Social Research Report Series 97-1

Gambling and Problem Gambling in Mississippi

A Report to the Mississippi Council on Compulsive Gambling

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January 1997

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F O R E W O R D

While legalized gambling has become a growth area in both the American and Mississippi economies, there has been a remarkable lack of research designed to monitor, evaluate and assess the extent and consequences of gambling behaviors. Dr. Rachel Volberg's ***Gambling and Problem Gambling in Mississippi*** is of special significance since it is the first comprehensive assessment of gambling behavior in the Mississippi population.

This important benchmark study can trace its origins to Governor Kirk Fordice's *1995 Mississippi Public Policy Think Tank.* This *Think Tank*, with the support of the Mississippi Casino Association, brought together leaders from local and state governments, the gaming industry, the treatment community, universities and other groups interested in gambling. Out of their deliberations came a call for the establishment of a council on compulsive gambling in Mississippi. Subsequently, the Mississippi Council on Compulsive Gambling was established in 1996 under the leadership of Executive Director Dick Lankford, with funding from both the Mississippi legislature and the Mississippi Gaming Association. An objective assessment of gambling and problem gambling among Mississippians became one of the Council's first objectives. During the fall of 1996 the Council, in cooperation with Mississippi State University's Social Science Research Center, commissioned a survey entitled *The 1996 Mississippi Survey of Gambling and Problem Gambling.* This survey provided the data for the current study.

Dr. Volberg is uniquely qualified to address issues of gambling prevalence and problem gambling. She has earned a reputation as *the* leading scholar on these topics. Dr. Volberg has led or participated in major gambling prevalence studies in Washington State, Georgia, Iowa, Louisiana, New York, North Dakota and New Zealand as well as in a number of Canadian jurisdictions. This report benefits from the expertise and experience gleaned from her distinguished career of researching gambling behaviors.

Dr. Volberg's report describes the characteristics of gamblers and non-gamblers in Mississippi and details their preferences for types of games and locations. Extensive, comparative information that contrasts the nature and extent of gambling in Mississippi with that in other states, especially those of our southern neighbors of Louisiana and Georgia, greatly expands the utility of the report. Dr. Volberg should be commended for her fine contribution to our understanding of this important aspect of Mississippi life.

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Acknowledgements

We would like to thank the residents of Mississippi who were interviewed for this survey. Their contribution has been vital in adding to our knowledge of changes in gambling and gambling-related problems in the United States. We would also like to thank the Mississippi Council on Compulsive Gambling for commissioning and funding this study as well as the staff of the Social Science Research Center of Mississippi State University who conducted the interviews for this study.

Gambling and Problem Gambling in Mississippi

A Report to the Mississippi Council on Compulsive Gambling

*Rachel A. Volberg**

Introduction

Until recently, the legalization of gambling has proceeded apace with little consideration of the potentially negative impacts that gambling can have on individuals, families and communities. This study, initiated and funded by the Mississippi Council on Compulsive Gambling, examines the extent of gambling and problem gambling in Mississippi in 1996 and compares the findings to similar studies conducted elsewhere in the United States.

The main purpose of this study is to establish a baseline measure of the prevalence of gambling-related problems among the adult population in Mississippi. Another purpose is to identify the types of gambling causing the greatest difficulties for the citizens of Mississippi. The results of this study will be useful in documenting the impact of legal gambling on the prevalence of gambling problems in the general population in Mississippi. The results will also be valuable in the development of prevention and treatment services for problem gamblers in Mississippi.

This report is organized into several sections for clarity of presentation. The ***Introduction*** includes a definition of the terms used in the report while the ***Methods*** section addresses the details of conducting the survey. The following three sections detail findings from the survey, with a focus on gambling in general, on the prevalence of problem gambling in Mississippi and on differences between non-problem and problem gamblers in the state. The final section compares the results of the study in Mississippi with the results of similar surveys in Georgia and Louisiana. The report concludes with recommendations for the future development of services for problem gamblers in Mississippi.

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❒ Background

Until the 1990s, the only form of legal gambling in Mississippi was bingo for charitable purposes. In 1990, dockside casino gambling on the Mississippi River and on the Gulf Coast was approved in a special session of the Mississippi Legislature. Dockside casino gambling has expanded rapidly from its origins in Biloxi in 1992. Dockside casinos are now established in several areas of the state, including the Tunica area, Vicksburg, Natchez, Greenville, Coahoma County, Bay St. Louis, Biloxi and Gulfport. There is also a casino owned by the Mississippi Band of Choctaw Indians near Philadelphia. In addition, there are 129 bingo halls currently operating throughout the state. Both dockside casinos and bingo halls are regulated by the Mississippi Gaming Commission.

There are presently 31 casinos in Mississippi offering table games, slot machines, video poker and keno. In both square footage and in gross gaming revenues, Mississippi has equaled or surpassed the Atlantic City casino market. The casino industry in Mississippi (not including the Choctaw casino) generated gross revenues of $1.72 billion in 1995. Tax revenues to the state from these operations are estimated at $122 million while tax revenues to local governments are estimated at $65 million. The casinos employ nearly 30,000 individuals and have probably generated another 20,000 jobs in construction and ancillary services. In contrast, charitable gambling or bingo in Mississippi generated approximately $620,000 in tax revenues for the state and provided approximately $9 million to charities for operations and programs in 1995 (International Gaming and Wagering Business 1996; McKinley 1996; Sheffield 1996).

Initially, there was little attention paid in Mississippi to the issue of problem gambling. In 1995, however, the Mississippi Public Policy Think Tank, organized by the Office of the Governor and the Mississippi Casino Association, brought together major stakeholders in the public and private sectors to develop a consensus about how to address this important issue. The Think Tank ended its deliberations with a long-term strategy to address problem gambling in Mississippi, including the formation of the Mississippi Council on Compulsive Gambling.

The Mississippi Council on Compulsive Gambling was initially funded with a grant of $100,000 from the Mississippi Gaming Association. Matching funds were provided through a legislative appropriation in 1996. The Council is presently seeking additional funds from other private sector sources. The Council is a non-profit organization whose activities focus on education, training, referrals to qualified counselors and healthcare providers, a 24-hour state-wide helpline and prevalence research (Mississippi Council on Compulsive Gambling 1996).

❒ Defining Problem and Pathological Gambling

Since the 1970s, legal gambling has become a popular recreational pastime throughout North America. In 1974, the first, and only, national survey of gambling in the United States found that 68% of the adult respondents had at some time wagered on one or more types of legal or illegal gambling (Kallick-Kaufmann 1979). In the 1980s and 1990s, studies in different states have found lifetime gambling participation rates that range from a low of 74% in Georgia to a high of 92% in New Jersey (Volberg 1994c, 1995a). The majority of people who participate in legal gambling are ***social gamblers*** who gamble responsibly, for entertainment and to socialize with friends and family.

The term ***problem gambling*** has been used in different ways. The term is sometimes used to refer to individuals who fall short of the diagnostic criteria for pathological gambling but are assumed to be in a preliminary stage of this progressive disorder (Lesieur and Rosenthal 1991). The term has also been used to refer to individuals who lose excessive amounts of money through gambling, relative to their income, although without reference to

specific difficulties that they may experience (Rosecrance 1988). The National Council on Problem Gambling uses this term to indicate ***all of the patterns of gambling behavior that compromise, disrupt or damage personal, family or vocational pursuits*** (National Council on Problem Gambling 1994).

Pathological gambling lies at one end of a spectrum of problem gambling and was first recognized as a psychiatric disorder in 1980 (American Psychiatric Association 1980). Recent changes have been made to the psychiatric criteria for pathological gambling to incorporate empirical research that links pathological gambling to other addictive disorders like alcohol and drug dependence. ***The essential features of pathological gambling are a continuous or periodic loss of control over gambling; a progression in gambling frequency and amounts wagered, in the preoccupation with gambling and in obtaining monies with which to gamble; and a continuation of gambling involvement despite adverse consequences*** (American Psychiatric Association 1994).

In prevalence surveys, individuals are categorized as ***problem gamblers*** or ***probable pathological gamblers*** on the basis of their responses to the questions included in the South Oaks Gambling Screen (see Appendix A for a discussion of the methods used to assess problem and pathological gambling in the general population). The term ***probable*** distinguishes the results of prevalence surveys, where classification is based on responses to questions in a telephone interview, from a clinical diagnosis. Respondents scoring three or four out of a possible 20 points on the South Oaks Gambling Screen items are classified as "problem gamblers" while those scoring five or more points are classified as "probable pathological gamblers."

In prevalence surveys conducted since 1990, a distinction is also made between "lifetime" and "current" problem and probable pathological gamblers. ***Lifetime*** problem and probable pathological gamblers are individuals who have, at some time in their lives, met the South Oaks Gambling Screen criteria for problem or pathological gambling. ***Current*** problem and probable pathological gamblers are individuals who have met these criteria in the past year. Not all lifetime problem and probable pathological gamblers meet sufficient criteria to be classified as current problem and probable pathological gamblers. For example, a middle-aged individual who experienced significant gambling-related difficulties in youth but no longer has such difficulties would be referred to as a lifetime problem gambler.

Methods

Nearly all of the surveys of gambling and problem gambling completed to date have been ***baseline*** surveys, assessing these behaviors in a jurisdiction for the first time. Baseline prevalence surveys provide estimates of the number of individuals in the general population who have experienced or are experiencing difficulties controlling their gambling as well as information about the demographic characteristics and gambling activities of these individuals.

Replication surveys permit more precise determinations of the impact of new gaming opportunities on the prevalence of gambling-related problems in a jurisdiction. This information is useful in planning the expansion of gaming opportunities as well as in targeting

services for problem gamblers and their families. Replication surveys have been conducted in only a few jurisdictions, including Iowa, Minnesota, New York, South Dakota and Texas in the United States (Emerson and Laundergan 1996; Volberg 1995b, 1996a; Volberg and Stuefen 1994; Wallisch 1996).

The baseline survey in Mississippi was completed in three stages. In the first stage of the project, Gemini Research consulted with staff from the Mississippi Council on Compulsive Gambling as well as from the Social Science Research Center, the organization responsible for data collection, regarding the final design of the questionnaire and the stratification of the sample. In the second stage of the project, staff from the Social Science Research Center completed telephone interviews with a sample of 1,014 residents of Mississippi aged 18 years and older.[1] All interviews were completed between September 25 and October 6, 1996 and the average length of these interviews was 10 minutes. The Social Science Research Center then provided Gemini Research with the data for the third stage of the project which included analysis of the data and preparation of this report.

❒ Questionnaire

The questionnaire for the survey in Mississippi was composed of three major sections (a copy of the questionnaire can be obtained from the Social Science Research Center at Mississippi State University). The first section included questions about 13 different types of gambling available to residents of the state. For each type of gambling, respondents were asked whether they had ever tried this type of gambling, whether they had tried it in the past year, how often each month they participated and whether they participated once a week or more in this type of gambling. Respondents were also asked to estimate their monthly expenditures on the types of gambling that they had tried in the past year. The second section of the questionnaire was composed of the lifetime and current South Oaks Gambling Screen items. The third section of the questionnaire included questions about the demographic characteristics of each respondent.

❒ Sample Design

Information about how survey samples are developed is important in assessing the validity and reliability of the results of the survey. While a fully random design is the most desirable approach in developing a representative sample of the population, this method often results in under-sampling demographic groups with low rates of telephone ownership, such as young adults, minorities and individuals with low education and income. To obtain a representative sample for the Mississippi survey, random selection of households and random selection of respondents within households was used.

— *Response Rate* —

To determine whether a representative sample was obtained, it is helpful to calculate the response rate for the sample as a whole. The response or completion rate for the Mississippi survey was calculated by taking the number of completed interviews and dividing it by the number of completes ***plus*** refusals ***plus*** partial interviews (including terminations by respondents during an interview as well as individuals identified as language-impaired or hearing-impaired by the interviewer). Using this method, the response or completion rate among valid respondents for the Mississippi survey was 70%, which compares well with response rates for similar surveys in recent years.

— *Weighting the Sample* —

To determine whether the sample was representative of the population, the demographics

[1]Three interviews were completed with respondents aged 17 years old. These respondents were dropped from the analysis in order to maintain comparability with similar studies in other jurisdictions.

of the Mississippi respondents were compared with information from the United States Bureau of the Census. After comparing the sample to the known characteristics of the Mississippi population, weights were applied to the sample to ensure that the sample would be representative of the distribution of the population of the state in terms of gender and ethnicity. ***Table 1*** shows key demographic characteristics of the sample before and after weighting and compares these characteristics to information from the 1990 census.

Table 1 shows that the actual sample substantially under-represented males and blacks in the population. The actual sample also slightly under-represented individuals under the age of 25 in the population. The weighted sample accurately represents the population in terms of gender and ethnicity. No effort was made to weight the sample for age since the difference between the actual sample and the population in terms of age was small and since the results of complex weighting formulae can be difficult to predict.

❒ Data Analysis and Reporting

For easier comparisons of data from the Mississippi survey with other jurisdictions, detailed demographic data on age, ethnicity, education, income and marital status were collapsed to have fewer values. ***Age*** was collapsed into four groups ("18 to 20," "21 to 29," "30 to 54" and "55 and over") for purposes of analysis. ***Ethnicity*** was collapsed from five groups ("Caucasian/White," "Native American," "African-American/Black," "Asian" and "Other") into three groups ("White," "Black" and "Other"). ***Marital Status*** was collapsed from five groups ("Married," "Separated," "Divorced," "Widowed," "Never Married") into four groups ("Married," "Widowed," "Separated/Divorced" and "Never Married"). ***Education*** was collapsed from five groups into two groups ("Less than High School" and "High School Graduate"). ***Income*** was collapsed from six groups into two groups ("Less than $25,000" and "$25,000 Plus") for purposes of analysis and comparison.

Chi-square analysis and analyses of variance were used to test for statistical significance. In order to adjust for the large number of statistical tests conducted, p-values smaller than .01 are considered ***highly significant*** while p-values at the more conventional .05 level are considered ***significant***. In reading the tables presented in this report, asterisks in the right-hand column of each table indicate that ***one*** of the figures in the row or in a demographic group is significantly different from other figures in the same row or demographic group.

Table 1: Comparing the Actual Sample, Weighted Sample and the General Population

		Actual Sample %	Weighted Sample %	1990 Census %
Gender	Male	36.9	46.1	46.4
	Female	63.2	53.9	53.6
Age	18 - 20	4.3	4.9	7.7
	21 - 24	6.3	6.8	8.0
	25 - 54	59.1	58.8	55.0
	55 and over	30.3	29.5	29.3
Ethnicity	White	71.1	67.4	67.5
	Black	27.1	31.7	31.6
	Other	1.9	1.0	0.9

All survey results are subject to margins of error. For data based on the total number of completed interviews in this survey (N=1,014), the margin of error is ±3.1% assuming a 95% confidence interval and assuming that the total proportion of the sample responding in one way or another to the question is relatively large. For example, if 50% of all the respondents surveyed answered a question in a particular way, then we can be sure, nineteen times out of twenty, that if the entire population of Mississippi had been interviewed, the proportion of the population answering in the same way would be between 46.9% and 53.1% based on the responses of individuals in the sample.

Gambling in Mississippi

In 1996, legal gambling in Mississippi included dockside casino gambling, bingo and other charitable games. Many residents of Mississippi also have relatively easy access to sales by the state lotteries in Florida and Louisiana, to racetracks in Arkansas, Alabama and Louisiana and to riverboat casinos and video poker establishments in Louisiana. To assess the full range of gambling activities available to Mississippi residents, the questionnaire for the survey collected information about 13 different wagering activities, both legal and illegal. Respondents were asked if they had ever bet or spent money on the following activities:

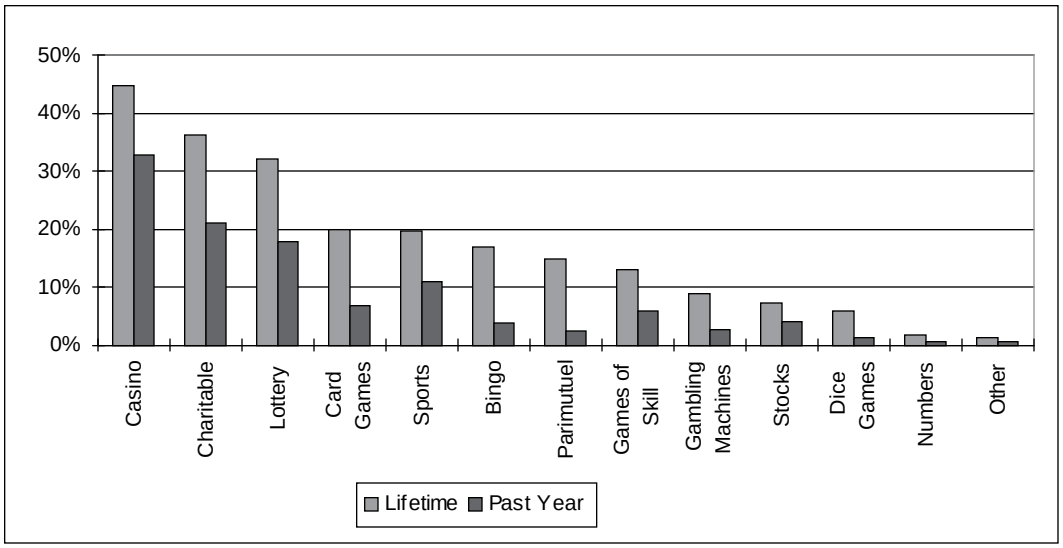
- lottery
- casinos
- bingo
- charitable games
- card games for money not at a casino
- horses, dogs or other animals
- slot machines, poker machines or other gambling machines not at a casino
- bowling, pool, golf or other games of skill
- dice games not at a casino
- stock or commodities markets
- sports events
- the numbers
- any other type of gambling

❒ Gambling in the General Population

In every recent survey of gambling and problem gambling, the majority of respondents acknowledge participating in one or more of the gambling activities included in the questionnaire. In the United States, the proportion of respondents who have ever gambled ranges from 74% in Georgia to 92% in New Jersey (Volberg 1994c, 1995a). In 1996, 64% of the respondents in Mississippi acknowledged participating in one or more of 13 gambling activities. This is the lowest rate of lifetime gambling participation identified in any jurisdiction where similar surveys have been completed.

Figure 1 on the following page shows lifetime and past-year participation rates for the types of gambling included in the 1996 survey. Lifetime and past-year participation is highest for casinos, charitable wagering and lottery products. Lifetime and past-year participation are lower but still substantial for card games, sports, bingo, parimutuel events such as horse or dog races and games of skill. Past-year par-

Figure 1: Lifetime and Past Year Gambling Participation Rates in Mississippi, 1996



ticipation on sports is higher than past-year participation for other types of gambling with similar lifetime participation rates.

Respondents who had participated in any type of gambling in the past year were asked how often they did this type of gambling in a typical month. Among the most popular types of gambling, those who wagered on card games in the past year did so on average nearly twice a month while those who spent money on charitable gambling in the past year did so on average once every two months. Those who gambled at a casino in the past year did so on average just under once a month while those who purchased lottery tickets in the past year did so on average just over once a month.

❒ Patterns of Gambling Participation

To understand patterns of gambling participation, it is helpful to examine the demographics of respondents who wager with increasing frequency. To analyze levels of gambling participation, we divide respondents into four groups:

- ***non-gamblers*** who have never participated in any type of gambling (36% of the total sample);
- ***infrequent gamblers*** who have participated in one or more types of gambling but not in the past year (15% of the total sample);
- ***past year gamblers*** who have participated in one or more types of gambling in the past year but not on a weekly basis (42% of the total sample); and
- ***weekly gamblers*** who participate in one or more types of gambling on a weekly basis (7% of the total sample).

Table 2 on the following page shows differences in the demographic characteristics of non-gamblers, infrequent gamblers, past year gamblers and weekly gamblers in Mississippi as well as differences in the mean number of gambling activities these groups have ever tried.

Table 2 shows that non-gamblers in Mississippi are significantly more likely than gamblers to be older black women with relatively low levels of education as well as annual house-

hold income. The non-gambling group also has the highest proportion of widowed respondents and individuals keeping house. Among the gamblers, infrequent gamblers are most similar to the non-gambling group. Infrequent gamblers are most likely to be older black women with low levels of education and income. This group includes a high proportion of widowed and retired respondents.

Past-year and weekly gamblers are more likely than non-gamblers or infrequent gamblers to be young unmarried white men, to have completed high school and to have relatively high annual household income. These two groups are also most likely to be working full-time or part-time. ***Table 2*** also shows that the ***number*** of gambling activities that gamblers have ever tried increases significantly with increased levels of participation.

In general in Mississippi, men are more likely than women to have wagered on games of skill, dice games, sports, the numbers and card games. The only type of gambling that women are more likely to have done than men is bingo. Respondents under the age of 30 are more likely to have wagered on games of skill, sports

Table 2: Demographics of Gamblers in Mississippi

		Non-Gamblers % (N=365)	Infrequent Gamblers % (N=149)	Past Year Gamblers % (N=425)	Weekly Gamblers % (N=76)	
Gender	Male	33.7	53.0	51.7	60.9	**
	Female	66.3	47.0	48.3	39.1	
Age	18 - 20	5.6	2.7	4.7	6.6	**
	21 - 29	11.0	12.6	20.5	19.7	
	30 - 54	43.4	50.6	55.7	45.2	
	55 and over	40.0	34.0	19.1	28.5	
Ethnicity	White	60.1	67.9	72.0	75.4	*
	Black	38.9	31.4	27.0	23.3	
	Other	1.0	0.7	1.0	1.3	
Marital Status	Married	53.6	59.3	57.6	57.5	**
	Widowed	17.1	12.8	4.7	3.7	
	Divorced/Separated	12.0	11.2	14.9	16.5	
	Never Married	17.3	16.7	22.7	22.3	
Education	Less than HS	24.7	17.0	10.8	4.8	**
	HS and Over	75.3	83.0	89.2	95.2	
Income	HH Income < $25,000	58.2	44.1	32.1	34.5	**
	HH Income > $25,000	41.8	55.9	67.9	65.5	
Employment	Working	53.0	56..6	73.7	80.2	**
	Other	43.9	41.5	25.3	19.8	
	Unemployed	3.1	1.9	1.0	—	
	Gambling Activities	—	2.35	3.59	5.09	**

* Significant
** Highly significant

and card games while older respondents are more likely to have wagered on stocks and commodities, parimutuel events such as horse or dog races and the numbers. White respondents are more likely than black respondents to have wagered on most types of gambling, particularly stocks and commodities, card games, horse or dog races and games of skill. The only type of gambling that black respondents are more likely than white respondents to have done is play the numbers.

Respondents who have never married or are separated or divorced are significantly more likely than married or widowed respondents to have wagered on dice games, games of skill, sports and card games. Respondents with a high school education and those with annual household incomes over $25,000 are more likely than respondents without a high school diploma or with lower incomes to have wagered on lottery games, at casinos, on parimutuel events, on games of skill and on sports as well as on stocks and commodities.

— Gambling Preferences and Location —

Favorite Type: Respondents who had ever gambled were asked to identify their favorite type of gambling. Among respondents who had a favorite type of gambling (N=444), 54% preferred casino gambling. Preferences for other types of gambling were much lower. For example, only 8% of these respondents indicated a preference for lottery games; 6% preferred wagering on sports and 6% on card games not at a casino; 5% identified sports betting or bingo or charitable gambling as their preferred activity.

Casino Preferences: Respondents who acknowledged going to a casino in the past year were asked about their preferences for particular casino products and locations. Among respondents who had been to a casino in the past year (N=332), there was a slight preference for the dockside casinos located on the Mississippi River along the western border of the state. Two-fifths of the respondents who had been to a casino in the past year (43%) indicated that they preferred to go to a casino in Tunica, Vicksburg, Natchez, Greenville or Coahoma. Just over one-third of respondents who had been to a casino in the past year (35%) preferred to go to a casino in Bay St. Louis, Biloxi or Gulfport, and 17% of these respondents indicated a preference for the casino in Philadelphia.

The preferences that respondents who have gambled at a casino in the past year express for particular gambling places differ significantly by place of residence. For example, 98% of respondents who reside in Gulf Coast counties and have gambled in casinos in the past year prefer to do so at Gulf Coast casinos while 85% of respondents who reside in counties on the western side of the state and have gambled in casinos in the past year prefer to do so at casinos on the Mississippi River. Preferences for particular casinos are evenly divided among respondents who do not live in or near a county with dockside casinos. Among these respondents (N=168), 37% prefer the Mississippi River casinos, 29% prefer the Gulf Coast casinos and 34% prefer to go to some other casino including the casino in Philadelphia.

In contrast to the slight preference for the Mississippi River casinos, there was a strong preference among respondents who had been to a casino in the past year for slot machines. Over three-quarters (77%) of the respondents who had been to a casino in the past year indicated that they usually play slot machines when they go to a casino. Only 18% of these respondents usually play card games and 3% prefer to play dice games when they go to a casino.

❒ Expenditures on Gambling

Reported estimates of expenditures obtained in this and similar surveys are based on recollection and self-report. These estimates do not include amounts spent on gambling within a jurisdiction by non-residents and tourists. Data on reported expenditures are best suited for analyzing the relative importance of dif-

ferent types of gambling among a jurisdiction's residents rather than for ascertaining absolute spending levels on different types of wagering.

To determine expenditures on gambling in the general population, the ***total monthly expenditure*** for each gambling activity is calculated by summing the amount of money reported spent by each respondent on each gambling activity. The total amount spent in a typical month by all respondents on all gambling activities is then calculated. The ***proportion*** of the total monthly expenditure spent on each gambling activity is calculated by dividing the amount spent on each activity by the total monthly expenditure. The total monthly expenditure on all gambling activities is divided by the total number of respondents in the survey to obtain an average amount spent per respondent.

— Adjustments to Expenditures —

While stocks and speculative investments are not universally regarded as a gambling activity, there are people who experience difficulties due to their involvement in these activities. For this reason, stocks and speculative investments are routinely included in the questionnaire for gambling surveys. However, in calculating the total monthly expenditure on gambling, expenditures on stocks and speculative investments are typically excluded. This is done in order to clearly explicate the relative gambling expenditures of the majority of respondents. This adjustment is also made to allow comparisons of expenditure data from Mississippi with data from other United States jurisdictions.

In every jurisdiction where similar surveys have been completed, amounts spent on stocks and speculative investments reflect large amounts of money spent by a relatively small number of respondents. Amounts spent on stocks and speculative investments in Mississippi constituted 45% of the unadjusted total monthly expenditure although only 4% of the respondents had participated in this activity in the past year.

— Variations in Expenditures —

Using the approach detailed above, we calculate that respondents in Mississippi (N=1,014) spend an average of $41 per month or $490 per year on gambling activities. It is worth reiterating that reported expenditures on gambling are based on recollection and self-report and should not be regarded as reflections of actual spending on different types of gambling in a jurisdiction. As in other jurisdictions, there are statistically significant differences in monthly expenditures on gambling across demographic groups. ***Table 3*** on the following page shows differences in the mean reported expenditures on gambling by specific demographic groups.

Table 3 shows that men in Mississippi estimate that they spend nearly three times as much on gambling as women and that respondents under the age of 30 estimate that they spend significantly more than older respondents. In contrast to most other jurisdictions, there is no significant difference in expenditures on gambling between white and black respondents. Not surprisingly, respondents with lower education and household income report spending significantly less on gambling than respondents with a high school education or those with annual household incomes over $25,000.

Table 4 on the following page shows total reported monthly expenditures for the sample on different types of gambling in Mississippi as well as the proportion that each type of expenditure represents of total adjusted monthly expenditures on gambling. Only those types of gambling for which total monthly expenditures exceeded 1% of the total monthly expenditure are shown.

Table 4 shows that reported expenditures on casino gambling make up more than half of all reported expenditures on gambling among Mississippi respondents. Reported expenditures

Table 3: Monthly Expenditures by Different Groups in Mississippi

	Average Monthly Expenditure $	
Male	62.85	**
Female	21.94	
18 - 20	79.79	*
21 - 29	68.23	
30 - 54	44.43	
55 and over	15.19	
White	44.23	
Black	32.05	
Other	89.42	
Married	39.43	
Widowed	3.47	
Divorced/Separated	64.75	
Never Married	48.12	
Less than HS	9.19	*
HS or higher	47.38	
HH Income < $25,000	28.21	*
HH Income > $25,000	62.31	
Working	45.38	
Unemployed	1.08	
Other	34.80	

* Significant
** Highly significant

Table 4: Reported Monthly Expenditures on Gambling in Mississippi

	Monthly Expenditure $	% of Total
Casino	22,299	53.9
Dice Games	3,812	9.2
Sports	2,633	6.4
Bingo	2,619	6.3
Lottery	2,254	5.4
Card Games	2,079	5.0
Charitable	1,697	4.1
Games of Skill	1,667	4.0
Parimutuels	929	2.2
Other	696	1.7
Total	41,366	100.0

on every other type of gambling are much lower, with none greater than 10% of total reported expenditures. Since 77% of the respondents who report gambling in casinos in the past year prefer slot machines, we estimate that 41% of total reported expenditures on gambling in Mississippi are for slot machines at dockside casinos.

As in other jurisdictions, the majority of respondents in Mississippi report spending rather small amounts on gambling per month. Approximately two-thirds of respondents in Mississippi (68%) report spending less than $10 on gambling in a typical month. Another 23% of the respondents report spending between $10 and $99 on gambling in a typical month, and 8% of the respondents report spending $100 or more on gambling in a typical month. However, this highest-spending group of respondents accounts for 80% of reported monthly expenditures on gambling in Mississippi.

Like weekly gamblers, respondents in the highest spending group in Mississippi are significantly more likely to be male, under the age of 30 and unmarried than respondents in lower spending groups. These higher spending respondents are also significantly more likely to have graduated from high school, to be employed and to have annual household incomes over $25,000 than respondents who spend less on gambling.

❒ Summary

In this section, we examined patterns of gambling participation in the sample as a whole. In 1996, 64% of the respondents in Mississippi acknowledge participating in one or more gambling activities, 49% acknowledge over participating in one or more gambling activities in the past year and only 7% acknowledge gambling on a weekly basis. Lifetime participation is highest for casino gambling, charitable wagering and lottery games. As in other jurisdictions, young unmarried white men with relatively high levels of education and income

are the respondents most likely to have ever gambled in Mississippi. By a large margin, Mississippi respondents who do gamble prefer to do so on slot machines at casinos near their place of residence.

Casino gambling accounts for over half of the reported expenditures on gambling reported in Mississippi. As with gambling participation, young unmarried men with relatively high education and income are most likely to report spending the largest amounts of money on gambling. Apart from the much lower participation rates in gambling in Mississippi, the patterns of gambling participation identified in Mississippi are similar to patterns identified in other jurisdictions. In the next section, we turn our attention to the prevalence of problem and probable pathological gambling in the sample.

Problem and Pathological Gambling in Mississippi

Following established criteria for discriminating between respondents without gambling-related difficulties and those with moderate to severe problems (Abbott and Volberg 1996; Lesieur and Blume 1987), Mississippi respondents' scores on the lifetime and current (past-year) South Oaks Gambling Screen items were tallied. In accordance with these criteria, prevalence rates were calculated as follows:

- ***lifetime problem gamblers*** are those respondents who score 3 or 4 points on the lifetime SOGS items. In Mississippi, 3.7% (±1.16%) of the respondents scored as lifetime problem gamblers.
- ***lifetime probable pathological gamblers*** are those respondents who score 5 or more points on the lifetime SOGS items. In Mississippi, 3.1% (±1.07%) of the respondents scored as lifetime probable pathological gamblers.
- ***current problem gamblers*** are those respondents who score 3 or 4 points on the past year SOGS items. In Mississippi, 2.8% (±1.01%) of the respondents scored as current problem gamblers.
- ***current probable pathological gamblers*** are those respondents who score 5 or more points on the past year SOGS items. In Mississippi, 2.1% (±0.88%) of the respondents scored as current probable pathological gamblers.

In the tables that follow in this and the next section, lifetime and current problem and probable pathological gamblers are grouped together. This approach is based on discriminant analysis that has established a strong and significant separation between non-problem gamblers and those who score as problem and probable pathological gamblers (Abbott and Volberg 1996; Volberg and Abbott 1994).

❒ Lifetime Prevalence

According to the 1990 census, the population aged 18 and over in Mississippi is 1,825,845 individuals. Based on these figures, we estimate that between 46,400 (2.54%) and 88,700 (4.86%) of Mississippi residents aged 18 and over can be classified as lifetime problem gamblers. In addition, we estimate that between 37,100 (2.03%) and 76,100 (4.17%) of Missis-

sippi residents aged 18 and over can be classified as lifetime probable pathological gamblers. ***Table 5*** on the following page shows that lifetime problem and probable pathological gamblers in Mississippi are significantly more likely than other respondents in the sample to be male, under the age of 30 and never married. This table also shows that lifetime problem and probable pathological gamblers in Mississippi are more likely than other respondents in the sample to be black, employed and to have annual household incomes over $25,000 although these differences do not attain statistical significance.

❒ Current Prevalence

Based on current prevalence and 1990 census information, we estimate that between 32,700 (1.79%) and 69,600 (3.81%) of Mississippi residents aged 18 and over can be classified as current problem gamblers. In addition, we estimate that between 22,300 (1.22%) and 54,400 (2.98%) of Mississippi residents aged 18 and over can be classified as current probable pathological gamblers.

Comparison of ***Table 5*** and ***Table 6*** on the following page shows that most of the differences between respondents who score as life-

Table 5: Comparing Lifetime Problem Gamblers with Non-Problem Respondents

		Non-Problem Respondents % (N=945)	Problem & Pathological Respondents % (N=69)	
Gender	Male	45.3	56.8	*
	Female	54.7	43.2	
Age	18 - 20	4.6	9.0	**
	21 - 29	15.1	25.7	
	30 - 54	49.8	48.7	
	55 and over	30.5	16.7	
Ethnicity	White	68.2	56.5	
	Black	30.9	42.0	
	Other	0.9	1.5	
Marital Status	Married	57.2	45.0	**
	Widowed	10.9	1.2	
	Divorced/Separated	13.1	18.9	
	Never Married	18.8	34.9	
Education	Less than HS	16.2	15.9	
	HS and Over	83.8	84.1	
Income	Annual Income <$25,000	43.4	33.9	
	Annual Income > $25,000	56.6	66.1	
Employment	Working	63.3	76.5	
	Other	34.8	22.3	
	Unemployed	1.9	1.2	

* Significant
** Highly significant

Table 6: Comparing Current Problem Gamblers with Non-Problem Respondents

		Non-Problem Respondents % (N=964)	Problem & Pathological Respondents % (N=50)	
Gender	Male	45.6	56.4	
	Female	54.4	43.6	
Age	18 - 20	4.7	7.9	**
	21 - 29	15.0	32.8	
	30 - 54	50.0	45.2	
	55 and over	30.3	14.1	
Ethnicity	White	68.0	55.8	
	Black	31.1	42.1	
	Other	0.9	2.0	
Marital Status	Married	57.1	43.9	**
	Widowed	10.7	1.6	
	Divorced/Separated	13.0	22.7	
	Never Married	19.2	31.8	
Education	Less than HS	16.5	10.7	
	HS and Over	83.5	89.3	
Income	Annual Income <$25,000	43.3	31.8	
	Annual Income > $25,000	56.7	68.2	
Employment	Working	63.3	82.2	*
	Other	34.8	17.8	
	Unemployed	1.9	0.0	

* Significant
** Highly significant

time problem or probable pathological gamblers and the remainder of the sample in Mississippi hold true for current problem and probable pathological gamblers. The greatest difference is that current problem and probable pathological gamblers are even more likely than lifetime problem and probable pathological gamblers to be under the age of 30, divorced or separated and employed.

❒ Natural Recovery

Gambling surveys conducted since 1990 have collected information on current as well as lifetime prevalence rates of problem and probable pathological gambling. The difference between lifetime and current prevalence rates represents individuals who have experienced a gambling problem at some time in their lives but do not score as having a gambling problem currently. Since there are few available treatment services for problem and pathological gamblers, these individuals can be regarded as problem and pathological gamblers in ***natural recovery***.

The proportion of problem and pathological gamblers in natural recovery in the general population ranges from 29% in New Brunswick to 57% in British Columbia (Baseline Market Research 1992; Angus Reid Group and Gemini

Research 1994). Another explanation of these numbers is that one in three lifetime problem gamblers in New Brunswick is currently experiencing difficulties while one in two lifetime problem gamblers in British Columbia is currently experiencing problems.

As in other jurisdictions, a proportion of the Mississippi respondents who score as lifetime problem or probable pathological gamblers do not score as having a current problem or pathology. In Mississippi, 32% of lifetime problem and probable pathological gamblers do not score as having a current problem or pathology. Another explanation of this number is that two out of every three individuals who have ever experienced gambling problems in Mississippi are currently experiencing such difficulties.

❒ Comparing Problem Gambling Across States

The jurisdictions where problem gambling surveys have been done in the United States differ substantially in the types of gambling available, in levels of gambling participation and in the demographic characteristics of the general population. ***Figure 2*** shows prevalence rates of lifetime problem and probable pathological gambling in all of the United States jurisdictions where surveys based on the South Oaks Gambling Screen have been completed. In states where replication surveys have been completed (Iowa, Minnesota, New York, South Dakota and Texas), the most recent prevalence rates are shown. ***Figure 2*** shows that the lifetime prevalence rate of problem and probable pathological gambling in Mississippi is higher than every other state where similar surveys have been conducted except Louisiana and New York.

Figure 2 shows that, in general, lifetime prevalence rates are lower in Central and Midwestern states than in the Northeast, South and West. Central and Midwestern states are jurisdictions where gambling has only recently been legalized. States in the Northeast and West tend to be ethnically more diverse than states in the Midwest and to have had access to legal gambling for longer periods of time. Like the Northeast and West, states in the South tend to be ethnically diverse. However, legal gambling is a recent introduction in all of the Southern states where surveys of gambling and problem gambling have been completed.

Figure 3 on the following page shows the current prevalence rates of problem and probable

Figure 2: Comparing Lifetime Prevalence Rates in the United States

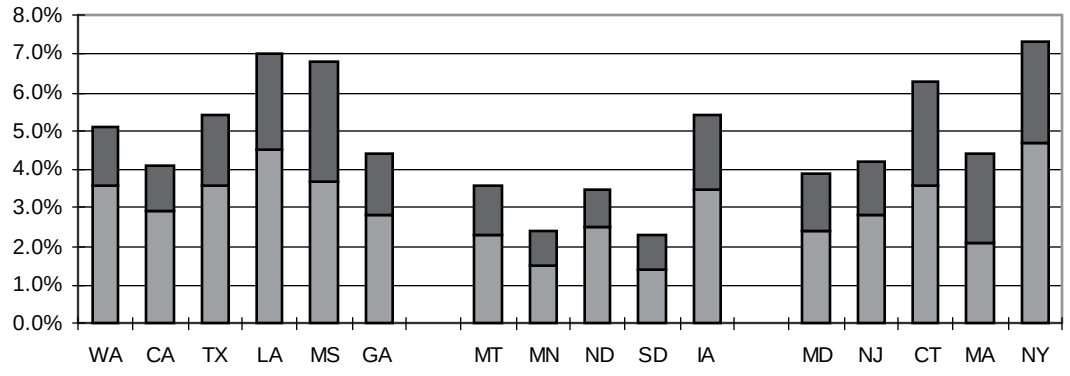
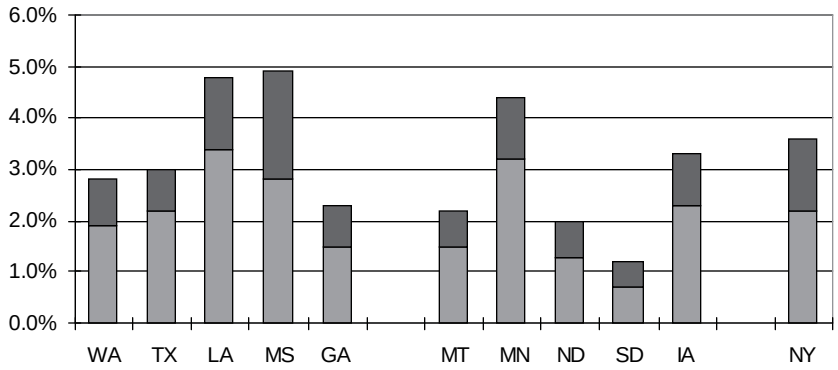


Figure 3: Comparing Current Prevalence Rates in the United States



pathological gambling in United States jurisdictions where both lifetime and current prevalence data have been collected. ***Figure 3*** shows that the current prevalence rate of problem and probable pathological gambling in Mississippi is equaled only by the current prevalence rate in Louisiana. As with lifetime prevalence rates, current prevalence rates tend to be higher in jurisdictions where casino gambling has recently been introduced. In the Midwest, Iowa and Minnesota have the highest current prevalence rates of problem and probable pathological gambling. In the South, the current prevalence rates in Louisiana and Mississippi also reflect the impact of the introduction of casino gambling.

❒ Summary

In Mississippi, 3.7% (±1.16%) of the respondents scored as lifetime problem gamblers and an additional 3.1% (±1.07%) of the respondents scored as lifetime probable pathological gamblers. In Mississippi, 2.8% (±1.01%) of the respondents scored as current problem gamblers while 2.1% (±0.88%) of the respondents scored as current probable pathological gamblers. Both lifetime and current prevalence of problem and probable pathological gambling in Mississippi in 1996 are higher than in most other states where similar surveys have been completed.

In Mississippi, lifetime problem and probable pathological gamblers are significantly more likely than other respondents to be male, under the age of 30 and never married. Current problem and probable pathological gamblers are even more likely than lifetime problem and probable pathological gamblers to be under the age of 30, divorced or separated and employed. Two out of every three individuals who have ever experienced gambling problems in Mississippi are experiencing those difficulties now. In this section, we have examined the prevalence of problem and probable pathological gambling among respondents in the Mississippi survey. Here, and in the first section of the report, our focus has been on the entire sample of 1,014 respondents. In the next section, we turn our attention to differences between non-problem and problem gamblers in the Mississippi survey. Only those respondents who acknowledged having tried one or more types of gambling (N=649) are included in analyses of the differences between non-problem and problem gamblers in the following section.

Comparing Non-Problem and Problem Gamblers in Mississippi

In considering the development of policies and programs for problem gamblers, it is important to direct these efforts in an effective and efficient way. The most effective efforts at prevention, outreach and treatment are targeted at individuals who are at greatest risk of experiencing gambling-related difficulties. Since the purpose of this section is to examine individuals at risk, our focus will be on differences between individuals who gamble, with and without problems, rather than on the entire sample.

In addition to looking only at respondents who gamble, our analysis in this section is limited to differences between non-problem gamblers and ***lifetime*** problem and probable pathological gamblers. For reasons explained in Appendix A, individuals who score as lifetime problem and probable pathological gamblers are most likely to reflect fully the characteristics of individuals in the community who are currently experiencing gambling difficulties. Further, since problem and probable pathological gamblers are statistically associated and are strongly separated from non-problem gamblers (Abbott and Volberg 1996; Volberg and Abbott 1994), these respondents are treated as a single group and are referred to as ***problem gamblers*** in this section.

❒ Demographics

Table 7 on the following page shows that, in contrast to other jurisdictions, there are few demographic differences between non-problem and problem gamblers in Mississippi. While problem gamblers in Mississippi are significantly more likely than non-problem gamblers to be black and never married, differences in age, education and income do not attain statistical significance.

While information about the demographic characteristics of problem gamblers is useful, it is also important to understand differences in the gambling behavior of non-problem and problem gamblers. Information about the behavioral correlates of problem gambling can help agencies develop effective public education and prevention materials, effectively identify at-risk individuals and provide appropriate treatment services.

❒ Weekly Gambling

Behavioral correlates of problem gambling include regular involvement with ***continuous*** forms of gambling (Dickerson 1993; Ladouceur, Gaboury, Dumont and Rochette 1988; Walker 1992). Regular gambling is defined as weekly or more frequent involvement with one or more types of gambling. ***Continuous*** forms of gambling are characterized by rapid cycles of play as well as the opportunity for players to immediately reinvest their winnings. Legal forms of continuous gambling in Mississippi include casino table games and slot machines as well as bingo. Illegal forms of continuous gambling include wagering on sports, cards, dice and games of skill.

Table 8 on the following page shows differences in weekly involvement in different types of wagering by non-problem and problem gamblers. As in other jurisdictions, problem gamblers in Mississippi are significantly more likely than non-problem gamblers to participate weekly in one or more gambling activities. Four times as many problem gamblers as non-problem gamblers in Mississippi wager weekly or more often. In striking contrast to other jurisdictions, where problem gamblers participate weekly in many more types of gambling than non-problem gamblers, problem

Table 7: Demographics of Non-Problem and Problem Gamblers

		Non-Problem Gamblers % (N=580)	Problem Gamblers % (N=69)	
Gender	Male	52.6	56.8	
	Female	47.4	43.2	
Age	18 - 20	3.9	9.0	
	21 - 29	17.8	25.7	
	30 - 54	53.8	48.7	
	55 and over	24.5	16.7	
Ethnicity	White	73.2	56.5	**
	Black	25.9	42.0	
	Other	0.9	1.5	
Marital Status	Married	59.5	45.0	**
	Widowed	7.1	1.2	
	Divorced/Separated	13.7	18.9	
	Never Married	19.7	34.9	
Education	Less than HS	11.0	15.9	
	HS and Over	89.0	84.1	
Income	Annual Income <$25,000	35.1	33.9	
	Annual Income > $25,000	64.9	66.1	

* Significant
** Highly significant

Table 8: Weekly Gambling of Non-Problem and Problem Gamblers

Games Played Weekly	Non-Problem Gamblers % (N=580)	Problem Gamblers % (N=69)	
Sports	2.1	13.0	**
Casino	0.7	10.1	**
Card Games	0.0	8.7	**
Weekly Gambling (1+ activities)	8.6	37.7	**

* Significant
** Highly significant

gamblers in Mississippi are significantly more likely to participate weekly in only a few types of gambling. These include casino gambling, card games and sports wagering. These activities are all considered ***continuous*** forms of gambling.

In light of the low levels of weekly gambling participation in Mississippi, we examined differences between non-problem and problem gamblers in monthly gambling participation. As with weekly gambling, there are significant differences between non-problem and problem gamblers in mean monthly participation rates only for casino gambling, wagering on card games and wagering on sports. While non-problem gamblers who had been to a casino in the past year did so on average less than once

a month, problem gamblers who had been to a casino in the past year did so on average one and a half times per month. Non-problem gamblers who wagered on card games in the past year did so just over once a month while problem gamblers who wagered on card games in the past year did so nearly three times a month. Non-problem gamblers who wagered on sports in the past year did so just over once a month while problem gamblers who wagered on sports in the past year did so more than twice a month.

In considering differences between non-problem and problem gamblers, it is helpful to compare respondents' preferences for specific types of gambling. While 43% of non-problem gamblers indicate that their favorite type of gambling is casino gambling, 60% of problem gamblers in Mississippi identify casino gambling as their preferred activity. While only 3% of non-problem gamblers say that sports is their favorite type of gambling, 11% of problem gamblers identify sports wagering as their preferred activity.

There are also differences ***among*** problem gamblers in their preferences for specific types of gambling. While 75% of female problem gamblers identify casino gambling as their favorite type of gambling, only 47% of male problem gamblers say that casino gambling is their preferred activity. While 74% of white problem gamblers prefer casino gambling, only 41% of black problem gamblers identify casinos as their favorite type of gambling. While 50% of problem gamblers under 30 identify casino gambling as their favorite type, 66% of problem gamblers over 30 identify casinos as their preferred activity. These findings suggest that there may be two distinct groups of problem gamblers in Mississippi: older white men and women who prefer casino gambling and younger black men who prefer wagering on illegal types of gambling including sports and card games not at casinos.

In most jurisdictions, problem and pathological gamblers are significantly more likely than other gamblers or non-gamblers to be young, minority, blue-collar men embedded in a culture where gambling is broadly accepted, if not always legal. Combined with the stresses that are part of the life of young minority and blue-collar men, gambling on sports, dice or locally available gaming machines as well as at casinos presents a challenging opportunity to get some "action", demonstrate control of their lives, beat the system and gain prestige among their friends (Volberg, Reitzes and Boles 1996).

The most significant change in gambling in North America since the 1970s has been the growing involvement of the middle class. While gambling has long been condoned among the upper classes and broadly tolerated among the lower classes, the same activities were frowned upon by the middle class (Rosecrance 1988). With little gambling experience, new middle class gamblers have no repertoire of techniques for dealing with the periodic losses that are an integral part of gambling. Until these gamblers develop the skills and strategies to gamble regularly without incurring disastrous losses, they are increasingly likely to experience difficulties (Rosecrance 1985). ***In Mississippi, we may be seeing the emergence of the middle class problem gamblers predicted by Rosecrance.***

❒ Expenditures

In addition to gambling regularly on continuous types of wagering, an important behavioral correlate of problem gambling is heavy gambling losses (Dickerson 1993). Although gambling losses should be considered relative to income, comparisons of reported gambling expenditures provide insight into the far greater financial impact of gambling on problem gamblers and their families.

Table 9 on the following page shows differences in the average monthly expenditures on gambling for non-problem and problem gamblers in Mississippi. Only those types of gambling for which expenditures among problem gamblers exceeded those of non-problem gamblers by $5 or more per month are shown.

Table 9 shows that the greatest differences between non-problem and problem gamblers in Mississippi in average gambling expenditures are for casinos, bingo, card games and sports. The difference between average expenditures by non-problem and problem gamblers on casino games does not attain statistical significance because of the very large standard deviation around the mean for both groups.[2] ***Table 9*** also shows that average total monthly expenditures on gambling are three and a half times higher for problem gamblers than for non-problem gamblers in Mississippi.

In our discussion of gambling expenditures in the total sample, we identified a small group of respondents (N=81) who reported spending $100 or more on gambling in a typical month (see the discussion of ***Variations in Expenditures***). This small group of respondents accounted for 80% of reported monthly expenditures on gambling in Mississippi. In considering risk factors associated with problem gambling, it is worth noting that 47% of the problem gamblers in Mississippi (N=32) fall into this heavy-spending group.

Table 9: Average Monthly Expenditures of Non-Problem and Problem Gamblers

Type of Gambling	Non-Problem Gamblers $ (N=580)	Problem Gamblers $ (N=69)	
Casino	31.13	61.37	
Bingo	1.16	28.18	**
Card Games	.96	22.03	**
Sports	2.45	17.56	**
Games of Skill	1.70	9.91	**
Lottery	2.75	9.57	*
Gambling Machines	.15	5.62	**
Total Expenditures	49.99	179.09	**

* Significant
** Highly significant

In addition to significant differences in gambling expenditures between non-problem and problem gamblers, there are significant differences among problem gamblers in terms of expenditures. For example, male problem gamblers report spending an average of $200 per month while female problem gamblers report spending an average of $151 per month. Differences in expenditures between male and female problem gamblers are greatest for bingo (female problem gamblers spend nine times more on bingo than male problem gamblers), card games and sports.

Similarly, there are substantial differences between younger and older problem gamblers with regard to gambling expenditures. While problem gamblers aged 18 to 20 report spending an average of $90 per month, those aged 21 to 29 report spending $311 per month and those aged 30 to 54 report spending $152 per month. Problem gamblers aged 55 and older report spending an average of $102 per month. Problem gamblers under the age of 30 report spending the most on bingo, casino games, card games, games of skill and dice. Problem gamblers aged 30 to 54 report spending the most on casino games and sports wagering while problem gamblers aged 55 and older report spending the most on casino games, card games and the numbers.

Among white problem gamblers, the average amount spent per month on gambling is $203 compared to $136 among black problem gamblers. Only one problem gambler is from another ethnic group and this individual reports spending an average of $505 per month on gambling. White problem gamblers report spending the most on casino games, bingo, sports and card games. Black problem gamblers report spending the most on card games, casino games, sports and bingo.

[2]A large standard deviation around the mean is caused by very large differences in the responses by individuals in each group. The standard deviation for casino spending among non-problem gamblers is $220 while the standard deviation among problem gamblers is $122.

❒ Legal versus Illegal Gambling

As we have seen, problem gamblers are significantly more likely than non-problem gamblers to be involved in several types of gambling and to spend more on their gambling. Differences in the wagering of non-problem and problem gamblers become even clearer when we examine involvement in legal *versus* illegal gambling among Mississippi respondents. ***Legal gambling*** includes lottery purchases, casino gambling, bingo, charitable gambling and parimutuel wagering. ***Illegal gambling*** includes card games, dice games, sports and games of skill as well as the numbers and illegal gambling machines.

Table 10 shows that while lifetime involvement in legal types of gambling is not significantly different for non-problem and problem gamblers, there are significant differences in lifetime involvement in illegal gambling as well as in past year and weekly involvement in both legal and illegal types of gambling.

While nearly all non-problem and problem gamblers have participated at some time in a legal form of gambling, only half of the non-problem gamblers compared to three-quarters of the problem gamblers have gambled illegally at some time. Two out of three non-problem gamblers compared to nearly nine out of ten problem gamblers have participated in the past year in legal types of gambling. In contrast, only one out of four non-problem gamblers and half of the problem gamblers have participated in the past year in some type of illegal gambling. These differences hold for weekly gambling as well.

Table 10: Legal and Illegal Gambling by Non-Problem and Problem Gamblers

Type of Gambling	Non-Problem Gamblers % (N=580)	Problem Gamblers % (N=69)	
Lifetime			
Legal	94.2	97.7	
Illegal	54.3	73.5	**
Past Year			
Legal	67.3	85.9	**
Illegal	25.9	56.9	**
Weekly			
Legal	4.1	16.7	**
Illegal	3.4	23.5	**

* Significant
** Highly significant

❒ Prevalence by Type of Gambling

The question most often asked about the relationship between gambling and problem gambling is: What type of gambling is most likely to add to the number of problem and pathological gamblers in the general population?

We have examined the relationship between weekly involvement, gambling expenditures and problem gambling among respondents in this survey to help answer this question for Mississippi. Our analysis shows that for lifetime problem and pathological gamblers, ***continuous*** forms of gambling including casino gambling, sports betting and wagering on card games not at a casino present the greatest risk.

Another approach is to examine the prevalence of gambling problems among individuals who have participated in specific types of gambling. ***Figure 4*** on the following page illustrates the prevalence of lifetime problem and pathological gambling for the total sample from Mississippi, for respondents who have ever gambled and for respondents who have ever participated in different types of gambling.

Figure 4 shows that lifetime prevalence rates are substantially higher among individuals who have participated in specific types of wagering than among the sample as a whole or among gamblers in general. In Mississippi, prevalence rates are highest among individuals who have ever wagered on illegal types of gambling such as dice games, illegal gambling machines and on card games not at casinos.

These types of gambling are most attractive to young men in the general population. Prevalence rates are also high among individuals who have ever wagered on parimutuel events and bingo which are legal forms of gambling attractive to older gamblers in the general population.

Prevalence rates are lower for most of the legal types of gambling available to Mississippi residents. Mississippi does not have a state lottery so problem gamblers must travel out-of-state to purchase lottery tickets. Dockside casinos have only been operational in Mississippi since 1992. Since gambling problems can take several years to develop fully (Volberg 1988), it is likely that the prevalence of problem and pathological gambling among casino gamblers in Mississippi will increase to a level closer to the prevalence rates for sports, bingo and parimutuel events in the future.

❒ Other Significant Differences

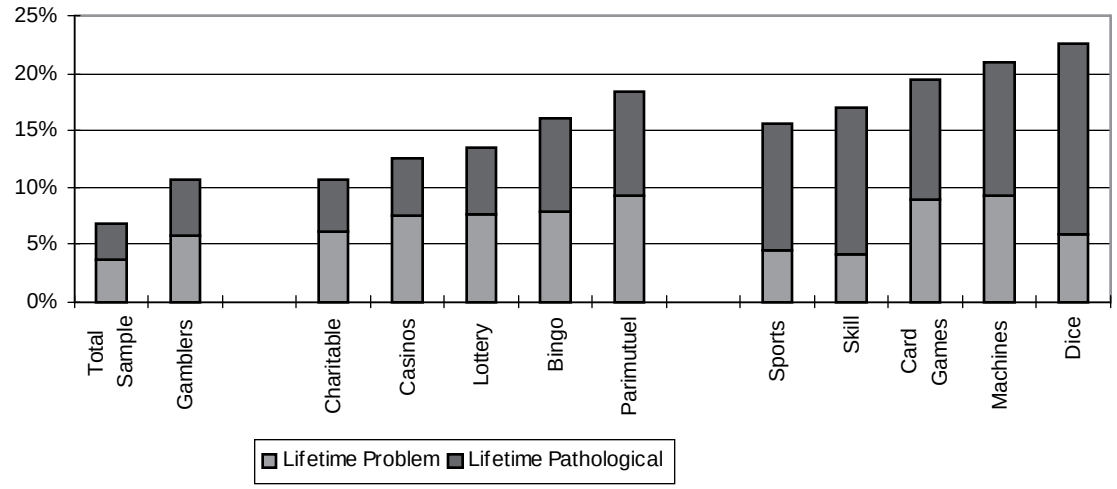
In addition to their demographics and gambling involvement, there are other significant differences between non-problem and problem gamblers in Mississippi. These include differences in respondents' perceptions of their gambling involvement, the amount of time they usually gamble and the largest amount they report losing in a single day.

— Starting to Gamble —

One important difference between non-problem and problem gamblers is the age at which they start gambling. While the mean age at which non-problem gamblers in Mississippi started gambling is 34 years old, the mean age at which problem and pathological gamblers in Mississippi started gambling is significantly younger at 27 years old. ***Table 11*** on the following page shows that there are significant differences in the age at which respondents started gambling by gender, age and marital status for both non-problem and problem gamblers. In contrast to other jurisdictions, differences in mean starting age among ethnic groups in Mississippi are not significantly different.

Table 11 shows that men, whether non-problem or problem gamblers, start gambling at a significantly earlier age than women in Mis-

Figure 4: Prevalence by Types of Gambling



sissippi. Younger respondents, whether non-problem or problem gamblers, also recall starting to gamble at significantly earlier ages than older respondents. Finally, problem gamblers who have never married recall starting to gamble at a significantly earlier age than non-problem or problem gamblers who are married, divorced or separated, as well as non-problem gamblers who have never married. Problem gamblers who are divorced or separated are the only group that recall starting to gamble later in life than their non-problem counterparts. This suggests that separation and divorce may be a risk factor in the development of gambling problems in older adults.

— Gambling Experiences and Resources —

Table 12 on the following page shows that problem gamblers are significantly more likely than non-problem gamblers in Mississippi to have felt nervous about their gambling and to have felt that one or both parents had a gambling problem. ***Table 12*** also shows that there are significant differences between non-problem and problem gamblers in Mississippi in terms of the time and resources that they devote to gambling. Problem gamblers are significantly more likely than non-problem gamblers to spend six or more hours gambling per session, to have lost $1,000 or more in a single day, and to travel 60 or more miles in order to gamble.

— Help-Seeking —

As in other jurisdictions, very few problem gamblers in Mississippi acknowledge desiring or seeking help for a gambling problem. Only 6% (N=4) of problem gamblers in Mississippi have desired help for a gambling problem and only 4% (N=3) have sought such help. One individual sought help from a problem gambling treatment program in Mississippi and another sought help from a problem gambling treatment program outside of Mississippi. The other two respondents declined to indicate where they had sought help for their gambling problems.

Table 11: Mean Starting Age of Non-Problem and Problem Gamblers

		Non-Problem Gamblers % (N=580)	Problem Gamblers % (N=69)	
Gender	Male	29	23	**
	Female	38	32	
Age	18 - 20	16	16	**
	21 - 29	23	19	
	30 - 54	32	30	
	55 or over	45	36	
Ethnicity	White	34	27	
	Black	32	27	
	Other	39	39	
Marital Status	Married	35	27	**
	Widowed	51	—	
	Divorced/Separated	30	36	
	Never Married	26	19	

* Significant
** Highly significant

Table 12: Other Significant Differences Between Non-Problem and Problem Gamblers

	Non-Problem Gamblers % (N=580)	Problem Gamblers % (N=69)	
Ever Felt Nervous About Your Gambling	10.8	57.6	**
Parent Ever Have Gambling Problem	2.4	16.2	**
Usually Gamble With			
Alone	17.0	17.0	
Spouse/Partner	28.5	25.9	
Other Family	14.5	12.2	
Friends	31.0	38.0	
Other	5.3	6.9	
Usual Time Spent Gambling			**
< 1 to 2 hours	75.8	36.9	
3 to 5 hours	21.2	52.3	
6 or more hours	3.0	10.8	
Largest Amount Lost in One Day			**
< $1 to $9	25.5	3.9	
$10 to $99	55.5	28.8	
$100 to $999	16.7	50.5	
$1,000 or more	2.3	16.8	
Usual Distance to Gamble			**
0 to 15 miles	53.8	27.0	
15 to 60 miles	29.0	38.3	
60 or more miles	17.3	34.7	

* Significant
** Highly significant

— Location —

In planning the development of services for problem gamblers in Mississippi, it is helpful to know where these individuals reside and where they prefer to gamble. In Mississippi, 30% of the problem gamblers reside in counties on the western side of the state, 16% of the problem gamblers reside in the Gulf Coast counties and 54% of the problem gamblers identified in the survey reside in counties where dockside casino gambling is not readily available.

In light of their residential distribution, it is interesting to note that problem gamblers living outside of counties in Mississippi with dockside casinos are significantly more likely than problem gamblers living within such counties to indicate that they usually travel 60 miles or more to gamble. Over half of problem gamblers living in non-dockside casino counties (52%) indicate that they usually travel 60 miles or more to gamble. In contrast, 35% of the problem gamblers living in western Mississippi and 68% of the problem gamblers living in the Gulf counties indicate that they usually travel less than 15 miles to gamble.

❒ Summary

Our focus in this section has been on the risk factors associated with problem gambling in

the general population. To identify these risk factors, we compared problem and non-problem gamblers in Mississippi as well as in other jurisdictions where similar surveys have been completed. As predicted by the research literature, regular gambling involvement, in particular with ***continuous*** forms of gambling and heavy gambling losses, are the factors associated with gambling-related difficulties in Mississippi.

Although there are few demographic differences between non-problem and problem gamblers in Mississippi, problem gamblers are significantly more likely than non-problem gamblers to be black and never married. Information on the age at which non-problem and problem gamblers started gambling suggests that separation or divorce may be a risk factor in the development of gambling problems in older adults.

Problem gamblers are significantly more likely than non-problem gamblers to wager regularly although they do so on only a few activities, including casino gambling, card games and sports wagering. While the majority of problem gamblers in Mississippi identify casino gambling as their preferred activity, this preference is most pronounced among older white female problem gamblers. Despite this expressed preference, problem gambling prevalence rates are highest among individuals who have wagered on illegal types of gambling such as dice games, non-casino gambling machines and card games and among individuals who have ever wagered on parimutuel events and bingo.

These findings suggest that there may be two distinct groups of problem gamblers in Mississippi: older white men and women who once preferred parimutuels and bingo but may now prefer casino gambling and younger black men who prefer sports wagering as well as gambling on card games, dice games and games of skill. Given these findings, prevention, outreach and treatment services should probably be aimed primarily at young black men engaged in illegal types of gambling and at middle-class gamblers who gamble regularly at dockside casinos. It will be especially important to direct some of these efforts at women problem gamblers who comprise nearly half of the lifetime and current problem gamblers.

In this section, we have identified several major risk factors associated with gambling-related difficulties among respondents in Mississippi. Our focus has been on respondents who acknowledge gambling, whether or not they experience difficulties related to this involvement. In the next section, we will focus on comparisons between the survey in Mississippi and two similar surveys completed recently in Georgia and Louisiana.

Comparing Mississippi, Louisiana and Georgia

This section focuses on comparisons between the survey in Mississippi and two recent surveys completed in Georgia and Louisiana. These two jurisdictions were chosen for comparison with Mississippi because (1) these are the other two Southern states where surveys of gambling and problem gambling have been completed, and (2) Louisiana is one of the few states besides Mississippi where riverboat casinos have been legalized while Georgia had no legal gambling except charitable bingo and a one-year old state lottery at the time the survey was completed.

This section examines similarities and differences in the questionnaires used in the three surveys. Differences and similarities between the samples from the three states are also examined. We then look at differences and similarities in gambling involvement and expenditures, in the prevalence of problem gambling and in the characteristics of problem gamblers in these three jurisdictions.

❒ Comparing the Questionnaires

In the ***Methods*** section, we noted that the questionnaire for the 1996 Mississippi survey included three major sections: gambling participation, the lifetime and current South Oaks Gambling Screen and questions about demographic characteristics. Care was taken in designing the questionnaire for the Mississippi survey to ensure that respondents' involvement in different types of gambling could be compared with similar surveys in nearby jurisdictions. ***Table 13*** shows how the different types of gambling included in the Mississippi survey were matched to the types of gambling included in surveys in Louisiana and Georgia:

Table 13 shows that the surveys in Georgia and Louisiana obtained greater detail about some types of gambling than the survey in Mississippi. For example, respondents in Louisiana were asked about their casino play in Louisiana on a riverboat, in Louisiana at an Indian casino and outside of Louisiana. Respondents in Georgia were asked about their lottery gam-

Table 13: Types of Gambling Included in Prevalence Surveys

Mississippi	Louisiana	Georgia
• Lottery	• Louisiana lottery game	• Instant or scratch-off lottery games • Daily lottery games • Lotto-type lottery games
• Been to a casino	• Louisiana riverboat casino game • Louisiana Indian Reservation casino game • Out-of-state casino game	• Gaming devices or slot machines at an out-of-state casino • Card or dice games at an out-of-state casino
• Bingo	• —	• Bingo
• Card games	• Private card games	• Card games for money
• Horses, dogs or other animals	• Louisiana horse race at the track • Louisiana horse race at OTB parlor	• Horse or dog races (includes on-track, off-track or with a bookie) • Cockfights or dogfights
• Stocks or commodities	• Speculative stock or commodity investment	• Speculative investments or stock market
• Gambling machines	• Louisiana video poker game not at Indian casino or riverboat casino	• —
• Games of skill	• Private game of skill such as billiards, bowling or golf	• Games of skill
• Dice games	• Private game of chance such as dice	• Craps or other dice games
• Sports	• Outcome of a public sporting event	• Bet on sports with friends, acquaintances, co-workers • Sports pools • Sports with a bookie
• Charitable	• Louisiana charitable game (raffle, bingo, keno)	• Raffles, casino nights or other small stakes charitable gaming
• Numbers	• —	• Numbers games (not the daily lottery game)
• Other	• Other	• Other

bling in greater detail than respondents in Mississippi or Louisiana since the state lottery in Georgia is one of the few legal types of gambling in that state. Respondents in Georgia were not asked about wagering on gambling machines not at casinos while respondents in Louisiana were not asked about wagering on the illegal numbers game.

❒ Comparing the Samples

In contrast to the sample from Mississippi, the samples from Louisiana and Georgia were not weighted. Consequently, the samples from these states are not fully representative of the population in the states. In Louisiana, blacks are under-represented while in Georgia, males and blacks are under-represented. ***Table 14*** shows that the three samples are significantly different in terms of gender and ethnicity. Respondents from Georgia are the most likely to be female while those from Louisiana are the most likely to be male. Respondents from Mississippi are the most likely to be black although this may be the result of weights applied to the Mississippi data and not to the data from Georgia or Louisiana.

Table 14 also shows that the three samples are significantly different in terms of gender and ethnicity. Respondents from Mississippi are the most likely to be widowed while respondents from Georgia are the least likely to have ever married. Respondents from Mississippi are the least likely to have graduated from high school while respondents from Louisiana are

Table 14: Demographic Characteristics of Respondents

		Mississippi (N=1,014)	Louisiana (N=1,818)	Georgia (N=1,550)	
Gender	Male	46.1	48.1	41.6	**
	Female	53.9	51.9	58.4	
Age	Under 30	20.8	22.3	21.3	
	Over 30	79.2	79.7	78.7	
Ethnicity	White	67.4	75.3	71.6	**
	Black	31.7	20.9	23.6	
	Other	1.0	3.8	4.7	
Marital Status	Married	56.4	57.7	56.1	*
	Widowed	10.3	8.9	9.2	
	Divorced/Separated	13.5	12.7	16.5	
	Never Married	19.9	20.6	18.3	
Education	Less than HS	16.2	14.0	12.3	*
	HS and Over	83.8	86.0	87.7	
Income	Annual Income <$25,000	42.7	43.5	35.1	**
	Annual Income > $25,000	57.3	56.5	64.9	
Employment	Working	64.2	61.9	66.7	*
	Other	34.0	35.1	31.3	
	Unemployed	1.8	3.1	2.0	

* Significant
** Highly significant

the least likely to have annual household incomes over $25,000. Respondents from Louisiana are the least likely to be working and the most likely to be unemployed.

❒ Comparing Gambling Involvement

Lifetime gambling participation is significantly higher in Louisiana and Georgia than in Mississippi. While only 64% of the Mississippi respondents have ever tried one or more types of gambling, 81% of the Louisiana respondents and 74% of the Georgia respondents have tried one or more types of gambling. Differences in lifetime gambling participation hold true for past-year and weekly participation. While 75% of Louisiana respondents and 65% of Georgia respondents have wagered on one or more types of gambling in the past year, only 49% of Mississippi respondents have done so. While 38% of Louisiana respondents and 28% of Georgia respondents wager weekly on one or more types of gambling, only 7% of Mississippi respondents wager weekly.

In general, differences between the samples from the three states are reflected in the demographics of those respondents who have ever gambled. ***Table 15*** shows differences in the demographic characteristics of respondents who have ever gambled in Mississippi, Louisiana and Georgia. Gamblers in Mississippi and Louisiana are more likely to be male than gamblers in Georgia. Black respondents in all three states are slightly less likely to have ever

Table 15: Demographics of Gamblers

		Mississippi (N=641)	Louisiana (N=1,469)	Georgia (N=1,151)	
Gender	Male	53.1	50.4	45.4	**
	Female	46.9	49.6	54.6	
Age	Under 30	23.1	23.4	23.1	
	Over 30	76.9	76.6	76.9	
Ethnicity	White	71.5	78.6	73.0	**
	Black	27.6	17.9	22.4	
	Other	0.9	3.5	4.6	
Marital Status	Married	58.0	59.5	55.8	*
	Widowed	6.4	6.1	6.3	
	Divorced/Separated	14.3	13.3	18.5	
	Never Married	21.3	21.0	19.4	
Education	Less than HS	11.5	11.0	9.0	
	HS and Over	88.5	89.0	91.0	
Income	Annual Income <$25,000	34.9	39.6	31.4	**
	Annual Income > $25,000	65.1	60.4	68.6	
Employment	Working	70.6	65.3	72.2	**
	Other	28.3	31.8	25.9	
	Unemployed	1.1	3.0	2.0	

* Significant
** Highly significant

gambled than white respondents. Widowed respondents in all three states are less likely to have ever gambled than other respondents. In all three states, respondents with higher levels of education and income are more likely to have ever gambled.

Table 16 shows differences in participation in specific types of gambling among respondents in the three states. While the proportion of respondents from Louisiana and Georgia who have ever gambled is significantly higher than among respondents from Mississippi, many of the differences in participation in specific types of gambling are due to differences in availability in the three states.

With no state lottery in place, respondents in Mississippi are the least likely to have ever purchased lottery products. Since riverboat and dockside casinos are legal in Mississippi and Louisiana but not in Georgia, respondents from these two states are significantly more likely to have gambled at a casino. With no racetracks in Georgia or Mississippi, respondents from these states are significantly less likely to have wagered on parimutuel events than respondents from Louisiana. With legal video poker available throughout the state, Louisiana respondents are significantly more likely to acknowledge wagering on gambling machines than respondents in Mississippi.

Differences across the states in illegal gambling are somewhat more difficult to explain. Respondents from Louisiana are significantly more likely than those from Georgia and Mississippi to have played dice and card games for money. Respondents from Georgia are significantly less likely than respondents from Mississippi and Louisiana to have wagered on games of skill while respondents from Mississippi are the least likely to have wagered on sports. Reasons for these differences may be cultural as well as demographic, such as the influence of the Cajun culture on attitudes toward gambling in Louisiana and the importance of the Baptist Church in Mississippi. However, this remains a hypothesis to be tested in future research.

Reported expenditures on gambling also differ significantly across the three states. While the average monthly expenditure on gambling is $82 in Georgia and $59 in Louisiana, the average monthly expenditure in Mississippi is $41.

Table 16: Lifetime Gambling Participation Rates

Type of Gambling	Mississippi (N=1,014)	Louisiana (N=1,818)	Georgia (N=1,550)	
Lottery	32.2	68.3	61.2	**
Casino	45.0	45.7	26.3	**
Bingo	17.0	—	17.6	
Charitable	36.2	43.0	37.6	**
Card Games	19.9	25.1	20.1	**
Parimutuels	14.8	26.2	17.5	**
Gambling Machines	8.8	28.9	—	**
Games of Skill	13.2	13.9	9.4	**
Dice Games	6.0	10.3	5.0	**
Stocks or Commodities	7.2	15.0	15.2	**
Sports	19.7	26.8	24.9	**
Numbers	1.7	—	3.7	**
Other	1.4	4.8	1.5	**

* Significant
** Highly significant

Among Georgia respondents, average expenditures are highest for instant lottery games, Lotto and slot machines at casinos (out-of-state). Among Louisiana respondents, average expenditures are highest for Louisiana riverboat casinos, sports and out-of-state casinos. Among Mississippi respondents, as we have seen, average expenditures are highest for dockside casinos.

❒ Comparing Problem Gambling Prevalence

Table 17 shows the point estimates and standard deviations (rounded to one decimal point) for lifetime and current problem and probable pathological gambling for Mississippi, Louisiana and Georgia as well as the combined lifetime and current prevalence rates.

While there are small overlaps in the standard deviations for both lifetime and current problem and probable pathological gambling, the differences in prevalence rates between Mississippi and Louisiana, on the one hand, and Georgia, on the other, are significant. Together, these figures show that there is a substantial and significant difference in the lifetime and current prevalence rates of problem and pathological gambling in these three Southern states.

In contrast to Georgia, casino gambling is available in Louisiana and Mississippi. However, gambling involvement and expenditures are far higher in Louisiana than in Mississippi. How can we account for the equally high prevalence rates of problem gambling in Mississippi and Louisiana?

One possible explanation of the much higher level of gambling participation in Louisiana is that gambling of all kinds is more broadly accepted in this state, where Creole and Cajun cultural influences are strong, while Mississippi remains a Baptist stronghold. The low rate of gambling involvement and the high rate of gambling problems in Mississippi may be due to the lower per capita income in Mississippi compared with either Louisiana or Georgia. Since the prevalence of gambling problems is much higher among lower socio-economic groups, the low socio-economic status of a large proportion of the population in Mississippi may contribute disproportionately to a higher rate of problem and pathological gambling in the state. A third explanation is that the availability of casino gambling has contributed rapidly to an equally high prevalence rate in the two states regardless of levels of involvement and expenditure.

Table 17: Lifetime and Current Prevalence Rates

		Mississippi (N=1,014)	Louisiana (N=1,818)	Georgia (N=1,550)	
Lifetime	Problem	3.7 (±1.2)	4.5 (±.0.9)	2.8 (±0.8)	*
	Probable Pathological	3.1 (±1.1)	2.5 (±0.7)	1.6 (±0.6)	*
	Total	6.8 (±1.5)	7.0 (±1.2)	4.4 (±1.0)	**
Current	Problem	2.8 (±1.0)	3.4 (±0.8)	1.5 (±0.6)	**
	Probable Pathological	2.1 (±0.9)	1.4 (±0.5)	0.8 (±0.4)	**
	Total	4.9 (±1.3)	4.8 (±1.0)	2.3 (±0.7)	**

* Significant
** Highly significant

— Demographics —

In contrast to differences in the demographic characteristics among the overall samples and among gamblers, ***Table 18*** shows that there are few differences among problem gamblers from Mississippi, Louisiana and Georgia. While the small size of these groups makes it difficult to establish statistical significance, these results correspond with findings from numerous other studies in the United States and Canada (Ladouceur 1996; Volberg 1996b).

— Gambling Involvement —

In contrast to substantial differences in gambling involvement among respondents from Mississippi, Louisiana and Georgia, ***Table 19*** on the following page shows that there are few significant differences in gambling participation by problem gamblers in these three states. With no lottery in Mississippi, problem gamblers from this state are significantly less likely to have purchased lottery products than problem gamblers from Louisiana and Georgia. Given the availability of casinos in Mississippi and Louisiana, problem gamblers in these two states are significantly more likely to have gambled at a casino than problem gamblers from Georgia. With the availability of video poker in Louisiana, problem gamblers in that state are significantly more likely than problem gamblers in Mississippi to have wagered on gambling machines not at a casino.

Table 18: Comparing Lifetime Problem Gamblers

		Mississippi (N=69)	Louisiana (N=127)	Georgia (N=68)
Gender	Male	56.8	62.2	63.2
	Female	43.2	37.8	36.8
Age	Under 30	34.7	39.7	41.2
	Over 30	65.3	60.3	58.8
Ethnicity	White	56.5	59.1	52.2
	Black	42.0	33.9	38.8
	Other	1.5	7.1	9.0
Marital Status	Married	45.0	37.8	36.8
	Widowed	1.2	3.1	8.8
	Divorced/Separated	18.9	19.7	20.6
	Never Married	34.9	39.4	33.8
Education	Less than HS	15.9	22.8	19.1
	HS and Over	84.1	77.2	80.9
Income	Annual Income <$25,000	33.9	47.5	32.8
	Annual Income > $25,000	66.1	52.5	67.2
Employment	Working	76.5	66.9	74.2
	Other	22.3	29.0	21.2
	Unemployed	1.2	4.0	4.5

* Significant
** Highly significant

Table 19: Comparing Gambling by Problem Gamblers

Type of Gambling	Mississippi (N=69)	Louisiana (N=127)	Georgia (N=68)	
Lottery	63.6	89.0	89.7	**
Casino	83.8	65.4	54.4	**
Bingo	40.2	—	27.9	
Charitable	56.7	63.0	50.0	
Card Games	56.9	54.3	52.9	
Parimutuels	40.0	48.0	32.4	
Gambling Machines	27.0	58.3	—	**
Games of Skill	33.0	29.9	20.6	
Dice Games	20.0	33.1	27.9	
Stocks or Commodities	11.6	19.7	23.5	
Sports	44.9	59.8	51.5	
Numbers	9.2	—	5.9	
Other	9.0	10.2	7.4	

* Significant
** Highly significant

Although there are few significant differences in lifetime gambling involvement among problem gamblers in Mississippi, Louisiana and Georgia, problem gamblers in Mississippi are significantly less likely to gamble on a weekly basis than problem gamblers in Louisiana and Georgia. Over three quarters (77%) of problem gamblers in Louisiana and 63% of problem gamblers in Georgia gamble weekly compared to only 38% of problem gamblers in Mississippi. While average monthly expenditures are $660 among problem gamblers in Louisiana and $299 among problem gamblers in Georgia, average monthly expenditures are only $179 among problem gamblers in Mississippi.

❒ Summary

Our focus in this section has been on comparisons between the survey in Mississippi and two similar surveys completed recently in Georgia and Louisiana. In comparing these surveys, we looked at the questionnaires used and at the characteristics of the samples from each state. In considering similarities and differences between the three studies, we looked at gambling involvement, problem gambling prevalence rates and at the characteristics of problem gamblers in the three states.

Review of the questionnaires from the three surveys found that while the surveys in Georgia and Louisiana obtained greater detail about some types of gambling than the survey in Mississippi, all three surveys obtained identical information with which to measure the prevalence of problem and pathological gambling as well as identical information about the demographic characteristics of the respondents.

The three samples are significantly different in terms of gender and ethnicity. Unlike the sample from Mississippi, the samples from Louisiana and Georgia were not weighted. Consequently, the samples from these states are not fully representative of the population in the states. The extent to which significant differences between the samples are due to actual differences in the population of these three states is difficult to determine although the differences between weighted and unweighted samples in Louisiana and Geor-

gia all contribute to conservative results in the prevalence of problem gambling.

Lifetime, past-year and weekly gambling participation are all significantly higher in Louisiana and Georgia than in Mississippi. With regard to specific types of gambling, many of the differences in participation are due to differences in availability in the three states. There is no state lottery in Mississippi and no riverboat or dockside casinos in Georgia. Neither Georgia nor Mississippi have legal horse racing events or legal gambling machines. Participation in these types of gambling in the three states differs significantly depending on availability. Reported expenditures on gambling are significantly higher in Georgia and Louisiana than in Mississippi. In Georgia, expenditures are highest for lottery games and for slot machines at casinos out-of-state. In Louisiana, expenditures are highest for riverboat casinos, sports and out-of-state casinos. In Mississippi, average expenditures are highest for dockside casinos.

There is a substantial and significant difference in the lifetime and current prevalence rates of problem and pathological gambling in the three states. While the availability of casino gambling has contributed to the high prevalence rates of problem gambling in Louisiana and Mississippi, there are other factors that may contribute to differences in prevalence rates across states in the same region, including cultural influences and socio-economic status. Despite significant differences in the prevalence of problem and pathological gambling, there are few differences in the characteristics of problem gamblers from the three states. As in the larger population, problem gamblers in Louisiana and Georgia gamble more often and spend more resources on gambling than problem gamblers in Mississippi.

Summary and Conclusion

An additional purpose of this study was to establish a baseline measure of the prevalence of gambling-related problems among adults in Mississippi. The other main purpose of the study was to identify the types of gambling causing the greatest difficulties for the citizens of Mississippi. The results of this study show that substantial numbers of Mississippi residents participate in legal gambling and that most residents spend small to moderate amounts on gambling. However, the study also shows that there is a significant proportion of the adult population of Mississippi experiencing difficulties related to their gambling. We estimate that, ***at a minimum***, there are presently 22,300 adult Mississippi residents experiencing severe difficulties related to their involvement in gambling.

❒ Summary

In this report, we have examined patterns of gambling participation for the general population in Mississippi, the prevalence of lifetime and current problem and pathological gambling in the state, the risk factors associated with problem and pathological gambling, and differences and similarities between Mississippi, Louisiana and Georgia in gambling involvement and problem gambling prevalence.

Mississippi has the lowest rates of lifetime, past-year and weekly gambling identified in similar surveys in the United States. Lifetime participation in Mississippi is highest for casino gambling, charitable wagering and lottery games. As in other jurisdictions, young unmarried White men with relatively high levels

of education and income are most likely to have ever gambled in Mississippi. By a large margin, Mississippi respondents who do gamble prefer to do so on slot machines at casinos near their place of residence. Casino gambling accounts for over half of the reported expenditures on gambling reported in Mississippi. Apart from much rates of participation, the gambling patterns identified in Mississippi are similar to patterns identified in other jurisdictions.

Both lifetime and current prevalence of problem and probable pathological gambling in Mississippi in 1996 are higher than in most other states where similar surveys have been completed. Lifetime and current problem and probable pathological gamblers in Mississippi are significantly more likely than other respondents to be male, under the age of 30, never married and employed. Two out of every three individuals who have ever experienced gambling problems in Mississippi are experiencing those difficulties now.

As predicted by the research literature, regular gambling involvement, in particular with ***continuous*** forms of gambling, and heavy gambling losses are the factors associated with gambling-related difficulties in Mississippi. Problem gamblers in Mississippi are significantly more likely than non-problem gamblers to be black and never married. Information on the age at which non-problem and problem gamblers started gambling suggests that separation or divorce may be a risk factor in the development of gambling problems in older adults in Mississippi. Problem gamblers in Mississippi are significantly more likely than non-problem gamblers to spend six or more hours gambling per session and to have lost $1,000 or more in a single day. While half of the problem gamblers in Mississippi live outside of counties where dockside casino gambling is available, a substantial proportion of these individuals usually travel 60 miles or more to gamble. In contrast, problem gamblers living in counties where dockside casino gambling are more likely to travel less than 15 miles to gamble.

Comparison of a variety of risk factors for problem gambling among Mississippi respondents shows that there may be two distinct groups of problem gamblers in Mississippi: older white men and women who once preferred parimutuels and bingo but may now prefer casino gambling and younger black men who prefer sports wagering as well as gambling on card games, dice games and games of skill.

In comparing the survey in Mississippi with those in Louisiana and Georgia, we looked at the questionnaires used and at the characteristics of the samples from each state as well as at gambling involvement, problem gambling prevalence and the characteristics of problem gamblers in the three states. The three samples are significantly different in terms of gender and ethnicity although the extent to which these differences are due to actual differences in the population is difficult to determine.

While lifetime, past-year and weekly gambling participation are all significantly higher in Louisiana and Georgia than in Mississippi, differences in participation in specific types of gambling appear to be due to differences in availability. Reported expenditures on gambling are significantly higher in Georgia and Louisiana than in Mississippi. In Georgia, expenditures are highest for lottery games and for slot machines at casinos out-of-state. In Louisiana, expenditures are highest for riverboat casinos, sports and out-of-state casinos. In Mississippi, average expenditures are highest for dockside casinos.

There is a substantial and significant difference in the lifetime and current prevalence rates of problem and pathological gambling in the three states. While the availability of casino gambling is one factor contributing to the high prevalence rates of problem gambling in Louisiana and Mississippi, there are other factors that may also contribute to differences in prevalence rates across these states, including cultural influences and socio-economic status. Despite significant differences in the prevalence of problem and pathological gambling, there are few differences in the charac-

teristics of problem gamblers from the three states. As in the larger population, problem gamblers in Louisiana and Georgia gamble more often and spend more on gambling than problem gamblers in Mississippi.

❒ Directions for the Future

The costs of problem and pathological gambling can be high, not only for individuals but for families and communities. Pathological gamblers experience physical and psychological stress and exhibit substantial rates of depression, alcohol and substance abuse and suicidal ideation. The families of pathological gamblers experience physical and psychological abuse as well as harassment and threats from bill collectors and creditors. Other significant impacts include costs to employers, creditors, insurance companies, social service agencies and the civil and criminal justice systems.

The State of Mississippi is in the process of developing services for problem and pathological gamblers and their families. Interested stakeholders in the state have come together to achieve consensus about how such services should be developed. This survey of gambling and problem gambling among adults in Mississippi is one of the first steps in the process. Information about the characteristics of individuals with gambling problems in Mississippi suggests that, as expected, the prevalence of problem and pathological gambling among young black man in Mississippi is high. However, there also seems to be an emerging group of problem gamblers who are middle-class and middle-aged whites with a strong preference for casino gambling. The services developed for problem gamblers in Mississippi will have to reflect the diversity of problem gamblers in the general population.

The Mississippi Council has already undertaken several important activities in the development of services for problem gamblers and their families in Mississippi, including the establishment of a 24-hour helpline, training for treatment professionals to achieve gambling counselor certification and the funding of this prevalence study. Additional directions for the future include:

- ***development*** of public education and prevention services targeted toward at-risk and under-served groups in the population, including young men as well as women problem gamblers;
- establishment of ***treatment services*** and the development of innovative ***treatment alternatives*** to provide a variety of options for individuals seeking help for gambling problems;
- ***evaluation*** of the effectiveness of the services that are established, based on uniform data collected from existing providers and the helpline;
- continued ***monitoring*** of gambling participation and problem gambling prevalence in the state to assess the impacts of the introduction of new dockside casinos as well as the possible introduction of other types of legal gambling on the residents of Mississippi and to refine existing efforts to minimize the negative impacts of gambling; and
- ***research activities*** including a thorough examination of the prevalence and characteristics of problem gamblers among under-served and/or minority groups as well as among adolescents in Mississippi.

This report represents the first opportunity to assess the prevalence of problem and pathological gambling in Mississippi. These data provide insights that will be valuable in ongoing policy and planning efforts in the state. In the future, it will be important for everyone involved with legal gambling in Mississippi to continue to work together to develop ways to help the increasing number of individuals in the state who experience difficulties related to their gambling and to prevent any further increases in the prevalence of problem gambling in Mississippi.

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Appendix A

Increasingly, surveys of gambling and problem gambling in the general population have become an essential component in the establishment and monitoring of gaming initiatives in Australia, Canada, Europe and the United States (Volberg and Dickerson 1996). Information from such surveys helps identify and minimize the potentially harmful impacts that legalized gambling may produce. This proactive approach helps ensure that appropriate measures are taken to educate the public about problem gambling and that appropriate levels and types of services for individuals with gambling-related difficulties are funded, developed and maintained.

A variety of methodological questions have been raised in recent years about research on gambling and problem gambling in the general population (Dickerson 1993; Lesieur 1994; walker 1992). Questions about surveys of gambling and problem gambling in the general population raised by Lesieur (1994) and Walker (1992) are issues common to all social science and survey research. Every researcher who uses survey methods must be concerned with respondent denial and with rising refusal rates in telephone surveys. However, these concerns are best addressed through careful attention to good survey design, including the use of appropriate sampling frames and well-designed questionnaires, as well as an emphasis on adequate interviewer training.

Issues related to the substantive topic of gambling and problem gambling include questions about the validity and reliability of the South Oaks Gambling Screen as well as challenges to assumptions about the nature of gambling and problem gambling built into the original version of the South Oaks Gambling Screen (Dickerson 1993; Volberg 1994a). In response to questions about these assumptions, work to improve the South Oaks Gambling Screen and to extend our understanding of how well the South Oaks Gambling Screen operates in general population surveys was carried out in New Zealand in the early 1990s.

❒ Development of the South Oaks Gambling Screen

Only one survey of gambling and gambling-related difficulties in the general population was conducted in the United States prior to 1980 (Kallick, Suits, Dielman and Hybels 1979). Between 1980 and 1990, state-wide surveys of gambling and problem gambling were carried out in California, Connecticut, Iowa, Maryland, Massachusetts, Minnesota, New Jersey, New York and Ohio (Christiansen/Cummings Associates 1992; Laundergan, Schaefer, Eckhoff and Pirie 1990; Sommers 1988; Volberg 1994c; Volberg and Steadman 1988) as well as in the Canadian province of Quebec (Ladouceur 1993).

Since 1990, baseline prevalence surveys of gambling and problem gambling have been completed in Georgia, Louisiana, Montana, North Dakota, South Dakota, Texas, Washington State and Wisconsin (Thompson, Gazel and Rickman 1996; Volberg 1992, 1993, 1995a, 1995c, 1996b; Volberg and Silver 1993; Volberg and Stuefen 1991; Wallisch 1993) as well as in the Canadian provinces of Alberta British Columbia, Manitoba, New Brunswick, Nova Scotia and Saskatchewan (Angus Reid Group and Gemini Research 1994; Baseline Market Research 1992; Criterion Research 1993; Omnifacts Research 1993; Smith, Volberg and Wynne 1994; Volberg 1994b). A national prevalence survey of gambling and problem gambling was carried out in New Zealand (Abbott and Volberg 1991, 1992, 1996).

All but three of the prevalence surveys carried out since 1980 have based on the South Oaks Gambling Screen (Lesieur and Blume 1987).

The Ohio and Wisconsin surveys were based on screens for problem gambling that have never been experimentally validated. The researchers in Minnesota made such substantial changes to the South Oaks Gambling Screen that they designated their instrument the SOGS-M. These changes made it difficult to directly compare the results of the survey in Minnesota with other SOGS-based surveys (Laundergan 1992).

The South Oaks Gambling Screen is a 20-item scale based on the diagnostic criteria for pathological gambling (American Psychiatric Association 1980). Weighted items on the South Oaks Gambling Screen include hiding evidence of Gambling, spending more time or money gambling than intended, arguing with family members over gambling and borrowing money to gamble or to pay gambling debts. In developing the South Oaks Gambling Screen, specific items as well as the entire screen were tested for reliability and validity with a variety of groups, including hospital workers, university students, prison inmates and inpatients in alcohol and substance abuse treatment programs (Lesieur and Blume 1987; Lesieur, Blume and Zoppa 1986; Lesieur and Klein 1985).

Surveys of gambling and problem gambling directed by Volberg and her associates since 1990 have used a revised version of the South Oaks Gambling Screen developed in New Zealand (Abbott and Volberg 1991, 1996). In revising the South Oaks Gambling Screen, the preliminary section of the questionnaire was expanded to collect more detailed information about gambling frequency and expenditures in the general population. In addition, the weighted items of the screen were expanded to assess both lifetime and current prevalence of problem and pathological gambling. To determine if the changes made to the South Oaks Gambling Screen had any impact on reported prevalence rates, the revised South Oaks Gambling Screen was tested in Iowa in 1991. The difference in the prevalence rates for these two questionnaires was 0.1% (Volberg and Stuefen 1991).

❒ The Accuracy of SOGS-Based Prevalence Rates

The South Oaks Gambling Screen was originally developed for use as a clinical screen and was adapted slightly in 1986 for use in general population surveys (Volberg and Steadman 1988). Like all screens to detect physical and psychological maladies, the South Oaks Gambling Screen is expected to make errors in classification although misclassification has very different consequences in clinical settings than in research in the general population.

Misclassification can occur when an individual without the malady in question is misdiagnosed as having the malady. This type of classification error is called a ***false positive*** (see table below).

Classification	**Condition**	
	Pathological	*Non-Pathological*
Pathological	True Positive	False Positive
Non-Pathological	False Negative	True Negative

Determining the size of each type of classification error and correcting for these errors is the key to establishing more accurate prevalence estimates. Research in New Zealand used the positive predictive value and efficiency approaches in efforts to correct lifetime and current prevalence rates of pathological gambling (Abbott and Volberg 1992, 1996).

The positive predictive value approach is based on existing information about the sensitivity and specificity of an instrument.[1] While the lifetime South Oaks Gambling Screen is known to have high sensitivity, the specificity of the screen has differed across different groups in

[1] Sensitivity is a measure of the capacity of an instrument to accurately detect the presence of a particular condition (true and false positives). Specificity is a measure of the rate at which an instrument detects true and false negatives.

the population (Lesieur and Blume 1987). Sensitivity and specificity have never been determined for the current South Oaks Gambling Screen. While the New Zealand researchers were able to correct the lifetime prevalence rate for false positives, it proved difficult to make the correction for false negatives. The researchers concluded that until more is known about the rate at which the lifetime South Oaks Gambling Screen misclassifies pathological gamblers as non-pathological, the usefulness of the positive predictive value approach in revising lifetime prevalence estimates was limited.

The efficiency approach was possible in New Zealand because a two-phase research design was used to identify **true pathological gamblers** among particular groups of respondents (Abbott and Volberg 1992). In the New Zealand study, true pathological gamblers were identified in each of four groups included in the survey: (1) probable pathological gamblers, (2) problem gamblers, (3) continuous gamblers and (4) non-continuous gamblers. No error rate was determined for respondents in the New Zealand study who did not acknowledge gambling on a regular basis. The efficiency approach involved calculating the rate of true pathological gamblers in each group and dividing this number by the total number of respondents in the sample. The efficiency approach resulted in a revised current prevalence estimate in New Zealand that was 0.1% higher than the uncorrected current prevalence rate.

This revised estimate rested on the conservative assumption that there were no false negatives among individuals who do not gamble regularly. While the error rates in the four groups have an impact on the overall prevalence rate, the size of the error rate for each group will have a different impact because of the differing sizes of these groups in the population. Even if the number of true pathological gamblers in the false negative group or among respondents who do not gamble regularly were extremely small, the relatively large size of these groups contributes to a noticeably higher overall prevalence rate. For example, if the non-gambling group is assumed to include a very small number of pathological gamblers (1%), the prevalence estimate increases by 0.7%.

The New Zealand researchers concluded that the lifetime South Oaks Gambling Screen is very good at detecting pathological gambling among those who currently experience the disorder. However, as expected, the screen identifies at-risk individuals at the expense of generating a substantial number of false positives. The current South Oaks Gambling Screen produces fewer false positives than the lifetime measure but more false negatives and thus provides a weaker screen for identifying pathological gamblers in the clinical sense. However, the greater efficiency of the current South Oaks Gambling Screen makes it a more useful tool for detecting rates of change in the prevalence of problem and pathological gambling over time (Abbott and Volberg 1996).

Although there are questions about the validity of applying results from research in New Zealand to studies in the United States, the New Zealand research does suggest that estimates of the lifetime prevalence of problem and probable pathological gambling over-state the actual prevalence of pathological gambling. However, since the lifetime South Oaks Gambling Screen does a good job of identifying pathological gamblers in the general population, information about the characteristics of these respondents is valuable in planning the implementation and development of services for pathological gamblers in the community. The New Zealand research further suggests that estimates of the current prevalence of problem and probable pathological gambling are quite accurate. In future research on gambling and problem gambling in Mississippi, it will be essential to collect information on current prevalence so that the magnitude of changes in the prevalence of gambling-related difficulties in Mississippi can be accurately assessed.

The Social Science Research Center (SSRC) has over 45 years experience analyzing economic and social issues in Mississippi, the southeastern region and the nation. Some 45 research fellows, cooperating faculty and research associates, supported by an administrative staff and graduate and undergraduate research assistants annually conduct around 20-25 sponsored and numerous unsponsored research projects. The SSRC is a university-level, multi-disciplinary research unit, organized with university-wide responsibilities under supervision of the Vice President for Research. The SSRC has administrative responsibilities, for certain programs, to the Director of the Mississippi Agricultural and Forestry Experiment Station (MAFES). The Center also serves as the administrative home of the National Black Graduate Student Association and has had administrative responsibility for the conduct of the Mississippi Alcohol Safety Education Program since its inception as an offshoot of an SSRC research project in 1972. Total expenditures for research and development activities in the Center exceed three million dollars a year. The Center has a strong tradition of research, development and evaluation projects in the areas of social and economic development, the family and children, community development, alcohol safety and substance abuse, race relations, information-age societal monitoring, natural resources, gaming, social services, and crime, delinquency and justice.

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