GAMBLING AND PROBLEM GAMBLING IN NEW YORK: A 10-YEAR REPLICATION SURVEY, 1986 TO 1996

Report to the New York Council on Problem Gambling

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EXECUTIVE SUMMARY

This report presents the results of the second survey of gambling and problem gambling in the State of New York. The main purpose of this study was to examine changes in the prevalence of gambling-related problems among adults in New York in the last decade. The other main purpose of the study was to identify the types of gambling causing the greatest difficulties for the citizens of New York. A large sample of New York residents aged 18 and over (N=1,829) were interviewed in April, 1996 about the types of gambling they have tried, the amounts of money they spend on gambling, and about gambling-related difficulties. The information in this report will be valuable in the further development of services for problem gamblers in New York.

Findings

- In 1986, 84% of the respondents in New York acknowledged participating in one or more of 10 gambling activities. In 1996, 90% of the respondents acknowledged participating in one or more of 14 gambling activities. This is a statistically significant increase in the rate of lifetime gambling among New York citizens.

- In 1996, lifetime participation was highest for lottery play, charitable gambling and casino gambling. From one-half to three-quarters of the respondents acknowledge they have done these types of gambling. About one-third of the respondents have wagered on non-casino card games, on horse races, dog races or other animal events, on bingo and on sports events.

- Men in New York estimate that they spend twice as much on gambling as women while respondents between the ages of 21 and 29 estimate that they spend significantly more than either older respondents. Caucasian respondents in New York estimate that they spend more on gambling than non-Caucasian respondents and never married, separated and divorced respondents spend more than married respondents. Unemployed respondents spend slightly more than working respondents and both of these groups spend more than respondents who are retired, going to school or keeping house.

- In New York in 1996, 4.7% (±0.97%) of the respondents scored as lifetime problem gamblers and 2.6% (±0.73%) of the respondents scored as lifetime probable pathological gamblers. In 1986, 2.8% of the respondents scored as lifetime problem gamblers and 1.4% scored as lifetime probable pathological gamblers. This is a statistically significant increase in the prevalence of lifetime problem and pathological gambling in New York.

- In New York in 1996, 2.2% (±0.67%) of the respondents scored as current problem gamblers and 1.4% (±0.54%) of the respondents scored as current probable pathological gamblers. Information on current problem and pathological gambling was not collected in 1986.

- The lifetime prevalence rate in New York in 1996 is higher than in any other state while the current prevalence rate in New York is higher than in any other state except Louisiana. The greatest difference between lifetime and current problem and pathological gamblers in New York is that current problem and pathological gamblers are just as likely to be women as men.

- While there are 328,000 New York residents aged 18 and over who are currently experiencing difficulties related to their gambling, we estimate that 118,000 of these individuals are experiencing severe difficulties that could require treatment. Based on the proportion of problem and pathological gamblers in New York who express a desire for treatment, we estimate that 11,800 individuals might access such services if they were available.

- Problem gamblers living outside the New York City region are more likely than problem gamblers living downstate to travel less than 15 miles to gamble and less likely to travel 60 or more miles to gamble. This suggests that problem gamblers outside New York City are more likely to wager on readily available types of gambling, such as the lottery, Quick Draw, local horse tracks, off-track-betting outlets and the casino at Turning Stone.

- Female problem gamblers spend approximately two-thirds of the amount that male problem gamblers spend on gambling. Younger problem gamblers spend substantially more than older problem gamblers and Caucasian problem gamblers spend far more than non-Caucasian problem gamblers. While Caucasian problem gamblers spend the most on legal forms of gambling, including casinos and parimutuel wagering, non-Caucasian problem gamblers spend the most on illegal forms of gambling, such as illegal gambling machines and dice games.

- There are significant differences in the age at which respondents started gambling by gender, age, ethnicity and marital status for both non-problem and problem gamblers in New York. Males, respondents under the age of 30, non-Caucasians and never married respondents report starting to gamble at significantly earlier ages than other respondents.

- As predicted by the research literature, regular involvement with continuous forms of gambling and heavy gambling losses are the factors most closely associated with gambling-related difficulties in New York. Problem gamblers in New York are most likely to gamble weekly on lottery games, Quick Draw and sports. Problem gamblers spend the most substantial amounts on casinos, sports and parimutuel wagering. Problem gamblers are more likely than non-problem gamblers to spend six or more hours gambling at a time, to have lost $1,000 or more in a single day and to travel 60 or more miles in order to gamble. Problem gamblers are more likely than non-problem gamblers to use alcohol, tobacco and marijuana on a weekly basis, to typically have five or more drinks in a day and to have felt somewhat or very unhappy as well as depressed or anxious most of the time in the past 12 months.

- There are significant differences among problem gamblers in their use of alcohol, tobacco and drugs. Male problem gamblers are more likely than female problem gamblers to use alcohol on a weekly basis and to have used illicit drugs in the past year. Problem gamblers aged 21 to 29 are more likely than other problem gamblers to use alcohol on a weekly basis while problem gamblers aged 18 to 20 are more likely than older problem gamblers to use marijuana on a weekly basis.

- Comparison of the 1986 and 1996 studies shows significant increases in participation in lottery play and casino gambling. There are significant decreases in participation for bingo and wagering on dice games.

- Problem gamblers in New York are increasingly likely to be Caucasian and unmarried and to have graduated from high school. Problem gamblers in 1996 are significantly more likely than problem gamblers in 1986 to have purchased lottery products. Wagering on card games and games of skill is higher among problem gamblers in 1996 than in 1986 while wagering on dice games and on horse or dog races is lower.

- Research shows that the prevalence of problem gambling is higher in jurisdictions where legalized gambling has been available for longer periods of time and where the population is ethnically heterogeneous. The survey in New York has identified an increase in the prevalence of problem gambling that does not appear to be related to the introduction of one specific type of gambling but, rather, to the expansion of opportunities to gamble regionally.

- Surveys in Louisiana and Iowa suggest that rapid increases in the availability of legalized gambling can add substantially to an underlying prevalence rate of problem gambling in the general population. This information merits attention as the State of New York considers the legalization of casino gambling.

Future Directions

While New York pioneered funding for treatment services for problem gamblers, these services are reaching only a fraction of the thousands of New York residents with severe gambling-related difficulties. Given expected further increases in the prevalence of gambling-related difficulties in New York, it will be imperative to maintain, and expand, current services. Directions for the future include increased funding for research activities, for expanded treatment services, for the development of treatment alternatives and a gambling counselor certification program, development of education and prevention services, evaluation of the effectiveness of existing as well as newly established services and continued monitoring of gambling and problem gambling in the general population.

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 New York Council on Problem Gambling, examines the extent of gambling and problem gambling in New York in 1996 and compares the findings to a similar survey completed in New York in 1986 as well as to similar studies conducted elsewhere in the United States.

The main purpose of this study is to examine changes in the prevalence of gambling-related problems among the adult population in New York in the last decade. The other main purpose of this study is to identify the types of gambling causing the greatest difficulties for the citizens of New York. The results of this study will be useful in documenting the impact of the spread of legalized gambling on the prevalence of gambling difficulties in the general population. The results of this study will also be valuable in the refinement of prevention and treatment services for New Yorkers with gambling-related difficulties.

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 next three sections detail findings from the survey, with a focus on gambling in general, on the prevalence of problem gambling in New York State and, finally, on differences between non-problem and problem gamblers in the state. These sections are followed by two more sections: the first is a comparison of findings from the 1986 and 1996 studies of gambling and problem gambling in New York while the second compares the two methods used to assess problem gambling among New York respondents in 1996. The report concludes with recommendations for the future development of services for problem gamblers in New York.

Background

In 1986, a survey funded by the New York State Office of Mental Health assessed lifetime gambling and problem gambling in the state. At that time, legal gambling in the state included charitable bingo, wagering on horse races at the track as well as at off-track-betting (OTB) venues around the state, and the 10-year-old New York State Lottery which offered a bi-weekly Lotto game as well as several daily number games. Beginning in 1978, New York State residents also had relatively easy access to casino gambling in Atlantic City.

By 1996, off-track wagering on horse races in New York had grown to include simulcasting as well as OTB teletheaters where patrons can watch and wager on races while dining in a restaurant-like setting. In addition to Atlantic City, there is now easy access to casino gambling in Montreal, Canada as well as at Foxwoods, in Southeastern Connecticut, and at Turning Stone in the Finger Lakes region of New York State. Lottery games have expanded to include instant scratch-off games as well as Quick Draw, a video keno game available in thousands of outlets around the state.

Legalized gambling in New York State generates substantial income for the state government as well as county and municipal governments, charitable groups and private operators. In FY 1993-94, the New York Lottery generated $1.01 billion in net income on sales of $2.37 billion. In FY 1994-95, the New York Lottery generated $1.24 billion in net income on sales of $3.02 billion. In FY 1995-96, the New York State Lottery generated $1.4 billion in net income on sales of $3.6 billion. This figure can be expected to increase dramatically in the future with the impact of Quick Draw, which generated $46.1 million in net income on sales of $184.5 million in its first nine months of operation (New York Lottery, personal communication).

In 1994, license fees to the state from other types of gambling, including bingo, bell jars (or pulltabs), games of chance and commercial licenses, amounted to $1.5 million. In 1995, license fees from other types of gambling amounted to $1.4 million. County and municipal governments received the remaining 40% of license fees in addition to small percentages of additional license fees paid by the operators of these types of gambling. While parimutuel handle declined between 1993 and 1994, revenues to the state from horse race wagering (including on-track, off-track and inter-track handle) increased in this period. In 1993, revenues to the state from horse race wagering were $ 65.7 million. In 1994, revenues to the state from horse race wagering were $79.5 million (New York State Racing & Wagering Board, personal communication; North American Gaming Report 1995).

On the horizon lies the potential for further expansion of legalized gambling in New York State. For example, the Oneida Indian Nation is seeking to establish slot machines at the Monticello racetrack in the Catskills. The St. Regis Mohawk Tribe has already signed a compact with the state government to operate a casino near the Canadian border and several other tribes are in negotiations for similar compacts. A constitutional amendment to legalize casino gambling throughout the state passed one state legislature and a second state legislature will consider the amendment in 1996. If this amendment passes a second time, a public referendum on the issue will be held, making it possible for casino gambling to become operational in New York State before the end of the decade. A task force on casino gambling was created by Governor Pataki in May, 1996 to conduct a comprehensive review of the economic impacts of this type of gambling on the state. The task force is expected to complete its investigation and issue a report by August, 1996.

Compared to over $1 billion in tax revenues generated by legal gambling in New York State, the amount spent on services to mitigate the problems associated with gambling is small. Although the self-help groups, Gamblers Anonymous and Gam-Anon, have been active in the state for decades, professional treatment programs for problem gamblers were only established in FY 1982-83, when a budget of $200,000 was provided to the Office of Mental Health to develop public education, outpatient treatment, training and research initiatives for problem gamblers in New York State. Two treatment programs for problem gamblers and their families, The Health Association in Rochester and St. Vincent's Hospital on Staten Island, were established and the National Council on Compulsive (now Problem) Gambling was funded to develop training and education activities, including a toll-free helpline. Funding for these programs was increased to $500,000 in FY 1983-84 and to $750,000 in FY 1985-86. This new level of support permitted the establishment of a new treatment program run by Jewish Family Services of Buffalo and Erie County. In FY 1988-89, funding was increased to $776,000 where it remained for three years.

In FY 1991-92, as part of deficit reduction, funding for the problem gambling treatment programs was eliminated from the Executive Budget. Upon final budget approval, $598,480 was appropriated to the programs and the National Council. Although the programs continued, their activities were substantially reduced, experienced staff left and many clients dropped out of treatment. In FY 1992-93 and FY 1993-94, the problem gambling treatment programs experienced similar turmoil as funding for the programs was dropped from the Governor's budget in January and restored at a lower level ($400,000 in 1993-94 and $450,000 in 1994-95) when the budget was finally passed the following summer.

In FY 1995-96, when Governor Pataki and the New York State Legislature approved the introduction of the new video lottery game, Quick Draw, $1.5 million was simultaneously set aside for prevention, education, outreach and treatment for problem gambling. With the additional funding, the Office of Mental Health established three new treatment providers, Family and Children's Service of Albany, Human Technologies, Inc. in Utica and Pederson Krag Center, Inc. on Long Island. Further, The Alcohol and Substance Abuse Council of Jefferson County was funded to develop outreach, education and referral activities.

In 1993, planning had started for a New York State affiliate of the National Council on Problem Gambling. The National Council had developed a leadership role at the national level by the late 1980s and it became apparent that, while the national focus of the National Council was best served by a Washington headquarters, New York State had a real need for a state council, located in Albany, which could focus on state issues. In 1995, the National Council on Problem Gambling moved to Washington, DC and the New York Council on Problem Gambling, headquartered next to the State Capitol, became the contract agency to provide public education, outreach and referrals to the citizens of New York State and to operate the state's toll-free, 24-hour Problem Gambling Helpline.

Defining Problem and Pathological Gambling

Since the 1970s, legalized 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 & 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 involvement in gambling as well as information about the demographic characteristics and gambling activities of these individuals.

The research reported here is a ***replication*** survey of gambling and problem gambling. 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 for the availability of gaming opportunities in the future as well as in targeting services for problem gamblers. Replication surveys have been conducted in only a few jurisdictions, including Iowa, Minnesota and South Dakota in the United States (Emerson, Laundergan & Schaefer 1994; Volberg 1995b; Volberg & Stuefen 1994) and Manitoba and New Brunswick in Canada (Baseline Market Research 1996; Criterion Research 1995).

The replication survey in New York was completed in three stages. In the first stage of the project, Gemini Research consulted with staff from the New York Council on Problem Gambling as well as from the Research Institute on Addictions, 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 Research Institute on Addictions completed telephone interviews with a sample of 1,829 residents of New York aged 18 years and older. All interviews were completed between April 12 and April 30, 1996 and the average length of these interviews was 14 minutes. The Research Institute on Addictions 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 replication survey in New York was composed of five major sections (see Appendix B for a copy of the questionnaire). The first section included questions about 14 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, 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 as well as several questions about indebtedness due to gambling. The third section of the questionnaire consisted of an alternative screen for pathological gambling based on the DSM-IV, the most recent diagnostic criteria for pathological gambling. The fourth section of the questionnaire included questions about respondents' alcohol and drug use and mental health status. The final section of the questionnaire included questions about the demographic characteristics of each respondent.

For the 1986 survey, the questionnaire was translated into Spanish to improve the likelihood that Hispanic respondents would agree to participate in the study. Of the 1,000 respondents in the 1986 survey, 4% were interviewed in Spanish and 7% of the total sample was identified as Hispanic. For the 1996 survey, it was agreed that the questionnaire would be translated into Spanish only if 5% or more of the eligible respondents indicated a preference to be interviewed in Spanish. This approach was based on telephone consultation with Professor Orlando Rodriguez, Director of the Hispanic Research Institute at Fordham University.

A screen was used during the initial period of data collection to identify respondents who wished to be interviewed in Spanish. Since the sample of telephone numbers purchased from Survey Sampling, Inc. was non-biased in terms of distribution, respondents from the initial period of data collection were distributed in the same proportions as the final sample (see ***Table 2*** below). Only 1% of the first 500 respondents indicated that they would prefer to be interviewed in Spanish. Based on this finding, staff from the Research Institute on Addictions and Gemini Research agreed that it would be unnecessary to translate the questionnaire and interview respondents in Spanish.

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 approach often results in under-sampling demographic groups with low rates of telephone ownership. These groups most often include young adults, minorities and individuals with low education and income. Increasingly, researchers use stratified random designs to guard against under-sampling. To determine whether a representative sample was obtained, it is helpful to calculate the response rate for the sample as a whole as well as to examine how closely the sample matches the known demographic characteristics of the population. If substantial differences are detected, post-stratification weights can be applied during analysis to ensure that the results of the survey can be generalized to the larger population.

To obtain a representative sample for the New York survey, random selection of households and random selection of respondents within households were used during the first part of the data collection process. During data collection, completed interviews were monitored to determine whether the sample was meeting quotas for males, young adults and population distribution. After completing approximately 1,000 interviews, it was determined that the sample would not meet quotas for males or for population distribution in the state. We elected at that time to begin screening for male respondents in eligible households in order to obtain adequate representation of men in the sample. We elected not to screen for population distribution at the same time because of concern that the final sample would over-represent males from the New York City region. Instead, we chose to post-stratify the sample after data collection was complete to correct for population distribution.

Response Rate

Survey professionals in general are finding that response rates for telephone surveys have declined in recent years. These declines are related to the proliferation of fax machines, answering machines and other telecommunications technology that make it more difficult to identify and recruit eligible individuals. These declines are also related to the amount of political polling and market research that is now done by telephone and to the higher likelihood that eligible households will refuse to participate in any surveys. The consequence has been that response rates for telephone surveys are now calculated in several different ways.

Table 1 shows the calculation of two response rates for the New York survey. These response rates do not include non-working numbers (including facsimile machines and modems), non-residential numbers or numbers where the interviewer was unable to determine whether there was an eligible respondent in the household. The first response rate includes cases where a household was contacted but where the individual who answered the telephone refused to identify an eligible respondent (adult aged 18 or over with the next birthday). The second response rate includes cases where an eligible respondent was contacted and refused to participate.

Table 1: Response Rates for 1996 New York Survey

Disposition	Count		
		Percent of Total	
Initial Refusal w/out Explanation	2,547	50.2	
			Percent of Total
Refusal by Eligible	561	11.1	22.2
Callback Refusal	136	2.7	5.4
Complete	1,829	36.0	72.4
		100.0	100.0

Using the first method, the response rate among ***eligible households*** for the New York replication survey was 36% which is within the range presently expected for telephone surveys. It is possible that this response rate would have been higher if the data collection period had been longer, providing more opportunity to convert some proportion of the initial refusals into completed interviews. Using the second method, the response rate among ***eligible respondents*** for the New York replication survey was 72% which compares well with response rates for similar surveys in recent years. The response rate for the baseline survey in New York in 1986 was 65%.

All survey results are subject to margins of error. For data based on the total number of completed interviews in this survey (N=1,829), the margin of error is ±2.2% 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 New York had been interviewed, the proportion of the population answering in the same way would be between 47.8% and 52.2% based on the responses of individuals in the sample.

Weighting the Sample

To determine whether the sample was representative of the population, the demographics of the sample were compared with demographic information from the United States Bureau of the Census. Since comparisons are with the 1990 census, some of the differences between the sample and the census, such as age and income, may be due to changes in the characteristics of the population over the past six years.

Since we knew that the sample under-represented residents from downstate New York, we applied weights to the sample to ensure that the sample would be representative of the distribution of the population of the state. ***Table 2*** on the following page shows key demographic characteristics of the sample before and after weighting and compares these characteristics to information from the 1990 census.

Table 2: Comparing the Demographics of the Actual Sample, Weighted Sample and the General Population

		Actual Sample %	Weighted Sample %	1990 Census %
Gender	Male	47.1	47.1	47.9
	Female	52.9	52.9	52.1
Age	18 - 20	3.2	3.3	6.1
	21 - 24	6.1	6.2	8.1
	25 - 54	63.0	63.0	56.6
	55 and over	27.6	27.2	29.1
Ethnicity	White	77.6	72.6	74.4
	Black	11.1	13.7	15.9
	Other	11.3	13.7	9.7
Education	Less than HS	10.8	10.7	24.0
	HS or higher	89.2	89.3	76.0
Residence	Metro Counties	30.1	41.1	41.0
	Suburban Metro Counties	16.5	20.9	21.0
	All Other Counties	53.4	38.0	38.0

Table 2 shows that while the unweighted New York sample is representative of the population in terms of gender and age, it is not representative of the population in terms of ethnicity or population distribution. The weighted sample, in contrast, is representative of the population in terms of gender, age, ethnicity and population distribution. As is usual with telephone surveys, individuals with lower education are under-represented in the sample.

To determine if the under-representation of individuals with low education had an impact on the prevalence of problem gambling, the sample was weighted for education. Weighting the sample to adequately represent individuals without a high school level education increases the proportion of non-Caucasians and females in the sample. These changes, in turn, lead to a slight drop in the prevalence of both lifetime and current problem gambling. Since weighting on multiple dimensions can have unpredictable consequences, we elected to advise readers of these differences rather than complicate the weighting of the sample further.

Data Analysis and Reporting

For easier comparisons of data from the 1996 survey in New York with the results of the 1986 survey as well as 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. 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"). Personal and household income were collapsed from six groups into two groups ("Less than $25,000" and "$25,000 Plus") for purposes of analysis and comparison.

In the New York survey, race and ethnicity were determined separately. Respondents were first asked whether they considered themselves Hispanic and then asked about their racial or ethnic affiliation. All but 34 of the respondents who considered themselves Hispanic indicated that their racial or ethnic affiliation was non-Caucasian. For purposes of analysis, these 34 respondents were included in the "Other" group after the Ethnicity category was collapsed from five groups ("Caucasian/White," "Native American," "African-American/Black," "Asian" and "Other") into three groups ("Caucasian," "Black" and "Other").

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 column is significantly different from other figures in the same row or column.

There were several topics included in the questionnaire because of their importance in assessing the full impact of problem gambling on individuals, families and communities. These topics included relationship difficulties, arguments about gambling, indebtedness, legal problems and mental health issues. In analyzing the results of the survey, we found that too few respondents answered these questions to allow us to generalize their responses or to assess the impact of these behaviors on these respondents, their families and their communities. For example, only the three respondents who acknowledged arguments with family members about their gambling in the past year were asked with whom those arguments occurred. Only five respondents who acknowledged borrowing money from relatives in the past year were asked which relatives they borrowed from. In cases where too few respondents answered these questions or where their answers were not of central interest to the purposes of the survey, no discussion of these topics has been included in the report.

GAMBLING IN NEW YORK

In 1985, legal gambling in New York was restricted to charitable bingo, wagering on horse races at the track as well as at OTB venues around the state, and the New York State Lottery. At that time, New York State residents also had access to casino gambling in Atlantic City. By 1996, legal gambling in New York had expanded to include simulcasting and OTB teletheaters as well as daily and instant lottery games. In addition, casino gambling had been established within the state at Turning Stone and outside the state in Montreal and Connecticut. The data for this study were collected seven months after the start of Quick Draw.

To assess the full range of gambling activities available to New York residents, the questionnaire for the survey collected information about 14 different wagering activities. Respondents were asked if they had ever bet or spent money on the following activities:

- office pools, raffles or charitable small-stakes gambling
- lottery, including instant scratch tickets, daily numbers and Lotto
- Quick Draw
- casinos
- bingo
- pulltabs
- policy, the numbers or Bolita
- 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
- stock or commodities markets
- bowling, pool, golf or other games of skill for money
- dice games not at a casino
- sports events

It should be noted that participation and expenditures on Quick Draw, the lottery's video keno game, were assessed separately from participation and expenditures on other lottery games. This was done for several reasons, including the recent introduction of the game, the nature of the game with its rapid cycle of stake, play and determination, and the importance of tracking the impacts of Quick Draw on problem gambling prevalence in the future.

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 1986, 84% of the respondents in New York acknowledged participating in one or more of 10 gambling activities. In 1996, 90% of the respondents acknowledged participating in one or more of 14 gambling activities. This is a statistically significant increase in the rate of lifetime gambling among New York citizens.

Table 3 shows lifetime participation rates for the types of gambling included in the 1996 survey. Lifetime participation is highest for lottery play, charitable gambling and casino gambling. From one-half to three-quarters of the respondents acknowledge having ever done these types of gambling. About one-third of the respondents acknowledge having wagered on non-casino card games, on horse races, dog races or other animal events, on bingo and on sports events. Lifetime participation is less than 20% for all other types of gambling.

Table 3: Lifetime Gambling Participation in New York State, 1996

Type of Gambling	Lifetime Participation %
	(N=1,829)
Lottery	76.3
Charitable	67.2
Casino	51.4
Cards Games	36.6
Parimutuel	34.8
Bingo	30.1
Sports	28.6
Games of Skill	18.3
Quick Draw	17.3
Stocks or Commodities	13.7
Pulltabs	12.1
Gaming Machines	11.5
Dice Games	7.0
Numbers	2.7

Patterns of Gambling Participation

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

- ***non-gamblers*** who have never participated in any type of gambling (10% of the total sample);
- ***infrequent gamblers*** who have participated in one or more types of gambling but not in the past year (10% 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 (45% of the total sample); and
- ***weekly gamblers*** who participate in one or more types of gambling on a weekly basis (35% of the total sample).

Table 4 shows differences in the demographic characteristics of non-gamblers, infrequent gamblers, past-year gamblers and weekly gamblers in New York as well as differences in the mean number of gambling activities these groups have ever tried.

Table 4: Demographics of Gamblers in New York State, 1996

		Non-Gamblers % (N=176)	Infrequent Gamblers % (N=181)	Past Year Gamblers % (N=828)	Weekly Gamblers % (N=645)	
Gender	Male	37.9	48.3	45.5	51.4	**
	Female	62.1	51.7	54.5	48.6	
Age	18 - 20	5.5	1.5	3.7	2.8	**
	21 - 29	20.0	13.6	18.5	14.8	
	30 - 54	45.5	43.0	55.5	53.7	
	55 and over	29.0	41.9	22.3	28.7	
Ethnicity	White	39.8	69.3	77.5	75.8	**
	Black	30.0	17.9	11.5	11.0	
	Other	30.2	12.7	10.9	13.1	
Marital Status	Married	48.3	38.2	52.2	53.8	**
	Widowed	15.2	16.8	6.8	8.2	
	Divorced/Separated	13.4	18.8	13.5	15.9	
	Never Married	23.2	26.2	27.5	22.1	
Education	Less than HS	23.2	14.1	5.9	12.5	**
	HS and Over	76.8	85.9	94.1	87.5	
Income	HH Income < $25,000	51.5	35.3	25.7	27.8	**
	HH Income > $25,000	48.5	64.7	74.3	72.2	
	Gambling Activities	---	2.7	4.3	5.4	**

* Significant
** Highly significant

Table 4 shows that non-gamblers in New York State are significantly more likely than gamblers to be female and to have low levels of education as well as annual household income. While the non-gambling group has the highest proportion of individuals under the age of 30, this group also has the highest proportion of widowed respondents and individuals keeping house.

Among the groups of gamblers, infrequent gamblers are the most likely to be non-Caucasian, unmarried and to have low levels of education and income. This group also has a high proportion of widowed and retired respondents. Past-year gamblers are the most likely to be under the age of 30, to have completed high school and to have relatively high annual household income. Weekly gamblers are the most likely of any of the groups to be male and most likely among the gamblers to be married. ***Table 4*** also shows that the ***number*** of gambling activities that gamblers have ever tried increases significantly with increased levels of participation.

In general in New York, men are more likely than women to have wagered on dice games, games of skill, sports, stocks and commodities, card games, the numbers and Quick Draw. Women are more likely than men to have wagered on bingo. Respondents under the age of 30 are more likely to have wagered on dice games and games of skill while older respondents are more likely to have wagered on the numbers, stocks and commodities, horse or dog races, the numbers, pulltabs and at a casino. Non-Caucasian respondents are more likely than Caucasian respondents to have wagered on the numbers. In contrast, Caucasian respondents are more likely than non-Caucasians to have wagered on pulltabs, horse or dog races, stocks and commodities, games of skill, card games and sports.

Respondents who are not married are significantly more likely than married or widowed respondents to have wagered on dice games and the numbers. 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 sports as well as stocks and commodities. Finally, unemployed respondents are more likely than working respondents to have wagered on dice games and gaming machines.

Gambling Preferences

For several types of gambling, respondents who acknowledged participation in the past year were asked about their preferences for particular products or places. These types of gambling included playing the lottery, going to a casino and wagering on horses, dogs or other animals.

Lottery: Respondents who acknowledged playing the lottery in the past year were asked whether they preferred to purchase instant scratch tickets, daily numbers or Lotto. Among respondents who played the lottery in the past year (N=1,209), there was a clear preference for the Lotto game. Two-thirds of these respondents (69%) indicated that Lotto was their preferred game when they purchased lottery products. One-third of these respondents (34%) preferred the instant games while 14% preferred the daily games. Since 22% of these respondents indicated that they had more than one preferred game, the responses of this group total more than 100%.

Although it is a lottery game, involvement in **Quick Draw** was assessed separately because of the nature of this product and its recent introduction. Approximately one-sixth of the respondents (N=278) had played Quick Draw in the past year and 19% of these respondents played Quick Draw on a weekly basis.

Casinos: Respondents who had gambled at a casino in the past year were asked where they usually went and whether they preferred to play card games, dice games or slot machines at the casino. Among respondents who had been to a casino in the past year (N=412), there was a clear preference for Atlantic City. Over half of these respondents (55%) usually travel to Atlantic City to gamble at a casino. In contrast, 17% of the respondents usually go to Las Vegas, 8% usually go to Turning Stone and 5% usually go to Foxwoods. A substantial proportion of these respondents (14%) indicated that they usually go to some other casino.

In terms of their preferences for casino games, 64% of these respondents usually play slot machines while 29% usually play card games. Only 4% of these respondents usually play dice games when they go to a casino and 3% usually play some other type of game.

Parimutuel: Respondents who said that they had wagered on horses, dogs or other animals in the past year were asked whether they usually did so at a racetrack in New York, at a racetrack in another state, at an OTB facility or somewhere else. Among respondents who had wagered on horses or dogs in the past year (N=173), 58% usually do so at a New York track and 25% usually do so at a New York OTB outlet. Less than one in six of these respondents (13%) usually wager on horses or dogs at a track in another state.

Location

The preferences that respondents who have gambled in the past year express for particular gambling places differ significantly by place of residence. For example, respondents from the New York City metropolitan area as well as from the New York City suburbs are significantly more likely to travel to Atlantic City to gamble than respondents from elsewhere in the state. Nearly three-quarters of New York City respondents (74%) and 58% of suburban respondents who have wagered in casinos in the past year prefer to do so in Atlantic City. In contrast, only 20% of respondents from elsewhere in the state prefer to gamble in Atlantic City. Among these respondents, 26% prefer to gamble in Las Vegas and another 26% prefer to gamble at Turning Stone.

As with casino gambling there are significant differences in the preferences that respondents from different areas of the state have for parimutuel wagering. While respondents who have wagered on horse or dog races from every part of New York State are most likely to do so at a New York racetrack, respondents from outside the metropolitan area and suburbs are significantly more likely to do so. While 51% of New York City respondents and 48% of suburban respondents prefer to wager at a New York State racetrack, 65% of respondents from elsewhere in the state prefer to do so. While only 14% of these respondents usually wager on horse or dog races at an OTB outlet, 37% of New York City respondents and 35% of suburban respondents usually wager at an OTB outlet.

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 different 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 New York 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 New York constituted 78% of the unadjusted total monthly expenditure although only 8% 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 New York (N=1,829) spend an average of $107 per month or $1,288 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 5*** shows significant differences in the mean reported expenditures on gambling by different demographic groups.

Table 5: Monthly Expenditures by Different Groups in New York, 1996

	Average Monthly Expenditure $	
Male	152.31	**
Female	67.79	
18 - 20	50.11	**
21 - 29	138.15	
30 - 54	116.23	
55 and over	74.87	
Caucasian	118.01	**
Black	66.07	
Other	101.45	
Married	92.26	**
Widowed	59.34	
Divorced/Separated	128.20	
Never Married	126.37	
Less than HS	117.11	**
HS or higher	106.68	
HH Income < $25,000	95.77	**
HH Income > $25,000	118.09	
Working	125.06	**
Unemployed	128.55	
Other	74.03	

* Significant
** Highly significant

Table 5 shows that men in New York estimate that they spend twice as much on gambling as women and that respondents between the ages of 21 and 29 estimate that they spend significantly more than either younger or older respondents. In contrast to most other jurisdictions, Caucasian respondents in New York estimate that they spend more on gambling than non-Caucasian respondents although the difference is greatest between Caucasians and Blacks. ***Table 5*** also shows that respondents who are not married (including divorced and separated) spend significantly more than married respondents and all three of these groups spend significantly more than widowed respondents. It is interesting that unemployed respondents (N=58) report spending slightly more

than working respondents (N=1,139) and that both of these groups report spending significantly more than respondents who are retired, going to school or keeping house (N=608).

Table 6 shows total reported monthly expenditures on different types of gambling in New York 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 6: Reported Monthly Expenditures on Gambling

	Monthly Expenditure $	% of Total
Casino	78,155	39.8
Sports	26,818	13.7
Lottery	23,784	12.1
Charitable	20,650	10.5
Parimutuel	12,210	6.2
Card Games	9,212	4.7
Games of Skill	4,825	2.5
Quick Draw	4,640	2.4
Bingo	4,507	2.3
Gaming Machines	4,273	2.2
Dice Games	2,585	1.3
Numbers	2,265	1.1

Table 6 shows that spending on ***casinos*** accounts for two-fifths (40%) of reported total monthly expenditures on gambling among New York respondents. Spending on ***legal*** forms of gambling in New York, including the lottery, charitable small-stakes gambling, Quick Draw, bingo and parimutuel wagering, accounts for another third (33%) of monthly expenditures on gambling among New York respondents. Expenditures on ***illegal*** gambling activities, including wagering on sports events, card games, games of skill, dice games and the numbers as well as illegal gaming machines accounts for the remaining 26% of reported total monthly expenditures on gambling among New York respondents.

As in other jurisdictions (see Appendix C for a comparison of New York with other jurisdictions), the majority of respondents in New York report spending rather small amounts on gambling per month. Two-fifths of respondents in New York (42%) report spending less than $10 on gambling in a typical month. Another 42% of the respondents report spending between $10 and $99 on gambling in a typical month and 17% of the respondents report spending $100 or more on gambling in a typical month. However, this group of respondents accounts for 86% of reported monthly expenditures on gambling in New York.

Like weekly gamblers, respondents in the highest spending group in New York 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 and to have annual household incomes over $25,000 than respondents who spend less on gambling.

Summary

In 1986, eight out of ten respondents in New York acknowledged one or more types of gambling in their lifetimes. In 1996, nine out of ten respondents in New York acknowledge participating in one or more types of gambling at some time, a statistically significant increase. Lifetime participation in New York in 1996 is highest for the lottery, charitable wagering and casino gambling. Young men with relatively high levels of income are the respondents most likely to have ever gambled in New York.

As with gambling participation, young men with relatively high income are most likely to report spending the largest amounts of money on gambling. The small group of respondents with the highest reported gambling expenditures are significantly more likely than respondents who spend less to be young, unmarried men with relatively high levels of education and income. In terms of expenditures, their favorite types of gambling include casinos, sports and lottery games.

In this section, we have examined patterns of gambling participation in the sample as a whole. Overall, the patterns of gambling participation identified in New York are similar to patterns identified in other jurisdictions (see Appendix C). In the next section, we turn our attention to the prevalence of problem and probable pathological gambling in the sample as a whole.

PROBLEM AND PATHOLOGICAL GAMBLING IN NEW YORK

Following established criteria for discriminating between respondents without gambling-related difficulties and those with moderate to severe problems (Abbott & Volberg 1996; Lesieur & Blume 1987), New York 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 (see also ***Table 22***):

- ***lifetime problem gamblers*** are those respondents who score 3 or 4 points on the lifetime SOGS items. In New York, 4.7% (±0.97%) 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 New York, 2.6% (±0.73%) 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 New York, 2.2% (±0.67%) 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 New York, 1.4% (±0.54%) 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 & Volberg 1996; Volberg & Abbott 1994).

Lifetime Prevalence

According to the 1990 census, the population aged 18 and over in New York is 13,730,906 individuals. Based on these figures, we estimate that between 512,000 (3.73%) and 778,500 (5.67%) of New York residents aged 18 and over can be classified as lifetime problem gamblers. In addition, we estimate that between 257,000 (1.87%) and 457,000 (3.33%) of New York residents aged 18 and over can be classified as lifetime probable pathological gamblers.

Table 7 on the following page shows that lifetime problem and probable pathological gamblers in New York are significantly more likely than other respondents in the sample to be male, under the age of 30, non-Caucasian and never married, divorced or separated. Lifetime problem and probable pathological gamblers are significantly less likely than other respondents in the sample to have finished high school and to have annual household incomes over $25,000.

Table 7: Comparing Lifetime Problem Gamblers with Non-Problem Respondents

		Non-Problem Respondents % (N=1,697)	Problem & Pathological Respondents % (N=132)	
Gender	Male	45.7	66.1	**
	Female	54.3	33.9	
Age	18 - 20	2.9	9.6	**
	21 - 29	16.1	25.4	
	30 - 54	53.3	44.7	
	55 and over	27.7	20.3	
Ethnicity	Caucasian	73.4	62.2	*
	Black	13.3	19.1	
	Other	13.3	18.8	
Marital Status	Married	52.3	34.6	**
	Widowed	9.2	8.2	
	Divorced/Separated	14.3	21.8	
	Never Married	24.2	35.4	
Education	Less than HS	10.3	16.4	*
	HS and Over	89.7	83.6	
Income	Annual Income <$25,000	28.8	39.7	**
	Annual Income > $25,000	71.2	60.3	

* Significant
** Highly significant

Current Prevalence

Based on current prevalence and 1990 census information, we estimate that between 210,000 (1.53%) and 394,000 (2.87%) of New York residents aged 18 and over can be classified as current problem gamblers. In addition, we estimate that between 118,000 (0.86%) and 266,000 (1.94%) of New York residents aged 18 and over can be classified as current probable pathological gamblers.

Comparison of ***Table 7*** and ***Table 8*** on the following page shows that most of the differences between respondents who score as lifetime problem or probable pathological gamblers and the remainder of the sample in New York hold true for current problem and probable pathological gamblers. The greatest difference between lifetime and current problem and probable pathological gamblers in New York is that the latter are just as likely to be women as men.

Table 8: Comparing Current Problem Gamblers with Non-Problem Respondents

		Non-Problem Respondents %	Problem & Pathological Respondents %	
		(N=1,763)	(N=66)	
Gender	Male	47.1	49.5	
	Female	52.9	50.5	
Age	18 - 20	3.2	8.0	**
	21 - 29	16.3	31.2	
	30 - 54	53.1	42.5	
	55 and over	27.5	18.3	
Ethnicity	Caucasian	73.2	57.6	**
	Black	13.3	25.6	
	Other	13.6	16.8	
Marital Status	Married	51.4	39.0	
	Widowed	9.2	6.3	
	Divorced/Separated	14.6	21.0	
	Never Married	24.7	33.7	
Education	Less than HS	10.3	21.5	**
	HS and Over	89.7	78.5	
Income	Annual Income <$25,000	29.0	46.1	**
	Annual Income > $25,000	71.0	53.9	

* Significant
** Highly significant

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. ***Table 9*** on the following page shows prevalence rates of lifetime and current problem and probable pathological gambling in all of the United States jurisdictions where surveys based on the South Oaks Gambling Screen have been completed. The lifetime prevalence rate in New York in 1996 is higher than in any other state while the current prevalence rate in New York is higher than in any other state except Louisiana.

Table 9: Prevalence of Problem Gambling Across Jurisdictions

Year	State	Lifetime Prevalence %	Current Prevalence %
	Northeast		
1986	New York	4.2	---
1988	New Jersey	4.2	---
1988	Maryland	3.9	---
1989	Massachusetts	4.4	---
1991	Connecticut	6.3	---
1996	New York	7.3	3.6
	Midwest & Central		
1989	Iowa	1.7	---
1990	Minnesota	---	1.6
1991	South Dakota	2.8	1.4
1992	Montana	3.6	2.2
1992	North Dakota	3.5	2.0
1993	South Dakota	2.3	1.2
1994	Minnesota	---	3.2
1995	Iowa	5.4	3.3
	South & West		
1990	California	4.1	---
1992	Texas	4.8	2.5
1992	Washington State	5.1	2.8
1994	Georgia	4.4	2.3
1995	Louisiana	7.0	4.8

To facilitate comparisons across jurisdictions, ***cross-jurisdictional averaging*** and ***cross-temporal averaging*** are used to extricate patterns in prevalence rates across jurisdictions and over time. ***Cross-jurisdictional averaging*** is used to account for the impact of regional variations in gambling availability on reported prevalence rates. Cross-jurisdictional averaging is done by adding prevalence rates of jurisdictions in different regions of the United States and then dividing the total by the number of jurisdictions in each region.

In general, Central and Midwestern states are jurisdictions where gambling has only recently been legalized. In the Northeast and West, legalized gambling has been available far longer. Central and Midwestern states tend to have lower prevalence rates of problem and probable pathological gambling than states in the Northeast and West. The cross-jurisdictional lifetime prevalence for Midwestern and Central states is 3.1% compared to 4.6% for Northeastern states and 5.1% for Western and Southern states.

Cross-temporal averaging is used to account for the probable impact of heightened public awareness of problem gambling since the early 1990s on reported prevalence rates. Cross-temporal averaging is done by adding prevalence rates for jurisdictions in different regions where surveys were done at approximately the same time and then dividing the total by the number of jurisdictions in each region. In general, prevalence rates among states surveyed in 1990 and earlier tend to be lower than prevalence rates among states surveyed after 1990. Among states surveyed in 1990 and earlier, the average lifetime prevalence rate is 2.1% in the Central and Midwestern states compared to 4.2% among Northeast and Western states. Among states surveyed in 1991 and later, the average lifetime prevalence rate is 3.5% in the Central and Midwestern states compared to 5.5% among Northeast, Western and Southern states.

Recent surveys completed in Georgia and Louisiana shed additional light on the impact of the availability of legalized gambling on prevalence rates of problem and probable pathological gambling (Volberg 1995a, 1995c). In Georgia, as in Texas, there was little or no legalized gambling at the time of the surveys. The surveys in these two states show that there is an underlying prevalence rate of problem gambling, even in jurisdictions without legalized gambling. In Louisiana, as in Iowa in 1995 (Volberg 1995b), legalized gambling expanded rapidly in a short period of time. The surveys in Louisiana and Iowa suggest that rapid increases in the availability of legalized gambling can add substantially to an underlying prevalence rate of problem gambling in the general population.

Summary

In New York, 4.7% (±0.97%) of the respondents scored as lifetime problem gamblers and an additional 2.6% (±0.73%) of the respondents scored as lifetime probable pathological gamblers. In New York, 2.2% (±0.67%) of the respondents scored as current problem gamblers while 1.4% (±0.54%) of the respondents scored as current probable pathological gamblers. While there are 328,200 New York residents aged 18 and over who are currently experiencing difficulties related to their gambling, we estimate that 118,100 of these individuals are experiencing severe enough difficulties to meet the psychiatric diagnosis for pathological gambling. Both lifetime and current prevalence of problem and probable pathological gambling in New York in 1996 are higher than in most other states where similar surveys have been completed.

In New York in 1996, lifetime problem and probable pathological gamblers are significantly more likely than other respondents to be male, under the age of 30, non-Caucasian and unmarried. While current problem and probable pathological gamblers are even more likely than lifetime problem and probable pathological gamblers to have low education and income, they are just as likely to be women as men.

In this section, we have examined the prevalence of problem and probable pathological gambling among respondents in the 1996 survey. Here, and in the first section of the report, our focus has been on the entire sample of 1,829 respondents. In the next section, we turn our attention to differences between non-problem and problem gamblers in the 1996 New York survey. Only those respondents who acknowledged involvement in one or more types of gambling (N=1,654) are included in analyses of the differences between non-problem and problem gamblers in the following section.

COMPARING NON-PROBLEM AND PROBLEM GAMBLERS IN NEW YORK

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. As we noted above, there is a strong statistical separation between non-problem gamblers and those who score as lifetime problem and probable pathological gamblers (Abbott & Volberg 1996; Volberg & Abbott 1994). Since problem and probable pathological gamblers are statistically associated, these respondents are treated as a single group and are referred to as ***problem gamblers*** in this section.

Demographics

Table 10 on the following page shows that, as in other jurisdictions, problem gamblers in New York State are demographically distinct from non-problem gamblers in the sample. Problem gamblers in New York are significantly more likely than non-problem gamblers to be male, under the age of 30, non-Caucasian and unmarried. Problem gamblers in New York are significantly less likely than non-problem gamblers to have graduated from high school and to have annual household incomes under $25,000.

Table 10: Demographics of Non-Problem and Problem Gamblers in New York

		Non-Problem Gamblers % (N=1,522)	Problem Gamblers % (N=132)	
Gender	Male	46.6	66.1	**
	Female	53.4	33.9	
Age	18 - 20	2.5	9.6	**
	21 - 29	15.7	25.4	
	30 - 54	54.2	44.7	
	55 and over	27.6	20.3	
Ethnicity	Caucasian	77.2	62.2	**
	Black	11.4	19.1	
	Other	11.4	18.8	
Marital Status	Married	52.7	34.6	**
	Widowed	8.5	8.2	
	Divorced/Separated	14.4	21.5	
	Never Married	24.4	35.4	
Education	Less than HS	8.8	16.4	**
	HS and Over	91.2	83.6	
Income	Annual Income <$25,000	26.5	39.7	**
	Annual Income > $25,000	73.5	60.3	

* Significant
** Highly significant

While information about the demographic characteristics of problem gamblers is useful, it is also important to understand more about the gambling behavior of non-problem and problem gamblers. Information about the behavioral correlates of problem gambling can help treatment professionals effectively identify at-risk individuals and provide appropriate treatment measures. This information is also useful to policymakers and gaming regulators in developing measures to mitigate the negative impacts of future gambling legalization.

Weekly Gambling

Behavioral correlates of problem gambling include regular gambling and involvement with ***continuous*** forms of gambling (Dickerson 1993; Ladouceur, Gaboury, Dumont & Rochette 1988; Walker 1992). Regular gambling is defined as weekly or more frequent involvement in 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 New York include casino games, parimutuel wagering, instant lottery games and Quick Draw. Illegal forms of continuous gambling include wagering on games of skill and sports.

Table 11 shows differences in the weekly involvement in different types of wagering by non-problem and problem gamblers. Although weekly participation for many types of gambling is significantly higher for problem gamblers than for non-problem gamblers in New York, the number of respondents involved can be extremely small. Only those types of gambling for which weekly participation among problem gamblers is 7% (N=10) or higher are shown.

Table 11: Weekly Gambling of Non-Problem and Problem Gamblers

Games Played Weekly	Non-Problem Gamblers %	Problem Gamblers %	
	(N=1,522)	(N=132)	
Lottery	29.7	53.8	**
Charitable	4.7	16.7	**
Quick Draw	2.6	9.8	**
Sports	2.2	8.3	*
Weekly Gambling (1+ activities)	36.4	69.0	**

* Significant
** Highly significant

Table 11 shows that problem gamblers in New York are most likely to gamble weekly on ***continuous*** types of gambling, including lottery games, Quick Draw and sports. ***Table 11*** also shows that twice as many problem gamblers as non-problem gamblers in New York wager weekly or more often. In addition to gambling involvement, respondents were asked about their preferred type of gambling. Both non-problem and problem gamblers in New York indicate that their favorite types of gambling are lottery games and casino gambling.

Given the recent introduction of Quick Draw, we did not expect to identify significant impacts on the rate of problem gambling due to this type of gambling. This is because gambling-related difficulties often take several years to develop. However, it is clear that a significant proportion of problem gamblers in New York are already participating regularly in this type of gambling and it is possible that these individuals may get into greater difficulties in the future as their involvement with Quick Draw continues. This is because Quick Draw is both a ***continuous*** type of gambling and is readily available in thousands of locations across the state.

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 of non-problem and problem gamblers provide insight into the far greater financial impact of gambling involvement on problem gamblers and their families.

Table 12 on the following page shows differences in the average reported monthly expenditures on gambling for non-problem and problem gamblers in New York. Although expenditures on every type of gambling except pulltabs are significantly higher for problem gamblers than for non-problem gamblers in New York, only those types of gambling for which expenditures among problem gamblers exceeded those of non-problem gamblers by $10 or more per month are shown.

Table 12: Average Monthly Expenditures of Non-Problem and Problem Gamblers

Type of Gambling	Non-Problem Gamblers $	Problem Gamblers $	
	(N=1,522)	(N=132)	
Casino	30.04	245.14	**
Charitable	6.24	84.25	**
Sports	4.55	52.48	**
Parimutuel	4.00	46.30	**
Lottery	12.21	39.40	**
Card Games	3.83	25.54	**
Gaming Machines	.71	24.05	**
Bingo	1.79	13.48	**
Quick Draw	1.95	12.63	**
Games of Skill	2.08	12.50	**
Dice Games	.65	12.11	**
Total Expenditures	78.45	581.51	**

* Significant
** Highly significant

Table 12 shows that the greatest differences between non-problem and problem gamblers in New York in average gambling expenditures are on casinos, charitable gambling, sports and wagering on horse and dog races. Except for charitable gambling, all of these types of gambling are considered ***continuous*** forms of gambling. ***Table 12*** also shows that average total monthly expenditures on gambling are seven times higher for problem gamblers than for non-problem gamblers in New York.

In our discussion of gambling expenditures in the total sample, we identified a small proportion of respondents (17%) who reported spending $100 or more on gambling in a typical month (see Page 17 and the discussion of *Variations in Expenditures*). This small group of respondents accounted for 86% of reported monthly expenditures on gambling in New York. In considering risk factors associated with problem gambling, it is worth noting that half of the problem gamblers in New York (49%) fall into this heavy-spending group.

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 $642 per month while female problem gamblers report spending an average of $471 per month, or approximately two-thirds of what male problem gamblers report spending. Differences in expenditures between male and female problem gamblers are greatest for wagering on card games, on horse or dog races, on games of skill, dice 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 $710 per month and those aged 30 to 54 report spending $739 per month. Problem gamblers aged 55 and older report spending an average of $307 per month. Problem gamblers aged 18 to 20 report spending the most on lottery products, card games, dice games and sports. Problem gamblers aged 21 to 29 and those aged 30 to 54 report spending the most on casino gambling, horse or dog races and sports. Problem gamblers aged 55 and over report spending the most on casino gambling.

Among Caucasian problem gamblers, the average amount spent per month on gambling is $755 compared to $228 among Black problem gamblers and $380 among problem gamblers from other ethnic groups. Caucasian problem gamblers report spending the most on casino gambling, horse or dog races and sports. Black problem gamblers report their highest spending on charitable small-stakes gambling, lottery products, casino gambling, illegal gambling machines and dice games. Problem gamblers from other ethnic groups report spending the most on casino gambling, bingo, illegal gambling machines and sports.

Finally, married problem gamblers report spending an average of $347 per month on gambling, divorced or separated problem gamblers report spending an average of $558 per month and never married problem gamblers report spending an average of $731 per month on gambling. Married problem gamblers are most likely to spend money on casino gambling, lottery products, horse or dog races and card games. Widowed problem gamblers (N=11) report spending the most on casino gambling, Quick Draw and lottery products. Divorced or separated problem gamblers are most likely to spend money on casino gambling, sports, lottery products and illegal gambling machines. Never married problem gamblers are most likely to spend money on casino gambling, horse or dog races and sports.

Legal versus Illegal Gambling

As we have shown, problem gamblers are significantly more likely than non-problem gamblers to be involved in many 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 in New York. ***Legal gambling*** includes charitable small-stakes gambling, lottery games, Quick Draw, bingo, casino and parimutuel wagering. ***Illegal gambling*** includes card games, dice games, games of skill, sports, pulltabs, the illegal numbers and illegal gambling machines.

Table 13 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 involvement in illegal gambling. These differences increase with the frequency of respondents' gambling. It is important to note that nine out of ten problem gamblers have wagered in the past year on one or more legal types of gambling and that three out of five problem gamblers wagers weekly on one or more legal types of gambling.

Table 13: Legal and Illegal Gambling by Non-Problem and Problem Gamblers

Type of Gambling	Non-Problem Gamblers %	Problem Gamblers %	
	(N=1,522)	(N=132)	
Lifetime			
Legal	98.7	99.0	
Illegal	62.8	86.3	**
Past Year			
Legal	85.2	92.3	**
Illegal	37.3	62.6	**
Weekly			
Legal	33.2	63.4	**
Illegal	6.9	19.7	**

* 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 New York State. Our analysis shows that for lifetime problem and pathological gamblers, continuous forms of gambling including lottery products, casinos and sports wagering 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 1*** illustrates the prevalence of lifetime problem and pathological gambling for the total sample, for respondents who have ever gambled and for respondents who have ever participated in different types of gambling.

Figure 1: Prevalence by Types of Gambling

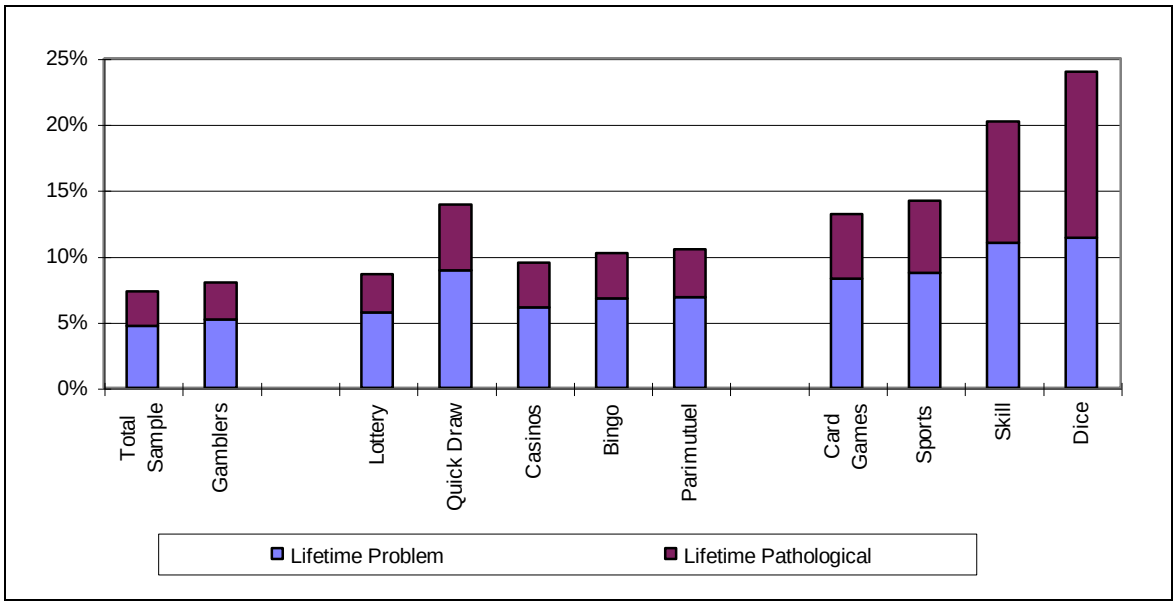

Figure 1 shows that lifetime prevalence rates are substantially higher among individuals who have participated in specific types of wagering than among the sample as a whole or among gamblers in general. In New York, prevalence rates are highest among individuals who have ever participated in illegal types of gambling such as dice games and games of skill. Prevalence rates are also high among individuals who have ever wagered on card games and sports.

Prevalence rates are lower for legal types of gambling such as the lottery, casinos, bingo and horse and dog race wagering. The one exception is Quick Draw, the video keno game operated by the New York State Lottery. The prevalence of lifetime problem and pathological gambling for Quick Draw is closer to prevalence rates for illegal types of gambling such as wagering on card games and sports than to prevalence rates for legal types of gambling in New York State. All of the types of gambling associated with higher prevalence rates in New York can be classified as ***continuous*** forms of gambling, with rapid cycles of stake, play and determination (Dickerson 1993).

Other Significant Differences

In addition to their demographics and gambling involvement, there are other significant differences between non-problem and problem gamblers in New York. 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. There are also significant differences in the types of borrowing that non-problem and problem gamblers have done to get money to gamble or to pay gambling debts.

Gambling Experiences and Resources

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 New York started gambling is 22.4 years old, the mean age at which problem and pathological gamblers in New York started gambling is significantly younger at 19.8 years old. ***Table 14*** shows that there are significant differences in the age at which respondents started gambling by gender, age, ethnicity and marital status for both non-problem and problem gamblers.

Table 14: Mean Starting Age of Non-Problem and Problem Gamblers

		Non-Problem Gamblers (N=1,507)	Problem Gamblers (N=130)	
Gender	Male	19.4	15.9	**
	Female	25.0	27.3	
Age	18 - 20	15.8	13.1	**
	21 - 29	18.1	15.2	
	30 - 54	21.0	18.7	
	55 or over	27.8	30.9	
Ethnicity	Caucasian	22.3	19.3	**
	Black	23.5	23.8	
	Other	22.3	17.2	
Marital Status	Married	22.4	18.1	**
	Widowed	29.3	45.6	
	Divorced/Separated	23.3	19.5	
	Never Married	19.3	15.8	

* Significant
** Highly significant

Table 15 on the following page shows that problem gamblers are significantly more likely than non-problem gamblers in New York to have felt nervous about their gambling and to have felt that one or both parents had a gambling problem. ***Table 15*** also shows that there are significant differences between non-problem and problem gamblers in New York 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.

Table 15: Other Significant Differences Between Non-Problem and Problem Gamblers

	Non-Problem Gamblers %	Problem Gamblers %	
	(N=1,522)	(N=132)	
Ever Felt Nervous About Your Gambling	9.3	52.0	**
Parent Ever Have Gambling Problem	4.3	15.0	**
Usually Gamble With			
Alone	33.7	25.4	
Spouse/Partner	20.6	20.4	
Other Family	12.3	13.7	
Friends	25.7	33.8	
Other	7.7	6.7	
Usual Time Spent Gambling			
< 1 to 2 hours	80.5	49.6	
3 to 5 hours	15.8	26.8	
6 or more hours	3.7	23.6	**
Largest Amount Lost in One Day			
< $1 to $9	34.1	8.7	
$10 to $99	42.9	35.0	
$100 to $999	21.2	34.6	
$1,000 or more	1.8	21.7	**
Usual Distance to Gamble			
0 to 15 miles	74.8	67.6	
15 to 60 miles	7.3	7.2	
60 or more miles	17.9	25.2	*

* Significant
** Highly significant

Indebtedness

Several items were added to the section of the questionnaire that included the South Oaks Gambling Screen to assess types of indebtedness that problem gamblers may incur more frequently than non-problem gamblers. Like several of the items on the South Oaks Gambling Screen that assess borrowing to get money to gamble, acknowledgment of these items is extremely low. While differences between non-problem and problem gamblers in response to these questions are all significant, the number of respondents who acknowledged these types of indebtedness is so small that the results must be interpreted with caution. The low rate of positive responses to these questions highlights the difficulties of collecting information about this sensitive topic. Further, the low response rate for similar questions on the South Oaks Gambling Screen suggests that prevalence rates for problem and probable pathological gambling are likely to be conservative.

Table 16 on the following page shows differences in the types of indebtedness that non-problem and problem gamblers in New York acknowledge. For comparative purposes, we have included responses to a number of items from the South Oaks Gambling Screen that also deal with indebtedness due to gambling. Since these items are used to distinguish between non-problem and problem gamblers, it is not surprising that the differences in responses to these questions are all statistically significant.

Table 16: Types of Indebtedness of Non-Problem and Problem Gamblers

	Non-Problem Gamblers % (N=1,522)	Problem Gamblers % (N=132)	
Charged 1+ credit cards to the limit	0.4	5.5	**
Missed insurance payments	0.2	4.0	**
Second mortgage or home equity loan	0.1	1.5	**
Cashed in life insurance policy	0.1	1.5	**
Not paid taxes	0.3	1.5	*
Cash withdrawals on credit card	3.0	32.0	**
Borrowed from spouse or partner	1.8	25.9	**
Borrowed from household	0.7	21.7	**
Borrowed from relatives or in-laws	0.4	13.2	**
Taken out bank loan	0.2	6.4	**
Sold personal property	0.2	6.1	**
Borrowed from loan shark	---	6.0	**
Cashed in stocks or bonds	0.1	5.7	**
Bounced a check	0.1	3.5	**

* Significant
** Highly significant

Table 16 shows that non-problem gamblers are significantly less likely to have incurred any debts in order to get money to gamble or to pay gambling debts. Of the added questions, only two achieve response rates similar or higher than response rates among problem gamblers for the standard questions from the South Oaks Gambling Screen. These are questions about charging one or more credit cards to the limit and missing insurance payments to get money to gamble or to pay gambling debts.

Alcohol, Drug Use and Mental Health

As in Texas, the replication survey in New York collected information about the alcohol and drug use of respondents who ever gambled. In addition, respondents in New York were asked questions about their psychological well-being as well as about mental health problems that they may have experienced.

Table 17 on the following page shows that problem gamblers are significantly more likely than non-problem gamblers in New York to use alcohol, tobacco and drugs on a weekly basis and to have felt unhappy, depressed or anxious in the past year. Problem gamblers are also significantly more likely than non-problem gamblers to have five or more drinks in a day.

Table 17: Alcohol and Drug Use by Non-Problem and Problem Gamblers

	Non-Problem Gamblers % (N=1,522)	Problem Gamblers % (N=132)	
Weekly alcohol use	34.1	39.1	**
5+ drinks on typical day	31.0	56.1	**
Weekly tobacco use	28.7	47.6	**
Weekly marijuana use	1.8	8.3	**
Past year use of other drugs	1.2	8.2	**
Somewhat/very unhappy	9.0	15.5	**
Felt depressed, anxious most of the time	3.9	12.5	**
Ever been treated for MH problem	7.6	12.1	
Treated for MH problem in past year	3.9	4.5	

* Significant
** Highly significant

Further analysis shows that there are significant differences between problem gamblers in their use of alcohol, tobacco and drugs. Male problem gamblers are significantly more likely than female problem gamblers to use alcohol on a weekly basis. Male problem gamblers are also significantly more likely than female problem gamblers to have used drugs besides alcohol, tobacco or marijuana in the past year. Problem gamblers aged 21 to 29 are significantly more likely than younger or older problem gamblers to use alcohol on a weekly basis while problem gamblers aged 18 to 20 are significantly more likely than older problem gamblers to use marijuana on a weekly basis. Finally, Black problem gamblers are significantly less likely than Caucasian problem gamblers to use alcohol on a weekly basis while Caucasian problem gamblers are significantly less likely than problem gamblers from other ethnic groups to consume 5 or more drinks in a typical day. Black problem gamblers are also significantly more likely than Caucasian problem gamblers to have felt depressed or anxious most of the time in the past 12 months.

As expected, very small numbers of respondents acknowledged that they had ever been treated for a mental health problem, in the past year or lifetime. All six of the problem gamblers who acknowledged such treatment in the past year had been treated for depression; two had been treated for anxiety; and one acknowledged treatment for suicidal ideation. The number of respondents in these groups is too small to determine whether these findings have significance for the development of treatment services for problem gamblers in New York.

Attention Deficit Hyperactivity Disorder (ADHD) was included in the list of mental health problems that these respondents were asked. This was done to test clinical observations of a relationship between ADHD and pathological gambling (Carlton, Manowitz, McBride, Nora, Swartzburg & Goldstein 1987; Rugle & Melamed 1993). However, since none of the respondents acknowledged treatment for ADHD, we were unable to document this relationship among problem and pathological gamblers in the general population.

Help-Seeking

As with mental health problems, very few problem gamblers in New York acknowledge desiring or seeking help for a gambling problem. Only 10% (N=14) of problem gamblers in New York have desired help for a gambling problem and only 8% (N=11) have sought such help. Three of these respondents had sought help from Gamblers Anonymous and two had sought help from one of the New York State problem gambling treatment programs. Other types of help that problem gamblers had sought included family and friends.

Location

In 1986, significantly more problem gamblers resided in the New York City metropolitan area than elsewhere in the state. In 1996, there are also significant differences in the geographic areas of the state where problem gamblers reside. This information is essential in planning the establishment of additional services for problem gamblers in the state. In 1996, 51% of the problem gamblers identified in the survey reside in one of the five New York City metropolitan counties and another 30% reside in one of the suburban counties adjacent to New York City. Only 18% of the problem gamblers in New York State reside outside the New York City region (N=24). Of the problem gamblers who live outside the New York City region, three-fifths (58% or N=14) reside in counties that contain the cities of Buffalo, Rochester and Syracuse.

While not attaining statistical significance, it is interesting to note that problem gamblers living outside New York City and its suburban environs are more likely than problem gamblers living downstate to indicate that they usually travel less than 15 miles to gamble and less likely to indicate that they usually travel 60 or more miles to gamble. This suggests that problem gamblers outside the New York City region are more likely to wager on readily available types of gambling, such as the lottery, Quick Draw, local horse race tracks, off-track-betting and the casino at Turning Stone.

Comparing Non-Problem and Problem Gamblers Across States

In contrast to variations in the prevalence of problem and probable pathological gambling across states (see ***Table 9***), individuals with gambling-related difficulties are strikingly similar across jurisdictions. This is true regardless of the availability of legalized gambling in a jurisdiction or the rate of gambling participation.

The following discussion is based on data from respondents in jurisdictions where detailed information on gambling and problem gambling has been collected. In the United States, these jurisdictions include Montana, South Dakota, North Dakota, Texas and Washington State. Data from these jurisdictions has been merged and organized to match demographic, gambling involvement and problem gambling variables from each jurisdiction (see Appendix C for comparisons of New York with these and other jurisdictions).

Data from surveys in California, Connecticut, Iowa in 1989, Maryland, Massachusetts, Minnesota, New Jersey and New York in 1986 are limited to assessments of lifetime participation and prevalence. While detailed information on gambling participation as well as lifetime and current prevalence is available from Georgia and Louisiana, these surveys were completed too recently to incorporate into the analysis.

Demographics

As in New York, problem gamblers in other jurisdictions are demographically distinct from non-problem gamblers. Problem gamblers from all of these states are significantly more likely than non-problem gamblers to be male, under the age of 30, non-Caucasian and unmarried. Comparison of New York with other jurisdictions (see Appendix C) shows that problem gamblers in New York are more likely to be male than problem gamblers in other jurisdictions except Iowa. Problem gamblers in New York are substantially more likely than problem gamblers in other jurisdictions except Texas to be non-Caucasian. Problem gamblers in New York are more likely to have left school than problem gamblers in every other jurisdiction except Texas and Washington State. Like problem gamblers in other jurisdictions, problem gamblers in New York recall starting to gamble at a significantly earlier age than non-problem gamblers in the larger samples.

Weekly Gambling

As in New York, problem gamblers in other jurisdictions are significantly more likely than non-problem gamblers to gamble regularly. In other jurisdictions, an average of 19% of non-problem gamblers participate weekly in one or more gambling activities while 52% of problem gamblers do so. We have already reported that 36% of non-problem gamblers in New York participate weekly in one or more gambling activities while 69% of problem gamblers do so (see ***Table 11*** as well as Appendix C).

Expenditures on Gambling

As in New York, average monthly expenditures on gambling are significantly higher for problem gamblers than for non-problem gamblers in other jurisdictions. In other jurisdictions, non-problem gamblers estimate that they spend an average of $66 per month on gambling while problem gamblers estimate that they spend an average of $302 per month. We have already reported that non-problem gamblers in New York estimate that they spend an average of $78 per month on all types of gambling while problem and pathological gamblers estimate that they spend an average of $581 per month (see ***Table 12*** as well as Appendix C).

Both gambling expenditures and the ratio of expenditures by problem gamblers to non-problem gamblers are higher in New York than in other jurisdictions. While problem gamblers in other jurisdictions spend 4.6 times more than non-problem gamblers, problem gamblers in New York spend 7.4 times more than non-problem gamblers. Expenditures on casinos, sports and parimutuel wagering are the major contributors to the higher ratio of problem to non-problem gambling expenditures in New York.

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 New York 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 New York.

Problem gamblers in New York are most likely to gamble weekly on ***continuous*** types of gambling, including lottery games, Quick Draw and sports. Problem gamblers are significantly more likely to spend substantial amounts on continuous types of gambling, including casinos, sports and parimutuel wagering. Problem gamblers are also significantly more likely than non-problem gamblers to spend six or more hours gambling, to have lost $1,000 or more in a single day and to travel 60 or more miles in order to gamble. Finally, problem gamblers are significantly more likely than non-problem gamblers to use alcohol, tobacco and marijuana on a weekly basis and to have five or more drinks in a day. Problem gamblers are also significantly more likely than non-problem gamblers to have felt somewhat or very unhappy with their personal life and to have felt depressed, anxious or upset most of the time in the past 12 months.

Based on differences between non-problem and problem gamblers in New York, it is clear that while preventive, outreach and treatment efforts should aim to reach a variety of groups, these efforts could most fruitfully be directed at young males who are spending substantial amounts of time and money wagering on continuous types of gambling in New York. It will also be important to direct some of these efforts at women problem gamblers who make up one-third of the lifetime problem gamblers and half of the current problem gamblers.

Preventive and outreach efforts could also be aimed at specific gaming venues, including lottery outlets, horse race tracks and OTB outlets, and at Native American and privately-owned casinos in New York, should the latter become operational. The links that have been identified between problem gambling and the use of alcohol and tobacco in New York will be useful in establishing screening for problem gambling in treatment programs for alcohol and substance abuse.

In this section, we have identified several major risk factors associated with gambling-related difficulties among respondents in New York. 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 examine changes in gambling participation and problem gambling prevalence in New York. Our focus in this next section will be on similarities and differences between the entire samples from the 1986 and 1996 surveys of gambling and problem gambling in New York.

COMPARING THE 1986 AND 1996 SURVEYS IN NEW YORK

In March, 1986, the first survey of gambling and problem gambling in the general population, based on the newly-developed South Oaks Gambling Screen, was completed in New York State (Lesieur & Blume 1987; Volberg & Steadman 1988). A random sample of 1,000 residents of New York State aged 18 and over were interviewed over the telephone about their involvement in gambling, about their gambling-related problems and about their demographic characteristics. Since the baseline survey in New York included only lifetime measures of gambling and prevalence, it is only possible to compare the results of the New York baseline and replication surveys in terms of these lifetime measures. In future research, it will be important to collect and analyze data on current problem and pathological gamblers in New York (see Appendix A).

In this section, we first examine similarities and differences in the questionnaires and sampling designs used in the 1986 and 1996 surveys. We then compare lifetime gambling involvement and problem gambling prevalence rates in 1986 and 1996. Finally, we look at differences in the demographics and gambling involvement of problem and pathological gamblers in these two surveys.

Comparing the Questionnaires

In the Methods section, we noted that the questionnaire for the 1996 survey included five major sections: gambling participation, the lifetime and current South Oaks Gambling Screen, the DSM-IV items, screens for alcohol use, drug use and mental health items and questions about demographic characteristics. The 1986 survey included three major sections: gambling participation, the lifetime South Oaks Gambling Screen items and questions about demographic characteristics. In contrast to the 1996 questionnaire, the 1986 questionnaire only assessed lifetime participation for 10 different types of gambling.

Care was taken in designing the questionnaire for the 1996 survey to ensure that respondents' lifetime involvement in different types of gambling could be compared with the earlier survey. ***Table 18*** shows how the different types of gambling included in the 1996 survey were matched to the types of gambling included in the 1986 survey:

Table 18: Types of Gambling Included in New York Surveys, 1986 and 1996

1986	1996
• lottery or numbers	• lottery, including instant scratch tickets, daily numbers and Lotto
	• numbers
• casino (only outside NYS)	• casino (inside and outside NYS)
• bingo	• bingo
• cards for money	• cards for money not at a casino
• horses, dogs or other animals	• horses, dogs or other animals
• slot machines, poker machines or other gambling machines	• slot machines, poker machines or other gambling machines not at a casino
• stock or commodities market	• stock or commodities market
• bowled, shot pool, played golf or some other game of skill for money	• bowled, shot pool, played golf or some other game of skill for money
• dice games	• dice games not at a casino
• sports	• sports
	• office pools, raffles or charitable small-stakes gambling
	• Quick Draw
	• pulltabs

Table 18 shows that greater detail on lottery participation was assessed in 1996 than in 1986. Wagering on office pools, raffles and charitable small-stakes gambling was added to the 1996 survey as was wagering on pulltabs and Quick Draw. In 1986, casino gambling was only available to New Yorkers at out-of-state locations (e.g. Las Vegas and Atlantic City). In 1996, casino gambling included the Native American casino at Turning Stone as well as Las Vegas, Atlantic City, Foxwoods and Montreal.

Comparing the Samples

To assess the magnitude of changes in gambling and problem gambling in New York accurately, it is essential to identify differences in the characteristics of the samples from the surveys in 1986 and 1996. We noted in the *Methods* section that it was necessary to weight the 1996 sample to account for under-sampling of residents in the New York metropolitan counties. Information in this section of the report is based on the weighted 1996 sample with variables matched to those used in the 1986 survey.

Table 19 shows that the two samples are significantly different only in terms of education and income. Respondents in the 1996 sample are significantly more likely to have graduated from high school and to have annual household incomes over $25,000 than respondents in the 1986 sample. There are no significant differences in the two samples in terms of gender, age, ethnicity or marital status.

Table 19: Demographic Characteristics of Respondents in New York, 1986 and 1996

		1986 % (N=1,000)	1996 % (N=1,829)	
Gender	Male	44.0	47.1	
	Female	56.0	52.9	
Age	18 - 29	22.4	20.2	
	30 - 39	25.1	24.6	
	40 - 49	18.3	20.9	
	50 - 64	19.7	18.8	
	65 and over	14.4	15.5	
Ethnicity	Caucasian	77.2	74.8	
	Black	12.5	13.7	
	Other	10.3	11.5	
Marital Status	Married	52.4	51.0	
	Widowed	10.7	9.1	
	Divorced/Separated	12.7	14.9	
	Never Married	24.2	25.0	
Education	Less than HS	17.7	10.7	**
	HS and Over	82.3	89.3	
Income	Annual Income <$25,000	44.9	29.6	**
	Annual Income > $25,000	55.1	70.4	

* Significant
** Highly significant

The significant differences between the two samples in education and income are most likely the result of demographic trends that affect the entire population of the United States. Differences in education are partly explained by the aging of the population and, possibly, by mortality rates among the oldest individuals in the general population who are the least likely to have finished high school. Differences in income are probably due to several factors. Perhaps most importantly, there was no effort to adjust income categories for inflation during the replication survey. The result of such an

adjustment would have been to move a substantial proportion of respondents in the 1996 sample into lower income categories. When income categories are adjusted for inflation, 45.7% of the 1996 sample fall into the category of annual household income below $25,000. This figure is not significantly different than the income data from 1986.

Changes in Gambling Involvement

In 1986, 84% of the respondents acknowledged participation in one or more of the 10 gambling activities included in the questionnaire. In 1996, 90% of the respondents acknowledged participation in one or more of the 14 gambling activities included in the questionnaire. This increase in lifetime gambling participation is statistically significant.

Table 20 shows the proportion of respondents in 1986 and 1996 who acknowledge ever participating in different types of gambling in New York. The large difference in machine gambling is probably due to respondents' belief in the earlier survey that this question referred to slot machines in casinos. In the 1996 survey, the question about gaming machine wagering specifically excluded slot machines at casinos.

Table 20: Lifetime Gambling Participation Rates, 1986 and 1996

Type of Gambling	1986 % (N=1,000)	1996 % (N=1,829)	
Lottery	66.7	76.4	**
Casino	44.0	51.4	**
Card Games	34.8	36.6	
Horses or Dogs	35.7	34.8	
Bingo	38.9	30.2	**
Sports	25.3	28.7	*
Games of Skill	19.1	18.3	
Stocks or Commodities	19.1	13.7	**
Gaming Machines	45.4	11.5	**
Dice Games	13.8	7.1	**

* Significant
** Highly significant

In addition to the significant increase in overall lifetime participation in gambling, there are significant increases in participation in specific types of gambling. The greatest increases are for lottery play and wagering at casinos. There are also significant decreases in participation in some types of gambling, including bingo and wagering on dice games. Finally, it is worth noting that there have been no significant changes in participation in parimutuel wagering and in wagering on games of skill.

As with the total samples, there are significant differences in the demographic characteristics of respondents who ever gambled in the two surveys. ***Table 21*** on the following page shows that gamblers in the 1996 survey are significantly more likely to have graduated from high school and to have annual household incomes over $25,000 than gamblers in the 1986 survey. When income is adjusted for inflation, this difference no longer attains significance.

Table 21: Demographic Characteristics of Gamblers in New York, 1986 and 1996

		1986 % (N=845)	1996 % (N=1,654)	
Gender	Male	45.4	48.1	
	Female	54.6	51.9	
Age	18 - 29	22.0	19.6	
	30 - 39	25.9	24.5	
	40 - 49	19.6	21.7	
	50 - 64	19.6	19.1	
	65 and over	12.9	15.1	
Ethnicity	Caucasian	80.0	78.0	
	Black	11.7	12.0	
	Other	8.4	9.9	
Marital Status	Married	53.5	51.3	
	Widowed	9.6	8.5	
	Divorced/Separated	12.1	15.0	
	Never Married	24.8	25.2	
Education	Less than HS	16.0	9.4	**
	HS and Over	84.0	90.6	
Income	Annual Income <$25,000	41.9	27.6	**
	Annual Income > $25,000	58.1	72.4	

* Significant
** Highly significant

Changes in Problem Gambling Prevalence

The results of the 1986 survey showed that 4.2% of the respondents in the sample scored as lifetime problem and probable pathological gamblers in New York (Volberg & Steadman 1988). In 1996, we found that 7.3% of the respondents in the sample scored as lifetime problem and probable pathological gamblers while 3.6% of the respondents scored as current problem and probable pathological gamblers.

Table 22 on the following page shows the point estimates and standard deviations (rounded to one decimal point) for lifetime problem and probable pathological gambling for the 1986 and 1996 samples. ***Table 22*** also shows the point estimates and standard deviations for the combined prevalence rate of lifetime problem and probable pathological gambling in New York in 1986 and 1996.

Table 22: Comparing Lifetime Prevalence Estimates, 1986 and 1996

	1986 % (N=1,000)	1996 % (N=1,829)	
Lifetime Probable Pathological	1.4 (±0.7)	2.6 (±0.7)	*
Lifetime Problem	2.8 (±1.0)	4.7 (±1.0)	**
Total Lifetime Prevalence	4.2 (±1.2)	7.3 (±1.2)	**

* Significant
** Highly significant

There are slight overlaps in the standard deviations for both problem and probable pathological gambling. The overlap for problem gambling is 0.1% while the overlap for probable pathological gambling is 0.2%. There is no overlap in the standard deviations for the combined prevalence rate which are separated by nearly an entire percentage point. Together, these figures show that there has been a substantial and significant increase in the prevalence rate of lifetime problem and probable pathological gambling in New York between 1986 and 1996. This increase has been accompanied by an increase in gambling participation and by an increase in the types of gambling available to New York residents both within and outside the state.

The increase in the prevalence of problem and probable pathological gambling between 1986 and 1996 cannot be entirely differentiated since lifetime problem and probable pathological gamblers identified in 1986 may have been included in the 1996 survey. Although the extent of a possible overlap is impossible to determine, the 1996 lifetime prevalence rate remains significantly higher than the rate established in 1986 even when we subtract the entire 1986 prevalence rate.

Demographics

In assessing the increase in the lifetime prevalence of problem and probable pathological gambling in New York, it is important to consider possible changes in the demographic characteristics of problem and probable pathological gamblers in the state. This analysis suggests changes that may have taken place with regard to the population at greatest risk for experiencing gambling-related difficulties in New York.

Table 23 on the following page shows that there are statistically significant differences between lifetime problem and probable pathological gamblers in New York in 1986 and 1996 in education and income. The information in ***Table 23*** suggests that lifetime problem and probable pathological gamblers in New York are increasingly likely to be Caucasian and unmarried and to have graduated from high school.

Table 23: Comparing Lifetime Problem Gamblers, 1986 and 1996

		1986 % (N=42)	1996 % (N=132)	
Gender	Male	64.3	66.1	
	Female	35.7	33.9	
Age	18 - 29	38.1	35.0	
	30 - 39	23.8	21.9	
	40 - 49	21.4	17.8	
	50 - 64	14.3	17.7	
	65 and over	2.4	7.6	
Ethnicity	Caucasian	57.1	64.8	
	Black	23.8	19.1	
	Other	19.0	16.2	
Marital Status	Married	50.0	34.6	
	Widowed	2.4	8.2	
	Divorced/Separated	11.9	21.8	
	Never Married	35.7	35.4	
Education	Less than HS	34.1	16.4	*
	HS and Over	65.9	83.6	
Income	Annual Income <$25,000	61.0	39.7	*

* Significant
** Highly significant

Gambling Involvement

We noted above that there have been significant changes in lifetime gambling in the general population between 1986 and 1996. In contrast, there are few differences in the lifetime gambling involvement of problem gamblers in New York in 1986 and 1996. ***Table 24*** shows differences in the proportion of problem gamblers who have done different types of gambling. The small size of the group of problem gamblers in 1986 means that statistically significant differences are difficult to establish.

Table 24: Comparing Lifetime Gambling by Problem Gamblers, 1986 and 1996

	1986 % (N=42)	1996 % (N=132)	
Lottery	73.8	90.2	*
Casino	71.4	67.6	
Bingo	50.0	42.5	
Card Games	59.5	66.4	
Horses or Dogs	64.3	50.1	
Gaming Machines	69.0	26.6	**
Stocks or Commodities	14.3	19.6	
Games of Skill	38.1	51.0	
Dice Games	33.3	23.4	
Sports	54.8	55.9	

* Significant
** Highly significant

Table 24 shows that problem gamblers in 1996 are significantly more likely to have purchased lottery products than problem gamblers in 1986. We have already explained that high rates of reported wagering on gaming machines in 1986 may be the result of respondents' confusion about slot machines at casinos. While the differences are not statistically significant, it is interesting to note that wagering on card games and games of skill is higher among problem gamblers in 1996 than in 1986 while wagering on dice games and on horse or dog races is lower.

Lifetime Scores on South Oaks Gambling Screen

In assessing changes in the prevalence of problem and probable pathological gambling in New York, it is helpful to look in detail at scores on the South Oaks Gambling Screen. The South Oaks Gambling Screen classifies respondents with scores over three as having moderate to severe gambling-related difficulties. In comparing the 1986 and 1996 surveys, the increase in the proportion of the sample in this moderate to severe range is 3.1% which we have noted is statistically significant. ***Table 25*** shows that there has also been an increase of 2.0% in the proportion of the 1996 sample scoring one or two points on the South Oaks Gambling Screen. The table also shows that while only two respondents in 1986 scored 10 points, there were nine respondents in 1996 who score 10 or more points.

Table 25: Comparing Lifetime SOGS Scores, 1986 and 1996

South Oaks Gambling Screen Score	1986 % (N=1,000)	1996 % (N=1,829)
0	77.8	72.7
1	12.9	13.3
2	5.1	6.7
3	2.0	3.4
4	0.8	1.3
5	0.5	0.9
6	0.3	0.6
7	0.3	0.4
8	0.1	0.1
9	---	0.1
10	0.2	0.1
11 plus	---	0.4

The individual South Oaks Gambling Screen items assess difficulties in personal, interpersonal and financial domains. Analysis of the individual items on the South Oaks Gambling Screen suggests more precisely which domains are most seriously affected by gambling-related difficulties among respondents in New York. Respondents in the 1996 survey are significantly more likely than respondents in the 1986 survey to have bet more than they intended and to have borrowed from household funds, from their spouse or partner and on their credit cards to get money to gamble or to pay gambling debts.

Replication Studies of Problem Gambling

Baseline studies of gambling and problem gambling, based on the South Oaks Gambling Screen, have now been conducted in 15 United States jurisdictions and 7 Canadian provinces as well as in New Zealand (Abbott & Volberg 1996; Ladouceur 1996; Volberg 1996). Replication studies of gambling and problem gambling have been completed in 3 United States jurisdictions and 2 Canadian provinces as well as in New Zealand. In general, baseline studies of gambling and problem gambling have shown that the prevalence of problem gambling is higher in jurisdictions where legalized gambling has been available for longer periods of time and where the population

is ethnically heterogeneous. Despite variations in the prevalence of problem gambling across jurisdictions, there are striking similarities in the characteristics of problem and pathological gamblers regardless of jurisdiction.

Problem and pathological gamblers are significantly more likely than other gamblers or non-gamblers to be young minority and blue-collar males 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, sports, at casinos or on locally available gaming machines presents a challenging opportunity to get some action, demonstrate control of their lives, beat the system and gain prestige among their friends. Problem gamblers 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.

Although only a few replication studies have been completed, these studies have begun to provide empirical evidence about the impact of legalized gambling on the prevalence of gambling-related problems in the general population. While these studies suggest that increases in the availability of legalized gambling do lead to increases in the prevalence of gambling problems, there are intervening factors that affect changes in prevalence rates over time.

To summarize the replication studies completed in North America: a study in South Dakota, two years after the baseline survey, showed no changes in gambling participation or problem gambling prevalence (Volberg & Stuefen 1994). A replication study in Minnesota, conducted four years after the baseline survey, found a significant increase in individuals who scored as problem gamblers although there was no change in the proportion of individuals who scored as pathological gamblers (Emerson, Laundergan & Schaefer 1994). In Iowa, a replication survey completed six years after the baseline survey found significant increases in both problem and pathological gambling (Volberg 1995b).

Canadian replication studies have been completed in Manitoba and New Brunswick (Baseline Market Research 1996; Criterion Research Corporation 1995). The Manitoba replication study was conducted two years after the baseline survey while the New Brunswick replication study was conducted four years after the baseline study. No significant changes in the overall prevalence of problem and pathological gambling were found in either province. However, in both provinces, the proportion of pathological to problem gambling had increased. In Manitoba, the current prevalence of probable pathological gambling increased by 0.6% while in New Brunswick, the current prevalence of probable pathological gambling increased by 0.8%. Although these changes are not statistically significant, they are indicative of trends in the development of gambling-related problems in these provinces.

Explaining Changes In Prevalence Rates Over Time

There are several possible explanations for differences in the findings of replication studies of gambling and problem gambling in the general population. These include differences in the period of time between baseline and replication studies; changes in the availability of legal types of gambling; and increased experience of gambling in the general population.

Timing and Availability: The period of time between baseline and replication studies in the same jurisdiction appears to affect whether changes will be detected in the prevalence of problem gambling. The amount of time that it takes for an individual to develop gambling-related difficulties ranges from three to twenty-five years, depending on a variety of factors. A 2-year replication study, as was done in Manitoba and South Dakota, is unlikely to detect changes in the prevalence of problem gambling even when there has been a significant increase in the availability of legalized gambling.

A 4-year replication study, as was done in Minnesota and New Brunswick, may or may not detect changes in prevalence although it does appear that the widespread introduction of casino gambling in Minnesota contributed to an increase in the prevalence of less-severe gambling difficulties in the general population. The 6-year replication study in Iowa identified a clear increase in the prevalence of problem gambling related to the extensive introduction of casino gambling. The 10-year replication survey in New York has identified an increase in the prevalence of problem gambling that is not related to the introduction of a specific type of gambling within the state but, rather, to increases in opportunities to gamble throughout the region.

Experience: Perhaps the most significant change in gambling in North America since the 1970s has been the growing involvement of the middle class. Since the 1970s, participation in gambling has increased rapidly as middle class attitudes toward gambling changed. Some reasons for this shift in attitudes toward gambling include a growing perception that gambling can be controlled through technology and corporate management systems; the medicalization of problem gambling; and the expanding role of the state in regulating and operating gambling activities (Lesieur & Browne 1993).

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 more likely than other gamblers to experience difficulties (Rosecrance 1985). Data from problem gambling treatment programs suggests that middle class gamblers who get into difficulties often have access to lines of credit and other financial resources that allow them to incur large debts relative to their income (Volberg 1988). Support for this hypothesis can be found in data from the 1996 New York survey which shows that 5.5% of problem gamblers have charged one or more credit cards to the limit to get money to gamble.

Summary

In this section, we have examined changes in the prevalence of lifetime problem and probable pathological gambling in New York between 1986 and 1996. In developing the questionnaire, care was taken to maintain comparability with the questionnaire used in 1986. In drawing the sample for the 1996 survey and in analyzing the data, care was taken to ensure that the findings from the survey could be generalized to the entire adult population of New York State.

Comparison of gambling involvement among respondents in 1986 and 1996 shows that there has been a significant increase in respondents' lifetime gambling participation as well as in specific types of gambling, particularly lottery games, casino wagering and wagering on sports. There has also been a significant increase in the prevalence of lifetime problem and probable pathological gambling in New York between 1986 and 1996. Problem and probable pathological gamblers in New York are increasingly likely to be well-educated and to have relatively good incomes. The greatest increase in the gambling involvement of problem and probable pathological gamblers between 1986 and 1996 is in wagering on the lottery.

COMPARING THE SOGS AND THE DSM-IV

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)(also see Appendix A). 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, efforts to improve the South Oaks Gambling Screen by adding a current measure of problem and probable pathological gambling were implemented in 1991 (Abbott & Volberg 1991, 1992). Work in New Zealand was carried out in part to improve our understanding of how well the South Oaks Gambling Screen operates in general population surveys (see Appendix A for a detailed discussion of this work).

A more serious concern has to do with the changes in the criteria for identifying pathological gamblers that have been adopted by the American Psychiatric Association. The South Oaks Gambling Screen was based on the original DSM-III criteria published in 1980 and was tested in clinical trials against the DSM-III-R criteria published in 1987. In the DSM-III, a diagnosis of pathological gambling required an individual to meet four of seven criteria with an exclusion of Anti-Social Personality Disorder. In the DSM-III-R, the same diagnosis required an individual to meet four of nine criteria and the exclusion of Anti-Social Personality Disorder was dropped. In the DSM-IV, a diagnosis of pathological gambling requires an individual to meet five of ten criteria with an exclusion of Manic Personality Disorder (American Psychiatric Association 1994).

Since so many surveys have been carried out using the South Oaks Gambling Screen,[1] use of this instrument allows comparisons of gambling problems across jurisdictions as well as over time (Walker & Dickerson 1996). With the recent changes in the psychiatric criteria for pathological gambling, however, researchers have become concerned about whether the South Oaks Gambling Screen is accurately measuring the prevalence of pathological gambling in the community. In moving forward, it is essential that the performance of any new instrument be compared to the South Oaks Gambling Screen as well as to clinical assessments so that findings based on these new measurements can be matched to findings based on the South Oaks Gambling Screen. In this way, the field of gambling research can move forward in an evolutionary, rather than revolutionary, manner.

In the New York replication survey, for the first time, the DSM-IV criteria for pathological gambling were included in a general population study alongside the South Oaks Gambling Screen. While this study does not answer questions about the validity and reliability of the DSM-IV criteria in relation to clinical assessments, it does provide an important opportunity to understand how the South Oaks Gambling Screen and the DSM-IV operate in relation to one another.

[1] Baseline studies based on the South Oaks Gambling Screen have been carried out in 21 United States and Canadian jurisdictions as well as in Australia, New Zealand and Spain. Replication surveys based on the South Oaks Gambling Screen have been carried out in 6 jurisdictions including New York.

Comparing the SOGS and the DSM-IV

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 & Blume 1987; Lesieur, Blume & Zoppa 1986; Lesieur & Klein 1985).

The DSM-IV Screen is a 10-item scale based on the most recent diagnostic criteria for pathological gambling (American Psychiatric Association 1994). In developing the DSM-IV criteria, 222 self-identified pathological gamblers and 104 substance abusers who gambled socially tested the individual items (Lesieur & Rosenthal 1991). Discriminant analysis was used to identify the items that best differentiated between pathological and non-pathological gamblers. While the results from this sample indicated that a cutoff of 4 points was appropriate, the American Psychiatric Association (1994) subsequently established a diagnostic cutoff of 5 points. As we noted above (see *Defining Problem and Pathological Gambling* on Page 3), 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). The individual DSM-IV criteria include the following behaviors:

- Preoccupied with gambling (e.g. preoccupied with reliving past gambling experiences, handicapping or planning the next venture, or thinking of ways to get money with which to gamble)
- Needs to gamble with increasing amounts of money in order to achieve the desired excitement
- Restlessness or irritability when attempting to cut down or stop gambling
- Gambling as a way of escaping from problems or relieving dysphoric mood (e.g. feelings of helplessness, guilt, anxiety or depression)
- After losing money gambling, often return another day in order to get even ("chasing one's losses)
- Lies to family members, therapists or others to conceal the extent of involvement with gambling
- Made repeated unsuccessful efforts to control, cut back or stop gambling
- Committed illegal acts, such as forgery, fraud, theft or embezzlement, in order to finance gambling
- Jeopardized or lost a significant relationship, job, educational or career opportunity because of gambling
- Reliance on others to provide money to relieve a desperate financial situation caused by gambling

The DSM-IV criteria were adapted slightly for use in a survey of British casino patrons (Fisher 1996). Some adjustments were made to the wording of the DSM-IV criteria for use in the British survey and the number of response categories was increased from "Yes/No" to "Never," "Once or Twice," "Sometimes" and "Often." If respondents gave a positive response ("Once or Twice," "Sometimes" or "Often") to any of the DSM-IV Screen items, they received a score of one for that item. Total scores were obtained by adding the positive items for each respondent. Analysis of the results of the British survey indicated that the DSM-IV Screen had good internal consistency and reliability as well as construct and face validity.

To understand how the SOGS and the DSM-IV Screen operate in relation to one another, it is useful to examine how respondents scored on each of these instruments. Since both screens

were administered only to respondents who had ever gambled, all of the figures reported below are based on the sample of gamblers (N=1,654) rather than on the total New York sample.

Table 26 shows the number of respondents who scored at different levels on the SOGS and the DSM-IV. The prevalence of the less severe DSM-IV category (3 or 4 points) is 1.81% while the prevalence of the more severe DSM-IV category (5 or more points) is 0.97% among respondents in New York who gambled. These figures compare to 2.48% and 1.51% for the current SOGS scores among respondents who gambled.

Table 26: Comparing Scores on the SOGS and the DSM-IV

SOGS	DSM-IV			
	0 - 2	3 - 4	5+	
0 - 2	1,563	20	4	1,587
3 - 4	34	2	5	41
5+	11	7	7	25
	1,608	30	16	1,654

Table 26 shows that the DSM-IV Screen operates quite well in relation to the SOGS. On the one hand, respondents who score low on the DSM-IV Screen also tend to score low on the SOGS. On the other hand, three-quarters of respondents who score high on the DSM-IV Screen (5 or more) score 3 or more points on the SOGS. However, the SOGS does not appear to perform as well in relation to the DSM-IV Screen. Only 56% of respondents who score as current probable pathological gamblers on the SOGS score 3 or more points on the DSM-IV Screen and only 28% of the current probable pathological gamblers on the SOGS also score at the highest level on the DSM-IV Screen. While the DSM-IV Screen and the SOGS clearly have a strong relationship to one another, it is unclear whether the strictest DSM-IV criteria represent the best cutoff for identifying pathological gamblers in the general population.

Statistical Characteristics of the DSM-IV Screen

In the New York survey, the DSM-IV Screen was administered after the South Oaks Gambling Screen. The mean score on the current South Oaks Gambling Screen for respondents who gambled was 0.33 while the mean score on the DSM-IV Screen for respondents who gambled was 0.32. The mean score on the current South Oaks Gambling Screen for respondents who gambled weekly was 0.69 while the mean score on the DSM-IV Screen for respondents who gambled weekly was 0.60.

Congruent Validity

Since several of the items on the SOGS and DSM-IV are similar, it is possible to check whether respondents answered similar questions differently in different places in the interview. ***Table 27*** on the following page shows how respondents answered several similar questions from the current SOGS and, later, from the DSM-IV Screen.

Table 27: Comparing Scores on Similar SOGS and DSM Items

SOGS or DSM-IV Item	% Positive (N=1,654)
Go back another day to win money you lost (chasing) (SOGS)	2.7
Often return another day to get even (chasing) (DSM)	6.3
Claimed to win when in fact lost (SOGS)	2.7
Hidden evidence of gambling (SOGS)	1.7
Lies to others to conceal extent of gambling (DSM)	1.3
Spend more time or money gambling than intended (SOGS)	9.4
Need to gamble with increasing amounts to achieve desired excitement (DSM)	2.4
Would like to stop gambling but couldn't (SOGS)	1.5
Made repeated unsuccessful efforts to control or stop gambling (DSM)	1.8

Table 27 shows that respondents are less likely to give a positive answer to the DSM-IV questions than to the current SOGS items assessing Tolerance and Lying. Respondents are more likely to give a positive answer to the DSM-IV questions than to the current SOGS items assessing Chasing and Loss of Control. While the lower overall positive response rates on the DSM-IV Screen may be the result of a heightened sensitivity to questions about problem gambling behaviors after the administration of the South Oaks Gambling Screen, this is an assumption that requires further investigation.

Construct Validity

In assessing the performance of a new instrument, it is helpful to assess significant differences between classified groups with respect to behaviors that are associated with problem gambling but are not included in the measurement scale. There are significant differences in the mean scores of problem and non-problem gamblers, as defined by the DSM-IV Screen, that provide evidence of the construct validity of the scale. The mean score of problem gamblers on the DSM-IV Screen was 6.04 compared to 0.3 for non-problem gamblers.

There are other behaviors that provide support for the construct validity of the DSM-IV Screen. For example, problem gamblers, as defined by the DSM-IV Screen, are significantly more likely than non-problem gamblers to gamble weekly or more often. Problem gamblers are also significantly more likely than non-problem gamblers to gamble for 6 or more hours when they gamble. Finally, problem gamblers, as defined by the DSM-IV Screen, are significantly more likely than non-problem gamblers to have desired help for a gambling problem.

Internal Consistency And Reliability

Factor analysis shows that 30.9% of the variance for the DSM-IV scale was accounted for by one factor, Preoccupation. Other factors with eigenvalues over 1.0 were Tolerance and Withdrawal which accounted for an additional 27.0% of the variance. These findings suggest that the scale is homogeneous and measures the desired behavior although its reliability in the New York sample is marginal since the Cronbach's alpha was .68, just under the accepted level of .70.

Item Analysis

Endorsement of DSM-IV Screen items among New York gamblers ranged from a high of 17.4% (Preoccupation) to a low of 0.1% (Illegal Acts). It is instructive to compare positive responses to specific items by problem gamblers and non-problem gamblers to see how well the different items discriminate between these groups. For this analysis, we have used the SOGS classification of non-problem and problem gamblers in order to prevent confusion between the method of classifying respondents and the items by which they were classified. Since all of the DSM-IV Screen items are framed in the past year, the ***current*** problem and probable pathological gamblers in New York were used in this analysis.

Table 28: Comparing Non-Problem and Problem Gamblers on the DSM Items

DSM-IV Items	Non-Problem Gamblers % (N=1,588)	Problem Gamblers % (N=66)	
Preoccupation	15.4	64.3	**
Tolerance	1.6	21.9	**
Withdrawal	0.6	26.1	**
Escape	2.6	27.5	**
Chasing Losses	4.5	47.4	**
Lying	0.6	15.2	**
Tried to Stop	1.0	22.6	**
Illegal Acts	0.1	---	
Risked Significant Relationship	0.3	2.1	
Bailout	0.1	4.2	
Mean DSM-IV Score	0.27	2.31	**

* Significant
** Highly significant

Table 28 shows that while the first seven DSM-IV items discriminate effectively between SOGS-defined problem and non-problem gamblers in New York, the last three items do not. The most effective discriminator among the DSM-IV items was Preoccupation with 64.3% of the current problem and probable pathological gamblers scoring a positive response in contrast to only 15.4% of the non-problem gamblers. The next best discriminator was Chasing, with 47.4% of the problem and probable pathological gamblers scoring a positive response compared to 4.5% of the non-problem gamblers. ***Table 28*** also shows that there is a significant difference in the mean DSM-IV scores for non-problem and problem gamblers, supporting the notion that the DSM-IV Screen measures something similar to the SOGS.

Comparing the SOGS and DSM Problem Gamblers

The prevalence of problem and pathological gambling, as measured by the DSM-IV Screen, is much lower than the prevalence rates identified with the South Oaks Gambling Screen. Only 0.87% of the total sample (N=1,829) and 0.97% of lifetime gamblers in New York (N=1,654) scored 5 or more points on the DSM-IV scale. This compares to a prevalence of current probable pathological gambling, as measured by the South Oaks Gambling Screen, of 1.4% for the total sample and 1.5% of lifetime gamblers in New York.

Table 29 compares the demographic characteristics of problem gamblers as defined by the SOGS and by the DSM-IV Screen. Since both the SOGS and the DSM-IV groups are so small, and since the majority of the DSM-IV group is part of the SOGS problem group as well, we made no effort to test the differences for statistical significance. ***Table 29*** does show that problem gamblers, as defined by the DSM-IV, are more likely than problem gamblers as defined by the SOGS, to be male, non-Caucasian and unmarried.

Table 29: Comparing Demographics of SOGS and DSM Problem Gamblers

		SOGS Problem Gamblers %	DSM-IV Problem Gamblers %
		(N=66)	(N=16)
Gender	Male	49.5	67.0
	Female	50.5	33.0
Age	18 - 20	8.0	---
	21 - 29	31.2	37.8
	30 - 54	42.5	45.8
	55 and over	18.3	16.4
Ethnicity	Caucasian	57.6	30.9
	Black	25.6	17.1
	Other	16.8	52.0
Marital Status	Married	39.0	21.3
	Widowed	6.3	---
	Divorced/Separated	21.0	25.2
	Never Married	33.7	53.5
Education	Less than HS	21.5	24.7
	HS and Over	78.5	75.3
Income	Annual Income <$25,000	46.1	47.6
	Annual Income > $25,000	53.9	52.4

Summary

Comparison of the South Oaks Gambling Screen and the DSM-IV Screen in the New York survey shows that the two screens are highly consistent and appear to be measuring the same phenomenon. However, the DSM-IV Screen is far more strict than the South Oaks Gambling Screen in classifying individuals as problem or pathological gamblers. In the New York survey, very few respondents were classified as pathological gamblers according to the DSM-IV criteria. Analysis suggests that the cutoff point for the DSM-IV Screen (5+ = pathological) is too severe and should be moved back to include individuals with less severe gambling difficulties. Moving the cutoff point back to 3 or 4, as recommended by Lesieur and Rosenthal (1991), would allow the screen to capture individuals whose pathology is well-developed but perhaps not yet extreme.

Use of the DSM-IV Screen in the New York survey provided a valuable opportunity to improve our understanding of the DSM-IV Screen in relation to the South Oaks Gambling Screen. In the

future, it will be important to compare the SOGS and the DSM-IV in problem gambling treatment programs where clinical assessments can be used to triangulate the results of these measurement tools and to determine the best cutoff points for classifying individuals as problem and pathological gamblers.

SUMMARY AND CONCLUSION

The main purpose of this study was to examine changes in the prevalence of gambling-related problems among adults in New York in the last decade. The other main purpose of the study was to identify the types of gambling causing the greatest difficulties for the citizens of New York. The results of this study show that significant numbers of New York residents participate in legal gambling, that these activities are widely accepted, and that most residents spend small to moderate amounts on gambling. However, the study also shows that there has been a significant increase in the prevalence of problem gambling in New York since 1986. We estimate that, ***at a minimum***, there are now 118,000 adult New York residents experiencing severe difficulties related to their involvement in gambling.

Summary

In 1986, eight out of ten respondents in New York acknowledged one or more types of gambling in their lifetimes. In 1996, nine out of ten respondents in New York acknowledge participating in one or more types of gambling at some time, a statistically significant increase. Lifetime participation in New York in 1996 is highest for the lottery, charitable wagering and casino gambling and young men with relatively high income are the respondents most likely to have ever gambled.

In New York, 4.7% of the respondents scored as lifetime problem gamblers and an additional 2.6% of the respondents scored as lifetime probable pathological gamblers. In addition, 2.2% of the respondents scored as current problem gamblers while 1.4% of the respondents scored as current probable pathological gamblers. Overall, the lifetime prevalence of problem and pathological gambling in New York State is 7.3% while the current prevalence rate in New York State is 3.6%. The lifetime prevalence rate in New York is higher than in any other state surveyed while the current prevalence rate is higher than in any other state surveyed except Louisiana.

Lifetime problem gamblers in New York are significantly more likely than other respondents to be male, under the age of 30, non-Caucasian and unmarried. While current problem gamblers are even more likely than lifetime problem gamblers to have low education and income, they are just as likely to be women as men.

Problem gamblers in New York are most likely to gamble weekly on lottery games, Quick Draw and sports and to spend substantial amounts on casino games, sports and parimutuel wagering. Problem gamblers are more likely than non-problem gamblers to spend six or more hours gambling in a typical session, to have lost $1,000 or more in a single day and to travel 60 or more miles in order to gamble. They are more likely than non-problem gamblers to use alcohol, tobacco and marijuana on a weekly basis, to have five or more drinks in a day and to have felt depressed, anxious or upset most of the time in the past 12 months.

Comparison of the surveys in 1986 and 1996 shows that there has been a significant increase in overall gambling participation as well as specifically in lottery gambling, casino wagering and wagering on sports. There has also been a significant increase in the prevalence of lifetime problem and probable pathological gambling in New York between 1986 and 1996. Problem and probable pathological gamblers in New York are increasingly likely to be well-educated and to have relatively high incomes. The greatest increase in the gambling involvement of problem gamblers between 1986 and 1996 is in wagering on the lottery.

Use of the DSM-IV Screen in the New York survey provided a valuable opportunity to improve our understanding of the DSM-IV Screen in relation to the South Oaks Gambling Screen. Comparison of these two screens shows that they are highly consistent although the DSM-IV Screen is more strict than the South Oaks Gambling Screen in classifying individuals as problem or pathological gamblers. Our analysis also suggests that the cutoff point for the DSM-IV Screen

may be too severe and that moving the cutoff point back to 3 or 4 would allow the screen to capture individuals whose pathology is well-developed but perhaps not yet extreme.

Directions for the Future

The costs of gambling problems 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 drug dependence 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.

In 1982, the New York Legislature pioneered efforts to address the impacts associated with the legalization of gambling by establishing problem gambling treatment programs within the state. New York State presently provides funds for education, prevention, outreach and treatment of problem gambling throughout the state. There are six treatment centers, located in Albany, Buffalo, Long Island, Rochester, Staten Island and Utica, which provide services to several hundred problem gamblers and family members per year as well as an education, outreach and referral program located in Jefferson County. New York State also funds the education, outreach and referral activities of the New York Council on Problem Gambling as well as the Council's toll-free, 24-hour Problem Gambling Helpline.

New York was one of the first states to fund treatment services for problem gamblers and substantial progress has been made in establishing services for problem gamblers and their families in New York State. However, funding for these services accounts for approximately 1/10 of 1% of tax revenues from legalized gambling in New York State and these services reach only a fraction of the thousands of New York residents with severe gambling-related difficulties. The increase in the prevalence of problem gambling in New York, despite the limited introduction of new gambling opportunities within the state, suggests that the prevalence of problem gambling in New York may continue to climb in the future.

Given this scenario, it is imperative to maintain, and even expand, current services for problem gamblers in New York as well as to establish education and prevention services for individuals who are at greatest risk for developing gambling-related difficulties. Directions for the future should include:

- ***research activities*** including a thorough examination of the prevalence and characteristics of problem gamblers among under-served and/or minority groups, among New York's youth, and at the county level in areas where Native American or privately-owned casinos may be located;

- ***expanded treatment services*** in anticipation of increases in the prevalence of problem gambling and in the number of individuals seeking help as a consequence of the introduction of Quick Draw and the expansion of casino gambling within the state;

- development of innovative ***treatment alternatives*** to provide a variety of options for individuals seeking help for gambling problems;

- ***training opportunities*** to educate alcohol and substance abuse treatment professionals in how to screen for gambling problems and pathology as well as when and where to refer such individuals for appropriate treatment;

- establishment of a ***gambling counselor certification program*** to ensure that individuals seeking help for gambling-related difficulties receive appropriate and effective services;

- ***development*** of public education and prevention services targeted toward at-risk and under-served groups in the population, including young males and women problem gamblers, as well as toward specific types of gambling, including lottery outlets and casinos within the state;

- ***evaluation*** of existing program services as well as those established in the future, based on uniform data collected from existing providers and the helpline; and

- continued ***monitoring*** of gambling participation and problem gambling prevalence in the state to assess the impacts of the introduction of new types of legal gambling on the residents of New York and to refine existing efforts to minimize the negative impacts of gambling.

The information presented in this report represent the first opportunity to assess changes in gambling and problem gambling over time in New York. These data provide insights that will be valuable in on-going policy and planning efforts in the state. In the future, it will be important for everyone involved with legalized gambling in New York to work together to develop ways to help the increasing number of individuals in New York who experience difficulties related to their gambling and to prevent any further increases in the prevalence of problem gambling in the state.

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