
GAMBLING AND PROBLEM GAMBLING IN ARIZONA

Report to the Arizona Lottery

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EXECUTIVE SUMMARY

This report presents the findings of a statewide survey of gambling participation and gambling-related problems in Arizona. The main purpose of this survey was to determine, for the first time, the scope of problem gambling in Arizona and identify the groups in the population most affected by the disorder. The results of this study also provide information about the impacts of problem gambling in Arizona and will be useful to the State and other stakeholders in efforts to help individuals and groups in Arizona affected by this disorder.

Problem gambling is a broad term that refers to all of the patterns of gambling behavior that compromise, disrupt or damage personal, family or vocational pursuits. Pathological gambling lies at one end of a continuum of problematic gambling involvement. Pathological gambling is a treatable mental disorder characterized by loss of control over gambling, chasing of losses, lies and deception, family and job disruption, financial bailouts and illegal acts.

Methods

The present study was completed in three phases. The first phase included finalizing the questionnaire and the sampling approach, translating the questionnaire into Spanish, programming it for computer administration, and training the interviewers. The second phase of the project included data collection and cleaning. The third phase of the project included data analysis, development of preliminary tables and preparation of a full report on the project.

The sample for this study included 2,750 residents of Arizona aged 18 and over.¹ Quotas for gender and region of the state were used to ensure that the sample was representative of the population of Arizona. Data collection was carried out between October 23, 2002 and January 8, 2003. After review, the sample was weighted by age and ethnicity to account for under-representation of younger adults and Hispanics, two groups that are particularly difficult to engage in surveys.

Gambling in Arizona

- The majority of adults in the United States have gambled at some time in their lives. Nationally, the proportion of the population that has ever gambled ranges from 81% in the Southern states to 89% in the Northeast. In Arizona, 89% of the respondents indicated that they had gambled at some time in their lives. Seven in ten (69%) Arizona adults have gambled in the past year and one in four (23%) gambles monthly or more often. Only 10% of Arizona adults gamble weekly or more often.
- The types of gambling that Arizona adults are most likely to have ever tried are gambling at a casino and playing the lottery. About seven in ten adults in Arizona have ever tried these activities. Approximately one in three Arizona adults have ever wagered on horse or dog races, sports and private games. Lifetime participation rates are below 20% for all other types of gambling.

¹ At the time this survey was conducted, the legal gambling age in Arizona was 18. The legal gambling age in Arizona was raised to 21 on July 1, 2003.

- The types of gambling that Arizona adults are most likely to do on a regular basis are playing the lottery, casino games and private wagering.
- Non-gamblers and infrequent gamblers in Arizona are significantly more likely than more frequent gamblers to be female, Hispanic, married and keeping house. Non-gamblers and infrequent gamblers are significantly less likely than more frequent gamblers to have served in the armed forces and to have annual household incomes over \$35,000.
- Past-year, monthly and weekly gamblers in Arizona are significantly more likely than non-gamblers and infrequent gamblers to be male, White, divorced, separated or never married, to be working fulltime and to have annual household incomes over \$75,000. Monthly and weekly gamblers, but not past-year gamblers, are significantly more likely than less frequent gamblers to be aged 55 and over and to have served in the armed forces.
- About half of all gamblers in Arizona say that gambling at a casino is their favorite type of gambling. Another 10% of the gamblers in Arizona indicate that playing the lottery is their favorite type of gambling.
- Non-gamblers and infrequent gamblers are most likely to say that losing money is an important or very important reason for not gambling, followed by moral or ethical concerns. Monthly and weekly gamblers are most likely to say that entertainment or fun is an important or very important reason for gambling, followed by the desire to win money. Weekly gamblers are significantly more likely than less frequent gamblers to say that excitement or challenge is an important reason for gambling.

Problem Gambling in Arizona

- Two problem gambling screens were used in the Arizona survey. The revised South Oaks Gambling Screen (SOGS-R) was used to provide comparability with the large body of research based on this instrument. The NORC DSM-IV Screen for Gambling Problems (NODS) was used to provide a measure of problem gambling based on the most recent psychiatric criteria for pathological gambling as well as comparability with recent national and statewide surveys.
- In problem gambling prevalence surveys, individuals are classified as problem gamblers, pathological gamblers or probable pathological gamblers on the basis of their responses to the questions included in one of the standard problem gambling screens. As our understanding of the distribution of gambling problems in the population improves, the characteristics of individuals who score even lower on problem gambling screens (at-risk gamblers) have gained importance. These individuals are of interest because they represent such a large proportion of the population, because of the possibility that their gambling-related difficulties may become more severe over time, and because the prospects of changing their behavior through effective public awareness and education campaigns are better than for more troubled gamblers.
- Based on the SOGS-R, the current prevalence of pathological gambling in Arizona is 0.7% and the current prevalence of problem gambling is 1.6%. The overall

prevalence rate of problem and pathological gambling in Arizona (2.3%) is at the lower end of the range of prevalence rates based on this screen.

- The most recent census identified 3.8 million adults living in Arizona aged 18 and over. Based on these figures, there are between 14,600 and 38,000 Arizona adults who can be classified as current pathological gamblers. Another 42,600 to 78,000 Arizona adults can be classified as current problem gamblers.
- In contrast to most other jurisdictions, there are relatively few differences in current problem gambling prevalence rates across different subgroups in the population in Arizona. Differences in prevalence rates by gender, age, region of the state, marital status, education, religion, household income and military service are all non-significant. The current prevalence of problem and pathological gambling is significantly higher among Hispanics and among respondents who are disabled or unemployed.
- Problem and pathological gambling prevalence rates are highest among past-year players of non-casino gaming machines, past-year casino bettors and those wagering privately.
- Based on the NODS, the lifetime prevalence of problem and pathological gambling in Arizona is 2.1% compared to a national rate of 2.7%. The past-year prevalence of problem and pathological gambling in Arizona is 1.0% compared to a national rate of 1.3%. However, both lifetime and past-year rates of at-risk gambling in Arizona are substantially higher than for the nation as a whole. The size of this at-risk population in Arizona suggests the need for public awareness and education to prevent individuals from progressing toward more severe levels.

Comparing Non-Problem and Problem Gamblers in Arizona

- For reasons related to different rates of classification errors, the lifetime SOGS is better than the current SOGS at detecting pathological gambling among those who currently experience the disorder. The lifetime SOGS is the measure best suited for identifying risk factors associated with gambling problems and for targeting efforts at prevention, outreach and treatment.
- Problem gamblers in Arizona in need of services are most likely to be male, White and aged 35 to 54. Although six in ten problem gamblers in Arizona are working fulltime, one in ten are disabled or unemployed compared with only one in twenty non-problem gamblers. Problem gamblers in Arizona are also significantly more likely than non-problem gamblers to have served in the military.
- Problem gamblers in Arizona in need of services are most likely to gamble regularly on the lottery and at a casino. These problem gamblers are significantly more likely than non-problem gamblers to gamble regularly on sports and private games of skill.
- Problem gamblers in Arizona in need of services are most likely to identify slot machines, whether at casinos or elsewhere, as their favorite type of gambling.
- Problem gamblers in Arizona are significantly more likely than non-problem gamblers to say that excitement or challenge and distraction are important or very important reasons to gamble. They are significantly less likely than non-problem gamblers to

say that inexpensive entertainment and supporting good causes are important or very important reasons to gamble.

- Problem gamblers in Arizona are significantly more likely than non-problem gamblers use tobacco daily, consume alcohol regularly and to have used marijuana, cocaine and other illicit drugs in the past year. Problem gamblers in Arizona are also significantly more likely than non-problem gamblers to rate their physical health only fair or poor, to have ever experienced a manic episode, and to have ever been depressed.
- Problem gamblers in Arizona are significantly more likely than non-problem gamblers or non-gamblers to have declared bankruptcy, to have been arrested and to have been incarcerated.
- At-risk gamblers fall between non-problem and problem gamblers on many dimensions although their gambling participation looks much more like that of problem gamblers than non-problem gamblers. At-risk gamblers are more likely than either non-problem or problem gamblers to say that entertainment and excitement are important reasons for gambling, to identify casino table games as their favorite type of gambling, to consume alcohol once a week or more often and to acknowledge difficulties in the past year due to drinking.

Directions for the Future

The impacts of problem gambling can be high, for families and communities as well as for individuals. Pathological gamblers experience physical and psychological stress and exhibit substantial rates of depression, alcohol and drug dependence and suicidal ideation. The families of problem and 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.

Given the relatively low rate of problem gambling prevalence in Arizona, it is tempting to believe that little is needed in the way of services. However, studies in other states suggest that problem gambling services actually play an important role in minimizing rates of problem gambling in the general population. There is also the question of how to prevent progression toward more severe gambling-related problems among the relatively large proportion of the population in Arizona that is at-risk.

A full range of ameliorative measures in Arizona would include extending health insurance coverage to cover problem gambling treatment, fostering responsible gambling policies and programs by gambling operators and developing government-industry initiatives to address this issue, expanding training opportunities for treatment professionals, expanding the gambling counselor certification program, providing increased funding to support public education and prevention services as well as problem gambling treatment, and continued monitoring of gambling and problem gambling prevalence to assess the impacts of legal gambling on the residents of Arizona.

INTRODUCTION

Since the 1960s, the availability of gambling has grown ten-fold in the United States. Today, a person can make a legal wager of some sort in every state except Utah and Hawaii; 38 states have lotteries, 28 states have casinos and 22 states have off-track betting (National Gambling Impact Study Commission, 1999; North American Association of State & Provincial Lotteries, 2003). Just as telling as the expansion of gambling into new jurisdictions is the growth of the gambling industries. Between 1975 and 2001, revenues from legal wagering in the United States grew twenty-fold, from \$3 billion to \$64 billion while gambling expenditures more than doubled as a percentage of personal income (Christiansen, 1998; Christiansen & Sinclair, 2002; Kallick et al, 1976).

The main purpose of this survey, funded by the Arizona Lottery, was to determine, for the first time, the scope of problem gambling in Arizona and identify the groups in the population most affected by the disorder. The results of this study are also intended to provide information about the impacts of problem gambling in Arizona and will be useful to the State and other stakeholders in efforts to help individuals and groups in Arizona affected by this disorder.

This report is organized into several sections for clarity of presentation. The *Introduction* includes a definition of the terms used in the report, a review of methods for assessing problem gambling and conducting prevalence surveys in the general population, and background information on gambling and problem gambling in Arizona. The *Methods* section addresses the details of conducting the survey. The next six sections present findings from the survey in the following areas:

- gambling in Arizona;
- prevalence of problem gambling in Arizona;
- comparing non-problem and problem gamblers in Arizona;
- comparing “early” and “late onset” gamblers in Arizona;
- examining gambling and problem gambling among older adults in Arizona; and
- comparing the performance of two problem gambling screens in Arizona.

Defining Our Terms

Gambling is a broad concept that includes diverse activities, undertaken in a wide variety of settings, appealing to different sorts of people and perceived in various ways by participants and observers. Failure to appreciate this diversity can limit scientific understanding and investigation of gambling and gambling problems. Another reason to note the differences between various forms of gambling arises from accumulating evidence that some types of gambling are more strongly associated with gambling-related problems than others (Abbott & Volberg, 1999a).

People take part in gambling activities because they enjoy them and obtain benefits from their participation. For most people, gambling is generally a positive experience.

However, for a minority, gambling is associated with difficulties of varying severity and duration. Some regular gamblers develop significant, debilitating problems that also typically result in harm to people close to them and to the wider community (Abbott & Volberg, 1999a).

Pathological gambling was first included in the third edition of the Diagnostic and Statistical Manual (DSM-III) of the American Psychiatric Association (1980). Each subsequent revision of this manual has seen changes in the diagnostic criteria for pathological gambling. A formal diagnosis of pathological gambling is arrived at by an appropriately qualified and experienced clinician following an extensive clinical interview. To make a diagnosis, a clinician must determine that a patient has met five or more of the ten diagnostic indicators associated with pathological gambling. Table 1 presents the current diagnostic criteria for pathological gambling (American Psychiatric Association, 1994: 618):

Table 1: Diagnostic Criteria for Pathological Gambling

Persistent and recurrent maladaptive gambling behavior as indicated by five (or more) of the following:	
Preoccupation	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)
Tolerance	Needs to gamble with increasing amounts of money in order to achieve the desired excitement
Withdrawal	Restless or irritable when attempting to cut down or stop gambling
Loss of Control	Has repeated unsuccessful efforts to control, cut back or stop gambling
Escape	Gambles as a way of escaping from problems or relieving dysphoric mood (e.g. feelings of helplessness, guilt, anxiety or depression)
Chasing	After losing money gambling, often returns another day in order to get even ("chasing" one's losses)
Lying	Lies to family members, therapist or others to conceal the extent of involvement with gambling
Illegal Acts	Committed illegal acts, such as forgery, fraud, theft or embezzlement, to finance gambling
Risked Relationship	Has jeopardized or lost a significant relationship, job, or educational or career opportunity because of gambling
Bailout	Relies on others to provide money to relieve a desperate financial situation caused by gambling
The gambling behavior is not better accounted for by a Manic Episode.	

The term problem gambling is used in a variety of ways. In some situations, its use is limited to those whose gambling-related difficulties are less serious than those of pathological gamblers. In other situations, it is used to indicate all of the patterns of gambling behavior that compromise, disrupt or damage personal, family or vocational pursuits (Cox et al, 1997; Lesieur, 1998). From this perspective, pathological gambling can be regarded as one end of a continuum of gambling-related problems. Problem gamblers, as well as individuals who score even lower on problem gambling screens (at-risk gamblers) are of concern because they represent much larger proportions of the population than pathological gamblers. These groups are also of interest because of the possibility that their gambling-related difficulties may become more severe over time. Problem and at-risk gamblers are also important because the prospects of changing their behavior through effective public awareness and education campaigns are better than for more troubled gamblers (Hodgins & el-Guebaly, 2000; Shaffer & Korn, 2002).

In considering the public health risks of problem gambling, it is important to note that not all of the features of pathological gambling need be present at one point in time (Abbott & Volberg, 1999a; Gerstein et al, 1999). Some of the impacts that at-risk, problem and pathological gamblers may experience include psychological difficulties, such as anxiety, depression, guilt, exacerbation of alcohol and drug problems and attempts at suicide as

well as stress-related physical illnesses such as hypertension and heart disease. Interpersonal problems include arguments with family, friends and co-workers and breakdown of relationships, often culminating in separation or divorce. Job and school problems include poor work performance, abuse of leave time and loss of job. Financial effects loom large and include reliance on family and friends, substantial credit card debt, unpaid creditors and bankruptcy. Finally, there may be legal problems as a result of criminal behavior undertaken to obtain money to gamble or pay gambling debts (Lesieur, 1998; Volberg, 2001a).

Measuring Gambling Problems

State governments began funding services for individuals with gambling problems in the 1980s. As a first step toward establishing these services, policy makers sought information about the number of people who might seek help for their gambling problems and what they looked like. In responding to these questions, researchers adopted methods from the field of psychiatric epidemiology to investigate the prevalence of gambling problems in the general population.

In the 1980s, few tools existed to measure gambling problems and only one, the South Oaks Gambling Screen, (SOGS) had been rigorously developed and tested for performance (Lesieur & Blume, 1987). The SOGS was first used in a prevalence survey in New York State in 1986 (Volberg & Steadman, 1988). Since then, the SOGS and subsequent modifications of the original screen have been used in problem gambling prevalence surveys in more than 45 jurisdictions in the United States, Europe, Canada and Asia (Abbott & Volberg, 1996, 2000; Bondolfi, Osiek & Ferrero, 2000; Productivity Commission, 1999; Shaffer, Hall & Vander Bilt, 1999; Sproston, Erens & Orford, 2000; Volberg et al, 2001).

Over the 15 years since its publication, there have been a variety of modifications and revisions to the SOGS. These include changes to the wording of specific items, to the response categories, to the order in which the items are asked, and to the scoring of the items (Lesieur 1994). In 1991, the original SOGS was expanded to assess both lifetime and current prevalence of problem and probable pathological gambling in a national survey in New Zealand (Abbott & Volberg, 1996). In this revised version of the instrument, dubbed the SOGS-R, respondents who endorse any of the original items on a lifetime basis are asked whether this behavior or experience has occurred in the past 12 months. The SOGS-R is the modification of the original screen most widely used in population research.

With the publication of revised psychiatric criteria for pathological gambling in 1994, development began on a number of new screens for problem and pathological gambling (Cunningham-Williams et al, 2000; Fisher, 2000; Gerstein et al, 1999; Shaffer et al, 1994; Stinchfield, 2003; Welte et al, 2002). The screen most widely used in population surveys based on the new psychiatric criteria is the National Opinion Research Center DSM-IV Screen for Gambling Problems (NODS) (Gerstein et al, 1999). Another new screen, the Canadian Problem Gambling Index (CPGI), used in the majority of recent Canadian prevalence surveys, is made up of items taken from both the SOGS and the DSM-IV (Ferris & Wynne, 2001). In part, these tools emerged in response to perceived shortcomings of the SOGS. They also reflect a concern to have screening instruments based on the most recent diagnostic criteria. Despite this proliferation, the psychometric properties of most of these tools have yet to be fully examined.

Gambling and Problem Gambling in Arizona: Background

Throughout the world, gambling participation and attitudes toward gambling are linked to the communities in which these behaviors occur and to the norms and values of members of those communities. Differences have been found in the types of gambling preferred by middle-class and blue-collar gamblers, by white and black Americans and by men and women (Dixey, 1996; Drake & Cayton, 1945; Henslin, 1967; Hraba & Lee, 1996; Light, 1977; Zola, 1964). It is equally important to note that individual and community definitions of gambling can vary widely. For example, a recent Gallup poll found that 52% of respondents defined stock market investment as a form of gambling while 22% did not consider buying lottery tickets to be gambling (Gallup, 1999).

Gambling in Arizona

Substantial opportunities to gamble legally are available to the citizens of Arizona. The three major forms of commercial gambling in Arizona include Indian casino gambling, the Arizona State Lottery and pari-mutuel wagering on horse and dog races. Overall, the gambling industries in Arizona generate an estimated \$1.6 billion in revenues (Stearns, 2003a).

Pari-mutuel wagering on horse and greyhound races is the oldest major form of legal gambling in Arizona. There are presently three commercial horse tracks, three greyhound tracks and race meetings at 15 county fairs around the state. There are also 77 off-track-betting locations throughout the state. Wagering at off-track locations and on simulcasts of races conducted in other states accounts for the majority of total Arizona pari-mutuel handle (over 60% in FY 2002). Total statewide pari-mutuel handle in FY 2002 was \$274 million with tax receipts of \$757,662 (Arizona Department of Racing, 2002).

In 1980, the Arizona State Lottery was approved by Arizona voters. The lottery started out selling only instant tickets but now offers a full range of instant, daily and large-jackpot games. In FY 2002, the Arizona Lottery had revenues of \$295 million. Just over half of these revenues were paid out in prizes and \$87 million (29%) was transferred to the State. Eleven percent of revenues supported the administration of the Lottery and 7% of revenues was paid in commissions to retailers. While 60% of the revenues that flowed from the Arizona Lottery to the State in FY 2002 went to specific purposes (e.g. local transportation, historical preservation, county assistance), the remaining \$33 million was deposited into the state's general fund for allocation by the state legislature (Arizona State Lottery, 2002).

In the wake of the Indian Gaming Regulatory Act, Governor Symington negotiated compacts with Arizona's tribes in 1992 to operate casinos on their reservations. These compacts limit the number of authorized devices and locations within the state, based on a formula derived from each tribe's population. Fifteen tribes in Arizona presently run 22 Class III gaming operations. The original compacts authorized the tribes to operate a pre-established number of electronic gaming devices with limits on payouts and maximum wagers as well as live keno, bingo, poker and on- and off-track pari-mutuel wagering on horse and dog racing. In 1995, after three years of rapid growth, the Arizona Legislature removed regulatory responsibility for tribal gaming from the Department of Racing and established an independent Department of Gaming.

New compacts approved by Arizona voters in 2002 and by the U.S. Department of the Interior in 2003 allowed the tribes to add to the number of machines that they operate and to begin offering house-banked blackjack (Arizona Department of Gaming, 2003; Stearns, 2003a). There are presently 10,337 gaming devices operating in Arizona's 22 casinos (or nearly 3 machines for every 1,000 Arizona adults) as well as 185 poker tables and 148 blackjack tables. Indian gambling is the largest form of legal wagering in Arizona, with an estimated \$1 billion in annual revenues, a figure that is expected to surge in 2003. For the first time, the new compacts also provide for the State to receive a share of casino revenues. State revenues from tribal casino gambling in Arizona are expected to quickly reach over \$100 million per year (Stearns, 2003b, 2003c).

Problem Gambling Services in Arizona

Although a growing number of states fund services for problem gamblers, the major sources of help for problem gamblers and their families remain the self-help groups, Gamblers Anonymous and Gam-Anon, and not-for-profit state councils on problem gambling. Between 1981 and 2000, the number of Gamblers Anonymous chapters in Arizona grew from 3 to more than 50 (Arizona Council on Compulsive Gambling, 2002).

The Arizona Council on Compulsive Gambling (AZCCG) was established in 1994 to raise awareness of problem gambling in Arizona. The Arizona Council is a not-for-profit, charitable organization that manages a 24-hour helpline for problem gamblers and their families, provides training and certification for health care professionals in the diagnosis, referral and treatment of problem and pathological gambling, and makes referrals to Gamblers Anonymous and certified treatment providers (Arizona Council on Compulsive Gambling, 2002). There are presently over 50 currently certified gambling counselors in Arizona and approximately 10 treatment centers with a certified gambling counselor on staff. There is also an in-patient, residential program for problem gamblers in Casa Grande.

The AZCCG helpline began operation in 1996 and started collecting information from callers in 1998. In 2002, the helpline received 1,560 calls—an increase of 53% in five years. Calls answered by the AZCCG are routed through its own helpline number as well as two national helpline numbers.² A growing proportion of helpline calls received by the AZCCG are from or about women problem gamblers as well as problem gamblers aged 55 and over. Between 1998 and 2002, the proportion of calls from or about women rose from 50% to 61% while the proportion of calls from or about persons aged 55 and over rose from 25% to 35%.

By comparison, the Arizona Lottery helpline, which began operations in September 2000, received over 1,100 calls from or about problem gamblers through April 30, 2003. Approximately 800 of these problem gamblers and/or family members were referred to state-sponsored treatment providers throughout Arizona. As a result of referrals made by the two Arizona helplines, along with non-helpline self-referrals, close to 1,000 Arizona residents have received state-sponsored problem gambling treatment. Based on information collected since September 2000, and in contrast to the AZCCG helpline, only about 45% of calls received by the Arizona Lottery helpline were from or about women problem gamblers and 20% were from or about persons aged 55 and over.

² The numbers answered by AZCCG include its own number (1-800-777-7207) as well as two national numbers (1-800-GAMBLER and 1-800-522-4700). A separate helpline (1-877-921-4004) is operated by the Arizona Lottery.

About 67% of the callers cited casinos as their primary gambling problem, 5% prefer playing the lottery, and the remainder identified other gambling activities (such as sports wagering, stock market and non-casino activities) as their preferred form of gambling.

Until recently, the Arizona Indian gaming industry was the primary source of financial support for problem gambling services in Arizona. More than half of AZCCG's annual budget of \$220,000 comes from donations by Indian casinos and tribal governments (Stearns, 2003a). Since 1999, the Arizona Legislature has appropriated \$500,000 annually to pay for problem gambling services in Arizona. These funds support education, awareness and treatment services for problem gamblers and their families. Proposition 202, which provided voter approval for the new state-tribal compacts, will provide approximately \$1,000,000 for problem gambling issues in its first year (FY2004) with anticipated annual increases thereafter for state and local problem gambling prevention and treatment services (Stearns, 2003a).

METHODS

The survey of gambling and problem gambling in Arizona was completed in three stages. In the first stage of the project, staff from Gemini Research consulted with the Arizona State Lottery as well as O'Neil Associates, the organization responsible for data collection, regarding the final design of the questionnaire and the sample. In the second stage of the project, staff from O'Neil Associates translated and programmed the questionnaire and completed telephone interviews with a sample of 2,750 residents of Arizona aged 18 years and older. Data collection was carried out between October 23, 2002 and January 8, 2003. O'Neil Associates 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 included sections on gambling participation, problem gambling, alcohol and drug use, experience of depression and manic episodes, help-seeking, other impacts of gambling including bankruptcy and involvement with the legal system, and demographics (see Appendix B for a copy of the questionnaire).

Researchers in the field of gambling studies recommend using more than one measure of problem gambling in surveys of the general population (Abbott & Volberg, 1999b; Gambino, 1999; Shaffer, Hall & Vander Bilt, 1997). Indeed, Shaffer and his colleagues argue that the use of multiple problem gambling screens should be one measure of the quality of problem gambling prevalence studies. As noted above (see *Measuring Gambling Problems* on Page 3), several problem gambling screens based on the most recent psychiatric criteria for pathological gambling have recently been developed. The revised South Oaks Gambling Screen (SOGS-R) was included in the Arizona questionnaire to provide comparability with the large body of research based on this instrument. The NORC DSM-IV Screen for Gambling Problems (NODS) was used to provide a measure of problem gambling based on the most recent psychiatric criteria for pathological gambling as well as comparability with recent national and statewide surveys.

Translation of the Questionnaire

Census data show that 21% of the adult population of Arizona is Hispanic or Latino. To enable interviews to be completed with Hispanic and Latino individuals who did not speak English, it was necessary to translate the questionnaire. The questionnaire was translated into Spanish by specialists at O'Neil Associates. Interviewers were instructed to arrange to conduct the interview in Spanish if the person spoke Spanish or indicated that they wanted to complete the interview in that language. Six percent (N=157) of the interviews were conducted in Spanish.

Pretest

The questionnaire was pre-tested with 15 randomly selected residents of Arizona. The main goal of the pretest was to test respondent comprehension and the programming of the questionnaire. The programming of the questionnaire worked well and only a few minor changes were necessary prior to fielding the full survey.

Survey Design

The sample for this study included 2,750 residents of Arizona aged 18 and over. Quotas for gender and region of the state were used to ensure that the sample was representative of the population of Arizona. All interviews were conducted at O'Neil Associates facilities by trained interviewers with supervision and random monitoring for technique and adherence to procedures. Interviews were conducted afternoons and evenings on weekdays and weekends. A minimum of six attempts to establish contact with each piece of sample was made, unless the interviewer received a definitive refusal. If an interview was not completed in the course of six calls, interviewers continued to make attempts to complete the interview during the fieldwork period.

Sample Disposition and Response Rate

Table 2 presents information about the disposition of the sample for the Arizona Problem Gambling Survey. Over the course of the study, a total of 9,064 numbers were called. At the end of the study, interviewers were able to determine that 536 of these numbers were not valid for the study, leaving 8,528 potentially eligible households. Of these, 3,658 numbers were persistently unavailable (i.e. numerous attempts had been made without reaching anyone or it had only been possible to leave messages on an answering machine or voice mail), leaving a total of 4,870 households with which contact was made. Of 4,870 households determined to be eligible, 2,750 completed the interview and 2,008 refused to be interviewed, either hanging up immediately or once the questions had begun.

Table 2: Disposition of Arizona Sample

Total Numbers	9064	100.0
Invalid Sample	536	5.9
Not in Service (Disconnected)	330	
Non-Residential	110	
Language Barrier - Non-Spanish	96	
Total Non-Contacts	3658	40.4
Answering Machine/Voice Mail	2014	
No Answer	1290	
Busy or Fast Busy Signal	354	
Eligible Contacts	4870	53.7
Completed Interview	2750	
Callback Scheduled	1750	
Refused to Participate	258	
Partial Interview	52	
Appointment	38	
Other/Sick	22	

There are a variety of ways to calculate completion or response rates. One definition is the number of completed interviews divided by the number of units in the sample known to be eligible (i.e. the number of completes divided by the number of refusals from eligible units). Using this method, a response rate of 56% and a refusal rate of 41% were achieved in the Arizona Problem Gambling Survey.

Survey research professionals in the United States and Canada have found that response rates for telephone surveys in the general population have declined in recent years as individuals in the general population become increasingly reluctant to participate in this type of research and as technological barriers proliferate (e.g. answering machines, caller id). The response rate achieved in this study is excellent compared with similar surveys and is likely due to the extended period of time spent in the field.

Weighting and Imputation

The sample was stratified by gender and geography and attained good representation on these dimensions. After review, the sample was weighted by age and ethnicity to account for under-representation of younger adults and Hispanics, two groups that are particularly difficult to engage in surveys. Weighting the data adjusts for lower representation of subgroups in the population but cannot correct for differences in gambling participation and problems (if they are present) between survey participants and non-participants in these groups. Table 3 presents information about key demographic characteristics of the achieved and weighted samples in Arizona compared with information from the 2000 Census.

Table 3: Demographics of Sample

		2000 Census	Achieved Sample	Weighted Sample
Gender			(2750)	(2750)
	Male	49.4	49.1	49.3
	Female	50.6	50.9	50.7
Age			(2622)	(2616)
	18 – 24	13.7	8.1	11.3
	25 – 34	19.7	13.5	18.7
	35 – 44	20.4	15.5	21.6
	45 – 54	16.7	20.6	16.2
	55 – 64	11.7	16.8	13.1
	65 – 74	9.7	15.1	11.3
	75+	8.1	10.4	7.8
Ethnicity			(2570)	(2561)
	White	69.0	74.7	69.1
	Black	2.7	1.4	1.5
	Hispanic	21.3	14.8	19.8
	Native American	3.8	2.6	2.8
Region			(2750)	(2750)
	Maricopa (Phoenix)	57.8	57.8	58.5
	Pima (Tucson)	15.0	15.0	14.9
	Elsewhere	27.2	27.2	26.6

Statistical Analysis

Once the data were delivered to Gemini Research, all of the variables were checked carefully for correct skip procedures. The data were analyzed using Statistical Package for the Social Sciences, Version 10.0 (SPSS 10.0). Numerous analytic variables were constructed from the raw data, including generalized gambling participation levels, scores on the problem gambling screens, levels of alcohol and drug use, experience of depression, and help-seeking. Chi-square analysis and analyses of variance were used to test for statistical significance.

GAMBLING IN ARIZONA

This chapter examines gambling participation among adults in Arizona. To assess the full range of gambling activities available to Arizona residents, the instrument for the survey included questions about ten different wagering activities. All respondents were asked if they had ever gambled or bet money on the following activities:

- casino games
- gaming machines outside of a casino
- lottery games
- illegal numbers games
- horse or dog races
- bingo outside of a casino
- private games (cards, dice or dominoes in someone's home or at a club or organization, or a game of skill such as golf, pool or bowling)
- the outcome of sports or other events with friends, co-workers, a bookie or some other person
- Internet or World Wide Web
- any other kind of gambling (e.g. raffles, sweepstakes, baby pools, pull-tabs, betting on a dogfight or cockfight)

Gambling in the General Population

In every recent survey of gambling and problem gambling, the majority of respondents acknowledge participating in one or more gambling activities. Nationally, the proportion of the population that has ever gambled ranges from 81% in the Southern states to 89% in the Northeast (Gerstein et al, 1999). In 2002, 89% of the Arizona respondents acknowledged participating in one or more of the ten activities included in the questionnaire.

Table 4 on the following page shows lifetime, past-year, monthly and weekly participation for all of the types of gambling included in the Arizona survey. Lifetime participation among Arizona adults was highest for casino gambling and lottery play. Seven in ten Arizona adults acknowledge having ever been to a casino or played the lottery. One in three Arizona adults has bet on horse or dog races, gambled privately or bet on sports. One in four Arizona adults has ever played non-casino bingo or non-casino gaming machines.

Past-year participation rates among Arizona adults were highest, again, for lottery play and casino gambling. About one in six Arizona adults acknowledge gambling in the past year on sports or on a private game of chance or skill. Past-year participation in all other

activities is much lower. The majority of monthly and weekly gambling participation among Arizona adults is explained by lottery play and casino gambling.

Table 4: Gambling Participation in Arizona

	Lifetime Participation (2750) %	Past Year Participation (2750) %	Monthly Participation (2750) %	Weekly Participation (2750) %
Casino	73.5	42.9	4.6	1.7
Lottery	65.8	49.1	16.0	6.6
Pari-mutuel	35.0	6.7	0.7	0.4
Private	31.2	16.6	3.8	1.6
Sports	30.1	18.3	3.0	0.9
Non-casino gaming machines	21.7	6.7	0.6	0.4
Other	21.7	13.3	0.6	0.1
Non-casino bingo	17.2	5.8	1.0	0.5
Internet	1.5	1.3	0.5	0.2
Illegal numbers	0.8	0.2	0.1	0.1
Total	89.2	69.4	23.2	10.4

Nearly one-sixth (15.3%) of the respondents only acknowledge having gambled on one activity in their lifetime. The majority of these respondents (N=422) are casino and lottery players. Nearly half of these respondents (49%) have been to a casino and 30% have played the lottery. Much smaller percentages of this group (between 3% and 5%) have gambled on private games, sports, horseracing, non-casino machines or “other” activities.

Endorsement of the usually residual “Other” category was much higher in this survey than in other gambling surveys. Respondents who said that they had done some other type of gambling in the past year were significantly more likely than those who did not endorse this item to be female, between the ages of 35 and 54, White, to have attended college, to be employed fulltime and to have annual household incomes over \$50,000. These respondents were significantly less likely to have been interviewed in Spanish. This analysis suggests that endorsement of this item is probably more closely related to charitable gambling than to illegal or culturally-specific activities such as cockfighting.

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, respondents were divided into five groups:

- **non-gamblers** who have never participated in any type of gambling (11% of the total sample);
- **infrequent gamblers** who have participated in one or more types of gambling but not in the past year (20% 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 (46% of the total sample); and

- **monthly gamblers** who participate in one or more types of gambling on a monthly basis (13% of the total sample).
- **weekly gamblers** who participate in one or more types of gambling on a weekly basis (10% of the total sample).

Table 5 presents information about the demographic characteristics of these different groups in Arizona. For easier comprehension, non-gamblers and infrequent gamblers have been collapsed into a single group, as have monthly and weekly gamblers.

There are some important differences between non- and infrequent gamblers in Arizona. Non-gamblers are significantly more likely than infrequent gamblers to be under 35, Hispanic, keeping house and to have an annual household income under \$25,000. Non-gamblers in Arizona are significantly less likely than infrequent gamblers to have attended college and to have military experience. The only significant difference between monthly and weekly gamblers in Arizona is that weekly gamblers are more likely than monthly gamblers to have graduated from college.

Table 5: Demographics of Gamblers in Arizona

		Non- & Infrequent Gamblers (842) %	Past Year Gamblers (1270) %	Monthly & Weekly Gamblers (639) %
Gender	Male	44.8	49.3	55.4
(.000)	Female	55.2	50.7	44.6
Age	18 – 34	29.3	32.5	26.0
(.000)	35 – 54	35.7	39.6	36.8
	55+	35.0	27.8	37.2
Ethnicity	White	69.6	75.5	74.1
(.005)	Hispanic	25.2	19.5	18.8
	Other*	4.9	5.1	7.1
Region	Maricopa (Phoenix)	57.0	58.7	59.9
(.827)	Pima (Tucson)	15.7	14.6	14.6
	Elsewhere	27.3	26.7	25.5
Marital Status	Married	64.0	61.4	58.4
(.001)	Widowed	9.3	5.8	8.6
	Divorced/Separated	11.9	12.5	14.6
	Never Married	14.8	20.4	18.4
Education	Elementary / Some HS	10.2	7.5	5.9
(.006)	HS Grad	25.0	22.7	28.3
	Some College	32.3	37.2	36.9
	BA Degree	20.1	21.8	18.5
	Graduate Study	12.4	10.8	10.4

* Includes Black, Native American and Other.

Table 5: Demographics of Gamblers in Arizona (cont'd)

		Non- & Infrequent Gamblers (842) %	Past Year Gamblers (1270) %	Monthly & Weekly Gamblers (639) %
Employment (.000)	Working Full Time	45.9	55.8	56.5
	Working Part Time	8.5	12.2	8.8
	Keeping House	16.3	9.0	5.7
	Retired	22.8	17.5	23.7
	Disabled / Unemployed	6.5	5.4	5.3
Income (.001)	Up to \$25,000	25.2	18.3	18.0
	\$25,001 - \$35,000	15.4	15.2	14.9
	\$35,001 - \$50,000	20.7	19.5	18.4
	\$50,001 - \$75,000	19.9	19.7	19.9
	\$75,001 - \$125,000	15.6	21.8	19.9
	Over \$125,000	3.3	5.5	8.9
Residence (.019)	Full year in Arizona	93.1	94.2	90.7
	Less than full year in AZ	6.9	5.8	9.3
Religion (.000)	Fundamentalist	14.2	9.3	7.1
	Protestant	25.9	31.8	31.8
	Catholic	24.7	27.3	29.9
	Other	20.8	11.6	11.4
	None	14.4	20.0	19.7
Armed Forces Service (.001)		14.9	18.1	22.8
Interviewed in Spanish (.000)		13.7	5.7	3.6

Overall, Table 5 shows that significant differences in gambling participation are associated with gender, age, ethnicity, marital status, education and employment status. Important differences in gambling participation are also associated with religion, income, military experience and a “snowbird” pattern of residence in Arizona. Non- and infrequent gamblers are significantly more likely than past-year, monthly and weekly gamblers in Arizona to be female, Hispanic and married, to be keeping house, practicing a religion other than Protestantism or Catholicism and to have an annual household income under \$25,000. Non- and infrequent gamblers are also significantly more likely than more frequent gamblers to have been interviewed in Spanish.

Monthly and weekly gamblers are significantly more likely than past-year gamblers to be male, aged 55 and over, retired and to have military experience. Monthly and weekly gamblers are significantly less likely than past-year gamblers to be married and to live in Arizona year-round. Finally, monthly and weekly gamblers are significantly less likely than past-year gamblers to have been interviewed in Spanish.

The relationship between gambling participation and age is particularly interesting. The “bimodal” pattern of gambling involvement among Arizona adults aged 55 and over—with relatively large numbers of people having little or no involvement in gambling, on the one hand, and a significant minority who gamble regularly, on the other—is characteristic of particularly high risk groups in the general population that are just entering the gambling “market.” As gambling becomes more widespread within these

groups, gambling problems may initially increase, then level out, and perhaps even decline again over time (Abbott, Volberg & Rönnerberg, 2003).

Gambling Preferences

For several types of gambling, respondents who acknowledged participating in the past year were asked about their preferences for particular games. These types of gambling included lottery, casino, pari-mutuel and non-casino gaming machines.

Lottery. Respondents who had played the lottery in the past year (N=1350) were asked what kinds of tickets they usually purchased. Respondents were permitted multiple answers to this question. The most popular lottery games in Arizona are Powerball and The Pick. Eight in ten of these respondents (83%) reported that they usually bought either Powerball or The Pick tickets. Another 11% said that they usually bought instant tickets, or “Scratchers,” as well as one of the large jackpot tickets.

Casino. Respondents who had gambled at a casino in the past year (N=1178) were asked what casino game they usually played. The majority (73%) said that they usually played slot machines or video poker at the casino. Another 17% said that they usually played card games such as blackjack or poker and 5% reported playing other table games such as roulette or craps. Only 3% of these respondents indicated that they usually played keno or bingo when they gambled at a casino. These respondents were also asked what city or location they usually visited when they went to a casino. Over half (54%) reported usually visiting a casino in Arizona while 44% indicated that they usually gambled at a casino in Nevada.

Pari-mutuel. Respondents who had wagered on horse or dog races in the past year (N=183) were asked whether they usually did so at a racetrack, an off-track betting facility in Arizona, a tribal casino or somewhere else. Seven in ten of these respondents (72%) indicated that they usually wagered at a racetrack. Another 20% of these respondents said that they usually wagered at an off-track betting facility in Arizona. Half of the small group of remaining pari-mutuel gamblers usually wagered at a tribal casino and the other half usually did so at an off-track facility outside Arizona.

Table 6 on the following page presents information about favorite gambling activities among infrequent, past-year, monthly and weekly gamblers. Questions about preferred gambling activities were only asked of respondents who indicated that they had gambled five or more times in their lifetime. If an individual acknowledged gambling once a month or more often on any of the activities included in the questionnaire, this variable was automatically coded “Yes.” If a person had ever gambled or had gambled in the past year but said “No” to this question, this variable was coded “No” and these items were not asked.

Table 6 shows that slot machines were the preferred gambling activity across all of these groups. Infrequent gamblers were significantly more likely to say that they had no favorite gambling activity than other gamblers. Monthly and weekly gamblers were significantly more likely than less frequent gamblers to identify the lottery as their favorite gambling activity.

Table 6: Favorite Gambling Activities Among Arizona Gamblers

	Infrequent Gamblers (136) %	Past Year Gamblers (785) %	Monthly Gamblers (354) %	Weekly Gamblers (285) %	Sig.
Favorite type of gambling					.000
Casino table games	15.6	23.9	16.8	21.6	
Slot machines (casino & non)	28.1	37.3	37.9	32.3	
Lottery	4.7	6.7	16.8	12.8	
Pari-mutuel	5.5	3.2	2.6	6.0	
Bingo	1.6	3.0	4.8	3.9	
Other	17.2	16.5	15.7	19.9	
None	27.3	9.4	5.4	3.5	

Motivations for Gambling

Another important question in gambling studies is why people choose whether or not to gamble. Respondents who had gambled five or more times in their lifetime were asked why they generally gambled, and to indicate whether any of several different reasons was “very important,” “somewhat important,” or “not at all important.” Table 7 presents information on the proportion of respondents who indicated that each of these reasons was “very important” or “somewhat important.”

Table 7: Reasons for Gambling Among Arizona Gamblers

Somewhat or very important	Infrequent Gamblers (136) %	Past Year Gamblers (785) %	Monthly Gamblers (354) %	Weekly Gamblers (285) %	Sig.
Importance of gambling compared with other activities	6.8	12.6	17.9	24.1	.000
Entertainment or fun	77.9	89.1	88.1	91.6	.001
To win money	46.7	62.3	71.8	76.1	.000
Excitement or challenge	44.4	58.0	62.6	73.1	.000
Support good causes	33.6	51.5	58.0	53.0	.000
Inexpensive entertainment	41.2	48.1	54.5	57.7	.003
To be with people	32.4	39.4	32.6	41.0	.049
Convenience	28.7	34.9	41.6	45.1	.001
As a distraction	14.0	22.4	26.9	30.5	.001

Table 7 shows that the majority of Arizonans gamble for entertainment although infrequent gamblers are significantly less likely to endorse this reason than more frequent gamblers. As gambling participation increases, winning money becomes an increasingly important reason for gambling as does excitement or challenge, inexpensive entertainment and convenience. Supporting good causes is more important to monthly gamblers than to past-year or weekly gamblers while being with people is less important. Finally, monthly and weekly gamblers are significantly more likely to say that distraction is a somewhat or very important reason for gambling.

Given differences in gambling participation by gender, age and ethnicity, differences in reasons for gambling associated with these important demographic variables were

examined. Women were significantly more likely than men to say that entertainment and fun and supporting good causes were important reasons for gambling. On the other hand, men were significantly more likely to say that excitement or challenge was an important reason for gambling. Respondents under the age of 35 were significantly more likely than older respondents to say that entertainment, winning money, excitement and being with other people were important reasons for gambling. Respondents aged 55 and over were significantly more likely to say that gambling was important compared with other recreational or social activities. Hispanic respondents were significantly more likely than other respondents to say that winning money, excitement or challenge and distraction were important reasons for gambling.

In the Arizona survey, respondents who had never gambled or gambled infrequently³ were asked whether any of several different reasons to not gamble was “very important,” “somewhat important” or “not at all important.” Losing money was the most important reason for not gambling among these respondents, followed by moral or ethical concerns. Non-gamblers were significantly more likely than infrequent gamblers to say that morality was an important reason for not gambling (64% compared with 49%). Infrequent gamblers were significantly more likely than non-gamblers to say that losing money was an important reason for not gambling (78% compared with 70%).

Women in this group were significantly more likely than men to say that losing money was an important reason not to gamble. Respondents under the age of 35 were significantly more likely than older respondents to say that inconvenience was an important reason not to gamble. Hispanic respondents were significantly more likely to say that inconvenience was an important reason not to gamble while White respondents were significantly more likely to say that losing money and morality were important reasons not to gamble.

³ Respondents who had gambled in the past year but had not gambled five or more times in their lifetime were included in the group that was asked their reasons for not gambling.

PROBLEM GAMBLING IN ARIZONA

Two problem gambling screens were used in the Arizona survey. The revised South Oaks Gambling Screen (SOGS-R) was used to provide comparability with the large body of research based on this instrument. The NORC DSM-IV Screen for Gambling Problems (NODS) was used to provide a measure of problem gambling based on the most recent psychiatric criteria for pathological gambling as well as comparability with recent national and statewide surveys.

Research on the performance of the SOGS-R has shown that the lifetime screen is very good at detecting pathological gambling among those who currently experience the disorder (Abbott & Volberg, 1992, 1996, 1999a). Nonetheless, as expected, the screen identifies clinically-relevant individuals at the expense of generating a substantial number of false positives. The past-year SOGS produces fewer false positives than the lifetime measure but more false negatives and thus provides a weaker screen for identifying pathological gamblers in the clinical sense (see Appendix A for a full explanation of these issues). However, the greater efficiency of the past-year SOGS makes it a better tool for identifying problem gambling prevalence rates as well as for detecting change in the prevalence of problem gambling over time.

In this section of the report, the past-year SOGS serves as the primary measure of problem and probable pathological gambling in Arizona. Given the increasing amount of research based on the NODS, information is also presented on the prevalence of at-risk, problem and pathological gambling in Arizona based on this screen. In the next section of the report, the lifetime SOGS serves as the primary measure to describe the clinically relevant characteristics of problem and pathological gamblers in Arizona. This approach is based on our assessment of the performance of both screens across a range of studies.

Prevalence Rates

In epidemiological research, prevalence is a measure of the number of individuals in the population with a disorder at one point in time while incidence is a measure of the number of new cases that arise over a specific period of time. In problem gambling prevalence surveys, individuals are classified as at-risk, problem or pathological gamblers on the basis of their responses to a previously established number of items from a valid and reliable problem gambling screen.

Prevalence rates are based on samples rather than the entire population. One important source of uncertainty in generalizing from a sample to the population—sampling error—is generally presented as a measure of the uncertainty around the identified value. Calculations of the size of this variation—sometimes called the confidence interval and sometimes referred to as the margin of error—are based on the percentage of the sample with a particular characteristic and the size of the sample.

To illustrate, the margin of error for the total sample of respondents in Arizona (N=2,750) is $\pm 1.9\%$. The margin of error for an entire sample is generally calculated for a situation in which half of the respondents answer a question “Yes” and the other half answer “No.” The confidence interval allows us to assume with reasonable certainty—95 times out of

100—that the “true” value is somewhere between 48.1% (50% minus 1.9%) and 51.9% (50% plus 1.9%).

The confidence interval narrows as the value approaches either 0% or 100%. For example, a value of 5% in the Arizona survey has a margin of error of $\pm 0.8\%$. This means that we can be reasonably certain that the “true” value falls between 4.2% and 5.8%. As values near these extremes, the confidence interval can approach or exceed the value itself. The closer the confidence interval comes to the value, the less reliable the value itself is considered to be. In several of the tables that follow, confidence intervals that equal or exceed 50% of the value of the prevalence estimate are flagged with an asterisk and readers are advised to treat these estimates with caution.

Prevalence Based on the SOGS-R

Table 8 presents information about the proportion of the total sample (N=2,750) who scored on an increasing number of items on the lifetime and past-year SOGS. Table 8 also summarizes the prevalence of problem and pathological gambling based on established criteria for discriminating between respondents without gambling-related difficulties and those with moderate and severe problems (Abbott & Volberg, 1996; Lesieur & Blume, 1987). Individuals scoring 10 or more points have been grouped together because of the small number of respondents at these higher levels.

Table 8: Scores on Lifetime and Past Year SOGS

Number of Items	Lifetime (2750)	Past Year (2750)
Non-Gamblers	10.8	10.8
0	59.9	76.0
1	17.5	7.8
2	6.4	3.1
Non Problem Gamblers	83.8	86.9
3	2.4	1.0
4	1.2	0.6
Problem	3.6	1.6
5	0.5	0.1
6	0.7	0.3
7	0.2	0.1
8	0.1	0.1
9	0.1	---
10+	0.3	0.1
Probable Pathological	1.9	0.7
Combined Problem/ProbPath	5.5	2.3

Population Estimates

According to the most recent census of the population (U.S. Bureau of the Census, 2001), the population of Arizona aged 18 and over in 2000 was 3,763,685. Based on these figures, we estimate that between 14,600 (0.4%) and 38,000 (1.0%) Arizona adults can be classified as current pathological gamblers. Another 42,600 (1.1%) to 78,000 (2.1%) Arizona adults can be classified as current problem gamblers.

Prevalence Across Demographic Groups

Problem gambling prevalence rates can be significantly different among subgroups in the population. Because the confidence intervals around prevalence estimates can be large, most comparisons between these groups must be interpreted with caution. However, the size of the overall sample in Arizona means that, in this instance, confidence intervals exceed 50% of the variance for relatively few of the prevalence estimates for subgroups in the population. In presenting these data, all instances where the confidence interval equals or exceeds the prevalence estimate have been suppressed. Table 9 presents information about the size of each group as well as the confidence interval for the combined problem and probable pathological gambling prevalence rate.

Table 9: Differences in Prevalence by Demographic Group

		Group Size	Past-Year Prevalence (3+)	Conf. Interval
Gender	Male	1357	2.7	±0.9
	Female	1393	2.0	±0.7
Age	18 – 34	296	2.3	±1.0
	.775 35 – 54	988	2.6	±1.0
	55+	842	2.1	±1.0
Ethnicity	White	1900	1.8	±0.6
	.021 Hispanic	544	3.9	±1.6
	Other**	142	2.8*	±2.7
Employment	Fulltime	1360	2.5	±0.8
	.040 Retired	529	2.6*	±1.4
	Disabled / Unemployed	148	6.1*	±3.9

* Confidence interval equals or exceeds 50% of the prevalence estimate.

** Includes Black and Native American as well as self-designated Other.

In contrast to most other jurisdictions, there are relatively few differences in the prevalence of past-year problem gambling across different subgroups in the population in Arizona. Differences in prevalence rates by gender, age, region of the state, marital status, education, religion, household income and military service are all non-significant. The current prevalence of problem and pathological gambling in Arizona is significantly higher only among Hispanics and among respondents who are disabled or unemployed.

We noted above (see discussion of Table 5) that adults aged 55 and over in Arizona exhibit a “bimodal” pattern of gambling involvement and speculated that this subgroup in Arizona may be at particularly high risk for developing gambling problems in the future. The lack of significant differences in problem gambling prevalence rates among age groups in Arizona is an indication that this process may already be underway.

Prevalence By Type of Gambling

Another approach to understanding the relationship between gambling involvement and gambling-related problems is to examine the prevalence of problem gambling among

individuals who participate in specific types of gambling. Table 10 shows the current prevalence of problem and probable pathological gambling for respondents who have gambled in the past year as well as for those who gamble weekly. Table 10 also shows the current prevalence of problem and probable pathological gambling for respondents who have participated in specific types of gambling in the past year. Telephone or computer wagering was not included in this table because the number of past year players was too small to yield meaningful results. All results where the confidence interval exceeds 50% of the prevalence estimate have been flagged with an asterisk.

Table 10: Prevalence by Type of Gambling

	Group Size	Past-Year Prevalence (3+) %	Conf. Interval
All Gamblers	2454	2.6	±0.6
Past-Year Gamblers	1909	3.2	±0.8
Monthly Gamblers	639	6.3	±1.9
Weekly Gamblers	285	7.7	±3.1
Among Past Year Players			
Non-Casino Gaming Machines	185	9.2	±4.1
Private	458	5.2	±2.0
Casino	1178	5.0	±1.2
Other	367	4.9	±2.2
Non-Casino Bingo	158	4.4*	±3.2
Pari-mutuel	184	4.3*	±2.9
Sports	502	4.0	±1.7
Lottery	1350	3.9	±1.0

*Confidence interval equals or exceeds 50% of the prevalence estimate.

Table 10 shows that problem gambling prevalence rates increase along with gambling participation. The prevalence of problem gambling is highest among past-year players of non-casino gaming machines. Problem gambling prevalence rates are also high among past-year private bettors, past-year casino bettors and among those who have gambled on “other” activities in the past year.

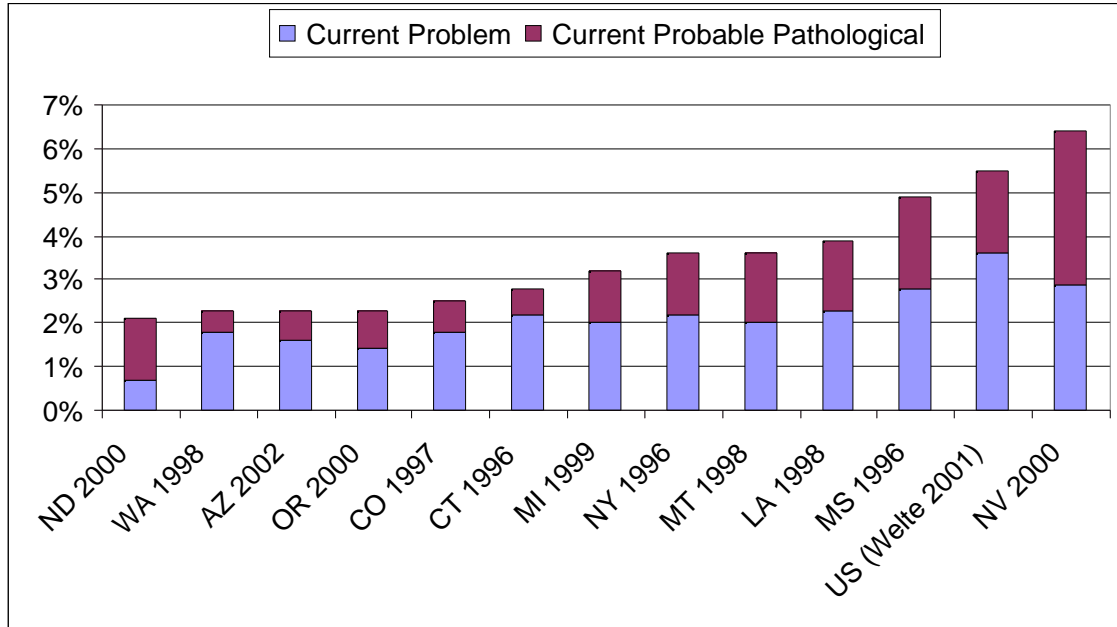
Comparing Arizona with Other Jurisdictions

As with gambling participation, it is helpful to compare the prevalence of problem and probable pathological gambling in Arizona with comparable prevalence estimates elsewhere in the United States. Although 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, it is helpful to understand how Arizona compares with other jurisdictions.

Figure 1 on the following page presents past-year SOGS prevalence rates for states where similar surveys have been conducted in the United States since 1996. Overall, Figure 1 shows that the current prevalence of problem and probable pathological gambling in Arizona is at the lower end of a wide range of problem gambling prevalence rates based on the South Oaks Gambling Screen. The current prevalence of problem and probable pathological gambling in Arizona is identical to prevalence rates obtained in Washington State in 1998 and Oregon in 2000. The prevalence of current problem

and probable pathological gambling in Arizona is well below the prevalence rate identified in a recent national survey funded by the National Institutes of Health (Welte et al, 2001).

Figure 1: Comparing SOGS Prevalence Rates Across States (Past Year)



Full information on the NODS, the secondary problem gambling screen used in the Arizona survey, is presented in a separate section of this report (see *Comparing Two Problem Gambling Screens in Arizona* on Page 45). In this section of the report, our focus is on comparisons between Arizona and other jurisdictions where the NODS has been used. Figure 2 presents lifetime prevalence rates for jurisdictions where surveys using the NODS have been conducted.

Figure 2: Comparing NODS Rates Across States (Lifetime)

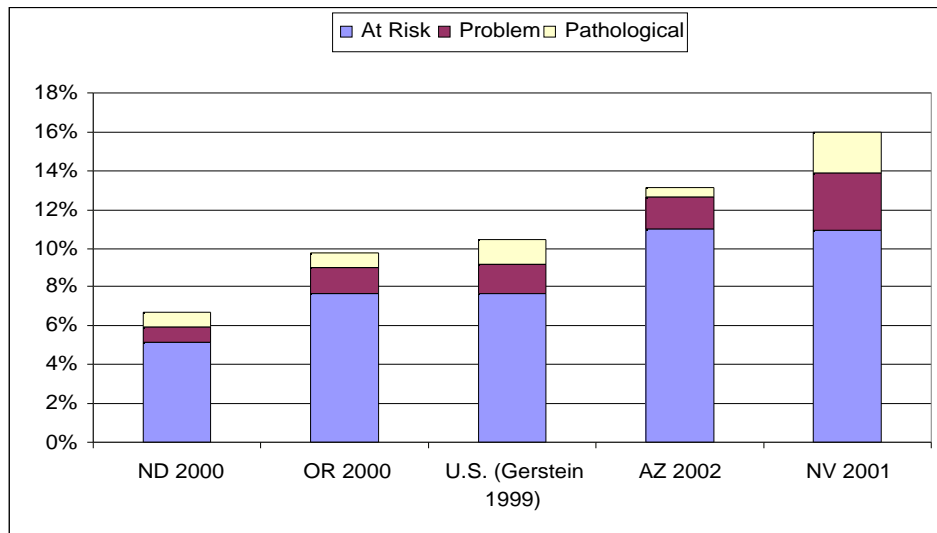


Figure 2 indicates that the prevalence of problem and pathological gambling in Arizona is lower than in other jurisdictions where the same screen has been used, including a recent national survey funded by the National Gambling Impact Study Commission. However, the prevalence of at-risk gambling in Arizona is substantially higher than in other states or for the nation as a whole. Based on the 2000 census, it appears that between 370,000 (9.8%) and 460,000 (12.2%) Arizona adults can be classified as at-risk gamblers.

There are many possible explanations for the high rate of at-risk gambling in Arizona. One possibility is that the rapid expansion of legal gambling opportunities in Arizona has created a large number of Arizona residents with thus-far mild gambling-related difficulties. Another possibility is that rapid population growth in Arizona has brought with it large numbers of people with pre-existing gambling difficulties.⁴ A third possibility is that specific subgroups in the population in Arizona (e.g. older adults, retirees and Hispanics) contribute independently to the high rate of at-risk gambling and do so regardless of the availability of legal gambling opportunities. A fourth possibility is that the particular types of gambling legalized in Arizona in the 1990s are associated with high rates of at-risk gambling. All of these possibilities are hypotheses that require substantial testing, preferably with well-designed longitudinal research.

As noted above (see *Defining Our Terms* on Page 1), at-risk gamblers are of concern because they represent a much larger proportion of the general population than problem and pathological gamblers and because of the possibility that their gambling-related difficulties may become more severe over time. However, at-risk gamblers are likely to find it easier to change their behavior in response to effective public awareness and education campaigns than problem and pathological gamblers (Hodgins & el-Guebaly, 2000; Shaffer & Korn, 2002). Detailed information on the characteristics of at-risk gamblers in Arizona is presented below (see *Understanding At-Risk Gamblers* on Page 30).

⁴ Between 1990 and 2000, Arizona experienced a 40% increase in population, a rate exceeded only by the State of Nevada. This compares with a 13% increase for the nation as a whole (U.S. Bureau of the Census, 2003).

COMPARING NON-PROBLEM AND PROBLEM GAMBLERS IN ARIZONA

In considering how best to develop and refine 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 vulnerable individuals, our focus will be on differences between individuals who gamble, with and without problems, rather than on the entire Arizona sample.

Both the lifetime and current South Oaks Gambling Screen measures are important tools but they have rather different uses (see Appendix A for a full explanation). Since the lifetime SOGS is the better tool for identifying vulnerable individuals in the population, it is best to consider respondents who score as lifetime problem and pathological gamblers when evaluating the characteristics of individuals most in need of help for gambling problems. Furthermore, respondents who score as lifetime problem gamblers and those who score as lifetime probable pathological gamblers are treated as a single group and are referred to as problem gamblers in this section. 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, 2000; Volberg & Abbott, 1994).

Demographics

Table 11 shows that, in contrast to other jurisdictions, problem gamblers in Arizona are demographically quite similar to non-problem gamblers. There are no significant differences between problem and non-problem gamblers in Arizona with respect to age, ethnicity, region of the state where they live, marital status, education or annual household income. However, problem gamblers in Arizona are significantly more likely than non-problem gamblers to be male, to be working fulltime, and to have military experience.

Table 11: Demographics of Non-Problem and Problem Gamblers

		Non-Problem Gamblers (2304) %	Problem & Pathological Gamblers (150) %	Sig.
Gender	Male	48.8	73.3	.000
	Female	51.2	26.7	
Age	18 – 34	29.0	31.5	.307
	35 – 54	38.1	41.8	
	55+	32.9	26.7	
Ethnicity	White	75.7	72.9	.603
	Hispanic	18.9	22.2	
	Other*	5.4	4.9	
Region	Maricopa	58.6	60.4	.526
	Pima	14.8	11.4	
	Other	26.6	28.2	

* Includes Black and Native American as well as self-designated Other.

Table 11: Demographics of Non-Problem and Problem Gamblers (cont'd)

		Non-Problem Gamblers (2304) %	Problem & Pathological Gamblers (150) %	Sig.
Marital Status	Married	61.6	58.1	.128
	Widowed	7.4	4.7	
	Divorced/Separated	12.7	18.9	
	Never Married	18.3	18.2	
Education	Elementary / Some HS	7.3	7.4	.476
	HS Grad	23.4	21.6	
	Some College	36.7	43.9	
	BA Degree	21.0	18.2	
	Graduate Study	11.5	8.8	
Employment	Working Full Time	53.3	61.8	.000
	Working Part Time	11.0	2.8	
	Keeping House	9.4	4.2	
	Retired	21.4	18.1	
	Disabled / Unemployed	4.9	13.2	
Income		(1580)	(121)	
	Up to \$35,000	34.4	27.3	.126
	\$35,001 – \$50,000	19.1	25.6	
	\$50,001 or more	46.5	47.1	
Residence	Full year in AZ	93.1	90.5	.150
	Less than full year in AZ	6.9	9.5	
Religion	Protestant	31.4	27.1	.014
	Catholic	27.4	22.9	
	Fundamentalist	9.6	18.6	
	Other	13.0	11.4	
	None	18.6	20.0	
Armed Forces Service		18.7	25.0	.040

Although problem gamblers in Arizona are significantly more likely than non-problem gamblers to be working fulltime, it is worth noting that one in ten problem gamblers is disabled or unemployed compared with only one in twenty non-problem gamblers. The difference is explained by the greater proportion of non-problem gamblers who are working parttime and keeping house.

Gambling Participation

While information about the demographic characteristics of problem gamblers is useful in designing prevention and treatment services, it is also helpful to understand differences in the gambling behavior of non-problem and problem gamblers. Information about the behavioral correlates of problem gambling can help professionals design appropriate prevention and treatment measures, effectively identify vulnerable individuals and establish accessible services.

Before considering gambling participation, it is helpful to examine differences in the preferences that problem and non-problem gamblers express for different gambling

activities.⁵ Table 12 presents information about favorite gambling activities among non-problem and problem gamblers in Arizona.

Table 12: Comparing Favorite Gambling Activities

Favorite Type of Gambling	Non-Problem Gamblers (1403) %	Problem & Pathological Gamblers (139) %	Sig.
Slot machines (casino & non)	35.4	40.3	.000
Casino table games	20.0	32.4	
Other	17.2	15.1	
Pari-mutuel	3.7	5.0	
None	9.5	3.6	
Lottery	10.7	2.2	
Bingo	3.6	1.4	

Table 12 shows that problem gamblers in Arizona are significantly more likely than non-problem gamblers to identify slot machines or casino table games (e.g. poker, craps and roulette) as their favorite gambling activity. Non-problem gamblers are significantly more likely than problem gamblers to say that lottery games are their favorite gambling activity or that they have no preference for a particular gambling activity.

Past-Year. Table 13 shows differences in past-year involvement in different types of gambling by non-problem and problem gamblers in Arizona. Only those types of gambling for which past-year participation among problem gamblers is 10% or higher are shown. Table 13 shows that problem gamblers in Arizona are significantly more likely than non-problem gamblers to have gambled in the past year on most of the different types of gambling included in the survey. While non-problem gamblers are most likely to have gambled in the past year on the lottery, problem gamblers are most likely to have gambled at a casino. Second-tier gambling activities among both non-problem and problem gamblers in Arizona include private wagering and gambling on sports. Problem gamblers in Arizona are substantially more likely than non-problem gamblers to have gambled in the past year on non-casino gaming machines and on horse or dog races.

Table 13: Past Year Gambling Among Non-Problem and Problem Gamblers

	Non-Problem Gamblers (2304) %	Problem & Pathological Gamblers (150) %	Sig.
Casino	46.2	76.0	.000
Lottery	54.0	71.3	.000
Private	17.7	33.3	.000
Sports	19.7	32.7	.000
Non-casino gaming machines	6.7	20.7	.000
Other	14.6	20.7	.032
Pari-mutuel	7.1	13.3	.007

⁵ Only respondents who indicated that they had ever gambled five or more times were asked to identify their favorite gambling activity.

When they gamble at a casino, non-problem gamblers in Arizona are more likely than problem gamblers to report that they usually play slot machines or video poker. Three-quarters (74%) of the non-problem gamblers who had gambled at a casino in the past year said that they usually played slot machines or video poker in contrast to 66% of the problem gamblers. Three in ten problem gamblers in Arizona who have gambled at a casino in the past year (29%) prefer table games such as poker, craps or roulette compared to 21% of non-problem gamblers.

Problem gamblers in Arizona are significantly more likely than non-problem gamblers to prefer instant scratch lottery games over large jackpot games like The Pick and Powerball. Two in ten of the non-problem gamblers in Arizona who have played the lottery in the past year (22%) say that they usually buy “scratchers” compared with 36% of the problem gamblers (Pearson chi-square=12.303, , p=.001).

Monthly. Table 14 shows differences in monthly involvement in different types of gambling by non-problem and problem gamblers in Arizona. Although most of these differences are significant, only those types of gambling for which monthly participation among problem gamblers is 10% or higher are shown. Table 14 shows that problem gamblers in Arizona are significantly more likely than non-problem gamblers to gamble monthly or more often on the lottery, at a casino and privately.

Table 14: Monthly Gambling Among Non-Problem and Problem Gamblers

	Non-Problem Gamblers (2304) %	Problem & Pathological Gamblers (150) %	Sig.
Lottery	17.2	29.3	.000
Casino	4.2	20.7	.000
Private	3.7	11.3	.000

Weekly. Problem gamblers in Arizona are significantly more likely than non-problem gamblers to gamble weekly or more often on the lottery, at a casino and on non-casino gaming machines as well as wagering privately. However, with the exception of lottery play, weekly gambling participation rates are extremely low.

Other Significant Differences

In addition to their demographic characteristics and gambling involvement, there are other significant differences between non-problem and problem gamblers in Arizona. These include differences in respondents’ perceptions of their gambling careers and involvement, differences in their reasons for gambling, and differences in the impacts of their gambling on physical and mental health as well as on family, finances and community.

Gambling Careers and Styles

Table 15 on the following page presents information about important differences between non-problem and problem gamblers in Arizona in gambling “careers” and “style.” Table 15 shows that problem gamblers in Arizona are significantly more likely to have started gambling before the age of 18 and to have felt nervous about their

gambling. Table 15 also shows that problem gamblers in Arizona are significantly more likely than non-problem gamblers to gamble alone and less likely to gamble with family members. Problem gamblers are significantly more likely than non-problem gamblers to gamble for three or more hours when they gamble. Non-problem gamblers are significantly less likely than problem gamblers to travel when they gamble. Finally, Table 15 shows that problem gamblers in Arizona are significantly more likely to spend \$100 or more on gambling in an average month, to have lost \$100 or more in a single day and to have lost \$1,000 or more in a single year.

Table 15: Differences in Gambling Careers and Style

	Non-Problem Gamblers (1403) %	Problem & Pathological Gamblers (139) %	Sig.
Started gambling before 18	21.2	42.4	.000
Ever felt nervous about your gambling	17.1	65.5	.000
Company			.029
Spouse or partner	37.9	35.0	
Alone	25.6	32.8	
Other family member	35.2	28.5	
Other individuals, organizations	1.3	3.6	
Distance			.002
Don't travel	14.9	4.4	
5 miles	18.7	16.3	
6 – 30 miles	22.3	31.9	
31 – 60 miles	8.4	12.6	
More than 60 miles	35.6	34.8	
Time spent gambling			.000
Less than 1 hour	29.8	10.6	
1-2 hours	34.4	30.3	
3-5 hours	28.9	36.4	
6 or more hours	6.8	22.7	
Average monthly spending			.000
\$10 or less	57.9	32.6	
\$11 - \$99	32.3	21.7	
\$100 or more	9.9	45.7	
Largest single day loss			.000
Less than \$10	12.6	---	
\$10 - \$99	49.0	10.4	
\$100 or more	38.4	89.6	
Largest single year loss			.000
Never lost money	4.3	---	
\$10 - \$99	39.6	4.0	
\$100 - \$999	45.9	37.9	
\$1,000 or more	10.2	58.1	

Motivations for Gambling

Table 16 presents information about the reasons that non-problem and problem gamblers in Arizona endorse as “somewhat important” or “very important.” Table 16 shows that entertainment is the most important reason for gambling among both non-problem and problem gamblers in Arizona. However, problem gamblers are significantly more likely than non-problem gamblers to believe that excitement or challenge and winning money are important reasons for gambling. Problem gamblers are also significantly more likely than non-problem gamblers to say that distraction is an important reason for gambling. In contrast, non-problem gamblers are significantly more likely than problem gamblers to say that supporting good causes and inexpensive entertainment are important reasons to gamble.

Table 16: Comparing Reasons for Gambling

Somewhat or very important	Non-Problem Gamblers (1403) %	Problem & Pathological Gamblers (139) %	Sig.
Entertainment or fun	88.3	89.9	.354
Excitement or challenge	58.7	80.6	.000
To win money	64.2	80.4	.000
Support good causes	52.5	43.9	.032
Convenience	37.2	42.6	.125
As a distraction	22.5	41.6	.000
Inexpensive entertainment	52.0	37.8	.001
To be with people	38.0	33.1	.149
Gambling compared with other recreational/social activities	13.4	36.0	.000

Finally, Table 16 shows that problem gamblers are significantly more likely to indicate that gambling is an important activity compared with their other recreational or social activities. Less than one in seven non-problem gamblers but more than one in three problem gamblers feels that gambling is “somewhat” or “very important” compared to other recreational or social activities.

Physical and Mental Health

Table 17 on the following page presents differences between non-problem and problem gamblers on several health-related dimensions. Table 17 shows that problem gamblers are significantly more likely than non-problem gamblers in Arizona to identify their physical health status as poor or fair, rather than as good or excellent. Problem gamblers are also significantly more likely than non-problem gamblers to acknowledge that they are presently very troubled by their “emotions, nerves or mental health” and to acknowledge that they have experienced symptoms of a manic episode or major depression at some time in their lives.

Table 17: Differences in Physical and Mental Health

	Non-Problem Gamblers (2304) %	Problem & Pathological Gamblers (150) %	Sig.
Physical health status fair or poor	12.4	21.3	.002
Troubled by emotions, nerves, MH	13.2	24.0	.000
Manic episode (ever)	8.9	26.0	.000
Depression (ever)	34.8	58.0	.000
Alcohol and Drug Use			
Daily tobacco use	19.3	36.0	.000
Weekly alcohol use	22.6	32.2	.010
Past year marijuana use	4.3	11.6	.000
Past year cocaine use	0.6	3.4	.004
Past year other drugs	1.1	4.0	.012
Help Seeking			
Help sought for alcohol or drug problems (ever)	3.6	10.1	.001
Help sought for gambling problem (ever)	0.3	2.7	.000

Table 17 also shows that problem gamblers are significantly more likely than non-problem gamblers in Arizona to use tobacco on a daily basis, to consume alcohol once a week or more often and to have used marijuana, cocaine or other illicit drugs in the past year. Finally, Table 17 demonstrates that problem gamblers in Arizona are significantly more likely than non-problem gamblers to have sought help for a gambling, alcohol or drug problem.

Ninety-nine respondents in Arizona indicated that they had ever sought help for an alcohol or drug problem. Four in ten (39%) had gone to Alcoholics Anonymous or Narcotics Anonymous and one in four (26%) had enrolled in an outpatient treatment program. Six had been to see a counselor, six had enrolled in a hospital-based inpatient program, four had seen their family doctor and three had asked for help from a family member or friend. In contrast, only ten respondents in Arizona said that they had ever sought help for a gambling problem. Two of these individuals had sought help from more than one source (family and friends, in one case, and Gamblers Anonymous and a treatment provider in Arizona, in the other). One person asked for help only from a family member, one asked for help only from a friend, four contacted Gamblers Anonymous and two refused to indicate where they had sought help.

Other Impacts of Gambling

Table 18 on the following page shows differences in the impacts of gambling on family, finances and the criminal justice system among non-problem and problem gamblers in Arizona. Interestingly, Table 18 shows that problem gamblers are significantly more likely than non-problem gamblers to say that they have been troubled in the past year by the gambling of someone with whom they live. Both problem and non-problem gamblers were most likely to identify this person as unrelated. However, when family members were identified, problem gamblers were most likely to identify this person as a spouse or

sibling while non-problem gamblers were more likely to identify a parent, child or other relative. Table 18 also shows that problem gamblers in Arizona are significantly more likely than non-problem gamblers to have ever filed for bankruptcy and to have been arrested and incarcerated.

Table 22: Differences in Family, Financial and Criminal Justice Impacts

	Non-Problem Gamblers (2304) %	Problem & Pathological Gamblers (150) %	Sig.
Past year, someone close disabled	21.6	27.3	.064
Troubled by someone else's gambling	5.3	13.3	.000
Ever filed for bankruptcy	9.3	19.3	.000
Ever arrested	13.3	32.0	.000
Ever incarcerated	6.6	21.3	.000

Understanding At-Risk Gamblers

Given the high rate of at-risk gambling identified in Arizona (see Figure 2 on Page 22) and the importance of developing services for this subgroup in the population, it is helpful to examine these individuals in some detail. At-risk gamblers were identified using the lifetime NODS and the results presented in this section are based entirely on that screen, rather than on the lifetime SOGS that formed the basis for the foregoing analysis.

Careful readers will notice that, in contrast to the NODS, the SOGS-R does not include a category of individuals classified as “at risk.” The original SOGS identified cutoff scores only for individuals classified as “problem gamblers” (3 or 4 points) and “probable pathological gamblers” (5 or more points) (Lesieur & Blume, 1987). Most researchers have followed the convention established by the developers of the SOGS and have ignored the large number of individuals who score below the published cutoff scores. It is worth noting that the proportion of the Arizona sample scoring 1 or 2 points on the past-year SOGS (10.9%) is nearly identical to the proportion of the sample scoring as “at-risk” on the lifetime NODS (11.0%).

In general, at-risk gamblers fall between non-problem and problem gamblers on many dimensions, including demographics, gambling participation, physical and mental health and family, financial and criminal justice impacts. For example, Table 19 on the following page shows that at-risk gamblers in Arizona are more likely than non-problem gamblers but less likely than problem gamblers to be male, under the age of 35 and working fulltime. In other respects, at-risk gamblers cluster with either non-problem or problem gamblers. For example, at-risk gamblers are just as likely as non-problem gamblers to be White while problem gamblers are much more likely to be Hispanic. However, at-risk and problem gamblers are less likely than non-problem gamblers to be married. At-risk and non-problem gamblers are more likely than problem gamblers to be working parttime or to be retired. However, at-risk and problem gamblers are more likely than non-problem gamblers to have military experience.

Table 23: Demographics of Non-Problem, At-Risk and Problem Gamblers (NODS)

		Non-Problem Gamblers (2093) %	At-Risk Gamblers (301) %	Problem & Pathological Gamblers (59) %	Sig.
Gender	Male	47.8	63.1	72.9	.000
	Female	52.2	36.9	27.1	
Age	18 – 34	27.7	36.5	42.9	.005
	35 – 54	39.1	35.1	30.4	
	55 +	33.2	28.4	26.8	
Ethnicity	White	76.5	73.4	56.1	.002
	Hispanic	18.6	18.6	35.1	
	Other*	4.9	7.9	8.8	
Marital Status	Married	63.0	52.7	50.9	.010
	Widowed	7.1	8.3	8.8	
	Divorced/Separated	12.8	15.3	12.3	
	Never Married	17.1	23.7	28.1	
Employment	Working Full Time	52.9	58.3	66.7	.000
	Working Part Time	10.8	10.4	---	
	Keeping House	10.0	3.5	3.7	
	Retired	21.6	19.8	13.0	
	Disabled / Unemployed	4.8	8.0	16.7	
Income		(1420)	(237)	(45)	
	Up to \$25,000	18.5	20.7	20.0	.023
	\$25,001 – \$35,000	15.1	15.6	11.1	
	\$35,001 – \$50,000	19.5	19.4	22.2	
	\$50,001 – \$75,000	21.6	14.3	20.0	
	\$75,001 – \$125,000	20.3	18.6	20.0	
	\$125,001 or more	5.0	11.4	6.7	
Armed Forces Service		18.1	24.6	24.6	.016

* Includes Black, Native American and Other.

When it comes to gambling participation, at-risk gamblers look much more like problem than non-problem gamblers. Table 20 presents information about the proportion of non-problem, at-risk and problem gamblers who gamble once a month or more often on the major forms of gambling in Arizona.

Table 24: Monthly Gambling Among Non-Problem, At-Risk and Problem Gamblers (NODS)

	Non-Problem Gamblers (2093) %	At Risk Gamblers (301) %	Problem & Pathological Gamblers (59) %	Sig.
Lottery	15.9	29.1	35.6	.000
Casino	3.2	14.6	27.1	.000
Private	3.0	10.6	13.6	.000
Sports	2.2	9.6	10.2	.000
Pari-mutuel	0.4	2.0	8.5	.000

Table 20 shows that at-risk gamblers are more likely than non-problem gamblers but less likely than problem gamblers to play the lottery or gamble at a casino once a month

or more often. While similar proportions of at-risk and problem gamblers gamble monthly on private games and sports, at-risk gamblers are less likely than problem gamblers to wager once a month or more often on horse or dog races.

As with gambling participation, the gambling losses of at-risk gamblers fall between those of non-problem and problem gamblers. For example, 7% of non-problem gamblers, 26% of at-risk gamblers and 63% of problem gamblers indicate that they spend \$100 or more on gambling in a typical month. Similarly, 35% of non-problem gamblers, 66% of at-risk gamblers and 91% of problem gamblers acknowledge that they have lost \$100 or more in a single day of gambling. While at-risk gamblers' losses fall between those of non-problem and problem gamblers, similar proportions of at-risk and problem gamblers acknowledge usually gambling for three or more hours at a time (52% and 63% compared with 33% of non-problem gamblers).

Table 21 shows that at-risk gamblers are actually more likely than either non-problem or problem gamblers to say that entertainment and excitement are important reasons for gambling. At-risk gamblers fall between non-problem and problem gamblers with regard to the importance of winning money, convenience and distraction as reasons for gambling. At-risk gamblers also fall between non-problem and problem gamblers in rating the importance of gambling in relation to other recreational activities in their lives.

Table 25: Comparing Reasons for Gambling (NODS)

Somewhat or very important	Non-Problem Gamblers (2093) %	At Risk Gamblers (301) %	Problem & Pathological Gamblers (59) %	Sig.
Entertainment or fun	87.2	93.4	88.1	.012
Excitement or challenge	55.1	79.1	76.7	.000
To win money	61.4	78.1	86.7	.000
Convenience	36.4	40.0	51.7	.042
As a distraction	19.3	36.2	61.0	.000
To be with people	35.7	43.7	42.4	.029
Gambling compared with other recreational/social activities	10.8	26.7	51.7	.000

For the most part, at-risk gamblers in Arizona also fall between non-problem and problem gamblers with regard to physical and mental health issues, alcohol and drug use, help-seeking and the criminal justice impacts of gambling. At-risk gamblers are more likely than non-problem gamblers but less likely than problem gamblers to rate their physical health as only fair or poor, to say that they have been troubled by their emotions in the past year, to endorse items assessing lifetime experiences of mania and depression and to say that they have ever sought help for an alcohol or drug problem. At-risk gamblers are more likely than non-problem gamblers but less likely than problem gamblers to have ever been arrested or incarcerated.

It is also helpful to consider what makes at-risk gamblers in Arizona unique. These individuals are more likely than both non-problem and problem gamblers to identify casino table games as their favorite type of gambling (32% compared with 18% and 24% respectively). At-risk gamblers are also more likely than either non-problem or problem

gamblers to acknowledge weekly alcohol consumption (30% compared with 22% and 23% respectively). Finally, at-risk gamblers are more likely than either non-problem or problem gamblers to acknowledge difficulties in the past year due to drinking (6% compared with 1% and 4% respectively).

LOOKING AT EARLY AND LATE ONSET GAMBLERS

Anecdotal evidence has led gambling researchers and clinicians to hypothesize that a qualitative split exists between “action” and “escape” gambling (Schull, 2002). “Action” gamblers are presumed to be largely engaged in strategic and competitive gambling activities such as sports or card games, to be mostly male and to have started gambling early in life. “Escape” gamblers are presumed to be largely engaged in machine gambling, to be more often female, to have started gambling relatively late in life and to progress more rapidly in the development of problematic gambling (Ladd & Petry, 2002; Lesieur & Blume, 1991; Potenza et al, 2001; Tavares et al, 2001). The assumption that “action” gamblers start gambling early in life while “escape” gamblers start much later is so widespread that many clinicians assume that these terms are synonymous with the terms “early onset” and “late onset” (Arizona Council on Compulsive Gambling, 2002).

This chapter presents comparisons of “early” and “late onset” gamblers—those who started gambling in childhood or adolescence compared with those who started gambling in their thirties and forties. Respondents who provided information about the age when they started gambling⁶ were divided into three groups—those who started gambling at the age of 18 or earlier, those who started gambling between the ages of 19 and 29 and those who started gambling at the age of 30 or later. Respondents in the “early onset” group who were under the age of 30 were dropped from analysis to improve the comparability of these two groups in terms of life experience.

A particular focus in this chapter will be on the preferences of early and late onset gamblers and problem gamblers for “escape” versus “action” types of gambling. “Action” gambling activities include table games at casinos, horse or dog races, private wagering and gambling on sports. “Escape” gambling activities include slot machines, video poker and bingo as well as instant lottery tickets.

Demographics

Table 22 on the following page presents information about the demographic characteristics of early and late onset gamblers in Arizona. Table 22 shows that there are numerous significant differences between early and late onset gamblers in Arizona. As hypothesized, early onset gamblers are significantly more likely than late onset gamblers to be male. Early onset gamblers are also significantly more likely than late onset gamblers to be under the age of 45, White, living in Maricopa County and married, to have military experience, to have attended college, to be working fulltime and to have annual household incomes over \$75,000. On the other hand, early onset gamblers are significantly less likely than late onset gamblers to be widowed or retired, to identify a religious preference and to have been interviewed in Spanish.

⁶ Only respondents who indicated that they had ever gambled five or more times were asked about the age at which they started gambling.

Table 26: Demographics of Early and Late Onset Gamblers in Arizona

		Early Onset (395) %	Late Onset (323) %	Sig.
Gender	Male	72.2	32.2	.000
	Female	27.8	67.8	
Age	30 – 44	48.9	18.9	.000
	45 – 54	17.7	19.6	
	55 – 64	13.4	21.1	
	65+	20.0	40.4	
Ethnicity	White	87.4	79.4	.006
	Hispanic	7.6	15.1	
	Other*	5.0	5.5	
Region	Maricopa (Phoenix)	60.3	51.6	.048
	Pima (Tucson)	15.2	16.5	
	Elsewhere	24.6	32.0	
Marital Status	Married	68.4	62.4	.000
	Widowed	5.3	15.2	
	Divorced/Separated	14.9	17.7	
	Never Married	11.4	4.7	
Education	Elementary / Some HS	4.1	9.9	.000
	HS Grad	18.2	32.0	
	Some College	37.2	35.1	
	BA Degree	23.3	14.9	
	Graduate Study	17.2	8.1	
Employment	Working Full Time	63.0	40.0	.000
	Working Part Time	8.4	8.4	
	Keeping House	2.1	5.2	
	Retired	22.8	39.7	
	Disabled / Unemployed	3.7	6.8	
Income	Up to \$25,000	10.0	27.8	.000
	\$25,001 - \$35,000	11.3	15.3	
	\$35,001 - \$50,000	21.9	17.7	
	\$50,001 - \$75,000	21.0	19.1	
	\$75,001 - \$125,000	22.6	15.3	
	Over \$125,000	13.2	4.8	
Religion	Fundamentalist	7.7	5.6	.000
	Protestant	32.6	44.1	
	Catholic	21.0	25.8	
	Other	12.5	10.8	
	None	26.3	13.7	
Armed Forces Service		34.0	18.9	.000
Interviewed in Spanish		0.3	4.3	.000

* Includes Black, Native American and Other.

Gambling Participation

Table 23 presents information about the preferences for different types of gambling expressed by early and late onset gamblers in Arizona. Only data from respondents who expressed a preference is included here. Table 23 clearly shows that late onset gamblers are significantly more likely to prefer gambling activities with a large element of chance while early onset gamblers are significantly more likely to prefer gambling activities with an element of skill. However, it is interesting that nearly the same proportion of the early onset gamblers identifies slot machines and casino table games as their favorite gambling activity.

Table 27: Comparing Favorite Gambling Activities

Favorite Type of Gambling	Early Onset (259) %	Late Onset (262) %	Sig.
			.000
Slot machines (casino & non)	37.8	60.3	
Casino table games	40.2	14.1	
Lottery	11.2	13.7	
Pari-mutuel	6.9	3.8	
Bingo	3.9	8.0	

Table 24 shows differences in past-year involvement in different types of gambling by early and late onset gamblers in Arizona. Table 24 shows that early onset gamblers in Arizona are significantly more likely than late onset gamblers to have wagered privately in the past year, to have gambled on sports, on horse or dog races and, interestingly, on non-casino slot machines. Late onset gamblers are significantly more likely to have played non-casino bingo in the past year.

Table 28: Past Year Gambling Among Early and Late Onset Gamblers

	Early Onset (395) %	Late Onset (323) %	Sig.
Lottery	69.6	64.3	.080
Casino	58.3	64.0	.072
Sports	39.5	13.0	.000
Private	37.9	11.8	.000
Pari-mutuel	13.4	5.9	.001
Non-casino gaming machines	12.9	5.6	.001
Non-casino bingo	7.8	11.5	.064

Table 24 also shows that early and late onset gamblers are not significantly different in their past-year gambling on the lottery or at a casino. As predicted, early onset gamblers in Arizona are significantly more likely to have wagered on casino table games, bet on horse or dog races, wagered privately and gambled on sports in the past year. Also as predicted, late onset gamblers in Arizona are significantly more likely to have played non-casino bingo and slot machines or video poker at a casino in the past year. Over eight in ten (83%) late onset gamblers indicate that they usually play games of chance such as slot machines, video poker, keno, bingo and pulltabs when they gamble at a casino.

What is surprising is that only one in three (32%) of the early onset gamblers in Arizona say that they usually play games of skill when they gamble at a casino (this includes poker, blackjack, betting on sports and betting on horse or dog races).⁷ Nearly two-thirds (66%) of early onset gamblers say that they usually play games of chance when they go to a casino and four in ten identify slot machines as their favorite gambling activity. Finally, Table 24 shows that early onset gamblers are significantly more likely than late onset gamblers to have played non-casino gaming machines in the past year.

Gambling Careers

Data on the age when respondents started gambling and their current age were used to examine differences in the gambling “careers” of early and late onset gamblers. Readers are reminded that only early onset gamblers aged 30 and over were included in this analysis. The current average age of this group of early onset gamblers is 41 and the average age at which they started gambling is 15. In contrast, the current average age of late onset gamblers is 59 and the average age at which they started gambling is 41. At 26 years, the average length of the gambling “career” of early onset gamblers is significantly longer than the 19-year average length of the gambling “career” of late onset gamblers ($F=18.526, p=.000$).

Early onset gamblers are significantly more likely than late onset gamblers to consume alcoholic beverages on a weekly basis and to have used marijuana in the past year. However, they are no more likely than late onset gamblers to use tobacco daily. Perhaps because of their age, early onset gamblers are significantly more likely than late onset gamblers to rate their physical health as excellent or good.

Prevalence of Problem Gambling

The small size of the groups of “early” and “late onset” gamblers makes it difficult to assess differences in the prevalence of problem gambling for these groups with accuracy. Using the past-year SOGS, there is no significant difference in the proportion of “early” and “late onset” gamblers who score 3 or more and can be classified as problem or probable pathological gamblers (5.3% compared to 3.7%, Pearson chi-square=1.024, $p=.203$). However, as Table 25 shows, there are substantial differences in the proportion of “early” and “late onset” gamblers who score as at-risk, problem and pathological gamblers based on the lifetime NODS. While “early onset” gamblers are 50% more likely to score as at-risk gamblers and 120% more likely to score as problem gamblers, “late onset” gamblers are twice as likely to score as pathological gamblers. These differences are statistically significant (Pearson chi-square=10.843, $p=.013$).

Table 29: Lifetime NODS Prevalence Among Early and Late Onset Gamblers

	Early Onset (395) %	Late Onset (322) %
At Risk (NODS = 1,2)	22.5	14.9
Problem (NODS = 3,4)	3.5	1.6
Pathological (NODS = 5+)	0.8	1.6

⁷ Since blackjack was not a legal game in Arizona casinos at the time of this survey, these respondents were likely referring to blackjack played at casinos in other jurisdictions, such as Nevada.

The small size of the groups of “early” and “late onset” gamblers suggests the need for caution in interpreting these results. However, it is interesting that the prevalence of pathological gambling is higher among “late onset” gamblers whose gambling careers are significantly shorter than the gambling careers of “early onset” gamblers. This finding supports the notion that late onset gamblers progress more rapidly in the development of problematic gambling.

We noted above that many observers equate the terms “early” and “late onset” gambling (people) with “action” and “escape” gambling (activities). The analysis presented here suggests that these terms are not synonymous. Early and late onset gamblers are demographically distinct and early onset gamblers are more likely than late onset gamblers to have wagered privately, on sports and on horse or dog races in the past year. However, early onset gamblers are equally divided in their preference for slot machines and casino table games and nearly two-thirds usually play games of chance when they go to a casino. Clearly, more research is needed to understand the relationships between gambling careers, gambling preferences and the development of gambling problems.

GAMBLING AND PROBLEM GAMBLING AMONG OLDER ADULTS

Since the 1960s, the availability of gambling has grown ten-fold in the United States (National Gambling Impact Study Commission, 1999). This explosion in the availability of legal, commercial gambling has occurred at the same time as an explosion in the older adult population, as the “Baby Boom” generation ages. Although increasing numbers of older adults spend their time and money gambling, little research has been done to investigate the impacts of this massive new recreational influence on older Americans. A particular concern with regard to older problem gamblers is that their financial losses are more devastating than for younger people because they have less time to recoup losses.

This chapter compares the demographics, gambling preferences and involvement and problem gambling prevalence among Arizona respondents of different ages. As in the previous section of this report, a particular focus will be on the preferences of younger and older gamblers for “escape” versus “action” types of gambling.

Demographics

Table 26 presents information about the demographic characteristics of respondents in Arizona aged 18 to 54, 55 to 64 and 65 and over. The reason for differentiating between middle-aged and older respondents is that, in many studies, gambling participation is higher among 55 to 64 year-olds than among younger or older individuals in the population.

Table 30: Demographics of Older and Younger Adults in Arizona

		18 – 54 (1775) %	55 – 64 (341) %	65+ (499) %	Sig.
Gender	Male	49.9	49.3	45.9	.292
	Female	50.1	50.7	54.1	
Ethnicity	White	68.8	80.4	88.2	.000
	Hispanic	25.9	14.0	6.3	
	Other*	5.3	5.6	5.5	
Region	Maricopa (Phoenix)	60.9	52.0	54.6	.001
	Pima (Tucson)	14.6	13.7	17.2	
	Elsewhere	24.5	34.2	28.2	
Marital Status	Married	60.5	66.2	60.8	.000
	Widowed	1.2	9.7	27.7	
	Divorced/Separated	13.2	20.3	7.0	
	Never Married	25.1	3.8	4.4	
Education	Elementary / Some HS	8.4	7.9	6.6	.000
	HS Grad	23.7	21.1	30.4	
	Some College	36.5	35.8	32.0	
	BA Degree	21.5	18.2	18.6	
	Graduate Study	9.9	17.0	12.4	

* Includes Black, Native American and Other.

Table 30: Demographics of Older and Younger Adults in Arizona (cont'd)

		18 – 54 (1775) %	55 – 64 (341) %	65+ (499) %	Sig.
Employment	Working Full Time	68.0	44.1	7.2	.000
	Working Part Time	11.5	9.7	7.6	
	Keeping House	13.7	5.5	2.7	
	Retired	0.8	29.8	81.6	
	Disabled / Unemployed	6.0	10.9	1.0	
Income	Up to \$25,000	18.3	19.1	29.7	.000
	\$25,001 - \$35,000	14.8	8.3	21.0	
	\$35,001 - \$50,000	19.4	17.8	22.0	
	\$50,001 - \$75,000	20.4	22.2	15.7	
	\$75,001 - \$125,000	21.3	23.0	9.4	
	Over \$125,000	5.9	9.6	2.1	
Religion	Fundamentalist	12.4	7.0	5.2	.000
	Protestant	23.3	38.9	47.7	
	Catholic	29.1	23.1	22.1	
	Other	14.6	15.2	12.9	
	None	20.5	15.8	12.1	
Residence	Full year in Arizona	96.2	93.0	81.6	.000
	Less than full year in AZ	3.8	7.0	18.4	
Armed Forces Service		11.6	27.9	35.5	.000
Interviewed in Spanish		10.0	4.1	1.4	.000

Table 26 shows that, with the exception of gender, there are numerous significant differences in the demographic characteristics of younger, middle-aged and older adult respondents in Arizona. Middle-aged and older adults in Arizona are significantly less likely than younger respondents to be Hispanic, to live in Maricopa County, to be working fulltime, to live in Arizona year-round and to have been interviewed in Spanish. Middle-aged and older adults are significantly more likely than younger respondents to have served in the armed forces.

Marital status is clearly associated with age in Arizona. Older adults are far more likely than other age groups to be widowed while middle-aged respondents are most likely to be divorced or separated and younger adults are the age group most likely to have never married. Older adults are more likely than younger adults to have only graduated from high school while middle-aged adults are the group most likely to have pursued graduate study. Older adults are the group most likely to have annual household incomes under \$35,000 while middle-aged adults are the group most likely to have incomes over \$75,000. Finally, older adults are the group most likely to be retired while middle-aged adults are the group most likely to be disabled or unemployed.

Table 26 also shows that there are several significant differences between middle-aged and older adults in Arizona. Middle-aged respondents are significantly more likely than older adults to be Hispanic, to be divorced or separated, to have attended college, to be either working fulltime or to be disabled or unemployed, to have annual household incomes over \$50,000, to have been interviewed in Spanish and to have military

experience. In contrast, older adults in Arizona are significantly more likely than middle-aged respondents to be widowed, to be retired and to live in Arizona year-round.

Gambling Participation

In contrast to many other jurisdictions, there is no significant difference in the proportion of middle-aged and older adults in Arizona who gamble although older adults are somewhat more likely to be infrequent gamblers while middle-aged adults are somewhat more likely to be past-year gamblers. While adults aged 18 to 54 are significantly more likely than older adults to have gambled in the past year, middle-aged and older adults in Arizona are actually somewhat more likely than younger adults to gamble regularly (i.e. monthly or weekly).

Table 27 presents information about the types of gambling preferred by gamblers of different ages. Only respondents who had ever gambled five or more times were asked this question. Table 27 shows that older adults in Arizona are the group most likely to prefer gambling on slot machines while adults aged 18 to 54 are the group most likely to prefer casino table games as well as playing the lottery. Older adults in Arizona are more likely than younger adults to say that non-casino bingo is their favorite gambling activity while adults under the age of 65 are more likely to say that betting on horse or dog races is their favorite gambling activity.

Table 31: Favorite Gambling Activities Among Older and Younger Adults

Favorite Type of Gambling	18 – 54 (731) %	55 – 64 (155) %	65+ (217) %	Sig.
				.000
Slot machines (casino & non)	44.6	51.6	58.1	
Casino table games	31.9	25.8	20.3	
Pari-mutuel	5.3	5.8	3.2	
Lottery	15.3	9.0	9.7	
Bingo	2.9	7.7	8.8	

Table 28 on the following page shows differences in past-year involvement in different types of gambling by three age groups in Arizona. Table 28 shows that adults of all ages in Arizona are equally likely to have gambled at a casino in the past year and to have bet on horse or dog races. Older adults in Arizona are significantly less likely to have played the lottery, to have wagered privately or on sports and to have gambled on the Internet in the past year than younger adults. They are significantly more likely than younger adults to have played non-casino bingo in the past year.

There are fewer differences among age groups when it comes to regular (monthly or weekly) gambling. Adults aged 18 to 54 are significantly more likely than older adults to wager once a month or more often on sports and significantly less likely to wager once a month or more often at a casino. Middle-aged adults are significantly more likely than other adults to play the lottery on a regular basis while older adults are significantly more likely than other adults to play bingo regularly.

Table 32: Past Year Gambling Among Older and Younger Gamblers

	18 – 54 (1775) %	55 – 64 (341) %	65+ (499) %	Sig.
Lottery	51.5	52.9	38.5	.000
Casino	42.5	45.6	44.1	.516
Sports	22.5	12.6	9.4	.000
Private	19.7	12.0	11.2	.000
Pari-mutuel	6.6	6.7	7.4	.818
Non-casino gaming machines	8.2	5.6	2.8	.000
Non-casino bingo	4.2	5.3	12.0	.000
Internet	1.6	1.2	0.2	.043

Among those who have gambled at a casino in the past year, there are significant differences in game preference by age. Overall, adults of all ages are most likely to indicate that they usually play games of chance (e.g. slot machines, video poker, keno, bingo and pulltabs) when they gamble at a casino although older adults are most likely to say this (86%) compared with middle-aged adults (79%) and adults aged 18 to 54 (72%). Adults aged 18 to 54 are the most likely and older adults are the least likely to say that they usually play games of skill (26% vs. 14%).

Prevalence of Problem Gambling

We noted above (see the discussion of Table 5 on Page 13 as well as *Prevalence Across Demographic Groups* on Page 20) that adults aged 55 and over in Arizona exhibit a “bimodal” pattern of gambling involvement with one in three (33%) gambling infrequently or not at all and one in four (27%) gambling once a month or more often. We also noted that, in contrast to many other studies, there are no significant differences in the prevalence of problem gambling across age groups in Arizona. This is true regardless of the method used to assess gambling problems. Taken together, these results suggest that middle-aged and older adults in Arizona may be at particularly high risk for developing gambling problems in the future.

Gambling and Retirement

Another relationship worth exploring is that between gambling and retirement. Two in ten of the respondents in the Arizona survey indicated that they were retired (N=528). Nearly eight in ten of these respondents (78%) were aged 65 and over and another 19% were aged 55 to 64.

There were no significant differences between respondents who were retired and those who were not in terms of gender. However, retirees were significantly less likely than younger Arizona respondents to be Hispanic and to live in Maricopa County. Retirees were also significantly less likely to live in Arizona year-round. Retirees were significantly more likely than younger Arizona respondents to be widowed, to have graduated from high school and to have annual household incomes under \$50,000.

In terms of gambling involvement, retirees in Arizona were significantly less likely than younger respondents to have played the lottery, wagered privately as well as on sports and gambled on non-casino gaming machines in the past year. Retirees were significantly more likely than younger respondents to have played non-casino bingo in

the past year. There were no significant differences in the prevalence of problem gambling among retired and non-retired respondents in Arizona, regardless of the method used.

Gambling and Military Experience

We noted above, in relation to Table 5, that there is a significant relationship between military experience and monthly or weekly gambling. This is at least partly explained by the relationship between gambling, gender and age—with older men far more likely than older women to have ever served in the Armed Forces and to have gambled.

Further analysis shows that respondents with military experience (N=488) are primarily male (91%) and White (85%). Nearly six in ten (57%) of these respondents are aged 55 and over. They are significantly more likely than respondents without military experience to be married, to have attended college, to be retired, to live outside Maricopa County and to have annual household incomes over \$35,000. They are significantly less likely than respondents without military experience to live in Arizona year-round. Respondents who served in the Armed Forces are significantly more likely than other respondents in the survey to have played the lottery, gambled at a casino and wagered on sports in the past year. Finally, while there are no significant differences in problem gambling prevalence rates using the SOGS-R, respondents with military experience are significantly more likely than those without such experience to score as lifetime at-risk, problem and pathological gamblers based on the NODS (Pearson chi-square=8.281, p=.003).

COMPARING TWO PROBLEM GAMBLING SCREENS IN ARIZONA

Two problem gambling screens were used in the Arizona survey to provide comparability with both existing and emerging research on problem gambling. The SOGS was employed as the primary measure of problem gambling in Arizona to provide a basis for comparison with the largest number of other jurisdictions. The NODS was included in order to assess pathological gambling in Arizona using the most current psychiatric criteria. The NODS was also used to permit comparisons of the Arizona survey with the recent U.S. national survey as well as with a growing number of statewide surveys (Gerstein et al, 1999; Volberg, 2001b, 2001c, 2002).

This technical section of the report is intended for readers interested in the performance of the NODS in the Arizona survey. While the analysis presented here does not answer questions about the validity and reliability of the NODS in relation to clinical assessments, this survey provides an opportunity to examine how the two most widely used methods to identify problem and pathological gamblers in the general population operate in relation to one another.

The NORC DSM-IV Screen for Gambling Problems (NODS)

The NODS is based on the most recent diagnostic criteria for pathological gambling (American Psychiatric Association, 1994). The NODS is composed of 17 lifetime and 17 past-year items, compared to the 20 lifetime and 20 past-year items that comprise the revised South Oaks Gambling Screen. The maximum score on the NODS is 10 compared to 20 for the SOGS. Although there are fewer items in the NODS than in the SOGS-R, and the maximum score is lower, the NODS is actually more restrictive in assessing problem gambling behaviors than the SOGS-R or other screens based on the DSM-IV criteria. This is because of limits placed on several of the criteria, in keeping with approaches taken in alcohol and drug abuse research.

For example, several of the DSM-IV criteria are difficult to establish with a single question. In assessing these criteria (Preoccupation, Escape, Risking a Significant Relationship), two or three questions were used with respondents receiving a single point if they give a positive response to any of the questions assessing that criterion. Another complication in constructing the NODS is that two of the DSM-IV criteria (Withdrawal, Loss of Control) assume that the questioner already knows that the individual has tried to “stop, cut down, or control” his or her gambling. These criteria were assessed with the NODS by first determining whether the respondent had tried to control her or his gambling before assessing whether the respondent had felt restless or irritable during these times (Withdrawal) and, then, assessing whether the respondent had been able to do so (Loss of Control).

Another decision in developing the NODS was to place definite limits on several of the criteria, in keeping with the approach taken in alcohol and drug abuse research. For example, in assessing Preoccupation, the NODS asks if the periods when respondents spent a lot of time thinking about gambling or about getting money to gamble have lasted 2 weeks or longer. Similarly, the NODS asks if respondents have tried, but not succeeded, in controlling their gambling three or more times (Loss of Control).

Respondents are also asked if they have lied to others about their gambling three or more times (Lying). Only positive responses to these latter items are included in the final score for the NODS.

Prevalence Based on the NODS

Table 29 presents information about the proportion of the total sample (N=2,750) who scored on an increasing number of items on the lifetime and past-year NODS. Comparisons of the prevalence of at-risk, problem and pathological gambling in Arizona with other jurisdictions is provided separately (see Figure 2 on Page 22) as is a description of the characteristics of at-risk gamblers in Arizona (see *Understanding At-Risk Gamblers* on Page 30).

Table 33: Scores on Lifetime and Past Year NODS

Number of Items	Lifetime (2750)	Past Year (2750)
Non-Gamblers	10.8	10.8
0	76.1	82.8
Non Problem Gamblers	76.1	82.8
1	8.2	4.0
2	2.7	1.4
At-Risk Gamblers	11.0	5.3
3	1.1	0.6
4	0.5	0.2
Problem	1.6	0.7
5	0.1	0.1
6	0.1	0.1
7	0.1	0.1
8	0.1	---
9	---	---
10	0.1	---
Pathological	0.5	0.3
Combined Problem/Path	2.1	1.0

Based on the population aged 18 and over in 2000, there are presently approximately 19,000 pathological gamblers and 60,000 problem gamblers in Arizona. These estimates are both well within the range of problem and probable pathological gambling based on the past-year SOGS (see *Population Estimates* on Page 19). In addition to classifying respondents as problem and pathological gamblers, the NODS classifies respondents who score even lower on the continuum as at-risk gamblers. In Arizona, there are approximately 415,000 adults who are experiencing some difficulties related to their gambling and may be at risk of developing more severe problems in the future.

Statistical Properties of the NODS⁸

The accuracy of any instrument is measured by looking at the reliability and validity of the instrument (Litwin 1995). The reliability of an instrument refers to the ability to

⁸ Only the performance of the lifetime NODS is examined here. There were too few respondents in the survey who scored in the problem and pathological range on the past-year NODS to yield reliable information. It is also important to note that the unweighted data were used for this analysis since the purpose was to assess performance rather than generalize to the population.

reproduce the results of the application of the test. The *validity* of an instrument refers to the ability of the instrument to measure what it is intended to measure. In examining the psychometric properties of the NODS among Arizona respondents, we assess its reliability by examining the internal consistency of the screen and then analyze the individual items to determine the ability of the screen to discriminate effectively between non-problem and problem gamblers. We then examine several forms of validity for the NODS.

Reliability

The most widely accepted test of reliability is a measure of the internal consistency of an instrument. The reliability of the lifetime NODS among Arizona respondents is good with Cronbach's alpha of .82. This alpha is substantially higher than the .70 that is generally accepted as representing good reliability. The reliability of the more limited set of items that are scored for the NODS (N=10) is lower than the full scale, with Cronbach's alpha of .73. These alphas are only marginally lower if respondents who have never gambled are excluded from the analysis.

In addition to testing the internal consistency of the NODS, the screen was analyzed to assess how the individual items of the lifetime NODS cluster together. This analysis indicates that the NODS is a homogeneous scale since all of the items load on a single factor which accounts for 34% of the total variance in the score. Table 30 presents information on the relationship of the lifetime NODS items to this single factor.

Table 34: Lifetime NODS Principal Component Analysis

NODS Scored Items	Component Loading
Preoccupation	.604
Tolerance	.576
Withdrawal	.708
Loss of Control	.634
Escape	.514
Chasing	.477
Lying	.641
Illegal Acts	.547
Risked Significant Relationship	.559
Bailout	.549

Item Analysis

Endorsement of the lifetime NODS items among Arizona gamblers ranged from a high of 8.0% (Chasing) to a low of 0.3% (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 used the lifetime SOGS classification of non-problem and problem gamblers to prevent confusion between the method of classifying respondents and the items by which they were classified. While this analysis was completed for both the lifetime and current screens, only the lifetime results are presented here.

Table 35: Comparing NODS Items Among SOGS Non-Problem and Problem Gamblers

NODS Scored Items	Non-Problem Gamblers (2323) %	Problem Gamblers (146) %	p-value*
Preoccupation	1.7	33.6	.000
Tolerance	1.1	19.2	.000
Withdrawal	0.4	20.5	.000
Loss of Control	0.1	13.0	.000
Escape	2.6	33.6	.000
Chasing	5.3	50.7	.000
Lying	0.7	24.7	.000
Illegal Acts	0.1	4.8	.000
Risked Significant Relationship	0.6	15.8	.000
Bailout	0.1	11.0	.000

* Fisher Exact Test chi-square

Table 31 shows that all of the NODS items discriminate effectively between SOGS-defined problem and non-problem gamblers in Arizona. The largest gap in endorsement rates between non-problem and problem gamblers is for Chasing with 51% of the SOGS lifetime problem gamblers scoring a positive response in contrast to only 5% of the non-problem gamblers. The next largest gap is for Preoccupation, with 34 of the SOGS lifetime problem gamblers scoring a positive response compared to 1.7% of the non-problem gamblers. In addition to the individual items, there is also a significant difference in mean scores on the lifetime NODS items for non-problem and problem gamblers. This provides further support for the notion that the lifetime NODS measures something similar to the lifetime SOGS.

Validity

There are several different types of validity that can be measured to assess the performance of an instrument. These include content, criterion, congruent and construct validity. Content validity is a subjective measure of how appropriate the items seem to a set of reviewers who have some knowledge of the subject matter. Since the NODS is so closely based on the DSM-IV criteria, and since these criteria have been shown to have good content validity, it is likely that the NODS also has good content validity (Lesieur & Rosenthal, 1998).

Criterion Validity

Criterion validity requires that the instrument be judged against some other method that is acknowledged as a standard for assessing the same phenomenon. As a first step, we calculated the correlation coefficient between the lifetime NODS and the lifetime South Oaks Gambling Screen. The result of this analysis was statistically significant at the .01 level (Pearson correlation coefficient=.725).

To better understand how the SOGS and the NODS operate in relation to one another, it is helpful to examine how respondents scored on each of these instruments in more detail. Table 32 on the following page shows the number of respondents who scored at different levels on the lifetime SOGS and the lifetime NODS.

Table 36: Comparing Scores on the SOGS and the NODS

SOGS	NODS				Total
	0	1 - 2	3 - 4	5+	
0	1607	86	1		1694
1 - 2	481	141	7		629
3 - 4	26	51	16	3	96
5+	4	15	18	13	50
Total	2118	293	42	16	2469

Table 32 shows that the lifetime NODS operates quite well in relation to the lifetime SOGS in Arizona. Respondents who score low on the NODS also tend to score low on the SOGS and 86% of the respondents who score three or more on the NODS also score three or more on the SOGS. In contrast, only 34% of respondents who score three or more on the lifetime SOGS also score at this level or above on the lifetime NODS.

Congruent Validity

Since several of the items on the SOGS and NODS are similar, it is possible to check whether respondents answered similar questions differently. Table 33 shows how respondents who gambled answered several similar questions from the lifetime SOGS and the lifetime NODS.

Table 37: Comparing Endorsement of Similar SOGS and NODS Items

	SOGS or NODS Item	Positive Score (2469) %
CHASING	Go back another day to win money you lost (chasing) (SOGS)	1.3
	Often return another day to get even (chasing) (NODS)	8.0
LYING	Claimed to win when in fact lost (SOGS)	2.6
	Lied three or more times to family/others about gambling (NODS)	2.1
TOLERANCE	Spend more time or money gambling than intended (SOGS)	19.5
	Need to gamble with increasing amounts to get same excitement (NODS)	2.2
LOSS OF CONTROL	Would like to stop gambling but couldn't (SOGS)	1.8
	Made 3+ attempts to stop, cut down or control gambling (NODS)	0.9

Table 33 shows that, for the most part, respondents are less likely to give an answer that scores as a positive response on the lifetime NODS questions than on the lifetime SOGS items. This is particularly the case for the items assessing Tolerance. However, respondents are more likely to give a positive answer to the NODS question assessing Chasing than to the SOGS item assessing the same behavior. This suggests that further research is needed on the cognitive properties of all of the problem gambling screens presently in use.

Comparing SOGS and NODS Problem Gamblers

Table 34 compares the demographic characteristics of lifetime problem gamblers as defined by the NODS with lifetime problem gamblers as defined by the SOGS. Since most of the NODS problem gamblers are SOGS problem gamblers as well, no effort has been made to test the differences for statistical significance. Table 34 shows that problem gamblers identified using the lifetime NODS are more likely than problem gamblers identified using the lifetime SOGS to be under the age of 30, Hispanic and never married. NODS-identified problem gamblers are less likely to reside in rural counties outside the Phoenix and Tucson areas.

Table 38: Comparing SOGS and NODS Problem Gamblers

		SOGS Problem Gamblers (150) %	NODS Problem Gamblers (59) %	
Gender	Male	73.3	72.9	-0.4
	Female	26.7	27.1	+0.4
Age	18 – 24	9.6	17.9	+8.3
	25 – 34	21.9	25.0	-3.1
	35 – 54	41.8	30.4	-11.4
	55 – 64	13.0	14.3	+1.3
	65+	13.7	12.5	-1.2
Ethnicity	White	72.9	56.1	-16.8
	Hispanic	22.2	35.1	+12.9
	Other*	4.9	8.8	3.9
Region	Maricopa	60.4	62.7	+2.3
	Pima	11.4	18.6	+7.2
	Other	28.2	18.6	-9.6
Religion	Protestant	27.1	27.3	
	Catholic	22.9	27.3	
	Fundamentalist	18.6	16.4	
	Other	11.4	9.1	
	None	20.0	20.0	
Marital Status	Married	58.1	50.9	-7.2
	Widowed	4.7	8.8	+4.1
	Divorced/Separated	18.9	12.3	-6.6
	Never Married	18.2	28.1	+9.9
Education	Elementary / Some HS	7.4	14.0	+6.6
	HS Grad	21.6	26.3	+4.7
	Some College	43.9	42.1	-1.8
	BA Degree	18.2	14.0	-4.2
	Graduate Study	8.8	3.5	-5.3
Employment	Working Full Time	61.8	66.7	+4.9
	Working Part Time	2.8	---	
	Keeping House	4.2	3.7	-0.5
	Retired	18.1	13.0	-5.1
	Disabled / Unemployed	13.2	16.7	+3.5

* Includes Black, Native American and Other.

Table 38: Comparing SOGS and NODS Problem Gamblers (cont'd)

		SOGS Problem Gamblers (150) %	NODS Problem Gamblers (59) %	
Residence	Full year in AZ	90.5	89.7	
	Less than full year in AZ	9.5	10.3	
Income	Up to \$25,000	19.2	20.0	
	\$25,001 – \$35,000	7.5	11.1	
	\$35,001 – \$50,000	25.8	22.2	
	\$50,001 – \$75,000	18.3	20.0	
	\$75,001 – \$125,000	18.3	20.0	
	\$125,001 or more	10.8	6.7	
Armed Forces Service		25.0	24.6	

SUMMARY AND CONCLUSION

The main purpose of this survey was to determine, for the first time, the scope of problem gambling in Arizona and identify the groups in the population most affected by the disorder. The results of this study also provide information about the impacts of problem gambling in Arizona and are intended to assist the State and other stakeholders in efforts to help individuals and groups in Arizona affected by this disorder.

Summary

The types of gambling that Arizona residents are most likely to have ever tried are gambling at a casino and playing lottery games. A second tier of gambling activities in Arizona consists of betting on horse or dog races, gambling privately and betting on sports. Non-gamblers and infrequent gamblers in Arizona are most likely to be female, Hispanic, married and keeping house and to have annual household incomes under \$25,000. Monthly and weekly gamblers in Arizona are most likely to be male, married, over the age of 55, to have served in the armed forces and to be retired.

The combined prevalence of problem and probable pathological gambling in Arizona is 2.3%--lower than in most other jurisdictions where similar surveys have been carried out. Problem gambling prevalence rates are highest among men, among adults aged 35 to 54, among Hispanics and among disabled and unemployed individuals in Arizona. Problem gambling prevalence rates are highest among individuals who have gambled in the past year on non-casino gaming machines, privately and at a casino. Based on the secondary problem gambling screen used in the survey, the prevalence of at-risk gambling in Arizona is higher than in other jurisdictions and a cause for concern.

Further analysis shows that lifetime problem gamblers in Arizona (those most likely to be in need of services) are significantly more likely than non-problem gamblers to be male and to have military experience. Lifetime problem gamblers are significantly more likely than non-problem gamblers to be working fulltime although twice as many problem as non-problem gamblers are disabled or unemployed (see Table 11 on Page 24). In contrast to many other jurisdictions, there are no significant differences between problem and non-problem gamblers in Arizona with respect to age, ethnicity, marital status, education or annual household income. This suggests that gambling problems in Arizona have gone "up market" and are now quite evenly distributed throughout the population. This is similar to trends that have been noted internationally and appears to be associated with the introduction of casinos and the "normalization" of gambling (Abbott, Volberg & Rönnerberg, 2003).

Lifetime problem gamblers in Arizona are significantly more likely than non-problem gamblers to identify slot machines or casino table games as their favorite gambling activity and to gamble once a month or more often on the lottery, at a casino and privately. Problem gamblers in Arizona are significantly more likely than non-problem gamblers to have started gambling before the age of 18, to usually gamble alone and to spend significantly more time and money on gambling. Problem gamblers are significantly more likely than non-problem gamblers in Arizona to believe that excitement or challenge, winning money and distraction are important reasons for gambling.

Problem gamblers in Arizona are significantly more likely than non-problem gamblers to rate their physical health as poor or fair and to have experienced mental health problems such as depression at some time in their lives. Problem gamblers in Arizona are significantly more likely than non-problem gamblers to smoke daily, to consume alcohol once a week or more often and to have used marijuana, cocaine or other illicit drugs in the past year. Although base rates are quite low, problem gamblers in Arizona are significantly more likely than non-problem gamblers to have sought help for an alcohol, drug or gambling problem. Finally, problem gamblers in Arizona are significantly more likely than non-problem gamblers to have been troubled by the gambling of someone with whom they live, to have ever filed for bankruptcy and to have been arrested and incarcerated.

At-risk gamblers fall between non-problem and problem gamblers on many dimensions, including demographics, physical and mental health and in family, financial and criminal justice impacts. When it comes to gambling participation, however, at-risk gamblers look much more like problem than non-problem gamblers. At-risk gamblers are actually more likely than either non-problem or problem gamblers to say that entertainment and excitement are important reasons for gambling. At-risk gamblers are more likely than both non-problem and problem gamblers to identify casino table games as their favorite type of gambling, to consume alcohol once a week or more often and to acknowledge difficulties in the past year due to drinking.

Growing concerns in the problem gambling treatment community indicated the importance of analyzing differences between “early onset” and “late onset” gamblers in Arizona. This analysis showed that early onset gamblers are significantly more likely than late onset gamblers to be male, under the age of 45, White and married, to have military experience and to have attended college, to be working fulltime and to have annual household incomes over \$75,000. Late onset gamblers are significantly more likely to be female, over the age of 65, Hispanic, widowed, retired and to have annual household incomes under \$25,000. Although early onset gamblers are more likely than late onset gamblers to prefer gambling activities with an element of skill, nearly two in three play games of chance and four in ten identify slot machines as their favorite gambling activity. Early onset gamblers are more likely than late onset gamblers to consume alcohol and use marijuana. Early onset gamblers are significantly more likely than late onset gamblers to score as at-risk, problem and pathological based on the lifetime NODS.

Another concern in the problem gambling treatment community is the growing involvement of older adults in casino and lottery gambling. Analysis of different age groups in Arizona shows that middle-aged and older adults in Arizona are significantly less likely than younger adults to be Hispanic, working fulltime and living in Arizona year-round. Older adults in Arizona are significantly more likely to have served in the armed forces. Despite these differences, there is little difference in the proportion of adults of different ages who gamble. Middle-aged and older adults are actually somewhat more likely than younger adults to gamble on a regular basis. Adults of all ages are equally likely to have gambled at a casino in the past year but older adults are less likely than younger adults to have played the lottery. In spite of different patterns of gambling involvement across age groups, there are no significant differences in the prevalence of problem gambling across these groups. This is another indication that problem gambling in Arizona has spread throughout the population and that middle-aged and

older adult gamblers may be at increased risk for developing more serious difficulties in the future.

Directions for the Future

The impacts of gambling-related problems can be high, not only for individuals but also 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 (Lesieur, 1998; Volberg, 2001a).

The impacts of gambling-related problems are not limited to those at the most severe end of the problem gambling continuum. Indeed, it is likely that problem and at-risk gamblers account for the largest proportion of the social costs of disordered gambling (Korn & Shaffer, 1999). It is also likely—if the addiction model applies—that problem and at-risk gamblers will be more responsive than pathological gamblers to prevention and intervention efforts (Hodgins & el-Guebaly, 2000; Shaffer & Korn, 2002).

How Many To Plan For?

One important purpose of a prevalence survey is to identify the number of individuals in a jurisdiction who may need treatment services for gambling-related difficulties at a given point in time. Experience in many jurisdictions suggests that not all of the individuals in need of treatment for a physical or psychological problem will seek out such treatment. From a policy perspective, the question is: How many individuals should we plan to provide for?

Recent research indicates that approximately 3% of individuals with severe alcohol-related difficulties actually seek treatment in any one year (Smith, 1993). Based on research in Australia as well as in Oregon, where services for problem gamblers are widely available, it appears that the proportion of current pathological gamblers who seek treatment in any one year is quite similar (Dickerson, 1997; Volberg, 1997). In calculating the number of problem and pathological gamblers who might seek treatment in Arizona, we focus on the group of individuals who score as current probable pathological gamblers (e.g. the 14,600 to 38,000 individuals represented by the confidence interval around the point estimate for current probable pathological gambling in Arizona). Based on this approach, we estimate that Arizona should plan to provide problem gambling treatment services to between 450 and 1,100 individuals per year.

Recommendations

Given the relatively low rate of problem gambling prevalence in Arizona, it is tempting to believe that little is needed in the way of services. However, studies in other states suggest that problem gambling services may actually play an important role in minimizing rates of problem gambling in the general population. There is also the question of how to prevent progression toward more severe gambling-related problems among the relatively large proportion of the population in Arizona who are at-risk. A full range of ameliorative measures in Arizona would include:

- development of **public education and prevention services** targeted toward particularly vulnerable groups (e.g. Hispanics, middle-aged and older adults) as well as venues where problem gamblers are most likely to be found. These include casinos, race tracks and off-track-betting facilities;
- fostering of gaming industry **responsible gaming policies and programs** to minimize gambling-related difficulties among patrons;
- developing cooperative **government-industry initiatives** to address problem gambling;
- working with **insurance companies** to obtain coverage for treatment services for individuals with gambling-related difficulties;
- expanding **training opportunities** to educate more mental health, 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;
- expansion of the state-level **gambling counselor certification program** to ensure that individuals seeking help for gambling-related difficulties receive appropriate and effective services;
- an **increase** in funding to support public education and prevention services as well as treatment of problem gambling;
- **evaluation** of existing services as well as those established in the future; and
- continued **monitoring** of gambling and problem gambling prevalence to assess the impacts of legal gambling on the residents of Arizona.

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APPENDIX A

Methods to Assess Problem Gambling in the General Population

The tools used to generate numbers are always a reflection of the work that researchers and others are doing to identify and describe the phenomena in which they are interested (Alonso & Starr, 1987; Prewitt, 1986). Historically, standardized measures and indices have often emerged in situations where there is, simultaneously, intense distrust and a perceived need for public action (Porter, 1995). Examples include the emergence of measures of “public utility” in France in the mid-1800s and the development of cost-benefit analysis in the United States in the mid-1900s.

There have been three “generations” of psychiatric research since the turn of the century, each coinciding with dramatic changes in psychiatric nomenclature (Dohrenwend, 1998). The third, and latest, generation of studies began around 1980 with the publication of the third edition of the *Diagnostic and Statistical Manual (DSM-III)* (American Psychiatric Association, 1980). The systematic approach to psychiatric diagnoses adopted in the DSM-III led directly to the development of semi-structured interviews and rating examinations for use by clinicians. These tools were quickly adopted for epidemiological research despite the relative lack of research on the validity of these case identification procedures with general population samples (Dohrenwend, 1995).

The Social Construction of Problem Gambling Measures

With the rapid expansion of legal gambling in the 1980s, state governments began to establish services for individuals with gambling problems. In establishing these services, policymakers and program planners quickly sought answers to questions about the number of “pathological gamblers” in the general population who might seek help for their difficulties. These questions required epidemiological research to identify the number (or “cases”) of pathological gamblers, ascertain their demographic characteristics, and determine the likelihood that they would utilize treatment services if these became available.

Following the first inclusion of the diagnosis of pathological gambling in the DSM-III (American Psychiatric Association, 1980), a few researchers from a variety of scientific disciplines, including psychiatry, psychology, and sociology, began to investigate gambling-related difficulties using various methods from psychiatric epidemiology. At this time, few tools existed to measure gambling-related difficulties. The only tool that had been rigorously developed and tested for its performance was the South Oaks Gambling Screen (SOGS).

The SOGS, closely based on the new diagnostic criteria for pathological gambling, was originally developed to screen for gambling problems in clinical populations (Lesieur & Blume, 1987). The 20 weighted items on the SOGS include hiding evidence of gambling, spending more time or money gambling than intended, arguing with family members over gambling and borrowing money from a variety of sources to gamble or to pay gambling debts. In developing the SOGS, specific items as well as the entire screen were tested for reliability and validity with a variety of groups, including hospital workers, university students, prison inmates and inpatients in alcohol and substance abuse treatment programs (Lesieur & Blume, 1987; Lesieur, Blume & Zoppa 1986; Lesieur & Klein 1985).

Adopting the SOGS for Population Research

Like other tools in psychiatric research, the SOGS was quickly adopted in clinical settings as well as in epidemiological research. The SOGS was first used in a prevalence survey in New York State (Volberg & Steadman, 1988). By 1998, the SOGS had been used in population-based research in more than 45 jurisdictions in the United States, Canada, Asia and Europe (Abbott & Volberg, 2000; Bondolfi, Osiek & Ferrero, 2000; Gerstein et al, 1999; Productivity Commission, 1999; Shaffer, Hall & Vander Bilt, 1999; Sproston, Erens & Orford, 2000; Volberg et al, 2001). This widespread use of the SOGS came at least partly from the great advantage of comparability within and across jurisdictions that came with use of a standard tool (Walker & Dickerson, 1996). Although there were increasingly well-focused grounds for concern about the performance of the SOGS in non-clinical environments, this tool remained the *de facto* standard in the field until the mid-1990s, when the new DSM-IV criteria were published (American Psychiatric Association, 1994; Volberg & Banks, 1990).

Like all tools to detect physical and psychological maladies, screens to detect gambling problems can be expected to generate some errors in classification. However, misclassification has very different consequences in different settings. Misclassification can occur when an individual without the malady in question is misdiagnosed as having the malady. This type of classification error is called a false positive. Misclassification can also occur when an individual with the malady is misdiagnosed as not having the malady. This type of classification error is called a false negative (see table below). While most screens to detect psychiatric disorders work well in clinical settings where the prevalence of the disorders under investigation is predictably high, the accuracy of many psychiatric screens declines when they are used among populations where prevalence is much lower, such as the general population (Dohrenwend, 1995).

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

Clinicians are concerned with the issue of false positives because the cost of treating someone who does not need treatment can be high. Clinicians are also concerned with false negatives because of the enormous impact associated with failure to correctly diagnose an individual with a disorder. In prevalence research, where the primary concern is accurately identifying the number of people with and without the disorder, both types of classification error are important, but for different reasons. In population research, each type of classification error has an independent impact on the overall efficiency of the screen. Indeed, the rate of false negatives may be of principal concern in prevalence research since even a very low rate of false negatives can have a large

effect on the overall efficiency of a screen (i.e. the total proportion of individuals who are correctly classified).

Take as an example a group of 1,000 individuals of whom 5% are classified as pathological and 95% are classified as non-pathological. Let us assume that the rate of false positives is 50% so that 25 of the 50 identified pathological gamblers are misclassified. Even if the rate of false negatives were much lower, say 5%, 47 of the 950 non-pathological gamblers would be misclassified. Thus, even a very low rate of false negatives will generate a group that is nearly twice as large as the group of false positives (see table below).

	Pathological	Non-Pathological	Total
Pathological	25	25	50
Non-Pathological	47	903	950
Total	72	928	1,000

Validating the SOGS

A national study in New Zealand in the early 1990s furnished an opportunity to examine the performance of the South Oaks Gambling Screen in the general population (Abbott & Volberg, 1992, 1996). This opportunity arose from the two-phase research design employed in the New Zealand study. This design allowed the researchers to identify true pathological gamblers among particular groups of respondents. In the New Zealand study, true pathological gamblers were identified in each of four groups included in the survey: (1) probable pathological gamblers, (2) problem gamblers, (3) regular continuous gamblers and (4) regular non-continuous gamblers. No error rate was determined for respondents in the New Zealand study who did not acknowledge gambling on a regular basis. Prevalence rates were corrected using the “efficiency approach” which involved calculating the rate of true pathological gamblers in each group and dividing this number by the total number of respondents in the sample. The efficiency approach resulted in a revised current prevalence estimate in New Zealand that was 0.1% higher than the uncorrected current prevalence rate.

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

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

A recent study in Minnesota supports the New Zealand work on the performance of the SOGS (Stinchfield, 2002). In this study, the SOGS and a nineteen-item version of the DSM-IV criteria (the DIGS—Diagnostic Interview for Gambling Severity) were administered to three samples, including a general population sample, a sample of callers to a gambling hotline and a sample of individuals entering treatment for a gambling problem. Stinchfield found that the accuracy of the SOGS (as assessed by the DIGS) was high among individuals who called a gambling hotline or were entering treatment but that the instrument did not perform as well in the general population. Stinchfield concluded that the SOGS had satisfactory reliability and validity in all three samples and he argued that the SOGS is best suited for identifying vulnerable individuals. However, in his view, the DIGS is more useful if the goal of a study is to estimate the prevalence of pathological gambling in the general population.

Growing Concerns with the SOGS

Beginning in the early 1990s, a variety of methodological questions were raised about SOGS-based research in the general population (Culleton, 1989; Dickerson, 1993; Lesieur, 1994; Volberg, 1994; Walker, 1992). Some of these issues, such as respondent denial and rising refusal rates, were common to all survey research. Other questions were related to the issue of how to best study gambling-related difficulties. These included reservations about the reliability and validity of the SOGS as well as challenges to assumptions about the nature of gambling problems that were built into the original version of this instrument.

What led to the growing dissatisfaction with the South Oaks Gambling Screen? One important change was the rapid expansion of legal gambling itself. This expansion led many people who had never before gambled to try these activities. As legal gambling expanded into new markets and as new types of gambling were marketed to new groups, the individuals seeking help for gambling difficulties became increasingly heterogeneous. Representatives of the gambling industries also played a role in challenging the supremacy of the South Oaks Gambling Screen through their efforts to discredit what they saw as unacceptably high prevalence rates.

Prevalence surveys in the early 1990s suggested that growing numbers of women and middle-class individuals were developing gambling problems (Volberg, 1992, 1996; Volberg & Silver, 1993). Several of the specific items included in the SOGS made little sense to these new groups or to the treatment professionals working with them. Questions about borrowing from loansharks, for example, or cashing in stocks and bonds to get money to gamble or pay gambling debts were more relevant to the middle-

aged, middle-class men most likely to seek help for gambling problems in the 1970s and early 1980s than to the young adults and middle-aged women who began to experience gambling problems in the 1990s. Questions about others criticizing one's gambling and feeling guilty about one's gambling were more likely to receive a positive response from low-income and minority respondents than others in the population (Volberg & Steadman, 1992). Questions about borrowing from the "household" to get money to gamble would be interpreted differently by individuals from ethnic groups where "household" may be defined as the entire extended family.

There were also multiplying needs for tools in different settings. Starting in the early 1990s, growing government resources became available for services for problem gamblers. In 1985, only three states funded services for problem gamblers. By 1996, 21 states were funding an array of services for problem gamblers, including education, prevention, and referral; an increase of 600 percent in ten years (Cox et al, 1997). Along with these resources came new demands for accountability and performance. These demands drew further attention to the deficiencies of the South Oaks Gambling Screen and increased dissatisfaction with its performance in general population studies.

Emergence of New Problem Gambling Screens

In 1994, the fourth edition of the *Diagnostic and Statistical Manual* (DSM-IV) adopted a new set of criteria for the diagnosis of pathological gambling. The changes made to the psychiatric criteria for pathological gambling incorporated empirical research that linked pathological gambling to other addictive disorders like alcohol and drug dependence (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, 1998). 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 established a diagnostic cutoff of 5 points. Pathological gambling is now defined as persistent and recurrent maladaptive gambling behavior as indicated by five or more of ten criteria (listed in Table 1 on Page 2 of this report), with the reservation that the behavior is not better accounted for by manic episodes—a reservation added somewhat as an afterthought, as it was not part of the underlying research on which the DSM-IV criteria were based.

Most researchers conducting gambling studies and treatment professionals working with individuals with gambling problems have expressed satisfaction with the new DSM-IV criteria. Internationally, numerous researchers and treatment professionals have adopted the DSM-IV criteria in their work and these criteria are now the measure against which the performance of other instruments must be demonstrated.

There is a growing community of researchers and treatment professionals active in the gambling field and a growing number of tools to measure gambling problems for different purposes. Until 1990, only three screens existed to identify individuals with gambling problems. Since 1990, nine screens for adults and three screens for adolescents have been developed, including two based on the SOGS and at least four based on the DSM-IV criteria (National Research Council, 1999). Despite this proliferation, the psychometric properties of most of these new tools remain unexamined. Even more significantly, few of these new screens have been tested for their differential performance in clinical settings, population research, and program evaluation. Another

concern is how to calibrate the performance of these new screens with the results of more than a decade of SOGS-based research.

The 1998 National Survey

In 1998, the National Gambling Impact Study Commission contracted with the National Opinion Research Center to collect data from a nationally representative sample of households about gambling behavior and gambling-related problems (Gerstein et al, 1999).¹ The questionnaire for the national survey supplemented demographic and geographic information with economic and family indicators. Respondents were asked highly detailed questions about their gambling behavior and about adverse consequences related to gambling. Respondents were also asked questions about their physical and mental health, about alcohol and substance use and dependence and about criminal records.

The guidelines of the National Gambling Impact Study Commission specified that the DSM-IV criteria be used to identify respondents with gambling-related difficulties in the general population. This meant that the study team could not use the South Oaks Gambling Screen since this is based on the DSM-III criteria. Instead, the study team developed a series of questions designed to match the DSM-IV criteria for diagnosing pathological gambling. This series of questions is referred to as the NODS (the National Opinion Research Center DSM Screen for Gambling Problems).

Development of the NODS

The NODS is composed of 17 lifetime items and 17 past year items and the maximum score on the NODS is 10. Although there are fewer items in the NODS and the maximum score is lower, the NODS is actually more restrictive in assessing problematic behaviors than the SOGS or any other screen based on the DSM-IV criteria.

For example, several of the DSM-IV criteria are difficult to establish with a single question. In assessing these criteria (Preoccupation, Escape, Risking a Significant Relationship), two or three questions were used with respondents receiving a single point if they give a positive response to any of the questions assessing that criterion. Another complication in constructing the NODS is that two of the DSM-IV criteria (Withdrawal, Loss of Control) assume that the questioner already knows that the individual has tried to “stop, cut down, or control” her or his gambling. These criteria were assessed with the NODS by first determining whether the respondent had tried to control her or his gambling before assessing whether the respondent had felt restless or irritable during these times (Withdrawal) and, then, assessing whether the respondent had succeeded in doing so (Loss of Control).

Another decision in developing the NODS was to place definite limits on several of the criteria, in keeping with the approach taken in alcohol and drug abuse research. For example, in assessing Preoccupation, the NODS asks if the periods when respondents

¹ The National Opinion Research Center formed a study team that included Gemini Research, Ltd., the Lewin Group and Christiansen/Cummings Associates, Inc. In addition to the survey of 2406 adults, research initiatives included a national survey of 534 youths aged 16 and 17, intercept interviews with 530 adult patrons of gaming facilities, a longitudinal data base (1980 to 1996) of social and economic indicators and estimated gambling revenues in a random national sample of 100 communities and case studies in 10 communities regarding the effects of large-scale casinos opening in close proximity.

spent a lot of time thinking about gambling or about getting money to gamble have lasted 2 weeks or longer. Similarly, the NODS asks if respondents have tried, but not succeeded, in controlling their gambling three or more times (Loss of Control). Respondents are also asked if they have lied to others about their gambling three or more times (Lying). Only a positive response to these latter items are included in the final score for the NODS.

In the national survey, NORC chose to administer the NODS only to those respondents who acknowledged ever losing \$100 or more in a single day of gambling and/or those who acknowledged that they had been behind at least \$100 across an entire year of gambling at some point in their lives. This decision was made after pretesting indicated that non-gamblers and infrequent gamblers grew impatient with repeated questions about gambling problems and after a review of other problem gambling surveys showed that persons who had never experienced significant losses were unlikely to report problems related to gambling. Further research is needed to determine whether the use of these filters in other problem gambling studies is warranted.

Validity and Reliability of the NODS

In the study of clinical disorders, pathological gambling counts as a chronic rather than as an acute disorder. Once fully developed, chronic disorders leave a lifelong vulnerability. This vulnerability may be effectively treated and kept in check. However, periods when an individual is relatively free of symptoms do not mean that the person is free of the disorder. From the perspective of measuring prevalence, the strongest emphasis belongs on the determination of whether pathological gambling has developed rather than on whether its symptoms are recent or current. This is clearly reflected in the DSM-IV criteria, which focus on the accumulation of discrete symptoms through the present and do not require that specific symptoms be clustered tightly together in time.

As noted above, research on the performance of the SOGS has shown that the lifetime screen is very good at detecting pathological gambling among those who currently experience the disorder. However, the lifetime SOGS accurately identifies vulnerable individuals at the expense of generating higher numbers of false positives. Based on the construction of the NODS as well as the results from the national survey, the research team argued that the specificity of the NODS should be very good, reducing the rate of false positives among those classified with the lifetime screen; and in this respect, contrasting with the performance of the SOGS.

One important step in developing the NODS was a field test with a national clinical sample of 40 individuals in outpatient problem gambling treatment programs. Based on the field test, the research team concluded that the NODS had strong internal consistency, retest reliability and good validity. The field test demonstrated that the sensitivity of the lifetime NODS in a clinical population was higher than the past year NODS. This is what one would expect if pathological gambling is appropriately conceptualized as a chronic disorder.

Assessing Problem Gambling in the Future

The assumption underlying all of the existing gambling research is that gambling-related difficulties are a robust phenomenon that exist in the community and can be measured.

Despite agreement among researchers and treatment professionals at this fundamental level, there is disagreement about the concepts and measurement of gambling-related difficulties. While the ascription of “conceptual and methodological chaos” to the field (Shaffer, Hall & Vander Bilt, 1997: 8) may be an overstatement of the situation among its experienced researchers, the presence of competing concepts and methods is not uncommon among emerging and even mature scientific fields. Nevertheless disputes among experts have led to some degree of public confusion and uncertainty about the prevalence of problem gambling and the impacts of legal gambling on society.

Like much of science, measurement is a negotiable process. Instrumentation is always a reflection of the work that researchers are doing to identify and describe the phenomena in which they are interested. Each of the methods used to classify problem gamblers represents a culturally and historically situated consensus about the nature of problem gambling. As research continues and as the definitions of problem gambling change, new instruments and new methods for estimating prevalence in the general population and for testing models of gambling behavior will continue to emerge. To advance the field of gambling studies in an orderly manner, these emerging methods must be tested against each other and against existing tools, such as the South Oaks Gambling Screen. This approach will serve to ensure the relevance of our past work as well as our work in the future.

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APPENDIX B

Questionnaire for the Arizona Problem Gambling Survey

Hello, my name is _____ and I am calling from O'Neill Associates. I want to assure you that we're not selling anything; we are conducting a survey for the State of Arizona about people's attitudes toward gambling.

In order to interview the right person, I need to speak with the MALE IN THE HOUSEHOLD OVER 18 WITH THE MOST RECENT BIRTHDAY. (IF NECESSARY, Would that be you?).

IF NO, ASK TO SPEAK TO THAT PERSON.
IF NOT AVAILABLE, ARRANGE CALL-BACK.

IF R IS RELUCTANT TO PARTICIPATE OR INDICATES THAT IT IS NOT A CONVENIENT TIME:
I realize I am intruding on your time but the results of this survey are for a very important study and by participating the results will be more accurate. Can you please spare just a few minutes to participate?

Your number was randomly selected by a computer. All of your answers will be kept strictly confidential and will only be used for reporting purposes. You may refuse to answer any question that makes you uncomfortable. MOVED AFTER RESPONDENT SELECTION

SECTION A: GAMBLING INVOLVEMENT

SKIP RULES: ASK ALL RESPONDENTS Lifetime Participation (A1, A2, A3, A4, A5, A6, A7, A8, A9, A10). IF RESPONDENT DOES NOT ACKNOWLEDGE ANY GAMBLING, GO TO CHECKPOINT A.

IF RESPONDENT ACKNOWLEDGES ANY Lifetime Participation, ASK Past Year Participation (A1A, A2A, A3A, A4A, A5A, A6A, A7A, A8A, A9A, A10A) AND FOLLOW-UP QUESTIONS FOR EACH TYPE OF GAMBLING ACKNOWLEDGED.

I would like to ask about your experience with various kinds of gambling. By gambling, I mean placing a bet on the outcome of a race, buying a lottery ticket, betting on a sporting event or at a casino, playing the stock market or playing a game – including for charity – in which you might win or lose money.

First, I would like to ask you about some popular activities.

A1. Have you ever gambled at a casino? (READ IF NECESSARY: A casino is a large gambling hall with many different kinds of games, for example, in a resort hotel or in a gambling hall on a riverboat or cruise ship.)

- 1 Yes GO TO A1A
- 2 No GO TO A2
- 8 DON'T KNOW GO TO A2
- 9 REFUSED GO TO A2

A1A. About how often did you gamble at a casino in the past 12 months?

- 1 Daily (30+ times per month)
- 2 Several times a week (6 – 29 times per month)
- 3 Several times a month (3 – 5 times per month)
- 4 Once a month or less (6 – 12 times per year)
- 5 Only a few days all year (1 – 5 times per year)
- 6 Not at all in the past 12 months (0 times) GO TO A2
- 8 DON'T KNOW GO TO A2
- 9 REFUSED GO TO A2

A1B. (ASK IF A1A = 1-5) When you gamble at a casino, what game do you usually play? (DO NOT READ LIST)

- 1 Card games such as blackjack or poker
- 2 Other table games, such as roulette or craps
- 3 Slot machines
- 4 Other video games, such as video poker
- 5 Keno-type games
- 6 Sports
- 7 Horse or dog race betting
- 8 Bingo
- 9 Pull-tabs
- 10 Other [SPECIFY]
- 88 DON'T KNOW
- 99 REFUSED

A1C. When you visit a casino, what city or geographic location do you visit most often? (DO NOT READ LIST)

- 1 Las Vegas, Laughlin or Reno, Nevada

- 2 Atlantic City, New Jersey
- 3 Gulf Coast, Mississippi
- 4 Somewhere in Arizona
- 5 Other [SPECIFY]
- 8 DON'T KNOW
- 9 REFUSED

A2. Have you ever gambled on a gaming machine outside of a casino, such as a slot machine, or video poker or keno at a bar, convenience store, race track or other location? (INCLUDE VIDEO LOTTERY TERMINALS, OTHER GAMES WHERE ONE PLAYS AGAINST THE MACHINE. DON'T INCLUDE INTERNET GAMBLING, PULLTABS OR GAMES WHERE R ONLY MADE SIDE BETS ON OUTCOME OF GAME WITH AN ACQUAINTANCE)

- 1 Yes GO TO A2A
- 2 No GO TO A3
- 8 DON'T KNOW GO TO A3
- 9 REFUSED GO TO A3

A2A. About how often did you gamble on a gaming machine outside of a casino in the past 12 months?

- 1 Daily (30+ times per month)
- 2 Several times a week (6 – 29 times per month)
- 3 Several times a month (3 – 5 times per month)
- 4 Once a month or less (6 – 12 times per year)
- 5 Only a few days all year (1 – 5 times per year)
- 6 Never GO TO A3
- 8 DON'T KNOW GO TO A3
- 9 REFUSED GO TO A3

A2B. (ASK IF A2A = 1-5) When you gamble on a gaming machine outside of a casino, where do you usually play? (DO NOT READ LIST)

- 1 Bar or tavern
- 2 Race track
- 3 Convenience store
- 4 Restaurant or lounge
- 5 Grocery store or laundromat
- 6 Private club
- 7 Social/fraternal organization
- 8 Truck stop
- 9 Bingo hall
- 10 Pool hall or billiard parlor
- 11 Or somewhere else [SPECIFY]
- 88 DON'T KNOW
- 99 REFUSED

A3. Have you ever spent money on lottery games like Powerball or The Pick, daily games like Pick-3 or instant tickets like Scratchers?

- 1 Yes GO TO A3A
- 2 No GO TO A4
- 8 DON'T KNOW GO TO A4
- 9 REFUSED GO TO A4

A3A. About how often did you buy a lottery ticket in the past 12 months?

- 1 Daily (30+ times per month)
- 2 Several times a week (6 – 29 times per month)
- 3 Several times a month (3 – 5 times per month)
- 4 Once a month or less (6 – 12 times per year)
- 5 Only a few days all year (1 – 5 times per year)
- 6 Never GO TO A4
- 8 DON'T KNOW GO TO A4
- 9 REFUSED GO TO A4

A3B. (ASK IF A3A = 1-5) When you play the lottery, what kind of lottery tickets do you usually buy? (DO NOT READ LIST) (ACCEPT MULTIPLE RESPONSES)

- 1 The Pick
- 2 Powerball
- 3 Daily games like Pick-3
- 4 Scratchers
- 5 Other [SPECIFY]
- 8 DON'T KNOW

9 REFUSED

- A4. Have you ever spent money on Bolita, policy or an illegal numbers game?
 1 Yes GO TO A4A
 2 No GO TO A5
 8 DON'T KNOW GO TO A5
 9 REFUSED GO TO A5
- A4A. About how often did you play Bolita, policy or an illegal numbers game in the past 12 months?
 1 Daily (30+ times per month)
 2 Several times a week (6 – 29 times per month)
 3 Several times a month (3 – 5 times per month)
 4 Once a month or less (6 – 12 times per year)
 5 Only a few days all year (1 – 5 times per year)
 6 Never
 8 DON'T KNOW
 9 REFUSED
- A5. Have you ever placed a bet on a horse race or dog race? (INCLUDE BETTING WITH A BOOKIE)
 1 Yes GO TO A5A
 2 No GO TO A6
 8 DON'T KNOW GO TO A6
 9 REFUSED GO TO A6
- A5A. About how often did you bet on a horse or dog race in the past 12 months?
 1 Daily (30+ times per month)
 2 Several times a week (6 – 29 times per month)
 3 Several times a month (3 – 5 times per month)
 4 Once a month or less (6 – 12 times per year)
 5 Only a few days all year (1 – 5 times per year)
 6 Never GO TO A6
 8 DON'T KNOW GO TO A6
 9 REFUSED GO TO A6
- A5B. (ASK IF A5A = 1-5) When you gamble on horse or dog races, do you usually do so at a ...
 1 Racetrack
 2 OTB (off-track-betting) facility in Arizona
 3 OTB facility outside Arizona
 4 Tribal casino
 5 Or somewhere else (SPECIFY)
 8 DON'T KNOW
 9 REFUSED
- A6. Have you ever played bingo for money outside of a casino?
 1 Yes GO TO A6A
 2 No GO TO A7
 8 DON'T KNOW GO TO A7
 9 REFUSED GO TO A7
- A6A. About how often have you played bingo for money outside of a casino in the past 12 months?
 1 Daily (30+ times per month)
 2 Several times a week (6 – 29 times per month)
 3 Several times a month (3 – 5 times per month)
 4 Once a month or less (6 – 12 times per year)
 5 Only a few days all year (1 – 5 times per year)
 6 Never
 8 DON'T KNOW
 9 REFUSED
- A7. Have you ever gambled on a private game such as cards, dice or dominoes in someone's home or at a club or organization, or on a game of skill such as golf, pool or bowling? (DO NOT INCLUDE PRIVATE GAMES ON THE INTERNET IF A THIRD PARTY IS TAKING A CUT OR PLAYERS ARE PLAYING AGAINST "THE HOUSE.")
 1 Yes GO TO A7A

- 2 No GO TO A8
- 8 DON'T KNOW GO TO A8
- 9 REFUSED GO TO A8

A7A. About how often have you gambled on a private game in the past 12 months?

- 1 Daily (30+ times per month)
- 2 Several times a week (6 – 29 times per month)
- 3 Several times a month (3 – 5 times per month)
- 4 Once a month or less (6 – 12 times per year)
- 5 Only a few days all year (1 – 5 times per year)
- 6 Never
- 8 DON'T KNOW
- 9 REFUSED

A8. Have you ever bet on the outcome of sports or other events with friends, co-workers, a bookie or some other person?

- 1 Yes GO TO A8A
- 2 No GO TO A9
- 8 DON'T KNOW GO TO A9
- 9 REFUSED GO TO A9

A8A. About how often have you gambled on sports in the past 12 months?

- 1 Daily (30+ times per month)
- 2 Several times a week (6 – 29 times per month)
- 3 Several times a month (3 – 5 times per month)
- 4 Once a month or less (6 – 12 times per year)
- 5 Only a few days all year (1 – 5 times per year)
- 6 Never
- 8 DON'T KNOW
- 9 REFUSED

A9. Have you ever gambled on the Internet or World Wide Web? (INCLUDE LOTTERY TICKETS BOUGHT OVER THE INTERNET. DO NOT INCLUDE GAMES PLAYED AMONG PEOPLE UNLESS A BUSINESS HOSTING THE GAME TAKES A CUT.)

- 1 Yes GO TO A9A
- 2 No GO TO A10
- 8 DON'T KNOW GO TO A10
- 9 REFUSED GO TO A10

A9A. About how often have you gambled on the Internet in the past 12 months?

- 1 Daily (30+ times per month)
- 2 Several times a week (6 – 29 times per month)
- 3 Several times a month (3 – 5 times per month)
- 4 Once a month or less (6 – 12 times per year)
- 5 Only a few days all year (1 – 5 times per year)
- 6 Never
- 8 DON'T KNOW
- 9 REFUSED

A10. Have you ever gambled on any other kind of game I haven't mentioned? Examples might include raffles, sweepstakes, baby pools, pull-tabs or betting on a dogfight or cockfight.

- 1 Yes GO TO A11A
- 2 No GO TO CHECKPOINT A
- 8 DON'T KNOW GO TO CHECKPOINT A
- 9 REFUSED GO TO CHECKPOINT A

A10A. About how often have you gambled on any other kind of game I haven't mentioned in the past 12 months?

- 1 Daily (30+ times per month)
- 2 Several times a week (6 – 29 times per month)
- 3 Several times a month (3 – 5 times per month)
- 4 Once a month or less (6 – 12 times per year)
- 5 Only a few days all year (1 – 5 times per year)
- 6 Never
- 8 DON'T KNOW
- 9 REFUSED

CHECKPOINT A

SKIP RULE: ASK FOLLOWING QUESTION ONLY IF R HAS EVER GAMBLED (ONE OR MORE OF A1–A10 IS “YES”) AND DID NOT GAMBLE MORE THAN ONCE A MONTH ON ANY GAME (A1A—A10A NOT IN (1 2 3)). ELSE GO TO CHECKPOINT B.

PROGRAMMING NOTE: IF A1A–A10A IN (1 2 3), AUTOMATICALLY CODE RESPONSE TO A11 AS 5.

- A11. Now I'd like you to think about how many days you have ever gambled. Was it more than 5 days in your life?
- | | |
|----------------------|--------------------|
| 1 Yes | GO TO CHECKPOINT C |
| 2 No | GO TO CHECKPOINT B |
| 3 DON'T KNOW | GO TO CHECKPOINT B |
| 4 REFUSED | GO TO CHECKPOINT B |
| 5 LOGICAL IMPUTE YES | GO TO CHECKPOINT C |

SECTION J: QUESTIONS FOR NON-GAMBLERS

CHECKPOINT B

SKIP RULE: ASK J1 TO J3 ONLY IF R HAS REPORTED NO GAMBLING EVER (A1–A10 ARE ALL “NO” OR A11 = 2, 3 OR 4). ELSE GO TO CHECKPOINT C.

You have indicated that you have never OR SELDOM gambled. Now I would like to ask you about some possible reasons why you have never gambled. Please tell me whether each of the following reasons is very important, somewhat important, or not at all important to you as a reason for not gambling.

- J1. Inconvenient or you live too far away
- | |
|------------------------|
| 1 Very important |
| 2 Somewhat important |
| 3 Not at all important |
| 8 DON'T KNOW |
| 9 REFUSED |
- J2. Moral or ethical concerns
- | |
|------------------------|
| 1 Very important |
| 2 Somewhat important |
| 3 Not at all important |
| 8 DON'T KNOW |
| 9 REFUSED |
- J3. The possibility of losing money
- | |
|------------------------|
| 1 Very important |
| 2 Somewhat important |
| 3 Not at all important |
| 8 DON'T KNOW |
| 9 REFUSED |

SECTION B: GENERAL GAMBLING QUESTIONS

CHECKPOINT C

SKIP RULE: ASK FOLLOWING QUESTIONS ONLY IF R IS A GAMBLER (A11 = 1 OR 5); ELSE GO TO CHECKPOINT D.

- B1. IF R HAS DONE MORE THAN ONE TYPE OF GAMBLING, ASK: Thinking about the sorts of activities we have discussed, can you tell me which is your favorite gambling activity? (DO NOT READ LIST)
- | |
|------------------------------------|
| 1 Card games at a casino |
| 2 Table games at a casino |
| 3 Slot machines at a casino |
| 4 Video poker at a casino |
| 5 Gaming machines outside a casino |
| 6 Lottery game |
| 7 Illegal numbers game |
| 8 Horse race, dog race or jai alai |
| 9 Bingo |
| 10 Private game |
| 11 Sports |
| 12 Card games on the Internet |
| 13 Slot machines on the Internet |

- 14 Some other type of gambling on the Internet
- 15 Stock trading
- 16 Some other activity [SPECIFY]
- 88 DON'T KNOW
- 99 REFUSED

B2. When participating in your favorite type of gambling, who do you usually gamble with?

- 1 Alone
- 2 Spouse or partner or significant other
- 3 Other family member(s)
- 4 Friend(s), co-worker(s), neighbor(s), club member(s)
- 5 Some other individual or group
- 6 Whoever is around
- 8 DON'T KNOW
- 9 REFUSED

B3. When participating in your favorite type of gambling, can you tell me what distance you usually travel, if any?
(PAUSE, READ IF NECESSARY)

- 1 Don't travel
- 2 5 miles or less
- 3 6 to 15 miles
- 4 16 to 30 miles
- 5 31 to 45 miles
- 6 46 to 60 miles
- 7 More than 60 miles
- 8 DON'T KNOW
- 9 REFUSED

B4. When participating in your favorite type of gambling, how long do you usually play?

- 1 Less than one hour
- 2 1 to 2 hours
- 3 3 to 5 hours
- 4 6 to 12 hours
- 5 More than 12 hours
- 8 DON'T KNOW
- 9 REFUSED

Next, I would like to ask you about reasons you may have for gambling. Please tell me whether each of the following reasons is very important, somewhat important, or not at all important to you as a reason for gambling.

B5. To be around or with other people

- 1 Very important
- 2 Somewhat important
- 3 Not at all important
- 8 DON'T KNOW
- 9 REFUSED

B6. Because it's convenient or easy to do

- 1 Very important
- 2 Somewhat important
- 3 Not at all important
- 8 DON'T KNOW
- 9 REFUSED

B7. To win money

- 1 Very important
- 2 Somewhat important
- 3 Not at all important
- 8 DON'T KNOW
- 9 REFUSED

B8. For entertainment or fun

- 1 Very important
- 2 Somewhat important
- 3 Not at all important
- 8 DON'T KNOW
- 9 REFUSED

B9. To support good causes

- 1 Very important

- 2 Somewhat important
3 Not at all important
8 DON'T KNOW
9 REFUSED
- B10. Because it's exciting and challenging
1 Very important
2 Somewhat important
3 Not at all important
8 DON'T KNOW
9 REFUSED
- B11. Because it is inexpensive entertainment
1 Very important
2 Somewhat important
3 Not at all important
8 DON'T KNOW
9 REFUSED
- B12. To distract yourself from everyday problems
1 Very important
2 Somewhat important
3 Not at all important
8 DON'T KNOW
9 REFUSED
- B13. How old were you, the first time you gambled?
_____ years
98 DON'T KNOW
99 REFUSED
- B14. Was there any time when the amount you were gambling made you nervous?
1 Yes
2 No
8 Don't know
9 Refused
- B15. How old were you THE FIRST TIME that happened?
_____ years
98 DON'T KNOW
99 REFUSED
- B16. Compared to other recreational or social activities, how important is gambling to you? Would you say it is ...
(READ LIST)
1 Very important
2 Somewhat important
3 Not at all important
8 DON'T KNOW
9 REFUSED
- B17. About how much do you spend on gambling in an average month? (IF HESITANT, SAY "I'm just looking for an approximate amount." IF STILL HESITANT, READ LIST)
1 Less than \$1
2 \$1 to \$10
3 \$11 to \$49
4 \$50 to \$99
5 \$100 to \$199
6 \$200 to \$299
7 \$300 to \$499
8 \$500 to \$999
9 More than \$1000
88 DON'T KNOW
99 REFUSED
- B18. What is the largest amount of money you have ever lost gambling in one day? (PAUSE, PROMPT WITH HIGHEST NUMBER IN EACH RANGE IF NECESSARY)
1 Less than \$1
2 \$1 - \$9
3 \$10 - \$99

- 4 \$100 - \$999
- 5 \$1,000 - \$9,999
- 6 \$10,000 or more
- DON'T KNOW
- REFUSED

B19. In all your years of gambling, what is the largest amount you have lost in a year?
[PAUSE, PROMPT WITH HIGHEST NUMBER IN EACH RANGE IF NECESSARY]

- 1 Never lost money
- 2 \$10 - \$90
- 3 \$100 - \$999
- 4 \$1,000 - \$9,999
- 5 \$10,000 - \$99,999
- 6 \$100,000 - \$499,000
- 7 Over \$500,000
- 8 REFUSED

SECTION C: NORC DSM-IV SCREEN FOR GAMBLING PROBLEMS

THIS SECTION AND THE FOLLOWING SECTION ARE TWO DIFFERENT PROBLEM GAMBLING SCREENS. THE TWO SCREENS ARE ROTATED.

SKIP RULE: ASK FOLLOWING QUESTIONS ONLY IF R IS A GAMBLER (A11 = 1 OR 5); ELSE GO TO CHECKPOINT D.

Next, I would like to ask you some questions about how you feel about your gambling. There are no right or wrong answers. We want to know what your experiences have been. Remember that all the information you share is confidential.

IF INTERVIEWER ENCOUNTERS DIFFICULTIES WITH RESPONDENTS IN COMPLETING THIS SECTION, SAY:

We realize that these questions may not apply to everyone, but your answers are very important and will only take a few more minutes.

C1. Have there ever been periods lasting 2 weeks or longer when you spent a lot of time thinking about your gambling experiences or planning out future gambling ventures or bets?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

C1A. IF C1 YES Has this happened in the past year?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

C2. Have there ever been periods lasting 2 weeks or longer when you spent a lot of time thinking about ways of getting money to gamble with?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

C2A. IF C2 YES Has this happened in the past year?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

C3. Have there ever been periods when you needed to gamble with increasing amounts, or make larger bets than before, in order to get the same feeling of excitement?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

- C3A. IF C3 YES Has this happened in the past year?
- 1 Yes
 - 2 No
 - 8 DON'T KNOW
 - 9 REFUSED
- C4. Have you ever tried to stop, cut down, or control your gambling?
- 1 Yes GO TO C5
 - 2 No GO TO C8
 - 8 DON'T KNOW GO TO C8
 - 9 REFUSED GO TO C8
- C5. On one or more of the times when you tried to stop, cut down, or control your gambling, were you restless or irritable?
- 1 Yes
 - 2 No
 - 8 DON'T KNOW
 - 9 REFUSED
- C5A. IF C5 YES Has this happened in the past year?
- 1 Yes
 - 2 No
 - 8 DON'T KNOW
 - 9 REFUSED
- C6. Have you ever tried but not succeeded in stopping, cutting down, or controlling your gambling?
- 1 Yes GO TO C7
 - 2 No GO TO C8
 - 8 DON'T KNOW GO TO C8
 - 9 REFUSED GO TO C8
- C7. Has this happened three or more times?
- 1 Yes
 - 2 No
 - 8 DON'T KNOW
 - 9 REFUSED
- C7A. IF C7 YES Has this happened in the past year?
- 1 Yes
 - 2 No
 - 8 DON'T KNOW
 - 9 REFUSED
- C8. Have you ever gambled as a way to escape from personal problems?
- 1 Yes
 - 2 No
 - 8 DON'T KNOW
 - 9 REFUSED
- C8A. IF C8 YES Has this happened in the past year?
- 1 Yes
 - 2 No
 - 8 DON'T KNOW
 - 9 REFUSED
- C9. Have you ever gambled to relieve uncomfortable feelings such as guilt, anxiety, helplessness or depression?
- 1 Yes
 - 2 No
 - 8 DON'T KNOW
 - 9 REFUSED
- C9A. IF C9 YES Has this happened in the past year?
- 1 Yes
 - 2 No
 - 8 DON'T KNOW
 - 9 REFUSED

C10. Has there ever been a period when, if you lost money gambling one day, you would return another day to get even?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

C10A. IF C10 YES Has this happened in the past year?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

C11. Have you ever lied to family members, friends, or others about how much you gamble or how much you lost on gambling?

- 1 Yes GO TO C12
- 2 No GO TO C13
- 8 DON'T KNOW GO TO C13
- 9 REFUSED GO TO C13

C12. IF YES: Has this happened three or more times?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

C12A. IF C12 YES Has this happened in the past year?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

C13. Have you ever written a bad check or taken money that didn't belong to you, from family members or anyone else, in order to pay for your gambling?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

C13A. IF C13 YES Has this happened in the past year?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

C14. Have you ever done anything else that could have gotten you in trouble with the law, in order to pay for your gambling?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

C14A. IF C14 YES Has this happened in the past year?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

C15. Has your gambling ever caused serious or repeated problems in your relationships with any of your family members or friends?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

C15A. IF C15 YES Has this happened in the past year?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

C16. Has your gambling ever caused you any problems in school or to have trouble with your job, to lose a job, or miss out on an important job or career opportunity?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

C16A. IF C16 YES Has this happened in the past year?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

C17. Have you ever needed to ask family members or anyone else to loan you money, or otherwise bail you out of a desperate situation that was largely caused by your gambling?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

C17A. IF C17 YES Has this happened in the past year?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

SECTION D: SOUTH OAKS GAMBLING SCREEN

THIS SECTION AND THE PREVIOUS SECTION ARE TWO DIFFERENT PROBLEM GAMBLING SCREENS. THE TWO SCREENS ARE ROTATED.

SKIP RULE: ASK FOLLOWING QUESTIONS ONLY IF R IS A GAMBLER (A11 = 1 OR 5); ELSE GO TO CHECKPOINT D.

The next set of questions is part of a standard scale. There are no right or wrong answers to the questions that follow. We want to know what your experiences have been. Remember that all the information you share is confidential.

IF INTERVIEWER ENCOUNTERS DIFFICULTIES WITH RESPONDENTS IN COMPLETING THIS SECTION, SAY:

We realize that these questions may not apply to everyone, but your answers are very important.

D1. When you participate in the gambling activities we have discussed, how often do you go back another day to win back money you lost? Is it:

- | | |
|--------------------|-----------|
| 1 Never | GO TO D2 |
| 2 Some of the time | GO TO D1A |
| 3 Most of the time | GO TO D1A |
| 4 Every time | GO TO D1A |
| 8 DON'T KNOW | GO TO D2 |
| 9 REFUSED | |

D1A. How often have you done this in the past year?

- 1 Never
- 2 Some of the time
- 3 Most of the time
- 4 Every time
- 8 DON'T KNOW
- 9 REFUSED

D2. Have you ever claimed to be winning money from these activities when in fact you lost? Would that be ...
(READ LIST)

- | | |
|--------------------|-----------|
| 1 Never | GO TO D3 |
| 2 Some of the time | GO TO D2A |
| 3 Most of the time | GO TO D2A |
| 4 Every time | GO TO D2A |
| 8 DON'T KNOW | GO TO D3 |
| 9 REFUSED | GO TO D3 |

D2A. How often have you done this in the past year?

- 1 Never
- 2 Some of the time
- 3 Most of the time
- 4 Every time
- 8 DON'T KNOW
- 9 REFUSED

D3. Do you ever spend more time or money gambling than you intended?

- | | |
|--------------|-----------|
| 1 Yes | GO TO D3A |
| 2 No | |
| 8 Don't know | |
| 9 Refused | |

D3A. Have you done this in the past year?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

D4. Have people ever criticized your gambling?

- | | |
|--------------|-----------|
| 1 Yes | GO TO D4A |
| 2 No | |
| 8 DON'T KNOW | |
| 9 REFUSED | |

D4A. Have people criticized your gambling in the past year?

- 1 Yes
- 2 No
- 8 Don't know
- 9 Refused

D5. Have you ever felt guilty about the way you gamble or about what happens when you gamble?

- | | |
|--------------|-----------|
| 1 Yes | GO TO D5A |
| 2 No | |
| 8 DON'T KNOW | |
| 9 REFUSED | |

D5A. Have you felt this way in the past year?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

D6. Have you ever felt that you would like to stop gambling, but didn't think that you could?

- | | |
|--------------|-----------|
| 1 Yes | GO TO D6A |
| 2 No | |
| 8 DON'T KNOW | |
| 9 REFUSED | |

D6A. Have you felt this way in the past year?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

D7. Have you ever hidden betting slips, lottery tickets, gambling money or other signs of gambling from your spouse or partner, children, or other important people in your life?

- | | |
|--------------|-----------|
| 1 Yes | GO TO D7A |
| 2 No | |
| 8 DON'T KNOW | |

9 REFUSED

D7A. Have you done so in the past year?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

D8. Have you ever argued with people you live with over how you handle money?

- 1 Yes GO TO D8A
- 2 No GO TO D9
- 8 DON'T KNOW GO TO D9
- 9 REFUSED GO TO D9

D8A. Have these arguments ever centered on your gambling?

- 1 Yes GO TO D8B
- 2 No GO TO D9
- 8 DON'T KNOW GO TO D9
- 9 REFUSED GO TO D9

D8B. Did any of these arguments become physical?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

D8C. Have you had any of these arguments in the past year?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

D9. Have you ever missed time from work or school due to gambling?

- 1 Yes GO TO D9A
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

D9A. Have you missed time from work or school in the past year due to gambling?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

D10. Have you ever borrowed money from someone and not paid them back as a result of your gambling?

- 1 Yes GO TO D10A
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

D10A. Have you done so in the past year?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

Next, I am going to read a list of ways in which some people get money for gambling. Can you tell me which of these, if any, you have ever used to get money for gambling or to pay gambling debts?

D11. Have you ever borrowed from household money to gamble or pay gambling debts?

- 1 Yes GO TO D11A
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

D11A. Have you borrowed from household money in the past year?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

- D12. Have you ever borrowed money from your spouse or partner to gamble or pay gambling debts?
1 Yes GO TO D12A
2 No
8 DON'T KNOW
9 REFUSED
- D12A. Have you borrowed money from your spouse or partner in the past year?
1 Yes
2 No
8 DON'T KNOW
9 REFUSED
- D13. Have you ever borrowed from other relatives or in-laws to gamble or pay gambling debts?
1 Yes GO TO D13A
2 No
8 DON'T KNOW
9 REFUSED
- D13A. Have you borrowed from other relatives or in-laws in the past year?
1 Yes
2 No
8 DON'T KNOW
9 REFUSED
- D14. Have you ever gotten loans from banks, loan companies or credit unions to gamble or pay gambling debts?
1 Yes GO TO D14A
2 No
8 DON'T KNOW
9 REFUSED
- D14A. Have you gotten loans from banks, loan companies or credit unions in the past year?
1 Yes
2 No
8 DON'T KNOW
9 REFUSED
- D15. Have you ever made cash withdrawals on credit cards to get money to gamble or pay gambling debts? (DOES NOT INCLUDE INSTANT CASH CARDS FROM BANK ACCOUNTS)
1 Yes GO TO D15A
2 No
8 DON'T KNOW
9 REFUSED
- D15A. Have you made cash withdrawals on credit cards in the past year?
1 Yes
2 No
8 DON'T KNOW
9 REFUSED
- D16. Have you ever gotten loans from loan sharks to gamble or pay gambling debts?
1 Yes GO TO D16A
2 No
8 DON'T KNOW
9 REFUSED
- D16A. Have you gotten loans from loan sharks in the past year?
1 Yes
2 No
8 DON'T KNOW
9 REFUSED
- D17. Have you ever cashed in stocks, bonds or other securities to finance gambling?
1 Yes GO TO D17A
2 No
8 DON'T KNOW
9 REFUSED
- D17A. Have you cashed in stocks, bonds or other securities in the past year?
1 Yes

- 2 No
- 8 DON'T KNOW
- 9 REFUSED

D18. Have you ever sold personal or family property to gamble or pay gambling debts?

- 1 Yes GO TO D18A
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

D18A. Have you sold personal or family property to gamble or pay gambling debts in the past year?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

D19. Have you ever borrowed from your checking account by writing checks that bounced to get money for gambling or to pay gambling debts?

- 1 Yes GO TO D19A
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

D19A. Have you borrowed from your checking account by writing checks that bounced in the past year?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

D20. Do you feel that you have ever had a problem with betting money or gambling?

- 1 Yes GO TO D20A
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

D20A. Do you feel that you have had a problem with betting money or gambling in the past year?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

D21. Do you feel that either of your parents ever had a problem with betting money or gambling?

- 1 Yes GO TO D21A
- 2 No GO TO D22
- 8 Don't know GO TO D22
- 9 Refused GO TO D22

D21A. Which parent was that? (CODE ALL THAT APPLY)

- Father
- Mother
- Stepfather
- Stepmother
- Other
- Refused

D22. Has anyone that you lived with in the past 12 months gambled so much that it has troubled or bothered you?

- 1 Yes GO TO D22A
- 2 No GO TO D24
- 3 ADD VOLUNTEER LIVE ALONE
- 8 Don't know GO TO D24
- 9 Refused GO TO D24

D22A. What is that person's relationship to you?

- Spouse or partner
- Parent
- Brother or sister
- Child
- Other person

D23. In the past 12 months, did you ever argue about that person's gambling to the point where the argument became emotionally harmful?

- | | |
|--------------|------------|
| 1 Yes | GO TO D23A |
| 2 No | GO TO D24 |
| 8 Don't know | GO TO D24 |
| 9 Refused | GO TO D24 |

D23A. Did any of these arguments become physical?

- 1 Yes
- 2 No
- 8 Don't know
- 9 Refused

D24. Have you ever sought help to stop gambling?

- | | |
|--------------|--------------------|
| 1 Yes | GO TO D24A |
| 2 No | GO TO CHECKPOINT D |
| 8 DON'T KNOW | GO TO CHECKPOINT D |
| 9 REFUSED | GO TO CHECKPOINT D |

D24A. Who did you contact? (DO NOT READ)

- Family member
- Friend
- Family doctor
- Gamblers Anonymous
- Gambling treatment program in Florida
- Gambling treatment program outside Florida
- Veterans Administration
- Employee assistance program (EAP)
- Psychologist or psychiatrist
- Other counselor
- Clergy (e.g. minister/priest/rabbi)
- Alcohol or drug abuse treatment program
- Mental health treatment center
- Hospital in Arizona
- Hospital outside Arizona
- Other [SPECIFY]
- REFUSED

SECTION E: ALCOHOL AND DRUGS

CHECKPOINT D

SKIP RULES: ASK ALL RESPONDENTS Alcohol and Drug Questions.

Now I have some questions about things that some people do. Remember all your answers are totally confidential.

E1. In the last 12 months, how often have you used cigarettes, chewing tobacco or snuff?

- 1 Daily (more than 30 times per month)
- 2 Several times a week (6 – 29 times per month)
- 3 Several times a month (3 – 5 times per month)
- 4 Once a month or less (6 – 12 times per year)
- 5 Only a few days all year (1 – 5 times per year)
- 6 Never
- 8 DON'T KNOW
- 9 REFUSED

E2. In the last 12 months, how often have you had an alcoholic beverage?

IF RESPONDENT ASKS, A DRINK IS DEFINED AS: a can or bottle of beer or malt liquor, a 4-oz glass of wine, a mixed drink or a one and one-half oz shot

- 1 Daily (more than 30 times per month)
- 2 Several times a week (6 – 29 times per month)
- 3 Several times a month (3 – 5 times per month)
- 4 Once a month or less (6 – 12 times per year)
- 5 Only a few days all year (1 – 5 times per year)
- 6 Never
- 8 DON'T KNOW
- 9 REFUSED

E3. On a typical day when you drink, how many drinks do you have?

_____ [RECORD NUMBER]
888 DON'T KNOW
999 REFUSED

SKIP RULES: ASK E4 ONLY IF R HAS REPORTED DRINKING ALCOHOL MORE THAN ONCE A MONTH (E2 = 1, 2, 3). ELSE GO TO E5.

E4. In the last 12 months, how many times have you gotten into difficulties of any kind because of your drinking?

- 1 None
- 2 1
- 3 2-3
- 4 4-9
- 5 10 times or more
- 6 DON'T KNOW
- 7 REFUSED

E5. In the last 12 months, how often have you used marijuana or hashish?

- 1 Daily (more than 30 times per month)
- 2 Several times a week (6 – 29 times per month)
- 3 Several times a month (3 – 5 times per month)
- 4 Once a month or less (6 – 12 times per year)
- 5 Only a few days all year (1 – 5 times per year)
- 6 Never
- 8 DON'T KNOW
- 9 REFUSED

E6. In the last 12 months, how often have you used cocaine or crack?

- 1 Daily (more than 30 times per month)
- 2 Several times a week (6 – 29 times per month)
- 3 Several times a month (3 – 5 times per month)
- 4 Once a month or less (6 – 12 times per year)
- 5 Only a few days all year (1 – 5 times per year)
- 6 Never
- 8 DON'T KNOW
- 9 REFUSED

E7. In the last 12 months, how often have you used other drugs for non-medical reasons, including amphetamines or methamphetamines, barbiturates, tranquilizers, hallucinogens or narcotics?

- 1 Daily (more than 30 times per month)
- 2 Several times a week (6 – 29 times per month)
- 3 Several times a month (3 – 5 times per month)
- 4 Once a month or less (6 – 12 times per year)
- 5 Only a few days all year (1 – 5 times per year)
- 6 Never
- 8 DON'T KNOW
- 9 REFUSED

SKIP RULES: ASK E8 ONLY IF R HAS REPORTED USING DRUGS MORE THAN ONCE A MONTH (E5, E6 OR E7 = 1, 2, 3). ELSE GO TO E9.

E8. In the last 12 months, how many times have you gotten into difficulties of any kind because of your drug use?

- 1 None
- 2 1
- 3 2-3
- 4 4-9
- 5 10 times or more
- 8 DON'T KNOW
- 9 REFUSED

E9. Have you ever sought help to stop using alcohol or other drugs?

- 1 Yes GO TO E9A
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

- E9A. What type of help was that?
(DO NOT READ. CODE ALL THAT APPLY)
- Family member
 - Friend
 - Family doctor
 - Alcoholics or Narcotics Anonymous
 - Treatment program in Arizona
 - Treatment program outside Arizona
 - Veterans Administration
 - Employee assistance program (EAP)
 - Psychologist or psychiatrist
 - Other counselor
 - Minister/priest/rabbi
 - Hospital in Arizona
 - Hospital outside Arizona
 - Other
 - Refused

SECTION F: MENTAL HEALTH

SKIP RULES: ASK ALL RESPONDENTS Mental Health Questions.

Now I would like to ask you some questions about your physical and mental health.

- F1. How would you describe your general health over the past 12 months? Would you say it was excellent, good, fair or poor?
- 1 Excellent
 - 2 Good
 - 3 Fair
 - 4 Poor
- F2. In the past 12 months, has someone close to you become seriously ill or disabled?
- 1 Yes
 - 2 No
 - 8 DON'T KNOW
 - 9 REFUSED
- F3. In the past 12 months, has someone close to you died?
- 1 Yes
 - 2 No
 - 8 DON'T KNOW
 - 9 REFUSED
- F4. In the past 12 months, has someone close to you gambled so much it troubled you?
- 1 Yes GO TO F4A
 - 2 No GO TO F5
 - 8 DON'T KNOW GO TO F5
 - 9 REFUSED GO TO F5
- F4A. What is their relationship to you? If you are thinking about more than one person, please say each one. (CODE ALL THAT APPLY)
- 1 Spouse/partner/significant other
 - 2 Parent
 - 3 Brother or sister
 - 4 Child (own, adopted, foster)
 - 5 Other relative
 - 6 Other non-related person
 - 8 DON'T KNOW
 - 9 REFUSED
- F5. Has there ever been a period of at least one week when you were so happy or excited that you got into trouble, or your family or friends worried about it, or a doctor said you were manic?
- 1 Yes GO TO F5A
 - 2 No GO TO F6
 - 8 Don't know GO TO F6
 - 9 Refused GO TO F6
- F5A. Was this behavior ever the result of taking medication, drugs or alcohol?

- 1 Yes GO TO F5B
- 2 No GO TO F6
- 8 Don't know GO TO F6
- 9 Refused GO TO F6

F5B. Was this period of being happy, excited, high or manic always the results of taking medication, drugs or alcohol?

- 1 Yes
- 2 No
- 8 Don't know
- 9 Refused

F6. Has there ever been a period of at least one week when you were so irritable that you threw or broke things, started arguments, shouted at people or hit someone?

- 1 Yes GO TO F6A
- 2 No GO TO F7
- 8 Don't know GO TO F7
- 9 Refused GO TO F7

F6A. IF YES: Was this behavior ever the result of taking medication, drugs or alcohol?

- 1 Yes GO TO F6B
- 2 No GO TO F7
- 8 Don't know GO TO F7
- 9 Refused GO TO F7

F6B. IF YES: Was this period of being so irritable always the results of taking medication, drugs or alcohol?

- 1 Yes
- 2 No
- 8 Don't know
- 9 Refused

F8. Now I want to ask you about periods of feeling sad, empty or depressed. In your lifetime, have you ever had a period of 2 weeks or longer when nearly every day you felt sad, empty or depressed for most of the day?

- 1 Yes
- 2 No
- 8 Don't know
- 9 Refused

F9. In your lifetime, have you ever had a period of 2 weeks or longer when you lost interest in most things like work, hobbies, and other things you usually enjoyed?

- 1 Yes
- 2 No
- 8 Don't know
- 9 Refused

F10. In the past 12 months, have you gone to a clinic, doctor, counselor, or outpatient treatment for problems with your emotions, nerves, or mental health?

- 1 Yes
- 2 No
- 8 DON'T KNOW
- 9 REFUSED

F11. Right now, how troubled or bothered are you by your emotions, nerves, or mental health? Would you say not at all, somewhat or very much?

- 1 Not at all
- 2 Somewhat
- 3 Very much

SECTION G: OTHER IMPACTS

SKIP RULES: ASK ALL RESPONDENTS Other Impacts Questions.

G4. Have you ever filed for bankruptcy?

- 1 Yes GO TO G4A
- 2 No GO TO G5
- 8 Don't know GO TO G5
- 9 Refused GO TO G5

G4A. Was gambling a significant factor or cause of this bankruptcy?

- 1 Yes
- 2 No
- 8 Don't know
- 9 Refused

- G5. Have you ever been arrested or detained by the police or a sheriff?
- 1 Yes GO TO G5A
 - 2 No GO TO K1
 - 8 Don't know GO TO K1
 - 9 Refused GO TO K1

G5A. How many times have you been arrested?
_____ [RECORD NUMBER]

- G6. Have you ever been incarcerated in prison or jail for any reason?
- 1 Yes GO TO G6A
 - 2 No GO TO K1
 - 8 Don't know GO TO K1
 - 9 Refused GO TO K1

G6A. Was gambling a significant factor in your incarceration?

- 1 Yes
- 2 No
- 8 Don't know
- 9 Refused

SECTION K: DEMOGRAPHICS

SKIP RULES: ASK ALL RESPONDENTS Demographic Questions.

The following questions are for statistical purposes only and your answers will be confidential.

- K1. Are you currently married, widowed, divorced, separated, or have you never been married?
- Married, common-law, co-habitation
 - Widowed
 - Divorced
 - Separated
 - Never married
 - Refused

- K2. What is the highest level of education you have completed? (READ IF NECESSARY)
- 1 Elementary school
 - 2 Some high school
 - 3 High school degree or GED
 - 4 Some college
 - 5 Associate degree or other degree (vocational, technical or trade school)
 - 6 Bachelors degree
 - 7 Masters degree
 - 8 Postgraduate degree (PhD or JD)
 - 9 Other [SPECIFY]
 - 88 DON'T KNOW
 - 99 REFUSED

- K3. Last week, were you working full-time, part-time or not working?
- 1 Working full-time GO TO K4
 - 2 Working part-time GO TO K3A
 - 3 Not working last week GO TO K3B

K3A. IF WORKING PART-TIME, ASK: Have you previously retired from any fulltime jobs?

- 1 Yes
- 2 No
- 3 DON'T KNOW
- 4 REFUSED

K3B. IF NOT WORKING, ASK: Are you a student, homemaker/ househusband, completely retired, disabled, unemployed or something else?

- 1 Student
- 2 Homemaker/househusband
- 3 Completely retired

- 4 Disabled
- 5 Unemployed
- 6 Something else
- REFUSED
- DON'T KNOW

K4. In what year were you born?

K5. How many months of the year do you live in Arizona?
 _____ RECORD NUMBER (1 - 12)

K6. Are you one of the following: Hispanic, Latino, or of Spanish Origin?
 1 Yes
 2 No
 8 DON'T KNOW
 9 REFUSED

K7. Which of the following best describes your racial or ethnic group? Are you ...
 American Indian
 Asian or Pacific Islander
 Black or African American
 White or Caucasian
 Or something else (SPECIFY)
 DON'T KNOW
 REFUSED

K8. Have you ever been in the Armed Services?
 1 Yes
 2 No
 8 DON'T KNOW
 9 REFUSED

K9. Can you describe your current religious preference? (DO NOT READ LIST). (PROTESTANT INCLUDES BAPTIST, LUTHERAN, METHODIST, Episcopalian, etc).

- Protestant 1
- Catholic 2
- Jewish 3
- Muslim 4
- Christian 5 ASK K9A
- Mormon, LDS 6
- Other 7 SPECIFY
- None 8
- DON'T KNOW 88
- REFUSED 99

K9A. Do you consider yourself to be a born again Christian?
 Yes
 No
 REFUSED

The following question concerns income, and is for classification purposes only.

K10. Can you tell me approximately what your total household income was last year?
 IF DON'T KNOW OR REFUSE, SAY: Is that ... AND READ 1-8.

- 1 Up to \$15,000
- 2 \$15,001 to \$25,000
- 3 \$25,001 to \$35,000
- 4 \$35,001 to \$50,000
- 5 \$50,001 to \$75,000
- 6 \$75,001 to \$100,000
- 7 \$100,001 to \$125,000
- 8 Over \$125,000
- 88 DON'T KNOW
- 99 REFUSED

K11. In what county do you live?

K12. RECORD RESPONDENT GENDER. DON'T GUESS. (IF CANNOT TELL, SAY "I am required to ask, are you male or female?")

- 1 Male

2 Female

That was the last question. Thank you very much for your time and cooperation.