

GAMBLING AND PROBLEM GAMBLING AMONG GEORGIA ADOLESCENTS

Report to the Georgia Department of Human Resources

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Introduction

In the United States and other industrialized nations, adolescence is a life stage when individuals make the transition from childhood to adulthood. Like sexual experimentation and the use of alcohol and drugs, gambling may be a behavioral expression of adolescents' efforts to establish coherent, consistent identities (Erikson 1963). The majority of adolescents who gamble do so recreationally and in order to socialize. As with adults, however, a small number of adolescents experience problems related to their involvement in gambling.

Research on Adolescent Gambling

The research literature on pre-adult gambling falls into three general areas. These include studies of gambling as play (Smith & Abt 1984), studies of gambling as part of the economic socialization of children (Furnham 1986; Strauss 1952; Tan & Stacey 1981) and studies of gambling among adolescents in school or in the general population.

Surveys of high school students have been carried out in a number of North American jurisdictions (Arcuri, Lester & Smith 1985; Jacobs 1989; Ladouceur & Mireault 1988; Lesieur & Klein 1987; Steinberg 1988; Wittman, Fuller & Taber 1988). While using different methods to identify respondents as problem or pathological gamblers, all of these studies found that a majority of adolescents gamble. In general, between 40% and 90% of high school students have gambled for money at some time in their lives. Telephone surveys of adolescents in the general population have also found that a majority of respondents gamble, even in jurisdictions where gambling is not legal (Volberg 1993; Wallisch 1993; Winters & Stinchfield 1993).

Studies of gambling among high school students show that wagering on card games, sports events and games of personal skill are the most common forms of adolescent gambling (Jacobs 1989; Ladouceur & Mireault 1988). All of the available research shows that children begin gambling well before high school and that gambling is far more common among males than among females (Ide-Smith & Lea 1988; Wolfgang 1988). Interestingly, many of these studies show that most young people who gamble are introduced to gambling by their parents or other adults close to them (Jacobs 1989; Lesieur & Klein 1987).

Defining Problem Gambling Among Adolescents

A variety of terms have been used in the gambling research literature to refer to difficulties caused by an individual's gambling. The most widely used term is **problem gambling** although it has been used in different ways in the literature (Lesieur & Rosenthal 1991; Rosecrance 1988). The term **pathological gambling** is generally limited to the psychiatric disorder first recognized by the medical profession in 1980 (American Psychiatric Association 1980).

Research on adult gambling problems suggests that pathological gambling has strong antecedents in youthful gambling involvement (Custer & Milt 1985; Volberg 1994). However, since pathological gambling is defined as a progressive condition, problem gambling among adolescents is best viewed as a pre-clinical state. Adolescent gamblers are a particularly vulnerable group in terms of the future development of pathological gambling. Their propensity to display the full clinical disorder is likely be affected by a variety of risk factors and by the offsetting influence of prevention and treatment efforts.

The National Council on Problem Gambling uses the 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). Since this definition is equally applicable to adults and adolescents, this is the meaning intended by the term throughout this report. In discussing the results of the survey, **problem gambling** refers to the most serious

classification of adolescent gamblers; those who show incontrovertible evidence of gambling that has compromised, disrupted or damaged other important areas in their lives.

Assessing Problem Gambling Among Adolescents

The survey of adolescent gambling in Georgia builds on work carried out in other parts of the United States as well as internationally. Although there are now well-accepted methods for identifying **pathological gambling** in the adult population (Lesieur & Blume 1987; Volberg & Banks 1990), there are several reasons that the same criteria cannot be applied to adolescents. The psychiatric criteria for identifying pathological gambling among adults were developed on the basis of adult life and gambling experiences. Younger individuals have not had time to develop the same depth of life experience. In addition, these criteria have never been clinically tested among adolescents and there is little information about their validity or reliability in identifying pathological gambling among adolescents.

The most widely used method to assess problem and pathological gambling in the adult population is the South Oaks Gambling Screen (SOGS) (Lesieur & Blume 1987). The SOGS is a 20-item scale based on the diagnostic criteria for pathological gambling (American Psychiatric Association 1980). Weighted items on the SOGS 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 SOGS, 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 & Blume 1987; Lesieur, Blume & Zoppa 1986; Lesieur & Klein 1985). Studies of adolescents based on the South Oaks Gambling Screen have been carried out in high schools in Connecticut, New Jersey and Quebec (Ladouceur & Mireault 1988; Lesieur & Klein 1987; Steinberg 1988).

Recently, researchers have begun to develop new methods to identify problem and pathological gambling among adolescents. In Great Britain, efforts have focused on adapting the DSM-IV criteria for use with adolescents (Fisher 1992). In a pilot study, a sample of 11- to 16-year-old adolescents from a single secondary school were administered the DSM-IV-J (Juvenile) scale. Involvement in fruit machine play and affirmative answers to 4 of the 12 DSM-IV-J items were used to identify respondents as probable pathological gamblers. According to these criteria, 5.6% of the total sample scored as probable pathological gamblers. Respondents identified as probable pathological gamblers were significantly more likely than social gamblers to commit large amounts of time and money to gambling, to borrow money and sell their possessions, to skip school and to steal in order to support their involvement in fruit machine gambling.

In Massachusetts, a team of researchers is working to develop the Massachusetts Gambling Screen (MAGS), based on the Minnesota Alcohol Screening Test (MAST). The MAGS has been administered to the entire student body of an all-male private high school in the Boston area as well as to 856 students at three suburban high schools in the Boston area (Shaffer 1993; Shaffer, LaBrie, Scanlan & Cummings 1994). The MAGS classifies respondents as non-problem, in-transition or pathological gamblers using a relative item weighting scheme derived from discriminant function analysis. In the suburban high school study, the MAGS classified 8.5% of the students who gambled as pathological gamblers and another 13.9% as in-transition gamblers (moving toward or away from pathological gambling patterns). According to the DSM-IV criteria also used in this study, 6.4% of the students were classified as pathological gamblers.

In Minnesota, researchers adapted both the SOGS items and the SOGS scoring method for use with adolescents (Winters, Stinchfield & Fulkerson 1993a). In adapting the SOGS items, the researchers modified the borrowing items originally developed for adults. They found that the modified SOGS had moderate internal reliability and high content and construct validity among

male adolescents (Winters, Stinchfield & Fulkerson 1993b). Since clinical assessments of adolescent respondents who scored as problem gamblers were not conducted, the overall reliability of the modified SOGS could not be determined.

Like Fisher in Great Britain, the Minnesota researchers adopted an approach from the adolescent substance abuse literature in modifying the scoring method for the SOGS. Adolescent gamblers were classified separately on the basis of their gambling frequency and their SOGS scores. Low, intermediate and high scores for each dimension were determined by examination of the distribution of scores. Finally, groups of non-problem, at-risk and problem gamblers were identified on the basis of their scores on these two dimensions. Using this method, the Minnesota researchers identified 8.8% of their male respondents as problem gamblers.

In Texas and Washington State, the approach used in Minnesota was changed slightly (Volberg 1993; Wallisch 1993). Rather than treating the modified SOGS items as a single dimension, behavioral difficulties and borrowing difficulties were assessed separately. The reason for adopting this somewhat more stringent, three-dimension approach to identifying problem gambling among adolescents stemmed from concern about the sensitivity and specificity of the adult SOGS measures with adolescents.

To facilitate comparisons of adolescent gambling studies, Shaffer and Hall (1996) propose a generic classification scheme intended to overcome the use of different methods and terminology in these studies. **Table 1** shows this scheme and its usefulness in delineating the types of prevention and treatment that may be needed by groups with increasingly serious levels of problematic gambling involvement.

Table 1: Generic Levels of Gambling Involvement

Level	Classification	Implied Service Impact
Level 0	Non-Gambling	Education
Level 1	Non-Problem Gambling	Primary prevention
Level 2	In-Transition Gambling	Secondary prevention
		Tertiary prevention
		Early treatment
Level 3	Gambling-Related Disorder with Impairment	Relapse prevention
		Tertiary prevention
Level 4	Gambling-Related Disorder with Impairment and Desire for Treatment	Treatment
		Treatment

* Based on Shaffer & Hall (1996)

In a later section of this report (*Problem Gambling Among Adolescents in Georgia*), we will examine the proportion of Georgia adolescents who can be classified as non-gamblers, non-problem gamblers, at-risk gamblers (equivalent to the In-Transition gamblers identified by Shaffer and Hall) and problem gamblers (equivalent to Gambling-Related Disorder with Impairment). Information about help-seeking by Georgia adolescents will be used to identify problem gamblers desiring treatment (equivalent to Gambling-Related Disorder with Impairment and Desire for Treatment identified by Shaffer and Hall).

Methods

In this section, the methods used to assess gambling and problem gambling among adolescents in Georgia are described. Areas covered include the structure of the study, the questionnaire, the sampling design and the response rate for the study.

The Georgia Adolescent Survey

A random sample of 1,007 Georgia adolescents aged 13 to 17 was interviewed by telephone in February and March of 1996 about the types of gambling they had ever done, the amounts of money they spent on gambling, problems related to their gambling, their self-esteem and their use of alcohol and drugs.

The adolescent survey in Georgia was carried out in stages similar to those for the Georgia adult survey (Volberg 1995). In the first stage, staff from Gemini Research conferred by telephone with staff from the Georgia Department of Human Resources and the Georgia State University Applied Research Center to finalize the questionnaire. In the second stage, data collection was carried out by the Applied Research Center, the same organization that completed the interviews for the Georgia adult survey. In each case, parental consent was obtained as well as the consent of the adolescent respondent. The Applied Research Center provided Gemini Research with the data for the final stage of the project which included analysis of the data and preparation of this report.

Questionnaire Design

In developing the questionnaire for the adolescent survey in Georgia, it was deemed important to maintain comparability with the Georgia adult survey as well as to build on the work of other researchers in the field. In developing the Georgia adolescent questionnaire, we used the wording and scoring methods for the SOGS adopted in Washington State and also used in Texas. The Rosenberg Self-Esteem Scale (Rosenberg 1965) was added to the adolescent questionnaire to be able to compare adults and adolescents in Georgia on this important correlate of problem gambling (Volberg, Reitzes & Boles 1996).

The questionnaire for the Georgia adolescent survey was composed of five major sections. The first section included questions about 18 different types of gambling. For each type of gambling, adolescent respondents were asked whether they had ever tried this type of gambling, whether they had tried it in the past year and whether they participated regularly (once a week or more) in this type of gambling. The different types of gambling in the adolescent survey included:

- instant lottery games
- daily lottery games
- Lotto
- raffles and charitable games
- bingo
- numbers game
- card games for money
- sports events with friends
- sports pools
- sports events with a bookmaker
- dice games for money
- games of skill
- horse or dog races
- other animal events
- flipping coins
- arcade games
- casino table games
- slot machines at casinos

The gambling activities assessed among Georgia adolescents differ slightly from the activities assessed among adults. The only adult gambling activity that was dropped from the adolescent survey was speculative investments. Flipping coins and betting on arcade games were added to the adolescent gambling activities.

The second section of the Georgia adolescent questionnaire included the South Oaks Gambling Screen items and the third section was composed of the Rosenberg Self-Esteem Scale. The fourth section of the adolescent questionnaire included questions about respondents' lifetime and recent use of alcohol and drugs and the final section of the questionnaire included questions about the demographic characteristics of each respondent. A copy of the questionnaire is included in Appendix A.

Sampling Design

The focus of the study was adolescents aged 13 to 17, a group that represents only 7% of the general population. Since the group of eligible respondents was so small, it was necessary to use a targeted sample for the Georgia adolescent study. The numbers in this sample are not randomly generated but are based on comparisons of telephone lists, drivers license applications and voter registration lists to increase the incidence level of the sample to approximately 36%. The targeted sample was purchased from Survey Sampling, Inc. of Fairfield, Connecticut, which also provided the targeted samples for the Texas and Washington State adolescent surveys.

Parental permission was obtained before interviewing an adolescent in a household. A brief explanation of the purpose of the survey was given to the "head of household" and permission was sought to interview the adolescent in the home. If more than one adolescent resided in the household, a random number between 13 and 17 was generated by the CATI system and the adolescent closest to that age was selected. Once selected, the adolescent was read an introduction explaining the purpose of the study, assured of the anonymity and confidentiality of the responses and told that he or she was not required to answer any question that caused discomfort.

Interviewing was scheduled on weekdays from 10:00AM to 9:15PM Monday through Thursday and 10:00AM to 5:00PM on Friday. Weekend interviewing was conducted Saturday 11:00AM to 7:00PM and Sunday 10:00AM to 6:00PM. Each number was attempted a minimum of 8 times or until a final disposition was obtained.

Representativeness of the Sample

Although numbers are chosen randomly, telephone surveys tend to under-represent parts of the population. To determine if the sample of adolescents from Georgia represented the larger population of adolescents in the state, we compared the demographic characteristics of the respondents to the known demographics of adolescents in Georgia. This comparison showed that the proportion of Black adolescents included in the sample significantly under-represented the proportion of Black adolescents in the general population.

There are several possible explanations for the under-representation of Black adolescents in the sample. Since Black families tend to be larger than non-Black families, the practice of interviewing only one respondent per household contributed partly to the under-representation of Black adolescents in the sample. While the hypothesis cannot be tested, it is also possible that Black parents were less likely to allow their adolescent children to be interviewed for this study.

In order to correct for the under-representation of Black adolescents in the sample, post-hoc weighting was used to ensure that the results of the survey could be generalized to the adolescent population in Georgia. **Table 2** shows that weighting the sample did little to change other demographic characteristics of the sample such as age or gender.

Table 2: Comparing Demographic Characteristics of Actual and Weighted Sample of Georgia Adolescents

		Actual	Weighted
Gender	Male	50.6	49.9
	Female	49.4	50.1
Age	13	21.6	22.5
	14	20.8	20.7
	15	20.5	20.6
	16	19.9	19.2
	17	17.3	17.0
Ethnicity	White	77.4	62.0
	Black	16.9	33.5
	Other	5.7	4.5

Response Rates

A number was removed from the valid list of respondents if it was: (1) disconnected or changed; (2) the respondent was unable to complete the survey due to illness; (3) the respondent was out of town for the duration of the study; or (4) there were no eligible respondents residing in the household. The response rate for the survey was calculated by taking the number of completed interviews and dividing it by the number of completes *plus* refusals *plus* partial interviews.

There were two types of refusals in this survey: Refusal by Parent and Refusal by Respondent. The response rate for valid respondents in this survey was 88.3% when only refusals by adolescent respondents are taken into account. When refusals by parent are taken into account, the response rate drops to 73.8% which remains well within the range of acceptable response rates for similar surveys.

Gambling by Georgia Adolescents

This section examines gambling participation by adolescents in the general population in Georgia. For each of the 18 types of gambling included in the adolescent survey, respondents were asked whether they had ever tried this type of gambling, whether they had tried it in the past year, and whether they participated regularly (once a week or more) in this type of gambling. Adolescents were also asked to estimate how much they spent in a typical month on any type of gambling that they had done in the past year.

Chi-square analysis and tests of means were used to test for statistical significance. 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, one or two asterisks in the right-hand column of the table indicate that **one** of the figures in that row is significantly different from other figures in the same row.

Gambling Participation by Adolescents

As expected, a majority of the respondents from the Georgia adolescent gambling study said that they had tried one or more types of gambling at some time. Three-fifths of the Georgia adolescent respondents (62%) said that they had ever bet on one or more types of gambling. This lifetime gambling rate is lower than the lifetime gambling rate among adolescents in other states.

Experimenting with gambling is widespread among adolescents and adolescent gamblers in Georgia come from every socio-economic level. **Table 3** compares the characteristics of gamblers and non-gamblers among adolescents in Georgia. Adolescents who gamble are significantly more likely to be male than non-gamblers and to have money with which to gamble. There are no significant differences between adolescents who gamble and those who do not in age, ethnicity or the number of adults with whom they live.

Table 3: Demographic Characteristics of Adolescents in Georgia

		Non-Gamblers	Gamblers	
		%	%	
		(N = 385)	(N = 622)	
Gender	Male	43.7	53.9	**
	Female	56.3	46.1	
Age	13	26.3	20.0	
	14	20.3	21.0	
	15	19.9	21.1	
	16	18.7	19.5	
	17	14.7	18.4	
Ethnicity	White	62.0	62.0	
	Black	34.0	33.2	
	Other	4.0	4.9	
Size of HH	1 Adult	15.1	13.1	
	2 Adults	79.4	81.1	
	3+ Adults	5.5	5.8	
Income	Receive allowance	43.1	46.3	
	Work 10+ hrs/week	16.3	26.0	**
	Earn \$50+ week	22.4	31.1	**

*Significant

**Highly significant

Lifetime Participation

Georgia adolescents are most likely to have ever wagered on raffles (53%), on sports events with friends or acquaintances (44%), on card games for money (40%), on arcade games (39%) and on games of skill (35%). Lifetime participation for every other type of gambling is lower. Over one-quarter of the respondents (28%) have purchased instant or scratch-off lottery tickets, 20% have bet money on flipping coins, 19% have played bingo and 14% have purchased Lotto tickets. Lifetime participation rates are 10% or lower for every other type of wagering.

Frequency of Gambling

As with adults, there are differences in gambling involvement among adolescents. For purposes of analysis, we divided the Georgia adolescents who ever gambled into three groups:

- **infrequent gamblers** who participated in one or more types of gambling but not in the past year (10% of the total sample);
- **past year gamblers** who participated in one or more types of gambling in the past year but not on a weekly basis (40% of the total sample); and
- **weekly gamblers** who participate in one or more types of gambling on a weekly basis (12% of the total sample).

Table 4 compares the characteristics of infrequent, past year and weekly gamblers among adolescents in Georgia. Adolescents who gamble weekly are significantly more likely than other gamblers to be male and to have money with which to gamble. Weekly gamblers are also significantly more likely to be Black than adolescents who gamble less frequently. There are no significant differences between weekly, past year and infrequent adolescent gamblers in age or the number of adults with whom they live.

Table 4: Demographic Characteristics of Georgia Adolescents Who Gamble

		Infrequent	Past Year	Weekly	
		%	%	%	
		(N = 99)	(N = 402)	(N = 122)	
Gender	Male	42.5	50.5	74.1	**
	Female	57.5	49.5	25.9	
Age	13	28.7	19.3	15.4	
	14	23.9	20.6	20.0	
	15	18.7	21.4	22.0	
	16	14.2	20.0	22.3	
	17	14.5	18.8	20.4	
Ethnicity	White	56.1	66.8	50.7	**
	Black	38.2	27.6	47.3	
	Other	5.7	5.6	2.0	
Size of HH	1 Adult	12.6	12.8	14.4	
	2 Adults	79.7	81.8	79.7	
	3+ Adults	7.7	5.4	5.9	
Income	Receive allowance	51.8	46.0	42.9	
	Work 10+ hrs/week	18.9	25.5	34.5	*
	Earn \$50+ per week	24.8	29.0	43.4	**

*Significant

**Highly significant

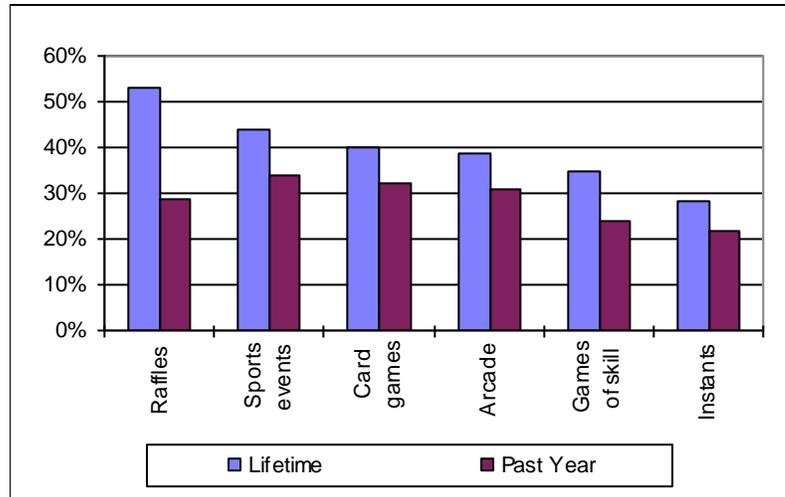
As in other jurisdictions, there are significant differences in gambling participation by gender, age and ethnicity. In Georgia, male adolescents are significantly more likely than female adolescents to have purchased instant lottery tickets and to have wagered on card games, sports events and sports pools with friends. Male adolescents are also significantly more likely to have bet on dice games, games of skill, flipping coins and arcade games. Finally, male adolescents are significantly more likely than female adolescents to have played the numbers and to have gambled on casino table games.

Apart from these gender differences, there are few significant differences in the gambling participation of adolescents from different ethnic or age groups. Black adolescents are significantly more likely than White adolescents to have wagered on dice games. Adolescents aged 17 are significantly more likely than younger adolescents to have purchased daily lottery tickets.

Most adolescents who gamble have bet on more than one activity. The average number of lifetime gambling activities for infrequent gamblers is 1.62. The average number of lifetime gambling activities for past year gamblers is 3.39 and the average number of lifetime activities for weekly gamblers is 5.66.

For adolescents who have only done one type of gambling (N=126), the type of gambling they are most likely to have tried is wagering on raffles and charitable events (37%). Another 21% of these respondents have only wagered on arcade games. Among adolescents who have gambled on more than one activity, the highest rates of participation are for wagering on raffles, sports events and card games with friends. **Figure 1** shows lifetime and past year participation for the most popular gambling activities among Georgia adolescents.

Figure 1: Proportion of Georgia Adolescents Who Have Gambled on Selected Activities



Starting to Gamble

Adolescent respondents who gambled were asked at what age they started gambling and what types of gambling they did when they started. The mean age at which adolescent respondents in Georgia started gambling was 12.6 years old. This is similar to the age at which adolescents in Texas and Washington State acknowledge starting to gamble.

In Georgia, adolescents who gamble and who reported the age at which they started (N=571) are most likely to have started gambling on card games with friends and family (20%) and on sports events with friends or acquaintances (16%). Fewer adolescents report starting to gamble on arcade games (11%), raffles (10%), games of skill (7%), flipping coins (7%) and instant lottery tickets (4%).

Reasons for Gambling

The reasons that adolescent respondents give for their involvement in gambling are similar to the reasons given by adults in Georgia. Among adolescent gamblers in Georgia, the most frequently cited reasons for gambling are fun or entertainment (77%) and excitement (65%). Other important reasons for gambling among Georgia adolescents include winning money (60%), curiosity (39%), to support worthy causes (37%) and for social reasons (33%).

Male adolescents are significantly more likely than female adolescents to say that they gamble for excitement, for social reasons and to win money while female adolescents are significantly more likely to say that they gamble to support worthy causes. Black adolescents are significantly more likely than White adolescents to say that they gamble for excitement. Younger adolescents are significantly more likely than older adolescents to say that they gamble to distract themselves from problems. There are no significant differences in the reasons that adolescents gamble when income is considered.

Expenditures on Gambling

Reported estimates of expenditures on gambling obtained in this survey are based on recollection and self-report. As with expenditure data from the adult survey in Georgia, these data are best suited for analyzing the relative importance of different types of gambling among adolescents rather than for ascertaining absolute spending levels on different types of wagering.

Adolescent respondents who had done any kind of gambling in the past year were asked to indicate how much money they spend on each gambling activity in a typical month. If an adolescent reported past year participation in a type of gambling but gave no information about expenditures, their response was recorded as zero. The reported **total monthly expenditure** for each gambling activity is calculated by summing the amount reported by each respondent for each gambling activity. The total monthly expenditure on all gambling activities among adolescents is divided by the total number of respondents to obtain an average amount spent on gambling per respondent. Since some gamblers were recorded as making zero expenditures, the figures reported here are likely to be conservative.

Adjustments to Expenditures

One adjustment was made in calculating the reported total monthly expenditure on gambling among Georgia adolescents. This was to exclude extremely high expenditures reported by two respondents on card games, sports events and games of skill. One 14-year-old respondent reported spending \$3,500 per month on these activities while another 16-year-old respondent reported spending \$30,000 per month on sports events and games of skill.

While there are several possible explanations for the extreme expenditures reported by these two respondents, examination of their family characteristics and income levels suggests that they are unlikely to have had access to the funds that they report spending. This adjustment

was made to show more clearly the relative gambling expenditures of the majority of Georgia adolescents. The two respondents who reported these expenditures were not dropped from analyses of gambling participation or prevalence.

Total Expenditures

Using the method outlined above, adolescent respondents in Georgia report spending \$20 per month or \$240 per year on all gambling activities. In contrast, adolescent respondents in Washington State reported spending an average of \$10 per month or \$120 per year on all gambling activities (Volberg 1993). Among adults in Georgia, the average expenditure on gambling was \$984 per year or 4.1 times greater than the average expenditure among adolescents in Georgia.

Reported monthly expenditures among adolescents vary significantly by the gender, age, ethnicity and income of the respondent. Males report spending significantly more money on gambling (\$31 per month) than females (\$10 per month). Older adolescents, including 16- and 17-year-old respondents, report spending significantly more money on gambling than younger adolescents. Black adolescents report spending significantly more money on gambling (\$28 per month) than White respondents (\$17 per month) or respondents from other racial and ethnic groups (\$9 per month). Respondents with weekly incomes over \$50 report spending significantly more on gambling (\$28 per month) than those with lower weekly incomes (\$14 per month).

As with adults, the majority of adolescent respondents in Georgia report spending rather small amounts on gambling in a typical month. Nearly half of the adolescent respondents (49%) report spending nothing on gambling in a typical month and 18% of the respondents report spending less than \$10 in a typical month. Another 22% of the adolescent respondents report spending between \$10 and \$49 on gambling in a typical month.

Only 10% of the respondents report spending \$50 or more on gambling in a typical month. However, this small group of respondents accounts for 72% of the total monthly expenditures on gambling among adolescents in Georgia. Adolescents in this highest spending group are significantly more likely than other respondents to be male and Black and to have weekly incomes over \$50.

Gambling on the Lottery

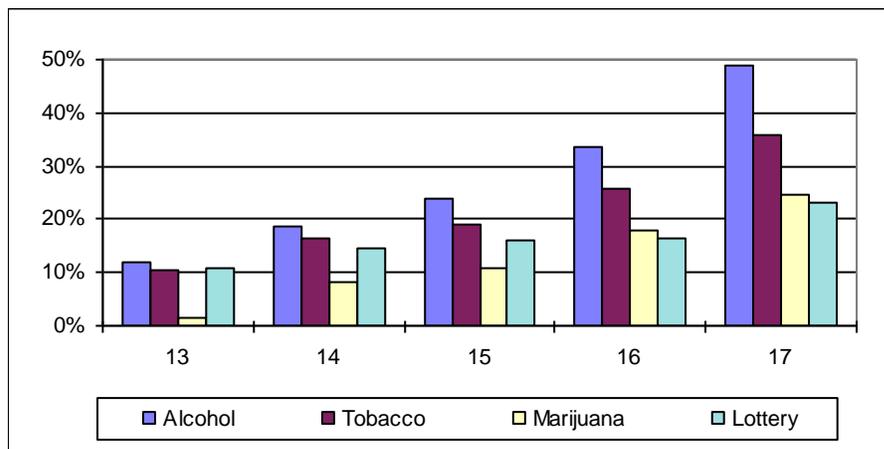
Contemporary high school students represent a unique group in the history of the United States: they are the only constituency that has experienced state sponsored and culturally approved gambling throughout their entire lives (Shaffer & Hall 1996). As legalized gambling has proliferated, policy makers, researchers and clinicians have become increasingly concerned about the impact of legalized gambling on adolescents (North American Think Tank on Youth Gambling 1995).

Epidemiologists have long considered certain drugs (e.g. cigarettes) as **gateways** to more pervasive illicit drug-using patterns (Kandel 1993). As a socially endorsed risk-taking behavior, some researchers and clinicians fear that lottery gambling may be an experience that encourages young people to engage in other, less broadly sanctioned types of gambling, such as sports betting. Researchers and clinicians also fear that gambling may lead adolescents to engage in other risk-taking behaviors, such as illicit drug use. In some jurisdictions, lottery play among adolescents begins earlier than alcohol or drug use and often exceeds their use of these substances. Researchers have begun to consider and test the hypothesis that lottery play may act as a **gateway** to other risk-taking behaviors among adolescents (Shaffer 1993; Shaffer & Hall 1996).

To test the notion that lottery play may be a gateway to other types of gambling among adolescents in Georgia, we examined lottery play by age as well as looking at the relationship between lottery play and other types of gambling. This analysis shows that there is a significant increase in lottery play by age. While 17% of 13-year-olds have purchased lottery products in the past year, 24% of 17-year-olds have done so. Analysis also shows that the increase in lottery play among adolescents is correlated with increases in wagering on card games and sports events with friends, on dice games and games of skill, and with flipping coins and wagering on arcade games.

To test the notion that lottery play acts as a gateway to other risk-taking behaviors, we examined past year use of alcohol, tobacco and marijuana as well as lottery play. **Figure 2** shows that, even more than lottery play, there are significant increases in Georgia adolescents' past year use of alcohol, tobacco and marijuana with age.

Figure 2: Lottery Play and Other Risk-Taking Activities by Georgia Adolescents



Since these are not longitudinal data, we cannot prove the hypothesis that lottery play is a gateway to other types of gambling and to other risky behaviors. However, these data do show that increases in lottery play are correlated with increases in other types of gambling and in the use of alcohol, tobacco and marijuana. Given increased access to gambling in general, and state lotteries in particular, it will be important in the future to attend to the impact of legalized gambling, and lotteries in particular, on adolescents in Georgia.

Problem Gambling Among Georgia Adolescents

While methods to assess problem and pathological gambling among adults are well-established, methods to assess problem and pathological gambling among adolescents are still being developed. Our approach to identifying problem gambling among the adolescents from Georgia is based on research on adolescent alcohol and substance abuse. This research combines measures of use (or involvement) with measures of negative consequences (Fisher 1992; Winters, Stinchfield & Fulkerson 1993b). This approach has also been used with data from adolescents in Texas and Washington State.

As described in the *Introduction* on Page 4, we have used a multi-factor method to assess problem gambling among adolescents in Georgia. The multi-factor method utilizes the South Oaks Gambling Screen but treats the behavioral and borrowing dimensions of the screen separately as well as incorporating measures of gambling involvement. While conservative, this approach is intended to focus as clearly as possible on those adolescents who show **incontrovertible** signs of problematic involvement with gambling.

Using the multi-factor method, adolescents from Georgia were classified into four categories:

- **non-gamblers** who did not acknowledge participation in any of the activities included in the survey (38% of the total sample);
- **non-problem gamblers** who gambled with few or no difficulties on any dimension (49% of the total sample);
- **at-risk gamblers** who gambled weekly with no problems or less intensively but with some problems (10.3% of the total sample); and
- **problem gamblers** who had several behavioral or borrowing problems and who either gambled weekly or spent more than \$10 per month on gambling (2.8% of the total sample).

Prevalence of Problem Gambling

In Georgia, 2.8% ($\pm 1.0\%$) of the total sample of adolescent respondents were classified as problem gamblers and another 10.3% ($\pm 1.9\%$) were classified as at-risk gamblers. Based on the 1990 census, there are 465,500 individuals between 13 and 17 in Georgia¹. Based on this figure, we estimate that there are between 8,400 and 17,700 adolescents in Georgia who already have experienced severe problems with their gambling. We further estimate that there are between 39,100 and 56,800 adolescents in Georgia whose behavior and activities place them at risk for developing problems related to their gambling. These ranges represent the 95% confidence interval around the prevalence point estimates.

¹ Data for 12- and 13-year-olds are grouped together by the Bureau of the Census. Since adolescent age groups tend to be similar in size, we included 50% of the 12-13 age group in our calculation.

Comparing Non-Problem, At-Risk and Problem Gamblers

In this section, the characteristics of problem and at-risk gamblers are compared with non-problem gamblers. Adolescents who never gambled are not included in these analyses since our interest is in factors associated with the development of gambling problems rather than in factors associated with gambling alone. Among the group of non-problem gamblers, 81% had gambled in the past year. Since past-year gambling is one of the dimensions of the multi-factor method, it is not surprising that all of the at-risk and problem gamblers had gambled in the past year.

In considering the results presented in this section, it is important to caution the reader about the small size of the sample of problem gamblers (N=28). Since this group is small, the information provided should not be regarded as precise measures of the group's characteristics but rather as indicative of demographic and behavior patterns associated with this group.

Demographics

Table 5 on Page 18 presents the demographic characteristics of adolescents who gamble without problems compared to those at risk of developing gambling problems and those with severe problems. Compared to adolescents in Georgia who have gambled without problems, at-risk and problem gamblers are significantly more likely to be male and Black. At-risk and problem gamblers are also significantly more likely than non-problem gamblers to have parents who gamble. At-risk gamblers are significantly more likely than non-problem or problem gamblers to have weekly incomes over \$50.

Gambling Participation

In considering the relationship between gambling involvement and gambling problems, it is helpful to look at differences in the lifetime gambling activities of non-problem, at-risk and problem gamblers in Georgia. Our focus is on lifetime gambling because past year and weekly gambling form one dimension in the multi-factor method used to classify respondents as problem or at-risk gamblers.

Table 6 on Page 19 shows that there are significant differences in the types of gambling that non-problem, at-risk and problem gamblers have ever tried. The only types of gambling for which differences among these groups are *not* significant are raffles, bingo, betting on slot machines and betting on arcade games. **Table 6** also shows that there is a significant difference in the number of types of gambling that non-problem, at-risk and problem gamblers have ever tried.

Table 5: Demographic Characteristics of At Risk Gamblers in Georgia

		Non-Problem	At Risk	Problem	
		%	%	%	
		(N = 489)	(N =105)	(N = 28)	
Gender	Male	48.8	73.6	69.1	**
	Female	51.2	26.4	30.9	
Age	13	21.0	18.0	9.9	
	14	21.0	19.1	28.2	
	15	21.1	20.3	22.5	
	16	19.1	19.6	26.7	
	17	17.8	23.0	12.7	
Ethnicity	White	65.1	53.9	36.9	**
	Black	29.2	43.8	63.1	
	Other	5.7	2.3	---	
Size of HH	1 Adult	12.2	17.2	12.7	
	2 Adults	81.8	77.8	80.3	
	3+ Adults	6.0	5.0	7.0	
Income	Receive allowance	47.1	39.4	57.8	
	Work 10+ hrs/week	24.2	32.2	38.8	
	Earn \$50+ week	28.2	45.9	27.3	**
One or both parents gamble		43.5	56.8	65.3	**

*Significant

**Highly significant

Table 6: Lifetime Gambling by At Risk Groups in Georgia

	Non-Problem	At Risk	Problem	
	%	%	%	
	(N = 489)	(N = 105)	(N = 28)	
Sports events	36.5	68.6	83.1	**
Card games	31.7	66.7	81.6	**
Games of skill	28.4	54.8	71.8	**
Raffles	52.5	52.1	63.4	
Arcade games	36.9	43.6	50.7	
Dice games	7.2	26.4	46.4	**
Instants	25.0	41.4	36.7	**
Bingo	18.3	17.7	32.4	
Flipping coins	17.7	28.3	26.7	*
Sports pools	8.2	23.0	25.4	**
Lotto	10.5	26.5	22.5	**
Daily	5.4	26.5	19.7	**
Slot machines	8.7	13.8	18.4	
Sports w/bookie	0.3	3.1	16.9	**
Numbers	6.8	24.5	12.7	**
Casinos	1.4	8.1	11.3	**
Mean number of activities	2.997	5.46	6.23	**
Horses	2.5	7.7	2.8	*
Other	1.6	6.9	---	**
Other animals	0.3	6.1	---	**

*Significant

**Highly significant

Gambling Expenditures

Given the correlation between gambling problems and heavy spending on gambling among adults, it is helpful to examine differences in expenditures on gambling of non-problem, at-risk and problem gamblers in Georgia. Only those types of gambling for which problem gamblers reported spending more than 25¢ per month are shown.

Table 7 shows that reported monthly expenditures for nearly every type of gambling are significantly higher among at-risk and problem gamblers than among non-problem gamblers. Differences are greatest for betting on games of skill, sports events and card games. Although the amounts reported are small, it is interesting to note that at-risk gamblers spend significantly more per month on instant lottery tickets and daily lottery games than either non-problem or problem gamblers. Only those types of gambling for which problem gamblers reported spending more than 25¢ per month are shown.

Table 7: Monthly Expenditures by At Risk Groups in Georgia

	Non-Problem	At Risk	Problem	
	\$	\$	\$	
	(N = 489)	(N = 105)	(N = 28)	
Card games	3.11	12.81	20.62	**
Slot machines	0.24	0.24	16.92	**
Games of skill	1.61	5.17	16.68	**
Dice games	0.41	10.50	12.13	**
Sports events	2.53	19.33	10.47	**
Arcade games	3.18	3.46	6.56	
Raffles	1.82	2.02	6.15	**
Bingo	0.51	0.52	5.07	**
Sports w/bookie	---	5.77	3.72	*
Numbers	0.19	1.74	3.24	**
Lotto	0.32	2.52	2.70	**
Flipping coins	1.75	1.19	2.60	
Instants	0.71	13.99	1.45	**
Casinos	---	0.45	1.28	**
Daily	0.15	1.30	0.55	**
Total expenditures	17.51	85.61	110.36	**

*Significant

**Highly significant

Prevalence by Type of Gambling

One question frequently asked about the relationship between gambling and problem gambling is: What type of gambling is most likely to add to the number of problem gamblers? On the basis of gambling involvement and expenditures, wagering on sports, card games and games of skill are the types of gambling most closely associated with gambling difficulties among adolescents in Georgia.

Another approach to this question is to examine the prevalence of gambling problems among respondents who have ever participated in different types of gambling. **Figure 3** on the next page shows the prevalence of at-risk and problem gambling among adolescents who have ever tried different types of gambling. For ease of comparison, adolescent gambling activities have been clustered in the same groups used to examine this issue for adults (Volberg 1995).

Figure 3: At Risk and Problem Gambling by Type of Gambling

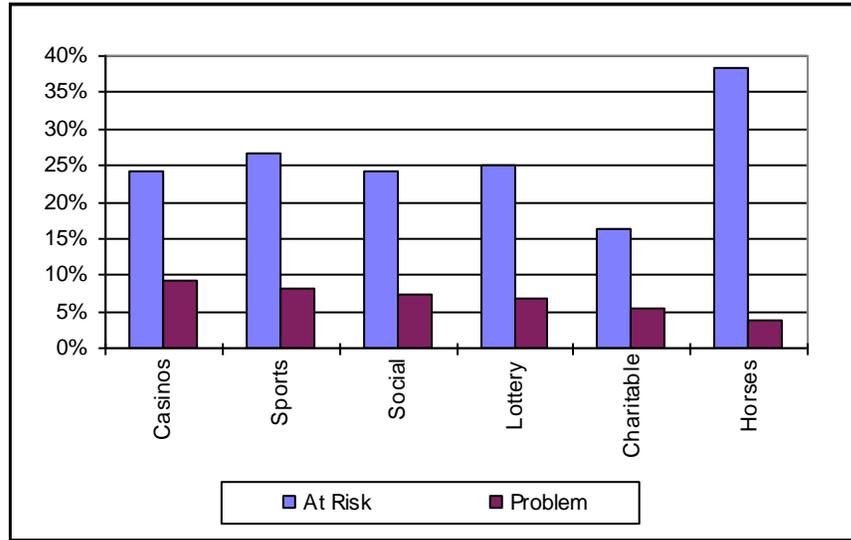


Figure 3 shows that the prevalence of problem gambling among adolescents for different types of gambling ranges between 4% and 9%. In contrast to the prevalence of problem gambling, the prevalence of at-risk gambling varies widely across different types of gambling. While over a third of adolescents who have ever gambled on horse races (38%) are classified as at-risk gamblers, only 16% of adolescents who have wagered on charitable games such as raffles and bingo meet the criteria for at-risk gambling.

Other Correlates of Problem Gambling

In addition to gambling involvement and expenditures, there are several other factors correlated with gambling difficulties among adolescents in Georgia. **Table 8** shows that the amount of time spent gambling, the largest amount ever gambled and two of the reasons that adolescents give for gambling are significantly different among non-problem, at-risk and problem gamblers.

Table 8: Correlates of At Risk Gambling in Georgia

	Non-Problem	At Risk	Problem	
	%	%	%	
	(N = 489)	(N = 105)	(N = 28)	
Usually gamble with:				
friends, acquaintances	64.2	61.5	74.6	
family members	14.4	16.6	12.7	
boyfriend, girlfriend	11.0	13.5	5.7	
Time spent gambling				
less than 1 hour	80.4	52.0	52.1	**
1 - 2 hours	16.6	37.5	28.2	
3 or more hours	3.0	10.5	19.7	
Largest amount ever gambled				
less than \$10	64.1	39.5	33.7	**
\$10 - \$49	32.2	38.5	54.9	
\$50 or more	3.7	22.0	11.3	
Reasons for gambling:				
excitement	59.6	87.0	90.1	**
hobby	7.4	17.2	12.7	**
win money	53.9	84.2	90.1	**
entertainment	74.9	86.2	94.3	**

*Significant

**Highly significant

In addition to differences in time spent gambling, largest amount ever lost and reasons for gambling, there are significant differences between non-problem, at-risk and problem gamblers in their attitudes about life, their perceptions of their own gambling problems and those of their parents.

Table 9 shows that problem gamblers are significantly more likely than non-problem and at-risk gamblers to have felt very unhappy in the last month as well as anxious or upset. Problem gamblers are also significantly more likely than non-problem and at-risk gamblers to have felt that they have a gambling problem, to have felt nervous about their gambling and to believe that one or both parents has had a gambling problem.

Table 9: Comparing Perceptions of At Risk Groups in Georgia

	Non-Problem	At Risk	Problem	
	%	%	%	
	(N = 489)	(N =104)	(N = 28)	
Very unhappy in last month	0.5	0.8	8.5	**
Felt anxious or upset most of last month	5.6	8.1	22.5	*
Feel you have had a gambling problem	1.1	0.8	45.1	**
Ever felt nervous about your gambling	9.0	25.0	69.6	**
Parent ever had a gambling problem	2.1	4.6	29.6	**

*Significant

**Highly significant

Gambling, Alcohol and Drug Use Among Georgia Adolescents

Research shows that problem gambling among adults is often complicated by involvement with drugs and/or alcohol (Adkins, Rugle & Taber 1985; Brown 1987; Lesieur & Heineman 1988; Linden, Pope & Jonas 1986). Two studies of adult problem gamblers in the general population support this finding from the treatment literature. In New Zealand, 60% of the “at large” pathological gamblers in the general population were found to be engaged in hazardous or harmful alcohol use (Abbott & Volberg 1992). In Alberta, all of the “at large” pathological gamblers in the general population were smokers; all of these individuals were classified as dangerously heavy alcohol consumers; and half of them had at some time used illicit drugs on a regular basis (Smith, Volberg & Wynne 1994). Among adults in Georgia, problem and pathological gamblers were significantly more likely to use alcohol or drugs while they gambled, to have been told that they had at some time had a problem with drugs or alcohol, and to have sought treatment for an alcohol or drug problem (Volberg 1995).

Alcohol and Drug Use Among Adolescents

Alcohol, tobacco and marijuana are the substances most often used by adolescents. However, significant proportions of the adolescents in the Georgia survey indicated that they had tried other illicit drugs. **Table 10** shows that, except for alcohol, tobacco and marijuana, very small numbers of adolescent respondents indicated that their use of illicit drugs was within the past year and even fewer acknowledge that their use was within the past month.

Table 10: Alcohol and Drug Use Among Adolescents in Georgia

	Lifetime	Within the	Within the
		Past Year	Past Month
	%	%	%
Alcohol	33.3	26.2	13.5
Tobacco	29.5	20.7	13.6
Marijuana	14.4	11.9	6.7
Downers	3.7	2.3	1.2
Hallucinogens	2.9	1.8	0.4
Uppers	2.8	2.5	1.1
Inhalants	1.9	1.1	0.5
Cocaine	0.5	0.2	---

Problems with Alcohol and Drug Use

In addition to assessing alcohol and drug use, adolescent respondents in Georgia were asked several questions to determine whether they were experiencing problems related to their use of alcohol or drugs. Small but significant proportions of the total sample of adolescents (N=1007) indicated that they had gotten into difficulties with friends one or more times

because of their drinking in the past year (2.5%), been criticized by someone they were dating because of their drinking (2.5%), driven a car while intoxicated (2.3%) or been in trouble with the police because of drinking (1.4%).

Respondents were asked similar questions about difficulties they may have had with their use of drugs. Again, small proportions of the total sample indicated that they had gotten into difficulties with friends one or more times because of their drug use in the past year (1.6%), been criticized by someone they were dating because of their drug use (2.5%), driven a car while high from drugs (3.1%) or been in trouble with the police because of drug use (1.6%).

Based on research with adolescents in other states, we hypothesized that gambling would be significantly related to adolescents' use of alcohol and other drugs. **Table 11** shows that frequency of gambling is significantly related to alcohol, tobacco and drug use as well as to problems with alcohol and drugs. Past year and weekly gamblers are significantly more likely than infrequent gamblers to have ever tried alcohol, tobacco and drugs. Weekly gamblers are significantly more likely than infrequent or past year gamblers to acknowledge that they have gotten into trouble in the past year because of their alcohol or drug use. Trouble includes a positive response to any one of the questions about criticisms from friends or dates, having driven a car under the influence or having gotten into trouble with the police. Finally, weekly gamblers are significantly more likely than infrequent and past year gamblers to have sought help for an alcohol or drug problem and to have desired help for a gambling problem.

Table 11: Alcohol and Drug Use Among Adolescent Gamblers in Georgia

	Infrequent	Past Year	Weekly	
	%	%	%	
	(N = 99)	(N = 402)	(N = 122)	
Alcohol	19.9	42.8	55.7	**
Tobacco	17.8	34.8	48.0	**
Drug use				**
None	89.1	78.4	65.2	
1 - 2	10.1	18.6	30.9	
3 or more	0.8	3.0	3.9	
Trouble due to alcohol	2.4	6.2	20.2	**
Trouble due to drugs	2.8	6.2	14.0	**
Sought help for alcohol/drugs	---	0.5	4.1	*
Desired help for gambling	0.8	0.5	3.2	*

*Significant

**Highly significant

Even more than gambling frequency, gambling problems among adolescents are correlated with the use of alcohol, tobacco and drugs. **Table 12** shows that at-risk and problem gamblers are even more likely than weekly gamblers to have used alcohol and other drugs except tobacco. At-risk and problem gamblers are significantly more likely than non-problem gamblers to have used alcohol, tobacco and drugs and to have gotten into trouble in the past year because of their use of alcohol or drugs. At-risk and problem gamblers are just as likely as weekly gamblers to have sought help for an alcohol or drug problem. Problem gamblers are the adolescents most likely to desire help for a gambling problem.

Table 12: Alcohol and Drug Use Among At Risk Groups in Georgia

	Non-Problem	At Risk	Problem	
	%	%	%	
	(N = 489)	(N =105)	(N = 28)	
Alcohol	37.3	51.7	80.3	**
Tobacco	31.5	48.4	39.5	**
Drug use				**
None	80.8	72.6	38.1	
1 - 2	16.7	23.6	56.3	
3 or more	2.5	3.8	5.7	
Trouble due to alcohol	5.4	14.4	36.6	**
Trouble due to drugs	5.2	11.0	26.7	**
Sought help alcohol/drugs	0.4	3.8	3.6	*
Desired help gambling	0.6	---	14.0	**

*Significant

**Highly significant

Comparing Georgia Adolescents with Other States

Given the similarity in the methods used to assess gambling and problem gambling among adolescents in Georgia, Texas and Washington State, it is possible to compare respondents in these three states in terms of their demographics, gambling participation, gambling problems and use of alcohol and drugs.

Complete demographic characteristics are provided only for adolescents who gamble in each state. **Table 13** shows that adolescents who gamble in all three states are equally likely to be male and to live in households with two adults. Washington adolescents who gamble are most likely to work 10 or more hours a week while Texas adolescents who gamble are most likely to have \$50 or more in weekly income, including jobs and allowance. The most obvious difference among adolescents in these three states is in their ethnic and racial composition. Washington adolescents are most likely to be White; one-third of Texas adolescents are Hispanic; and one-third of Georgia adolescents are Black although the proportion of Black adolescents in Texas is also high.

Table 13: Demographics of Adolescents Who Gamble in Three States

		Georgia	Texas	Washington
		%	%	%
		(N=623)	(N=716)	(N=870)
Gender	Male	54	56	53
	Female	46	44	47
Age	13	20	---	17
	14	21	23	23
	15	21	26	22
	16	19	26	21
	17	18	25	17
Ethnicity	White	62	48	91
	Black	33	14	2
	Hispanic	1	35	2
	Other	4	2	5
Size of HH	1 Adult	13	10	10
	2 Adults	81	85	87
	3+ Adults	6	6	3
Income	Receive allowance	46	55	48
	Work 10+ hrs/week	25	33	48
	Earn \$50+ per week	31	35	24

* Texas survey included only adolescents aged 14-17.

Gambling Participation

Table 14 shows that adolescents in Georgia are the least likely to have ever gambled and to have gambled in the past year while those in Washington are most likely to have ever gambled and to have gambled in the past year. Although Georgia adolescents are less likely to have ever gambled than adolescents in Texas and Washington, they are just as likely to gamble weekly.

Table 14: Gambling Participation Among Adolescents in Three States

	Georgia	Texas	Washington
	%	%	%
	(N = 1007)	(N = 924)	(N = 1045)
Non-Gamblers	38.1	22.5	16.7
Infrequent	9.8	12.7	14.4
Past Year	39.9	52.9	59.3
Weekly	12.2	11.9	9.6

The most common gambling activities among Texas adolescents are card, dice or board games, sports events, and games of skill. Bingo and lottery products are next most popular. In Washington State, adolescents are most likely to have gambled on raffles, sports events, and card, dice or board games. Georgia adolescent respondents are most likely to have ever wagered on raffles, sports events, card games and games of skill.

Problem Gambling

The similarity of the methods used in Georgia, Texas and Washington State to assess gambling difficulties allows us to directly compare prevalence rates of at-risk and problem gambling among adolescents in these three states. **Table 15** shows differences in the prevalence of problem and at-risk gambling among adolescents in Georgia, Texas and Washington State.

Table 15: Problem Gambling Among Adolescents in Different States

	Georgia	Texas	Washington
	%	%	%
	(N = 1007)	(N = 924)	(N = 1045)
Non-Problem	86.8	83.3	90.1
At Risk	10.4	11.7	9.0
Problem	2.8	5.0	0.9

Table 15 shows that the prevalence of at-risk and problem gambling is highest among adolescents in Texas and lowest among adolescents in Washington State. Since the prevalence of problem gambling tends to be higher among minorities, the high proportion of

Blacks and Hispanics in Texas and Blacks in Georgia contributes significantly to the higher prevalence of at-risk and problem gambling in the two Southern states.

While at-risk and problem adolescent gamblers in Georgia are similar to those in Texas and Washington State, there are some differences across the states. In Texas, problem gamblers are more likely than problem gamblers in Georgia to be Black or Hispanic and to live in a household with three or more adults. In Washington, at-risk and problem gamblers are more likely than at-risk and problem gamblers in Georgia to live in a household with three or more adults. In all three states, at-risk and problem gamblers are significantly more likely than non-problem gamblers to be minority males with weekly incomes over \$50 whose parents also gamble.

Gambling, Alcohol and Drug Use

Table 16 shows that Georgia adolescents are more likely than adolescents in Texas and Washington State to have never gambled or used alcohol or drugs. Georgia adolescents are less likely than Washington State adolescents and more likely than Texas adolescents to have done one of these activities, less likely than adolescents in these other states to have done two of these activities and just as likely to have done all three.

Table 16: Gambling, Alcohol and Drug Use by Adolescents in Three States

	Georgia	Texas	Washington
	%	%	%
	(N = 1007)	(N = 924)	(N = 1045)
None	29.8	15.8	13.1
Single Use	39.4	31.8	47.3
Gambling only	34.0	26.8	44.5
Alcohol only	4.6	4.6	2.6
Drugs only	0.8	0.4	0.2
Dual Use	18.8	38.2	27.9
Gambling & alcohol	13.9	37.0	25.4
Gambling & drugs	2.0	0.6	1.6
Alcohol & drugs	2.9	0.6	0.9
Triple Use	11.8	14.2	11.8

Comparing Adolescents and Adults in Georgia

With the similarities in the methods used to survey adults and adolescents in Georgia, it is possible to compare gambling and problem gambling across age groups from adolescence through adulthood. This section compares lifetime gambling and problem gambling among adolescents aged 13 to 17, adults aged 18 to 29 and adults aged 30 and older in Georgia. Only those adult respondents who gave their age (N=1528) were included in this analysis.

Gambling Participation

Since all gambling is illegal for adolescents, it is not surprising that significantly more adults than adolescents in Georgia have ever gambled, have gambled in the past year and gamble weekly. While 81% of younger Georgia adults and 73% of older Georgia adults have ever gambled, only 62% of Georgia adolescents have done so. While 25% of younger Georgia adults and 28% of older Georgia adults gamble weekly, only 12% of Georgia adolescents do so.

Patterns of lifetime gambling are significantly different for respondents of different ages. **Table 17** shows the proportion of adolescents, adults aged 18 to 29 and adults aged 30 and over who have ever tried different types of gambling.

Table 17: Lifetime Gambling Among Adolescents and Adults in Georgia

	Adolescents	Young Adults	Older Adults	
	%	%	%	
	(N = 1007)	(N =325)	(N = 1203)	
Raffles	32.7	35.7	38.6	*
Sports events	27.2	26.8	18.6	**
Card games	24.7	28.6	18.1	**
Games of skill	21.6	12.9	8.5	**
Instants	17.5	60.6	52.4	**
Bingo	11.6	12.3	19.1	**
Lotto	8.6	41.8	43.9	**
Sports pools	7.1	11.7	15.8	**
Slot machines	6.2	20.0	27.0	**
Dice games	7.6	5.5	5.0	
Daily	6.0	21.5	20.6	**
Numbers	6.3	3.4	3.7	**
Horses	2.1	10.5	19.2	**
Casinos	1.9	8.3	10.3	**
Other	1.5	2.8	1.2	
Sports w/bookie	1.0	2.5	2.0	
Other animals	0.8	0.9	0.7	

*Significant

**Highly significant

Table 17 shows that both groups of adults are significantly more likely to have ever purchased lottery products and to have wagered on horses, casino games and slot machines than adolescents. This is understandable since these are legal forms of gambling (although not all are legal in Georgia) with clear restrictions against participation by underage persons. Adolescents are significantly more likely than either group of adults to have played the numbers and to have wagered on games of skill. Adolescents and young adults are significantly more likely than older adults to have wagered on card games and on sports events while older adults are significantly more likely than younger adults or adolescents to have played bingo.

Problem Gambling

An important question when considering gambling problems among adolescents and adults is whether the methods used to classify adults are appropriate for use among adolescents. We have argued that the approach taken with adults is not entirely appropriate for adolescents. However, it is useful to look at how different age groups score according to both of the methods used to assess gambling-related problems in Georgia. **Table 18** shows differences in the proportion of adolescents, young adults and older adults who score on the multi-factor method used to classify adolescent respondents. This table also shows differences in the proportion of these groups who meet the adult criteria for classification as problem and probable pathological gamblers.

Table 18: At Risk and Problem Gambling Among Adolescents and Adults in Georgia

	Adolescents	Young Adults	Older Adults	
	%	%	%	
	(N = 1007)	(N = 325)	(N = 1203)	
Adolescent Method				**
Non-Problem	86.8	73.5	71.4	
At Risk	10.4	22.8	27.6	
Problem	2.8	3.7	1.0	
Adult Method				**
Non-Problem	89.9	91.4	96.6	
Problem	6.7	5.2	2.2	
Probable Pathological	3.4	3.4	1.2	

*Significant

**Highly significant

Table 18 shows that nearly a quarter of younger adults and over a quarter of older adults are classified as at-risk gamblers in contrast to 10% of the adolescent respondents. As in Washington State, younger adults are more likely than adolescents or older adults to be classified as problem gamblers using the multi-factor method. However, the large proportion of adults classified as at-risk gamblers using the multi-factor method suggests that the sensitivity of this approach is probably too high for use in adult populations.

In contrast to the multi-factor method, the method used to assess problem and pathological gambling among adults is based on a score across behavioral and borrowing items. **Table 18** also shows that adolescents and younger adults are most likely to score as problem gamblers using this method. Indeed, adolescents are more likely than either group of adults to be classified as problem gamblers using this method. Adolescents and young adults are equally

likely to score as probable pathological gamblers. These findings support the argument that problem gambling is most likely to occur in late adolescence and young adulthood. Along with data on the natural recovery of problem gamblers, these findings also suggest that people can age out of problem gambling careers.

Self-Esteem and Gambling

The surveys of adults and adolescents in Georgia represent the first time that a measure of self-esteem (Rosenberg 1965) was included in surveys of gambling and problem gambling. While researchers have long claimed that non-problem gambling is associated with high self-esteem and problem gambling with low self-esteem, there was no empirical evidence of these relationships.

Analysis of Georgia adults found that problem gamblers were more likely than either non-gamblers or non-problem gamblers to be young, single minority males with low self-esteem. These data confirm, for the first time, a relationship between gambling and self-esteem; a relationship that accounts for assumptions both about the low self-esteem of problem gamblers and the high self-esteem of non-problem gamblers (Volberg, Reitzes & Boles 1996).

Problem gamblers in the adult Georgia sample are embedded in a culture where gambling is acceptable. Combined with the stresses that are part of the life of young minority and blue-collar men, gambling on dice and sports 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. Adult problem gamblers in Georgia spend significantly more time and money gambling than do non-problem gamblers and they play a wider variety of games. Problem gamblers report starting to gamble at significantly younger ages than non-problem gamblers and are more likely to acknowledge using drugs or alcohol when gambling.

One limitation of the Georgia adult study was the inability to establish whether problem gamblers' low self-esteem existed prior to their involvement in gambling. Although not conclusive, it is interesting in this regard to examine how Georgia adolescents score on the same measure of self-esteem.

In analyzing the relationship between self-esteem, gambling and problem gambling among adolescents, we looked first at the reliability of the measure with the adolescent sample. The unstandardized alpha for the Rosenberg self-esteem scale among Georgia adolescents was .79; this is lower than the reliability of the scale among Georgia adults but still well within an acceptable range.

The next step was to run a multiple regression procedure to assess the relationship between lifetime gambling and self-esteem among adolescents. Lifetime gambling was included as a dependent variable and self-esteem was included as an independent variable along with gender, age, ethnicity and weekly income. This analysis showed that gender and income both exert a significant positive impact on lifetime gambling. In contrast to the adults, self-esteem does not explain involvement in gambling among Georgia adolescents.

The next step was to examine the relationship between self-esteem and gambling problems among adolescents in Georgia. The at-risk categories were used as the dependent variable and self-esteem, along with gender, age, ethnicity and weekly income, was included as an independent variable. This analysis showed that gender, income and self-esteem all exerted a significant impact on at-risk and problem gambling. In other words, males with high weekly incomes and low self-esteem are more likely to be classified as problem gamblers than other adolescents in the study.

Conclusion and Recommendations

The primary purpose of this study was to assess the level of problematic gambling among adolescents in Georgia. This information is vital in understanding the development of gambling problems among Georgia citizens as well as in developing services for adolescents in the state who experience difficulties related to their gambling.

The results of this study show that significant numbers of Georgia adolescents gamble, that this gambling is widely accepted by adolescents and their parents, and that most adolescents spend only small to moderate amounts of money on gambling. However, the study also shows that, **at a minimum**, there are 8,400 Georgia adolescents experiencing severe difficulties related to their gambling. Adolescents represent a generation for whom legal gambling has been available all their lives. However, young people are unlikely to have developed skills and strategies to manage their gambling and are thus more likely to develop difficulties.

Summary

To summarize the findings from the adolescent survey in Georgia: we found that the proportion of Georgia adolescents who gamble is lower than among Georgia adults or among adolescents in other states. Georgia adolescents who gamble are most likely to be older male adolescents with weekly incomes of \$50 or more. However, it is important to remember that 31% of problem gamblers and 26% of at-risk gamblers among adolescents in Georgia are female.

As with adults in Georgia, this study shows that the majority of Georgia adolescents report low levels of gambling, low expenditures and few if any difficulties related to their gambling. Among adolescents in Georgia, males, regular users of alcohol and drugs and those whose parents gamble are most likely to experience gambling difficulties. We estimate that between 8,400 to 17,700 adolescents in Georgia can be classified as problem gamblers and an additional 39,100 to 56,800 Georgia adolescents are at risk of developing gambling difficulties.

In contrast to Georgia adults, a significant proportion of Georgia adolescents with gambling problems recognize that they need help. Nearly three-quarters of the adolescent problem gamblers (70%) have felt nervous about their gambling; 45% have felt that they have a gambling problem; and 14% have desired or sought treatment for a gambling problem. This suggests that, if services are made available, a minimum of 1,200 adolescents would access these services almost immediately.

Recommendations

The lottery in Georgia provides substantial funds for education. While the State of Georgia clearly benefits from the gambling of its citizens, it is important to recognize that a liberal attitude toward gambling may lead to significant problems among the group that lottery proceeds are intended to benefit. The State of Georgia has already provided funds for an adult prevalence survey as well as for this adolescent survey, for the training of treatment professionals in recognizing adult problem gamblers and for the establishment of a helpline for Georgia residents experiencing gambling problems. Directions for the future include:

Prevention

The North American Think Tank on Youth Gambling (1995) recently endorsed the development of public awareness and education initiatives for adolescents. The Think Tank recommended that curricula and programs be developed to educate children, parents and teachers about the issue of youth gambling. In Georgia, it will be important for the Department of Human Resources to work cooperatively with the Georgia Lottery as well as with the Georgia Department of Education to develop curricula and programs for adolescent gamblers. It may also be possible to add gambling components to ongoing federally-funded substance abuse prevention programs.

One source of assistance in the development of education and prevention programs for youth gambling is Professor Ladouceur and his colleagues at Université Laval in Quebec City. The prevention program developed by Ladouceur and his colleagues is well designed and has been tested for effectiveness (Gaboury & Ladouceur 1993; Volberg, Dickerson, Ladouceur & Abbott, in press). As with alcohol and drug education, gambling prevention programs improve youths' knowledge of gambling and problem gambling although coping skills are not maintained for long. It will be important to develop curricula that are delivered at several points in the high school and college years to improve the likelihood that adolescents and young adults will utilize the skills they are taught.

As with education, public awareness efforts must be ongoing in order to be effective. In Minnesota, researchers documented the correlation between the volume of calls to the problem gambling hotline and public awareness activities such as the airing of radio and television PSAs, the distribution of press and media kits and a declaration by the governor of a "Problem Gambling Awareness Week" (Svendson 1994). In Georgia, it will be important to maintain and improve awareness of services for problem gamblers through ongoing radio and television advertising, press and media education and special events targeted at adolescents and young adults.

Finally, it will be important to target some of these public awareness and education activities to groups with the highest risk of developing gambling-related difficulties. In Georgia, adolescents at greatest risk for experiencing gambling problems are minority males with relatively high weekly income. We recommend targeting some of the proposed awareness and education activities toward this group.

Cooperative Endeavors with Gaming Operators

It will be important to establish cooperative endeavors with the Georgia Lottery and with charitable organizations to minimize adolescent gambling problems in Georgia. For example, it might be possible for the Georgia Department of Human Resources to provide training for retailers selling lottery products in the rules and regulations on selling such products to minors. It might also be possible to provide education and training to Georgia Lottery staff, including operators for the lottery assistance line, on adolescent gambling and problem gambling.

Another approach to addressing the issue of adolescent gambling in Georgia would be the establishment of a task force, composed of staff from the Georgia Department of Human Resources, the Georgia Lottery, the Georgia Department of Education and other agencies concerned with youth issues. This task force could be responsible for developing a plan to address the issue of adolescent gambling and problem gambling as well as for establishing the means to evaluate these efforts in the future.

Treatment

It will be important to continue to provide treatment services for problem gamblers in Georgia. The most cost-effective approach may be to target training and treatment activities at the groups with the highest risk for developing gambling problems. Since co-morbidity of gambling with alcohol and drug use is especially high among adolescents, a cost-effective approach to identifying adolescents with gambling problems would be to screen adolescents seeking help for alcohol or drug problems for their gambling involvement. Weekly gambling, particularly on sports, and high monthly expenditures on gambling would alert treatment professionals to the need for gambling-specific counseling with some clients.

Monitoring and Evaluation

In the future, it will be essential to evaluate the effectiveness of the efforts to minimize gambling problems among adolescents in Georgia. Evaluation activities should be built into the prevention and treatment initiatives established for adolescent gamblers so that uniform data are collected from all of these programs. It will also be important to continue to monitor gambling participation and the prevalence of problem gambling among adolescents in Georgia. Replication of the adolescent survey of gambling and problem gambling will be useful in evaluating the effectiveness of the efforts to mitigate problem gambling among adolescents in Georgia as well as in assessing the impact of possible future increases in the availability of legalized gambling on adolescent gambling and gambling problems.

Conclusion

This report represents a significant step forward in our knowledge of adolescent gambling and gambling problems. These data provide a benchmark for future assessments of gambling and problem gambling among adolescents in Georgia. These data also provide a foundation for policy making and planning for services for adolescents who experience difficulties related to their gambling. Consideration must now be given to educating Georgia adults and adolescents about the risks of gambling, to providing prevention and treatment services for those adolescents who experience difficulties with their gambling, and to ensuring that adequate and continuing funds for such efforts are made available.

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