer, 1993). Opportunities for people to get into trouble with gambling behaviors may also be seen as increasing. And, while the present data do not indicate a relationship between gambling and depression in the general population, neither do they contradict earlier studies showing a correlation between depression and pathological gambling.

REFERENCES


