Factors Relating to Gambling Behavior among College Students

Introduction

Gambling is a widespread activity in our society. In various studies conducted in the United States in 1992, the percentage of each sample who had gambled in their lifetime ranged from 76% to 91%. The portion of each sample who were found to be pathological gamblers ranged from 3.5% to 5.1% (Volberg, 1996). Abbott et al. (1995) suggest that the number of pathological gamblers is on the uprise for three main reasons. First, the stigma of gambling that has characterized the social attitude of this country in the past has largely disappeared. Second, legal gambling is much more available to people as most states are now using gambling activities as a means of generating revenues. Third, the weak family environment created by pathological gamblers fosters the development of addictive behaviors in the next generation.

Pathological gambling is of great concern because it causes problems for people in many ways. Gaudia (1987) suggests that the detrimental effects of gambling can be divided into four categories: economic, social, medical, and legal. Economically, a pathological gambler will on occasion win money, but, in the long run, will end up behind financially. Socially, a pathological gambler tends to withdraw from friends and family as his/her obsession with gambling grows. Medically, many different psychosomatic illnesses have been linked to problem gambling, probably due to the stress that surrounds the compulsion. Finally, legal problems can result from the crimes that pathological gamblers sometimes use to obtain money to further their involvement in gambling.

Although past research has examined many aspects of pathological gambling including its antecedents and effects, little is known about what initially attracts people at younger ages to gambling or what factors are related to the frequency, expenditure, and scope of their gambling behavior. The present study takes a social learning approach to identifying factors that influence the gambling behavior of young people.

Review of the Literature

Many adult actions can be attributed to the environment in which an individual was raised. People learn how to behave by watching how their parents and other important people in their lives behave. Social learning theory states that observational learning or modeling shapes behavior including socially undesirable behavior. Individuals are more likely to model those people whom they value, i.e. parents and friends (Bandura, 1977).

According to this theory, a relationship should exist between the gambling behavior of college students and the gambling behavior of their parents. Most of the past studies addressing this relationship focus on the connection between problem gambling among parents and students. Lesieur et al. (1991) found that 88% of their sample of college students had gambled sometime in the past, 15% were considered to be problem gamblers, and 5.5% were categorized as pathological gamblers. Signs of pathological gambling were significantly more prevalent among students who reported having compulsive gambling parents (18.8%) than those without compulsive gambling parents (4.7%). Winters et al. (1993) also divided their sample of 702 late adolescents into three

severity categories based on their responses--no problem (74.2%), at-risk gambling (17.1%), and problem gambling (1.6%). Larger proportions of the problem gambling (8.7%) and at-risk gambling (65.8%) groups reported that one or both of their parents gambled as compared with the no problem group (51.8%). Govoni et al. (1996) recruited 965 high school students aged 14 to 19 to participate in a study of gambling behaviors. Again, these students were divided into an at-risk gambling group (16.7%) and problem gambling group (10.3%). The rate of problem and at-risk gambling was almost twice as great among adolescents who stated that their parents gambled excessively.

Parents are not the only significant others in the lives of college students who could influence their gambling behavior. Peers are thought to exert a significant influence on the behavior of young people. Though this is an area that has been largely overlooked in the gambling literature, peer influence has been examined in conjunction with a number of other behaviors. Friends have been shown to influence the alcohol consumption of college students. Fromme and Ruela (1994) studied the drinking patterns of 168 undergraduates from a mid-Atlantic university. They surveyed both students and their friends and found that a strong positive correlation existed between their drinking behavior. van Roosmalen and McDaniel (1989) studied the association between the smoking behavior of adolescents and their peers. They found that the majority of students reported themselves as smokers when their best friend smoked regularly. Finally, one gambling study that did investigate a relationship between peer gambling and student gambling found one to exist. Browne and Brown (1993) surveyed 288 university students in regards to their lottery play. They found that the students whose

friends gambled more often had higher means of frequency of play themselves. The same trend was found for lottery expenditures by students and their friends.

Methodology

Sample and Data Collection

The data were collected in the fall of 1996 from 797 undergraduate students in three Economics classes and two Human Development and Family Studies classes at a large midwestern university. Three-page questionnaires were administered during class and the students were informed of their right to decline to participate. The study sample was selected using nonprobability techniques. Therefore, the degree of respresentativeness of it is not known and caution should be used before generalizing the results to all student populations.

Measurement and Definition of Predictor Variables

Gender. Respondents were asked to indicate whether they were male or female. Being male was coded as a 0 and being female was coded as a 1.

Student Status. Respondents were asked to indicate their year in college. Freshman were coded as 1, sophomores as 2, juniors as 3, and seniors as 4.

Employment Status. Respondents were asked to indicate their employment status. These responses were coded as follows: 0 = Student only/not employed, 1 = Employed part-time, 2 = Employed full-time.

Grade Point Average. Students were asked to approximate their overall grade point averages. These averages are based on a 4-point scale.

*Mother Gambling Expenditure.** Respondents were asked to provide their best estimate of the amount of money that their mother had spent on gambling in the past twelve months.

*Father Gambling Expenditure.** Respondents were asked to provide their best estimate of the amount of money that their father had spent on gambling in the past twelve months.

*Peer Gambling Expenditure.** Respondents were asked to provide their best estimate of the amount of money that their best friend had spent on gambling in the past twelve months.

*For the purpose of crosstabulation, these variables were grouped into the following categories: 0 = $0 spent (non-gambler), 1 = $1-25 spent, 2 = $26-100 spent, and 3 = over $100 spent.

Measurement and Definition of Outcome Variables

Student Gambling Status. Respondents were coded with a 0 if they reported no gambling activity in the past twelve months (non-gamblers). They were coded with a 1 if they reported participating in gambling in the past twelve months (gamblers).

Student Gambling Frequency. Subjects were presented with six types of gambling activities. They were asked to indicate how many times per month they had participated in each activity in the past year. An overall frequency of gambling variable was created by summing these numbers. For example, if a respondent bought lottery tickets three times a month, visited a casino twice a month, and bet on sports events five times a

month, his frequency of gambling score would be ten.

Student Gambling Expenditure. Respondents were asked to indicate how much money they spent on each gambling occasion for each type of activity. An overall gambling expenditure variable was created by multiplying the money spent per occasion of gambling by the frequency of gambling for each type of activity. These amounts were then summed to arrive at the total gambling expenditure.

Student Scope of Gambling. This variable was operationalized as the number of gambling activities out of six choices of categories in which the respondent participated in the last twelve months. This definition of scope is similar to that of Hraba and Lee (1996). These six choices included: (1) played a lottery ticket, scratch off, pull tab, or sweepstakes, (2) bet on a sporting event or sport pool, (3) played poker or other non-casino cards, (4) played video poker, keno, video blackjack, or arcade games, (5) visited a casino, riverboat casino, or after hours casino, and (6) bet on horses, dogs, or cock fights.

Data Analysis

In this study, crosstabulations were used to analyze the relationships between gambling status and gender, student status, employment status, and grade point average. The relationships between gender and scope of gambling, frequency of gambling, and gambling expenditures also were analyzed with crosstabulations.

The distributions of the two continuous outcome variables (gambling frequency and expenditure) were found to be very skewed. Gambling frequency and expenditure

along with gambling scope were, therefore, grouped into ordinal categories, and these categories allowed for further crosstabulations. The relationships between parental and peer gambling and student gambling scope, frequency, and expenditure were analyzed with these additional crosstabulations.

Results

Sample Characteristics

The percentages reported throughout the results indicate the valid percent after missing cases were excluded from analysis. Slightly over half of the respondents (50.9%) were male. The vast majority were Caucasian (90.6%). Respondents of Asian descent made up 3.7% of the sample, 2.6% were African American, and the remaining 3.0% were of Native American, Spanish, or other descent. The breakdown of the sample by student status was as follows: freshman (7.7%), sophomore (41.8%), junior (32.6%), senior (17.5%), and graduate (.4%). The college of business was represented by the greatest proportion of the respondents (29.8%), followed by Family and Consumer Sciences (20.5%), Agriculture (14.7%), Engineering (13.7%), Liberal Arts and Sciences (13.4%), Design (4.8%), and Education (3.1%). The majority of the respondents were employed part-time (52.0%), while 41.9% were students only/not employed and 6.1% were employed full-time. In addition, the mean college grade point average of the group was 2.93 on a four-point scale. These characteristics are presented in Table 1.

Differences between Gamblers and Non-gamblers

Crosstabulations revealed no significant differences between gamblers and non-

gamblers in the areas of employment status, and grade point average. Gamblers and non-gamblers did differ significantly by student status, $\chi^2 = 9.91$ ($p < .01$, $df = 3$). Only 50.2% of sophomores were gamblers as compared to 58.0% of juniors, 60.0% of freshman and 65.9% of seniors or graduate students.

Gender Differences in Gambling Behavior

There were many substantial gender differences found among the respondents in terms of gambling behavior. A chi-square analysis revealed that male students gamble significantly more often per month than female students, $\chi^2 = 20.77$ ($p < .000$, $df = 3$). These results are presented in Table 2. Male students also were found to spend significantly more money on gambling per month than female students, $\chi^2 = 23.10$ ($p < .000$, $df = 3$). These results are presented in Table 3. A similar trend was found for the scope of gambling. Male students participated in significantly more types of gambling activities than female students, $\chi^2 = 23.10$ ($p < .000$, $df = 3$). See Table 4.

Relationship between Parental Gambling and Student Gambling

Crosstabulation analysis showed that the relationship between mother gambling expenditure and student frequency of gambling was not statistically significant. The same was true for the relationship between mother gambling expenditure and student gambling expenditure. The relationship between mother gambling expenditure and student scope of gambling, however, was found to be significant (Gamma = .22, $p < .0001$). The Gamma indicates that there is a positive association between the two variables; as the level of mother gambling expenditure increases so does student scope of

gambling. These results are presented in Table 5.

The relationship between father gambling expenditure and student gambling frequency was found to be significant (Gamma = .24, $p < .000$). The Gamma indicates that there is a positive association between the two variables; as the level of father gambling expenditure increases so does student frequency of gambling. These results are presented in Table 6. The relationship between father gambling expenditure and student gambling expenditure was also found to be significant (Gamma = .25, $p < .000$). The Gamma indicates that there is a positive association between the two variables; as the level of father gambling expenditure increases so does student gambling expenditure. These results are presented in Table 7. Finally, the relationship between father gambling expenditure and student gambling scope also was found to be significant (Gamma = .31, $p < .000$). The Gamma indicates that there is a positive association between the two variables; as the level of father gambling expenditure increases so does student scope of gambling. These results are presented in Table 8.

Relationship between Peer Gambling and Student Gambling

The relationship between peer gambling expenditure and student gambling frequency was found to be significant (Gamma = .44, $p < .000$). The Gamma indicates that there is a positive association between the two variables; as the level of peer gambling expenditure increases so does student frequency of gambling. These results are presented in Table 9.

The relationship between peer gambling expenditure and student gambling expenditure

was found to be significant(Gamma = .49, $p < .000$). The Gamma indicates that there is a positive association between the two variables; as the level of peer gambling expenditure increases so does student gamblign expenditure. Table 10 presents these results. The relationship between peer gambling expenditure and student gambling scope was also found to be significant (Gamma = .52, $p < .000$). The Gamma indicates that there is a positive association between the two variables; as the level of peer gambling expenditure increases so does student scope of gambling. These results are presented in Table 11.

Discussion

Differences between Gamblers and Non-gamblers

One objective of this study was to assess the differences between gamblers and non-gamblers in various sociodemographic factors. No difference was found between gamblers and non-gamblers on their grade point averages. Previous studies have shown a negative correlation between grade point average and gambling problem severity, but none have shown a relationship between the decision to gamble and low grade point average (Lesieur, et al., 1991; Winters et al., 1993; Griffith, 1995).

The gamblers and non-gamblers, in this study, also did not differ significantly in the area of employment status. Previous research does support these results. Both Frank (1990) and Winters et al. (1993) found whether or not a student worked was not correlated with whether or not they gamble. One possible explanation for this finding is that students with outside jobs do not have as much time to spend gambling.

The relationship between student status and gambling status also was found to be significant. A larger proportion of seniors and graduate students than other grade levels were found to be gamblers. This could be the result of age differences as Iowa currently has a twenty-one years and older age restriction for entrance into its casinos.

Gender Differences in Gambling Behavior

In this study, male students were found to gamble more frequently, spend more money gambling, and gamble in more activities than female students. These findings are supported by the majority of the past research. Winters et al. (1993), Lesieur et al. (1991), and Ladouceur et al. (1994) all found male students to have higher scores on their measures of frequency. Winters et al. (1993) and Lesieur et al. (1991) also found that males had higher scores than females on their measures of gambling expenditure. Hraba and Lee (1996) found that male students had higher scores than female students on scope of gambling.

Relationship between Parental Gambling and Student Gambling

Social learning theory suggests that individuals learn certain behaviors by modeling the behaviors of those around them. Which behaviors will be learned depends on who is modeling them. People are more likely to follow the example of their significant others. These are the people they value more than any others and whose actions they are more likely to attend. If social learning theory were to hold true in the case of gambling behavior, it stands to reason that students who gamble would be more likely to have parents who gamble. In addition, the greater the students level of gambling

behavior, the greater the level of their parents behavior. Past research has shown that children whose parents gamble are more likely to gamble themselves (Browne & Brown, 1993; Custer, 1983; Jacobs, 1989). Previous studies also have shown a connection between problem gambling among parents and the development of problem gambling in their children (Lesieur et al., 1991; Winters et al., 1993; Govoni et al., 1996).

Social learning theory was supported in part by the findings of this study. The relationship between father level of gambling and student level of gambling was significant for all three measures of student gambling--frequency, expenditure, and scope. For mother level of gambling, however, only level of student scope of gambling was significant. Fathers appear to be more influential on students than mothers when it comes to gambling behavior.

Relationship between Peer Gambling and Student Gambling

The findings on the relationship between peer gambling and student gambling also supported the theory of social learning. Students with best friends who spent greater amounts of money on gambling were more likely to fall in the highest categories of gambling frequency, expenditure, and scope themselves. These relationships were found to be highly significant suggesting that peer gambling is a factor with the great influence over college student gambling behavior. Previous research supports these findings as friendships in adolescents have been shown to be extremely important in determining adolescent behavior (Savin-Williams & Berndt, 1990; Hartup, 1993).

Conclusion

Limitations of the Study

Caution should be exercised in generalizing the results of this study to other university students. The respondents in this study were not selected at random which can affect the findings. A second limitation of the study is related to the ordinal categories used in analyzing the variables of student gambling frequency, expenditure, and scope, and mother, father, and peer expenditures. Students were assigned to these categories based on the distribution of each variable not on predetermined cutoffs, and the categories were, therefore, sample-specific. A third limitation of the study is the fact that the data on mother, father, and peer gambling came from only one source--the student. It is possible that the students overestimated or underestimated their parents and friends expenditures based on their own perceptions.

Implications for the Primary Prevention of Gambling

The majority of the sociodemographic factors analyzed were found to not have significant influence on the decision to gamble by students. This suggests that primary prevention efforts need to reach out to all people. There are not one or two particular subgroups that are more likely than others to gamble. On the other hand, the fact that gender had such a significant effect on the gambling measures does suggest that prevention education should take steps to attract male students to their programs in order to learn more about gambling activities.

This study provided a great deal of support for social learning theory and the notion that the social environment plays a role in the development of gambling behavior. Student gambling was found to be positively related to both the gambling of parents and

the gambling of best friends. In fact, the gambling expenditure of best friends was the most valuable predictor of all three measures of gambling behavior. It is crucial that prevention efforts take this process of social learning into account. Students should learn to recognize the social influences acting on their behavior. They must also be given specific tools with which to combat these influences and make better, more well-informed decisions in regards to gambling.

Appendix

Table 1. Sociodemographic characteristics of the sample[a]

Characteristic	Valid Percent[b]
Gender	
Male	50.9
Female	49.1
Ethnicity	
Caucasian	90.6
Asian	3.7
African American	2.6
Spanish Descent	1.2
Native American	.6
Student status	
Freshman	7.7
Sophomore	41.8
Junior	32.6
Senior	17.5
Graduate	.4
Academic college	
Business	29.8
Family & Consumer Science	20.5
Agriculture	14.7
Engineering	13.7
Liberal Arts & Sciences	13.4
Design	4.8
Education	3.1
Employment status	
Employed part-time	52.0
Student only/not employed	41.9

Employed full-time	6.1
Grade point average	Mean = 2.9

[a]N = 797

Table 2. Gender differences in frequency of gambling[a]

Frequency of Gambling	Percent of Males	Percent of Females
Non-gamblers (0 times)	37.7	49.1
Low frequency	20.3	24.7
Medium frequency	23.8	16.5
High frequency	18.3	9.8

[a]p < .000

Table 3. Gender differences in gambling expenditure[a]

Gambling Expenditure	Percent of Males	Percent of Females
Non-gamblers ($0 spent)	39.3	51.4
Low expenditure	15.1	21.3
Medium expenditure	24.5	12.2
High expenditure	21.1	15.1

[a]p < .000

Table 4. Gender differences in scope of gambling[a]

Scope of Gambling	Percent of Males	Percent of Females
Non-gamblers (0 activities)	37.6	49.1
1 activity	15.3	21.1
2 activities	23.4	16.0
3 to 6 activities	23.7	13.8

[a]p < .000

Table 5. Relationship between mother gambling expenditure and student scope of gambling[a]

	Mother Gambling

	Expenditure			
Student Scope	Non-gambler	Low	Medium	High
Non-gambler	48.1%	34.0%	34.9%	33.3%
Low	17.9%	21.0%	18.6%	17.6%
Medium	20.4%	21.0%	14.0%	25.5%
High	13.6%	24.0%	32.6%	23.5%

[a]p < .0001

Table 6. Relationship between father gambling expenditure and student frequency of gambling[a]

	Father Gambling Expenditure			
Student Frequency	Non-gambler			
Non-gambler	51.2%	37.0%	32.2%	28.4%
Low	21.3%	24.0%	24.3%	25.0%
Medium	15.5%	21.0%	29.6%	28.4%
High	12.0%	18.0%	13.9%	18.2%

[a]p < .000

Table 7. Relationship between father gambling expenditure and student gambling expenditure[a]

	Father Gambling Expenditure			
Student Expenditure	Non-gambler	Low	Medium	High
Non-gambler	53.0%	41.1%	33.6%	29.1%
Low	18.3%	20.0%	17.3%	19.8%
Medium	13.2%	17.8%	27.3%	27.9%
High	15.5%	21.1%	21.8%	23.3%

[a]p < .000

Table 8. Relationship between father gambling expenditure and student scope of gambling[a]

	Father Gambling Expenditure			
Student Scope	Non-gambler	Low	Medium	High
Non-gambler	51.2	37.0	32.2	28.1
Low	18.8	19.0	19.1	15.7
Medium	19.1	25.0	17.4	22.5
High	10.9	19.0	31.3	33.7

[a]$p < .000$

Table 9. Relationship between peer gambling expenditure and student frequency of gambling[a]

	Best Friend Gambling Expenditure			
Student Frequency	Non-gambler	Low	Medium	High
Non-gambler	56.6%	22.3%	28.7%	7.9%
Low	19.0%	33.0%	21.8%	28.6%
Medium	13.7%	24.3%	31.0%	42.9%
High	10.7%	20.4%	18.4%	20.6%

[a]$p < .000$

Table 10. Relationship between peer gambling expenditure and student gambling expenditure[a]

	Best Friend Gambling Expenditure			
Student Expenditure	Non-gambler	Low	Medium	High
Non-gambler	58.9%	24.0%	29.8%	8.2%
Low	17.3%	28.1%	15.5%	16.4%
Medium	11.9%	27.1%	19.0%	41.0%
High	11.9%	20.8%	35.7%	34.4%

[a]p < .000

Table 11. Relationship between peer gambling expenditure and student scope of gambling[a]

	Best Friend Gambling Expenditure			
Student Scope	Non-gambler	Low	Medium	High
Non-gambler	56.6%	22.3%	28.7%	7.8%
Low	17.6%	27.2%	12.6%	17.2%
Medium	16.1%	31.1%	17.2%	32.8%
High	9.8%	19.4%	41.4%	42.2%

[a]p < .000