GAMBLING AND PROBLEM GAMBLING IN WASHINGTON STATE:
A REPLICATION STUDY, 1992 TO 1998

Report to the Washington State Lottery

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TABLE OF CONTENTS

APPENDIX A: Methods to Assess Problem Gambling in the General Population

APPENDIX B: Assessing the Proportion of Gambling Revenues From Problem Gamblers

APPENDIX C: Questionnaire for the 1998 Washington State Survey

LIST OF TABLES

LIST OF FIGURES

ACKNOWLEDGEMENTS

EXECUTIVE SUMMARY

This report presents the findings of a state-wide survey of gambling participation and gambling-related problems in Washington State. This study is a replication of a baseline study that was carried out by the same research team in 1992. A random sample of 1,501 Washington State residents aged 18 and over was interviewed in October and November of 1998 about the types of gambling in which they had ever participated, the amounts of money they spend on gambling, and about problems related to their gambling.

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 disorder characterized by loss of control over gambling, chasing of losses, lies and deception, family and job disruption, financial bailouts and illegal acts.

The main purpose of this study was to examine changes in the prevalence of gambling-related problems among the adult population in Washington State between 1992 and 1998. An additional purpose of this study was to compare prevalence rates of problem gambling in Washington State with prevalence rates from other jurisdictions. The results of this study will be useful in documenting the impacts of legal gambling on the citizens of Washington State and in refining the services available to individuals in Washington State with gambling-related difficulties.

Key Findings

- Lifetime gambling participation ranges from 64% to 95% in population surveys in the United States. In Washington State in 1998, 89% of the respondents had gambled at some time in their lives on one or more of the 16 gambling activities included in the study. In 1992, 91% of Washington State respondents acknowledged participating in one or more of the 19 gambling activities included in the questionnaire.

- In 1998, Washington State respondents who ever gambled were most likely to be between the ages of 25 and 54, to have graduated from high school and/or attended some college, to be working full time and to have household incomes over $25,000.

- In 1998, Washington State respondents who gambled weekly on one or more activities were most likely to be male, between the ages of 35 and 64 and working full time. Weekly gamblers in Washington State were more likely than other respondents to be divorced or separated and less likely to have attended college.

- Since 1992, there have been declines in lifetime participation among Washington State residents in large jackpot lottery games as well as wagering on card games with family and friends, horse races and sports. In this period, there have been increases in lifetime participation in the lottery's daily game and keno as well as wagering on pulltabs, Indian and commercial bingo, electronic gambling machines and card games at card rooms, mini-casinos and Indian casinos.

- Since 1992, there have been declines in past year participation among Washington State residents in the lottery's instant scratch games and large jackpot games as well as wagering on card games with friends and family, horse races and sports. There have been increases in past year participation in the lottery's daily game and keno as well as wagering on Indian bingo, electronic gambling machines and card games at card rooms, mini-casinos and Indian casinos.

- Since 1992, there have been declines in weekly participation among Washington State residents in the lottery's large jackpot games as well as wagering on pulltabs, horse races and sports. There have been increases in weekly participation in wagering on electronic gambling machines and card games at card rooms, mini-casinos and Indian casinos.

- Lifetime prevalence rates of problem and probable pathological gambling range from 2.3% in South Dakota in 1993 to 7.3% in New York in 1996. The combined lifetime prevalence rate of problem and probable pathological gambling in Washington State in 1998 is 5.0%.

- The combined lifetime prevalence rate in Washington State in 1992 was 5.1%. Compared with 1992, the lifetime prevalence of problem and probable pathological gambling have both remained stable.

- Based on these lifetime prevalence rates, we estimate that between 30,300and 77,700 Washington State residents can be classified as lifetime probable pathological gamblers. In addition, between 114,300 and 193,200 Washington State residents can be classified as lifetime problem gamblers.

- Current prevalence rates of problem and probable pathological gambling range from 1.2% in South Dakota in 1993 to 4.9% in Mississippi in 1996. The combined current prevalence rate of problem and probable pathological gambling in Washington State in 1998 is 2.3%.

- The combined current prevalence rate in Washington State in 1992 was 2.8%. Compared with 1992, the current prevalence of problem and probable pathological gambling have both remained stable.

- Based on these current prevalence rates, we estimate that between 6,200 and 35,300 Washington State residents can be classified as current probable pathological gamblers. In addition, between 47,000 and 102,600 Washington State residents can be classified as current problem gamblers.

- In 1998, Washington State respondents who scored as lifetime problem or probable pathological gamblers were significantly more likely than other gamblers to be male, under the age of 25, non-White or Hispanic and never married. There were no significant differences between non-problem and problem gamblers in marital status, employment status or household income.

- Washington State respondents who scored as lifetime problem gamblers in 1998 were significantly different from those who scored as lifetime problem gamblers in 1992. Lifetime problem gamblers in 1998 were significantly more likely than problem gamblers in 1992 to be male, under the age of 25 and non-White or Hispanic. Lifetime problem gamblers in 1998 were significantly more likely than problem gamblers in 1992 to have graduated from high school and to be working full time or going to school.

- Nearly one-third (31%) of all the respondents, 46% of the weekly gamblers and 57% of current problem gamblers indicated that they were aware of the activities of the Washington State Council on Problem Gambling.

Future Directions

Given the stability of the prevalence of gambling-related problems in Washington State and the success of the public awareness activities of the Washington State Council on Problem Gambling, it will be important to maintain and perhaps expand current services for individuals with gambling-related problems in the State. It will also be important to evaluate the services that are available for individuals at risk for developing gambling-related difficulties.

Policy-makers may wish to give consideration to requiring that insurance coverage be extended to cover problem gambling treatment, increasing public education and prevention services, fostering responsible gambling policies and programs by the gambling industries and developing government-industry initiatives to address this issue, expanding training opportunities for treatment professionals, establishing a gambling counselor certification program, expanding the activities of the Washington State Council on Problem Gambling and continued monitoring of gambling and problem gambling prevalence to assess the impacts of the introduction of new types of legal gambling and to refine existing efforts to minimize the negative impacts of gambling.

INTRODUCTION

Starting in the 1970s, the legalization of gambling proceeded apace with little consideration of the potentially negative impacts that gambling can have on individuals, families and communities. In the 1990s, however, prevalence surveys have become an essential component in the establishment and monitoring of gambling legalization in the United States and internationally (Volberg & Dickerson 1996).

The main purpose of this study, funded by the Washington State Lottery, is to examine changes in gambling participation and the prevalence of gambling-related problems in Washington State between 1992 and 1998. An additional purpose of this study is to identify the types of gambling causing the greatest difficulties for the citizens of Washington State. The results of this study will be useful in documenting the impact of legal gambling on the citizens of Washington State and in refining the services available to individuals in Washington State with gambling-related difficulties.

This report is organized into several sections for clarity of presentation. The ***Introduction*** includes a definition of the terms used in the report while the ***Methods*** section addresses the details of conducting the survey. The next five sections detail findings from the survey in the following areas:

- gambling in Washington State in 1998;

- prevalence of problem gambling in Washington State in 1998;

- comparing non-problem and problem gamblers in Washington State in 1998;

- comparing the baseline and replication surveys in Washington State; and

- comparing the results of two problem gambling screens in Washington State.

Background

In 1992, when the first survey of gambling and problem gambling was carried out in Washington State, there were already substantial legal opportunities for gambling available to the state's citizens. The Washington State Lottery offered several products, including a large-jackpot game, daily games and instant or scratch tickets. There was also on-track and off-track wagering on horse and dog races, commercial gambling opportunities on pulltabs and card games, and charitable wagering on pulltabs, bingo, and raffles. In the wake of the Indian Gaming Regulatory Act of 1988, several American Indian tribes in Washington State had established compacts and two tribes were operating casinos with table games such as poker and blackjack.

In the six years since the first survey of gambling and problem gambling among adults in Washington State, legal gambling in the region has expanded further. Within Washington State, the lottery has added a daily keno game as well as two new large-jackpot games. The number of commercial card rooms has expanded and some of these establishments have grown large enough to be called "mini-casinos." There are now 17 American Indian tribes with approved compacts in Washington State and at least 28 tribal gaming facilities currently operating, some of which only offer bingo (North American Gaming Report 1997). Finally, electronic gambling machines have recently started operating in Washington State.

Regionally, there have also been increases in legal gambling opportunities. To the north, the Province of British Columbia offers Washington State residents a range of gambling opportunities, including charitable casinos, large-scale bingo halls, and a complete range of lottery products, including sports, bingo and keno games, through the British Columbia Lottery

Corporation. To the south, electronic gambling machines owned by the Oregon State Lottery are widely distributed around the state at bars, taverns and restaurants as well as at several American Indian tribal casinos. The tribal casinos also offer off-track pari-mutuel wagering, blackjack and keno. To the east, Idaho offers lottery products, pari-mutuel and charitable wagering as well as several large-scale American Indian bingo operations.

Recent information on gross revenues,[1] or consumer spending, on different types of gambling provides a measure of the size of the different gambling industries in Washington State (Christiansen 1998). With gross revenues of approximately $170 million, the Washington State Lottery generated the largest share of the gross gaming revenues that were reported in Washington State in 1997. Casinos and electronic gambling devices (not including gambling on Indian reservations) generated approximately $154 million in gross revenues. Other types of gambling in Washington State were much smaller: bingo generated approximately $45 million in gross revenues in 1997, other charitable games generated approximately $38 million, pari-mutuel events generated approximately $35 million and card rooms generated approximately $18 million in gross revenues in 1997. Indian gaming facilities are not required to report their revenues so it is difficult to estimate their share of gross gaming revenues in Washington State.

Problem Gambling Services in Washington State

The baseline surveys of adults and adolescents in Washington State grew out of efforts already underway in the state to address the issue of problem gambling. In addition to funding the baseline surveys, the Washington State Lottery has funded the costs of equipment for a helpline staffed by the Washington State Council on Problem Gambling and has developed several public service announcements for print media and television. Through licensing fees, the Washington State Gambling Commission funds several activities related to problem gambling, including the operating expenses for the helpline as well as administrative expenses of the Washington State Council on Problem Gambling. The Washington State Gambling Commission also funds training sessions and conferences to educate a variety of professional groups about problem gambling. Tribal casinos and gaming industry suppliers provide additional funding to the Washington State Council on Problem Gambling to support its activities.

Efforts to educate Washington State citizens about problem gambling and provide services to individuals with gambling-related difficulties have expanded since 1992. The Washington State Council on Problem Gambling now operates a website which has received approximately 9,500 "hits" since it was started in mid-1997 as well as a helpline which receives approximately 200 calls a month from gamblers and family members seeking information and referral to treatment services. The Council conducts workshops and outreach activities to raise awareness of problem gambling among youth, law enforcement and prison personnel, treatment providers and lawmakers. The Council also provides training for casino employees as well as mental health and addiction treatment providers in the identification, referral and treatment of problem gambling. Treatment services for problem gamblers and their families have also expanded in Washington State. There are now Gamblers Anonymous meetings in 21 communities around the state and two professionally staffed treatment programs providing outpatient services (Washington State Council on Problem Gambling 1996; Washington State Council on Problem Gambling 1999).

Defining Our Terms

Gambling is an ancient form of recreation and there is evidence of gambling in prehistoric cultures as well as among indigenous peoples (Gabriel 1996). In Western countries, gambling has played an integral role in society although, historically, attitudes about the acceptability of different types of gambling have fluctuated in different eras and cultures. At the end of the 20th Century, *gambling* refers to a collection of several distinct behaviors and activities. The common

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[1] Gross revenues represent the amount extracted collectively from players and transferred to the operators of commercial games. Gross revenues do not represent profits to operators.

thread is that all of these activities involve risking the loss of something of value in exchange for an opportunity to gain something of far greater value (Thompson 1997). Most people who gamble are *social gamblers*. They gamble for entertainment and typically do not risk more than they can afford to lose. If they should "chase" their losses to get even, they do so briefly; there is none of the long-term chasing or progression of the pathological (or compulsive) gambler.

Pathological gambling lies at one end of a spectrum of gambling problems and was first recognized as a psychiatric disorder in 1980 (American Psychiatric Association 1980). Recent changes have been made to the psychiatric criteria for pathological gambling to incorporate empirical research that links pathological gambling to other addictive disorders like alcohol and drug dependence. According to the American Psychiatric Association (1994), the essential features of pathological gambling are:

- *a continuous or periodic loss of control over gambling;*

- *a progression, in gambling frequency and amounts wagered, in the preoccupation with gambling and in obtaining monies with which to gamble; and*

- *a continuation of gambling involvement despite adverse consequences.*

Some individuals experience difficulties related to their gambling without progressing in their involvement or engaging in the long-term chasing that characterizes most pathological gamblers. The term "problem gambler" (Lesieur & Rosenthal 1991; Rosenthal 1989) has been introduced to describe these individuals, who may be in an early stage of pathological gambling. The term is also used as a more inclusive category that encompasses pathological gambling at one end of a continuum of problematic gambling involvement. In this sense, *problem gambling* can be defined as *any pattern of gambling behavior which compromises, disrupts or damages family, personal or vocational pursuits* (Lesieur & Rosenthal 1991).

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

In prevalence surveys conducted since 1990, a distinction is also made between "lifetime" and "current" problem and probable pathological gamblers. *Lifetime* problem and probable pathological gamblers are individuals who, over the course of their lifetime, have met three or more of the South Oaks Gambling Screen criteria for problem or pathological gambling. *Current* problem and probable pathological gamblers are individuals who have met these criteria in the past year.

METHODS

The majority of surveys of gambling and problem gambling completed to date have been ***baseline*** surveys, assessing these behaviors in the general population for the first time. ***Replication*** surveys are used to monitor changes over time by measuring the same behaviors, using the same methods, at subsequent points in time. Replication surveys are useful in examining changes in participation in a mix of legal gambling activities. Replication surveys also permit more precise assessments of the impact of specific types of gambling on the prevalence of gambling-related difficulties in the general population. Finally, replication surveys are useful in refining the services for individuals with gambling-related problems. Replication surveys of gambling and problem gambling have now been carried out in eight states as well as in five Canadian provinces.

The present survey of gambling and problem gambling in Washington State is a ***replication*** of a survey carried out in 1992 and was completed in three stages. In the first stage of the project, staff from Gemini Research, Ltd. met with staff from the Washington State Lottery and the Washington State Council on Problem Gambling as well as with staff from Gilmore Research Group, the organization responsible for data collection, regarding the final design of the questionnaire. In the second stage of the project, staff from Gilmore Research Group completed telephone interviews with a sample of 1,501 residents of Washington State aged 18 years and older. All interviews were completed between October 1 and November 30, 1998. The average length of these interviews was 15 minutes. Gilmore Research Group then provided Gemini Research with the data for the third stage of the project which included analysis of the data and preparation of this report.

Questionnaire

The questionnaire for the survey in Washington State was composed of five major sections (see ***Appendix B*** for a copy of the questionnaire). The first section included questions about 16 different types of gambling available to residents of the state. For each type of gambling, respondents were asked whether they had ever tried this type of gambling, whether they had tried it in the past year, and, if so, how often they had done so once a week or more. Respondents were also asked to estimate their typical monthly expenditures on the types of gambling that they had tried in the past year.

The second section of the questionnaire was composed of the lifetime and current South Oaks Gambling Screen items. The third section of the questionnaire consisted of an alternate screen for gambling problems based on the most recent psychiatric criteria for pathological gambling. The fourth section of the questionnaire was composed of several questions about the impacts of gambling problems. The final section of the questionnaire included questions about the demographic characteristics of each respondent.

Sample Design

Information about survey samples is important in assessing the reliability of the results of the survey. While a fully random design is most desirable, this approach often results in under-sampling groups that are of particular interest. Researchers often use stratified random designs to guard against under-sampling of these groups. To determine whether a representative sample was obtained, it is helpful to calculate the response rate for the sample as a whole as well as to examine how closely the sample matches the known demographic characteristics of the population. If substantial differences are detected, post-stratification weights can be applied during analysis to ensure that the results of the survey can be generalized to the larger population.

To obtain a representative sample for the Washington State survey, random selection of households and random selection of respondents within households were used during the first part of the data collection process. During this time, completed interviews were monitored to determine whether the sample matched population estimates for males and young adults. After completing approximately 650 interviews, we determined that young men (18-34) were under-represented in the sample while older women (35+) were over-represented. We elected at that time to begin "soft screening" respondents in eligible households in order to obtain adequate representation of young men in the sample. Soft screening entails first asking for the man in the household under age 35, then any male, and then the adult with the next birthday. As a result of this screening procedure, the sample is fully representative of the population aged 18 and over in Washington State in terms of gender (male/female) and age (18-34 and 35+).

All interviews were conducted at Gilmore Research Group facilities by trained interviewers with supervision and random monitoring for technique and adherence to established procedures. Interviews were conducted afternoons and evenings on weekdays and weekends. Efforts to complete interviews with selected respondents were extensive. The number of callbacks to complete an interview with an eligible respondent ranged from 1 to 26 (mean = 3.90 and median = 3.0). Subsequent analysis showed that there was little relationship between the number of callbacks and respondents' scores on the problem gambling screens.

Response Rate

In general, response rates for telephone surveys have declined in recent years. Key factors that affect response rates are the number of callbacks budgeted into the data collection effort and the amount of time scheduled for data collection. One consequence of the decline is that response rates for telephone surveys are now determined in several different ways depending on how the denominator (i.e. the numbers deemed eligible to respond) is calculated.

The response rate for the 1998 survey in Washington State was calculated in two different ways. The first approach is called the Upper Bound method and takes into account only those individuals who are contacted and whose eligibility can be determined. This approach is used by the federal government because of controversies about the eligibility of numbers that are not contacted. The Upper Bound method of calculating the response rate for the Washington State survey yields a response rate of 59%. This is nearly identical to the Upper Bound response rate of 60% that was achieved in 1992 and is probably due to the large number of callbacks carried out in 1998 as well as the amount of time allocated for data collection. In a recent survey in Oregon, the Gilmore Research Group achieved an Upper Bound response rate of 61% (Volberg 1997c).

A more conservative approach is the method adopted by the Council of American Survey Research Organizations (CASRO). The CASRO method uses the known status of portions of the sample that are contacted to impute characteristics of portions of the sample that were not reached. The CASRO method of calculating the response rate for the 1998 Washington State survey yields a completion rate of 50% if over-quota eligibles are assumed to qualify as "good numbers." This compares to a CASRO completion rate of 48% in the recent survey in Oregon (Volberg 1997c).

Analysis and Reporting

For clarity and comprehension, as well as for easier comparison with other, similar surveys, detailed demographic data on age, ethnicity, marital status, education and employment status were reduced to fewer values. Age was reduced to seven groups ("18 to 24," "25 to 34," "35 to 44," "45 to 54," "55 to 64," "65 to 74" and "75 and Over"). Following current practice at the Bureau of the Census, ethnicity was assessed separately from race in the 1998 survey. A question about "Hispanicity" was crossed with a question about race and this ethnicity variable was reduced from six into four groups ("White," "Black," "Hispanic" and "Other" which includes Native Americans and Asians). Marital status was reduced to four groups ("Married," "Widowed," "Separated/Divorced" and "Never

Married") and employment was reduced to five groups ("Working Full Time," "Working Part Time," "Keeping House," "Retired," "Student/Disabled/Other"). In analyzing the results of the survey and in comparing the present survey with the 1995 survey, chi-square analysis and analyses of variance were used to test for statistical significance.

GAMBLING IN WASHINGTON STATE

This chapter examines gambling participation in the general population in Washington State. To assess the full range of gambling activities available to Washington State residents, the questionnaire for the survey collected information about 13 different wagering activities. Respondents were asked if they had ever played or bet money on the following activities:

- instant or scratch off lottery games

- lottery Daily Game or Daily Keno

- Lotto, Quinto or Lucky for Life

- pulltabs (paper or validator)

- raffles, fund-raising events or Reno Nights

- Indian bingo

- bingo at bingo halls or churches

- card games with friends or family

- electronic gambling machines or slot machines in Washington State

- card games in card rooms or mini-casinos

- cards, dice or other games at an Indian casino

- gambling locations out-of-state

- horses, dogs or other animals at the track, at an OTB or with a bookmaker

- sports events in pools, with family, friends or acquaintances or with a bookmaker

- telephone or computer wagering

- any other type of gambling

Gambling in the General Population

In every recent survey of gambling and problem gambling, the majority of respondents acknowledge participating in one or more gambling activities. In the United States, the proportion of respondents who have ever gambled ranges from 64% in Mississippi in 1996 to 92% in New Jersey in 1989 (Volberg 1994, 1997a). In Washington State in 1992, 91% of the respondents acknowledged participating in one or more of the 19 gambling activities included in the questionnaire. In 1998, 89% of the respondents acknowledged participating in one or more of the 16 activities included in the questionnaire (see *Comparing the 1992 and 1998 Surveys in Washington State* on Page 23 for further discussion).

Table 1 on the following page shows lifetime and past year participation for all of the types of gambling included in the 1998 survey. Lifetime participation among Washington State respondents is highest for instant or scratch lottery games, charitable gambling, out-of-state gambling and large jackpot lottery games with two-thirds to one-half of the respondents acknowledging that they have ever participated in these activities. Between two-fifths and one-quarter of the respondents have ever wagered on pulltabs, card games with friends or family, sports and horse or dog races. Between one-quarter and one-fifth of the respondents have wagered on non-Indian bingo and the lottery's daily games. Lifetime participation rates are below 15% for all of the other types of gambling included in the survey.

Table 1: Lifetime and Past Year Participation

	Lifetime Participation (1501) %	Past Year Participation (1501) %
Instant or Scratch Lottery	65.4	42.0
Fundraising Events / Reno Nights	56.9	37.1
Gambling Locations Out of State	56.9	21.4
Lotto / Quinto / Lucky for Life	53.4	43.3
Pulltabs	37.5	20.5
Cards with Friends / Family	33.4	15.6
Sports	30.0	12.8
Pari-mutuel	26.4	5.5
Other Bingo Halls / Churches	23.3	7.1
Daily Game / Keno	20.6	13.4
Electronic Gambling / Slots	14.6	10.1
Card Games in Card Rooms	14.3	8.1
Cards / Dice / Other at Indian Casino	12.9	8.6
Indian Bingo	10.7	5.5
Other	5.6	2.5
Telephone or Computer Wagering	0.5	0.3
Total	88.9	74.4

The rank order of gambling activities by past year participation is similar to the rank order for lifetime participation with some exceptions. For example, while lifetime participation in the lottery's large jackpot games is ranked fourth, past year participation in these games is ranked first. However, the top six activities remain the same for both lifetime and past year participation. Several activities move up in rank when we consider past year participation, including the lottery's daily games, gambling at Indian casinos, electronic gambling machines and gambling on card games at card rooms. Several other activities move down in rank when we consider past year participation. These include gambling on sports, non-Indian bingo and gambling on horse or dog races.

Patterns of Gambling Participation

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

- *non-gamblers* who have never participated in any type of gambling (11% of the total sample);

- *infrequent gamblers* who have participated in one or more types of gambling but not in the past year (14% 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 (54% of the total sample); and

- *weekly gamblers* who participate in one or more types of gambling on a weekly basis (20% of the total sample).

Table 2 shows that there are significant differences in the demographic characteristics of non-gamblers, infrequent gamblers, past-year gamblers and weekly gamblers in Washington State as well as differences in the mean number of gambling activities these groups have ever tried.

Table 2: Demographics of Gamblers in Washington State

		Non-Gamblers (166) %	Infrequent Gamblers (218) %	Past Year Gamblers (815) %	Weekly Gamblers (302) %	Total (1501) %
Gender***	Male	46.4	45.6	46.4	59.8	49.0
	Female	53.6	54.4	53.6	40.2	51.0
Age***	18 – 24	7.8	8.8	11.3	9.3	10.1
	25 – 34	17.5	24.5	23.0	16.6	21.3
	35 – 44	23.5	18.5	23.5	26.8	23.5
	45 – 54	18.7	19.4	21.3	17.5	20.0
	55 – 64	5.4	7.9	10.9	15.9	10.9
	65 +	27.1	20.8	9.9	13.9	14.2
Ethnicity	White	83.9	86.6	88.2	82.6	86.4
	Black	3.1	3.7	1.9	4.7	2.8
	Hispanic	4.3	3.7	2.6	4.0	3.2
	Other	8.7	6.0	7.3	8.7	7.6
Marital Status**	Married	59.1	57.9	55.8	51.8	55.7
	Widowed	11.0	10.6	5.1	6.6	6.9
	Divorced/Separated	15.2	11.1	17.1	22.9	17.2
	Never Married	14.6	20.4	22.0	18.6	20.2
Education***	Elementary / Some HS	6.7	3.2	4.0	8.6	5.1
	HS Grad	31.9	26.1	28.5	38.7	30.6
	Some College	30.7	37.6	35.7	31.8	34.6
	BA Degree	12.3	18.3	19.0	14.2	17.2
	Graduate Study	18.4	14.7	12.8	6.6	12.5
Employment***	Working Full Time	45.6	48.1	62.9	66.3	59.6
	Working Part Time	9.4	10.8	9.4	6.1	8.9
	Keeping House	15.0	13.7	9.1	6.1	9.8
	Retired	25.0	19.8	11.8	15.5	15.1
	Student / Disabled / Other	5.0	7.5	6.8	6.1	6.5
Income	Up to $15,000	18.7	12.3	10.5	7.2	10.8
	$15,001 -- $25,000	18.7	16.6	14.9	14.4	15.4
	$25,001 -- $35,000	14.0	19.0	14.4	16.9	15.6
	$35,001 -- $50,000	19.6	16.0	22.0	21.2	20.7
	$50,001 -- $75,000	15.0	22.1	20.1	24.2	20.7
	$75,001 and higher	14.0	14.1	18.1	16.1	16.7
Mean Gambling Activities***		---	2.9	5.4	6.4	4.6

Pearson Chi-Square * p<.05 ** p<.01 *** p<.001

Table 2 shows that, as in other jurisdictions, infrequent gamblers and non-gamblers in Washington State are significantly older, more likely to be widowed and more likely to be retired or keeping house than more frequent gamblers. While infrequent and non-gamblers are more likely than past

year or weekly gamblers to have attended college, these respondents are less likely to have household incomes over $25,000. Weekly gamblers in Washington State are significantly more likely than less frequent gamblers to be men, between the ages of 35 and 64, divorced or separated and working full time. Weekly gamblers are less likely than other respondents to have attended college. Finally, the table shows that the average number of gambling activities ever tried increases significantly with the frequency of a respondent's current gambling.

Gambling Preferences

For several types of gambling, respondents who acknowledged participation in the past year were asked about their preferences for particular games. These types of gambling included pulltabs, bingo, card rooms or mini-casinos, Indian bingo, Indian casinos and out-of-state gambling.

Pulltabs: Respondents who acknowledged playing pulltabs in the past year were asked whether they preferred the paper game or the electronic version known as "validators." Among respondents who had played pulltabs in the past year (N=307), there was a strong preference for the traditional paper game. Three-quarters of these respondents (76%) indicated that they preferred to play the paper game, 11% indicated that they preferred the validator game and 13% had no preference.

Bingo and Indian Bingo: Respondents who acknowledged playing bingo in the past year were asked whether they preferred the paper game, the electronic version or the satellite game played at Indian bingo halls. Among respondents who had played Indian bingo in the past year (N=83), 65% expressed a preference for the paper game and 22% expressed a preference for the electronic game. Only four respondents expressed a preference for the satellite game and all of the others expressed no preference for any particular type of bingo. Among respondents who had played bingo at bingo halls or churches (N=107), all but four of the respondents expressed a preference for the traditional paper bingo game.

Card Rooms / Mini-casinos: Respondents who acknowledged playing at a card room or mini-casino in the past year were asked whether they preferred blackjack, poker or some other card game. Among respondents who had played at a card room or mini-casino in the past year (N=121), 83% expressed a preference for blackjack and 13% expressed a preference for poker. Three of these respondents indicated that they had no preference and two respondents indicated that they preferred other card games besides blackjack or poker.

Indian Casinos: Respondents who acknowledged gambling at an Indian casino in the past year were asked whether they preferred blackjack, poker, other card games, dice, roulette, keno or some other game. Among respondents who had gambled at an Indian casino in the past year (N=129), 55% expressed a preference for blackjack and 19% expressed a preference for some other (non-card) game. Roulette was the preference of 8% of past year players, while poker, keno and dice were each preferred by 5% of the past year players.

Out-of-State Gambling: Respondents who acknowledged gambling out-of-state in the past year were asked whether they preferred blackjack, poker, other card games, dice, roulette, keno, slot machines or some other game. Among respondents who had gambled out-of-state in the past year (N=321), 58% expressed a preference for electronic gambling machines including video poker and slot machines. One-quarter of these respondents (25%) expressed a preference for blackjack and another 4% expressed a preference for poker or some other card game. Only 5% of these respondents expressed a preference for keno and 3% expressed a preference respectively for roulette and dice.

Expenditures on Gambling

Reported estimates of expenditures obtained in this and similar surveys are based on recollection and self-report. There are fundamental uncertainties about the tacit definitions that people use when they are asked to estimate "spending" on different types of gambling (Blaszczynski, Dumlao & Lange 1997). There are also questions about the impact that the social acceptability of different types of gambling may have on reports of expenditures. Finally, there are methodological issues related to sampling small groups of heavy users in general population surveys. These are issues common to a variety of disciplines, including market research as well as research on alcohol misuse and sexual behavior (Baldridge, Moore, Sylvester & Volberg 1999; Volberg, Moore, Christiansen, Cummings & Banks 1998). ***For these reasons, data on reported expenditures are best suited for analyzing the relative importance of different types of gambling among a jurisdiction's residents rather than for ascertaining absolute spending levels on different types of wagering.***

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

Adjustments to Expenditures

One adjustment was made in calculating total monthly expenditure on gambling for Washington State. This was to exclude expenditures on out-of-state gambling from the calculation. Out-of-state expenditures constitute 30% of the unadjusted total monthly expenditure. This adjustment was made to ensure comparability with the 1992 survey. This adjustment was also made in order to explicate the relative gambling expenditures within Washington State reported by Washington State respondents.

Variations in Expenditures

Using the approach detailed above, we calculate that respondents in Washington State (N=1501) spend an average of $39 in a typical month on gambling activities. This compares to an average expenditure of $32 spent by Washington State respondents in 1992 (Volberg 1993). This can also be compared to an average of $43 spent in a typical month by respondents in a recent survey in Oregon (Volberg 1997c).

Table 3 on the following page shows total reported monthly expenditures on different types of gambling in Washington State as well as the proportion that each type of expenditure represents of the total adjusted monthly expenditures on gambling. Only those types of gambling for which expenditures exceeded 1% of the total monthly expenditure are shown.

Table 3: Reported Monthly Expenditures on Gambling

	Monthly Expenditures $	% of Total
Lotto / Quinto / Lucky for Life	6,227	10.6
Instant or Scratch Lottery	5,919	10.1
Electronic Gambling / Slots	5,688	9.7
Card Games in Card Rooms	5,558	9.5
Cards / Dice / Other at Indian Casino	5,114	8.7
Fundraising Events / Reno Nights	4,549	7.7
Other	4,452	7.6
Pulltabs	4,091	7.0
Indian Bingo	3,782	6.4
Sports	3,110	5.3
Other Bingo Halls / Churches	2,682	4.6
Cards with Friends / Family	2,717	4.6
Daily Game / Keno	2,603	4.4
Pari-mutuel	2,085	3.5
Adjusted Total (less out of state)	58,812	100.0

In assessing the utility of expenditure data as a measure of the relative importance of different types of gambling in Washington State, it is helpful to compare these proportions with gross gaming revenues (see **Background** on Page 2). While the Washington State Lottery accounted for 37% of gross revenues in 1997, lottery games account for 25% of total reported expenditures among Washington State respondents. While card rooms, casinos and electronic gambling devices accounted for another 37% of gross revenues in 1997, these activities account for 28% of reported expenditures. Nevertheless, these two classes of gambling activity represent the majority of both gross gaming revenues and total monthly expenditures on gambling among Washington State respondents. The proportion of reported expenditures on bingo and charitable games are nearly identical to the proportion of gross revenues in 1997. The proportion of reported expenditures on pari-mutuel events is only half of the proportion based on gross revenues.

Reported monthly gambling expenditures vary significantly across demographic groups. Men report spending significantly more money on all gambling activities than women. Respondents between the ages of 35 and 64 report spending significantly more money on gambling than those under the age of 35 or those aged 65 and over. Non-White and Hispanic respondents report spending significantly more on gambling than White respondents. Respondents who have graduated from high school but not attended college report spending significantly more than those who have not graduated from high school and those who have attended college. Respondents who work full time or part time and those who are retired report spending significantly more on gambling than those who are keeping house, those who are disabled and students. In contrast to the survey in 1992, there are no significant differences in gambling expenditures based on annual household income.

PROBLEM GAMBLING IN WASHINGTON STATE

As noted in the section *Defining Our Terms* on Page 2, individuals are classified as **problem gamblers** or **probable pathological gamblers** in prevalence surveys on the basis of their responses to the South Oaks Gambling Screen items. Research on the performance of the South Oaks Gambling Screen has shown that the **lifetime** screen is very good at detecting pathological gambling among those who **currently** experience the disorder (see **Appendix A** for a full discussion of the performance of the SOGS). However, as expected, the screen identifies at-risk 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.

Prevalence Rates

Prevalence rates are based on the proportion of respondents who score on increasing numbers of items that make up the lifetime and current (or past year) scale of the South Oaks Gambling Screen. **Table 4** presents information about the proportion of respondents who score on an increasing number of items on the lifetime and current SOGS. For both the lifetime and current (past year) SOGS, individuals scoring 8 points or higher have been grouped together because of the small proportion of respondents in each of these groups. **Table 4** also summarizes the prevalence of lifetime and current problem and probable pathological gambling based on established criteria for discriminating between respondents without gambling-related difficulties and those with moderate to severe problems (Abbott & Volberg 1996; Lesieur & Blume 1987).

Table 4: Scores on Lifetime and Current SOGS Items

Number of Items	Lifetime	Past Year
	(1501)	(1501)
Non-Gamblers	**11.1**	**25.6**
0	61.2	60.3
1	17.1	9.1
2	5.6	2.7
Non Problem Gamblers	**83.9**	**72.1**
3	2.6	1.1
4	1.1	0.7
Problem	**3.7**	**1.8**
5	0.6	0.1
6	0.1	0.1
7	0.3	---
8 or more	0.3	0.2
Probable Pathological	**1.3**	**0.5**
Combined Problem/ProbPath	**5.0**	**2.3**

According to the most recent population estimates from the United States Bureau of the Census (1999a), the population of Washington State aged 18 and over in 1997 was 4,155,708. Based on these figures, we estimate that between 114,300 (2.7%) and 193,200 (4.6%) Washington State residents aged 18 and over can be classified as lifetime problem gamblers. In addition, we estimate that between 30,300 (0.7%) and 77,700 (1.9%) Washington State residents aged 18 and over can be classified as lifetime probable pathological gamblers.

Based on current prevalence rates and confidence intervals as well as census information, we estimate that between 47,000 (1.1%) and 102,600 (2.5%) Washington State residents aged 18 and over can be classified as current problem gamblers. In addition, we estimate that between 6,200 (0.1%) and 35,300 (0.9%) Washington State residents aged 18 and over can be classified as current probable pathological gamblers.

Prevalence Among Demographic Groups

As in other jurisdictions, lifetime and current prevalence rates are significantly different among sub-groups in the population. *Table 5* shows that there are substantial differences in lifetime and current prevalence rates by gender, age, ethnicity, marital status, education and employment status. *Table 5* includes information about the size of each group as well as the confidence interval for both lifetime and current prevalence rates in these groups.

Table 5: Differences in Prevalence by Demographic Group

		Group Size	Lifetime Problem (3+)	Conf.	Current Problem (3+)	Conf.
Total Sample		1501	5.0	±1.1	2.3	±0.8
Gender	Male	734	7.6	±1.9	3.8	±1.4
	Female	765	2.5	±1.1	0.9	±0.7
Age	18 – 24	151	11.9	±5.2	9.3	±4.6
	25 – 34	318	5.7	±2.5	1.9	±1.5
	35 – 44	350	4.6	±2.2	1.4	±1.2
	45 – 54	298	3.7	±2.1	1.3	±1.3
	55 – 64	162	3.1	±2.7	1.2	±1.7
	65 +	212	3.3	±2.4	1.9	±1.8
Ethnicity	White	1280	4.0	±1.1	1.6	±0.7
	Black	42	14.3	±10.6	4.8	±6.5
	Hispanic	48	14.6	±10.0	10.4	±8.6
	Other	112	9.8	±5.5	7.1	±4.8
Marital Status	Married	828	4.2	±1.4	1.6	±0.8
	Widowed	102	1.0	±1.9	1.0	±1.9
	Divorced/Separated	256	5.5	±2.3	2.3	±1.8
	Never Married	301	8.3	±3.1	5.0	±2.5
Education	Elementary / Some HS	76	6.6	±5.6	5.3	±5.0
	HS Grad	457	5.9	±2.2	3.7	±1.7
	Some College	517	4.8	±1.8	1.5	±1.0
	BA Degree	257	4.7	±2.6	1.9	±1.7
	Graduate Study	186	3.2	±2.5	0.5	±1.0
Employment	Working Full Time	874	5.3	±1.5	2.2	±1.0
	Working Part Time	131	3.8	±3.3	3.8	±3.3
	Keeping House	144	5.6	±3.7	1.4	±1.9
	Retired	222	2.7	±2.1	0.9	±1.2
	Student / Disabled / Other	96	10.4	±6.1	6.3	±4.9

Table 5 shows that lifetime and current prevalence rates are significantly higher among men than among women. Lifetime and current prevalence rates are also significantly higher among respondents aged 18 to 24 than among older respondents. Lifetime and current prevalence rates

are significantly higher among non-Whites than among Whites and those who have never married. Current prevalence rates are significantly higher among respondents who have not attended college and among those who are disabled, working part time or going to school. Since there were no significant differences in lifetime or current prevalence rates by income, these data are not shown.

Prevalence by Type of Gambling

Another approach to understanding the relationship between gambling involvement and gambling-related problems is to examine the prevalence of gambling problems among individuals who have participated in specific types of gambling. Due to the different rates of classification errors by the lifetime and current SOGS, the current measure is best suited for this purpose.

Table 6 shows the current prevalence of problem and probable pathological gambling for the total sample, for respondents who have gambled in the past year and for respondents who have participated in different types of gambling in the past year. The data in *Table 6* are presented in rank order, first for legal types of gambling in Washington State, then for out-of-state gambling and finally for illegal types of gambling. Telephone or computer wagering and "other" gambling were not included in this table because the number of past year players was too small to yield meaningful results.

Table 6: Prevalence by Type of Gambling

Past Year Activities	Group Size	Current Prevalence (3+) %	Conf.
Total Sample	1501	2.3	±0.8
Past Year Gamblers	1117	3.0	±1.0
Fundraising Events / Reno Nights	555	1.8	±1.1
Lotto / Quinto / Lucky for Life	649	2.9	±1.3
Other Bingo Halls / Churches	107	3.7	±3.6
Instant or Scratch Lottery	630	4.0	±1.5
Daily Game / Keno	201	4.5	±2.9
Electronic Gambling / Slots	156	4.5	±3.2
Pari-mutuel	82	4.9	±4.7
Pulltabs	307	5.9	±2.6
Cards / Dice / Other at Indian Casino	129	7.0	±4.4
Card Games in Card Rooms	121	8.3	±4.9
Indian Bingo	83	10.8	±6.7
Gambling Locations Out of State	321	3.1	±1.9
Cards with Friends / Family	234	5.6	±2.9
Sports	192	7.3	±3.7

Table 6 shows that the current prevalence of problem gambling among past year participants in charitable games is actually lower than for the sample as a whole. The current prevalence rate among past year players of large-jackpot lottery games is equal to the prevalence rate among all past year gamblers. Current prevalence rates among past year players of non-Indian bingo, the instant and daily lottery games and electronic gambling machines in Washington State as well as among respondents who have gambled in the past year on horse or dog races are one-and-a-half times higher than among past year players in general.

Current prevalence rates among respondents who have gambled in the past year on pulltabs, at Indian casinos, at card rooms or mini-casinos and on Indian bingo are all two to three-and-a-half times higher than among past year players in general. While the small size of some groups of past year players suggests caution in interpreting these numbers, this analysis points to the importance of targeting public education and prevention efforts in venues where pulltabs are sold, where commercial card games are played and at Indian bingo halls.

Comparing Washington State with Other States

The jurisdictions where problem gambling surveys have been done in the United States differ substantially in the types of gambling available, in levels of gambling participation and in the demographic characteristics of the general population. *Figure 1* shows prevalence rates of lifetime problem and probable pathological gambling in all of the United States jurisdictions where surveys based on the South Oaks Gambling Screen have been completed since 1990 and where prevalence rates have been calculated in a comparable manner. In states where replication surveys have been completed, the most recent prevalence rates are shown.

Figure 1: Lifetime Prevalence Rates in the United States
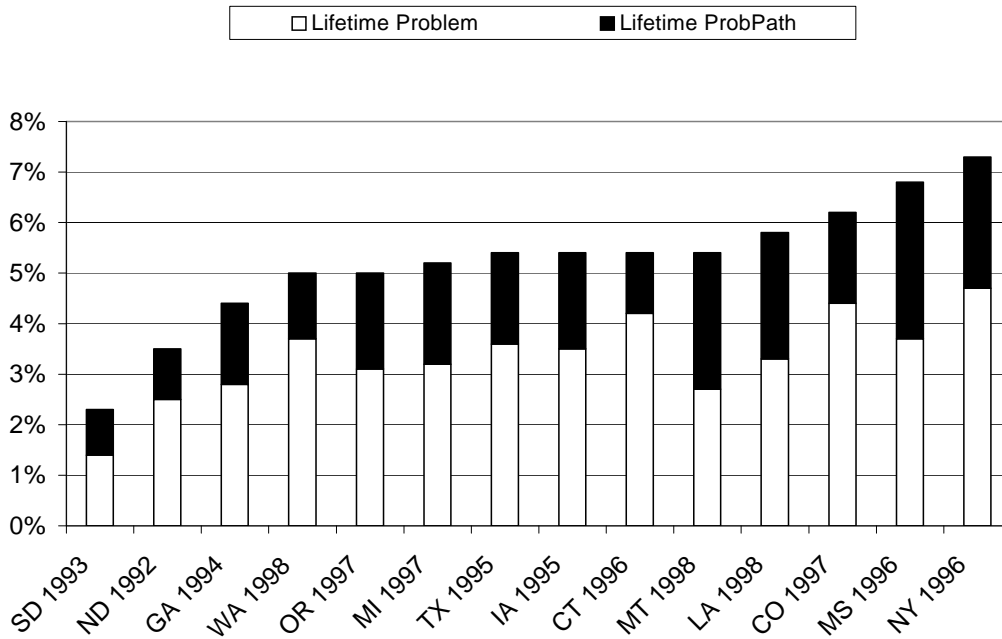
Figure 1 shows that the lifetime prevalence rate of problem and probable pathological gambling in Washington State is lower than lifetime rates in most other states. The three states where the lifetime prevalence rate is lower than in Washington State, including South Dakota, North Dakota and Georgia, were all surveyed before 1995. It is interesting that although the combined lifetime prevalence rate in Washington is identical to the combined rate in Oregon, the lifetime prevalence of probable pathological gambling in Oregon (the black part of the bar) is substantially higher than in Washington State.

Figure 2 on the following page shows prevalence rates of current problem and probable pathological gambling in all of the United States jurisdictions where surveys based on the South Oaks Gambling Screen have been completed since 1990 and where prevalence rates have been calculated in a comparable manner. Again, in states where replication surveys have been completed, the most recent prevalence rates are shown. *Figure 2* shows that the current

prevalence rates of problem and probable pathological gambling in Washington State are lower than current prevalence rates in other states where prevalence surveys have been conducted, with the exception of North Dakota and South Dakota.

Figure 2: Current Prevalence Rates in the United States
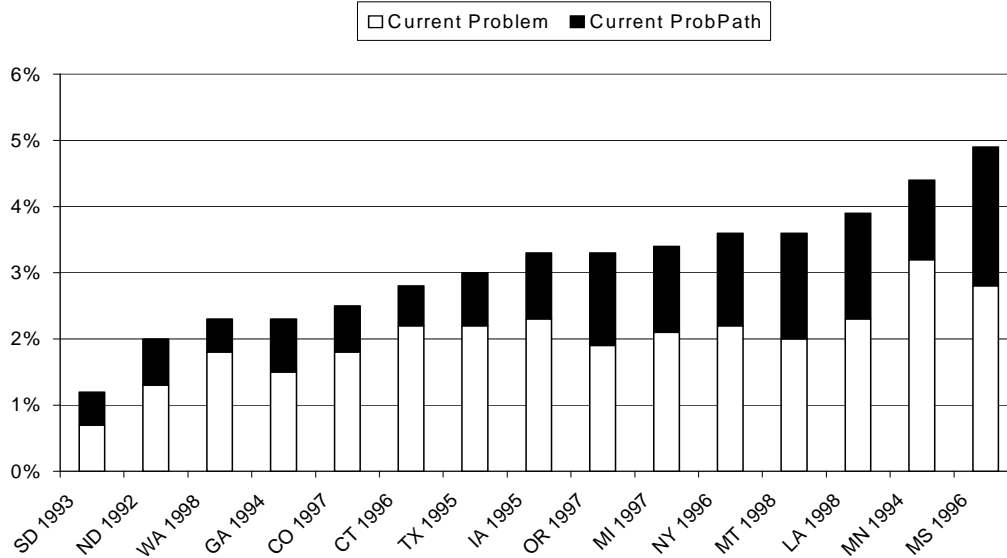
In considering these data, it is again worth noting that the prevalence of current probable pathological gambling (the black portion of each bar) is lower in Washington State than in North Dakota or Georgia where the combined current prevalence is the same or lower.

A recent meta-analysis of studies in North America presented prevalence rates for several different population groups based on the South Oaks Gambling Screen (Shaffer, Hall & Vander Bilt 1997). *Table 7* compares prevalence rates from the Washington survey with the North American prevalence rates in the meta-analysis.

Table 7: Comparing Washington State Nationally

	Washington State 1998	North America†
Lifetime Problem	3.7	3.4
Lifetime Probable Pathological	1.3	1.7
Current Problem	1.8	2.2
Current Probable Pathological	0.5	1.1

† From Shaffer, Hall & Vander Bilt (1997: 38). Includes Washington State 1992.

Table 7 shows that the lifetime and current prevalence rates of *problem* gambling in Washington State in 1998 are similar to problem gambling rates averaged over approximately 30 studies in North America between 1986 and 1996. The lifetime and current prevalence rates of *probable pathological* gambling in Washington State in 1998 are somewhat lower than the lifetime and current prevalence rates averaged over North America.

COMPARING NON-PROBLEM AND PROBLEM GAMBLERS

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

In addition to looking only at respondents who gamble, our analysis in this section is limited to differences between non-problem gamblers and *lifetime* problem and probable pathological gamblers. 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 of the methodological issues related to the South Oaks Gambling Screen). For reasons related to different rates of classification errors by the lifetime and current SOGS, the lifetime measure is better than the current measure at detecting pathological gambling among those who currently experience the disorder.

Since the lifetime South Oaks Gambling Screen is the more accurate method for identifying at-risk individuals in the general population, consideration of respondents who score as *lifetime* problem and pathological gamblers is most appropriate when evaluating the characteristics of individuals most in need of help with their gambling-related difficulties. Further, 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 (Volberg & Abbott 1994).

Demographics

Table 8 on the following page shows that, as in other jurisdictions, problem gamblers in Washington State are demographically distinct from non-problem gamblers in the sample. Problem gamblers in Washington State are significantly more likely than non-problem gamblers to be male, under the age of 25, non-White and never married. While the differences do not attain statistical significance, problem gamblers in Washington State are less likely than non-problem gamblers to have graduated from college and to be retired. Problem gamblers in Washington State are more likely than non-problem gamblers to be in school, disabled or unemployed.

Table 8: Demographics of Non-Problem and Problem Gamblers

		Non-Problem Gamblers (1260) %	Problem Gamblers (75) %	Sig.
Gender				
	Male	47.8	74.7	***
	Female	52.2	25.3	
Age				
	18 – 24	9.6	24.0	
	25 – 34	21.7	24.0	
	35 – 44	23.6	21.3	**
	45 – 54	20.5	14.7	
	55 – 64	11.8	6.7	
	65 +	12.8	9.3	
Ethnicity				
	White	87.8	68.0	
	Black	2.5	8.0	***
	Hispanic	2.7	9.3	
	Other	7.0	14.7	
Marital Status				
	Married	55.8	46.7	
	Widowed	6.7	1.3	*
	Divorced/Separated	17.4	18.7	
	Never Married	20.2	33.3	
Education				
	Elementary / Some HS	4.8	6.7	
	HS Grad	30.1	36.0	
	Some College	35.2	33.3	
	BA Degree	17.9	16.0	
	Graduate Study	12.0	8.0	
Employment				
	Working Full Time	61.3	61.3	
	Working Part Time	9.0	6.7	
	Keeping House	9.1	10.7	
	Retired	14.3	8.0	
	Student / Disabled / Other	6.3	13.3	
Income				
	Up to $15,000	9.9	11.9	
	$15,001 -- $25,000	15.2	13.4	
	$25,001 -- $35,000	15.8	14.9	
	$35,001 -- $50,000	20.8	20.9	
	$50,001 -- $75,000	21.5	19.4	
	$75,001 and higher	16.8	19.4	

Pearson Chi-Square   * $p<.05$ ** $p<.01$ *** $p<.001$

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

Gambling Participation

Behavioral correlates of problem gambling include regular gambling and involvement with *continuous* forms of gambling (Dickerson 1993; Ladouceur, Gaboury, Dumont & Rochette 1988; Walker 1992). *Continuous* forms of gambling are characterized by rapid cycles of play as well as the opportunity for players to immediately reinvest their winnings. Legal forms of continuous gambling in Washington State include instant lottery games, pulltabs, Indian and non-Indian bingo, electronic gambling machines, card games in card rooms, mini-casinos and Indian casinos, and pari-mutuel wagering on horse and dog races.

Problem gamblers in Washington State are significantly more likely than non-problem gamblers to have ever tried most of the different types of gambling included in the survey, except large jackpot lottery games, charitable gambling, pari-mutuel wagering on horse or dog races and out-of-state gambling. In contrast to other jurisdictions and to the results of the baseline survey in Washington State (see *Comparing the 1992 and 1998 Surveys* on Page 23), problem gamblers in Washington State in 1998 do not participate in many types of gambling on a weekly basis. While problem gamblers in Washington State are significantly more likely than non-problem gamblers to purchase instant lottery tickets and pulltabs, to gamble on Indian bingo, horse races and sports and to wager at card rooms, mini-casinos and Indian casinos, the number of individuals involved is extremely small and the analysis subject to large confidence intervals.

Table 9 shows differences in past year involvement in different types of wagering by non-problem and problem gamblers in Washington State. Only those types of gambling for which past year participation among problem gamblers is 10% (N=7) or higher are shown.

Table 9: Past Year Activities by Non-Problem and Problem Gamblers

Past Year Activities	Non-Problem Gamblers (1260) %	Problem Gamblers (75) %	Sig.
Instant or Scratch Lottery	46.6	58.7	*
Lotto / Quinto / Lucky for Life	48.9	45.3	
Pulltabs	22.1	38.7	**
Gambling Locations Out of State	23.3	37.3	**
Fundraising Events / Reno Nights	42.3	33.3	
Cards with Friends / Family	16.9	29.3	*
Sports	13.6	28.0	**
Card Games in Card Rooms	7.9	28.0	***
Cards / Dice / Other at Indian Casino	8.7	25.3	***
Daily Game / Keno	14.7	21.3	
Electronic Gambling / Slots	11.1	21.3	*
Indian Bingo	5.7	14.7	**
Total Past Year Activities	83.4	88.0	

Fisher's Exact Test   * p<.05   ** p<.01   *** p<.001

Table 9 shows that problem gamblers in Washington State are significantly more likely than non-problem gamblers to have purchased instant lottery tickets in the past year and to have gambled at out-of-state locations as well as on sports and on card games with friends and family, in card rooms and at Indian casinos. Problem gamblers in Washington State are also significantly more likely than non-problem gamblers to have wagered on electronic gambling machines and Indian bingo in the past year. With the exception of out-of-state gambling, sports and card games with friends and family, all of these activities are *continuous* types of gambling that are legally available in Washington State.

Expenditures

In addition to gambling on continuous types of wagering, an important behavioral correlate of problem gambling is heavy gambling losses (Dickerson 1993). Although gambling losses should be considered relative to income, comparisons of reported gambling expenditures of non-problem and problem gamblers provide insight into the far greater financial impact of gambling involvement on problem gamblers and their families. ***Table 10*** shows differences in the median reported expenditures for those types of gambling where differences between non-problem and problem gamblers in Washington State are significant.

Table 10: Monthly Expenditures by Problem and Non-Problem Gamblers

Mean Expenditures	Non-Problem Gamblers (1260) $	Problem Gamblers (75) $	Sig.
Electronic Gambling / Slots	1.76	46.20	*
Gambling Locations Out of State	17.51	38.64	**
Cards / Dice / Other at Indian Casino	2.91	19.37	***
Card Games in Card Rooms	3.45	16.07	***
Sports	1.74	12.23	***
Instant or Scratch Lottery	4.13	9.59	***
Pulltabs	2.88	6.09	***
Cards with Friends / Family	1.88	4.59	**
Indian Bingo	2.79	3.48	***
Total Monthly Expenditures	35.99	179.45	***

Wilcoxon (Kruskal-Wallis) Test   * p<.05   ** p<.01   *** p<.001

Table 10 shows that the greatest differences between non-problem and problem gamblers in Washington State in mean monthly expenditures on gambling are for gambling on card games at card rooms, mini-casinos and Indian casinos. While differences between the mean amounts reported by problem and non-problem gamblers are not as great for some other types of gambling, there are also strong statistical differences in typical expenditures by these groups for sports, instant lottery tickets and Indian bingo. ***Table 10*** also shows that total monthly expenditures on gambling are far higher for problem gamblers than for non-problem gamblers in Washington State.

Other Significant Differences

In addition to their demographic characteristics and gambling involvement, there are other significant differences between non-problem and problem gamblers in Washington State. These include differences in respondents' perceptions of their gambling involvement, the amount of time they usually gamble and the largest amount they report losing in a single day. ***Table 11*** on the following page shows that problem gamblers are significantly more likely than non-problem gamblers in Washington State to have felt nervous about their gambling. In contrast to surveys in other jurisdictions, problem gamblers in Washington State are no more likely than non-problem gamblers to feel that one or both parents has had a gambling problem.

Table 11 also shows that there are significant differences between non-problem and problem gamblers in Washington State in terms of the time and resources that they devote to gambling. Problem gamblers are significantly more likely than non-problem gamblers to spend six or more hours gambling per session and to have lost $1,000 or more in a single day.

Table 11: Other Significant Differences Between Non-Problem and Problem Gamblers

	Non-Problem Gamblers (1260) %	Problem Gamblers (75) %	Sig.
Mean Age Started Gambling	20.2	18.4	*
Ever Felt Nervous About Your Gambling	2.8	13.5	***
Parent Ever Have Gambling Problem	5.4	5.5	NS
Usually Gamble With			
Alone	26.3	21.6	
Spouse/Partner	26.2	16.2	
Other Family	15.0	14.9	NS
Friends	27.5	40.5	
Co-Worker / Other	5.0	6.8	
Usual Time Spent Gambling			
Less than 1 hour	49.0	26.7	
1 to 2 hours	26.5	26.7	
3 to 5 hours	20.0	33.3	***
6 or more hours	4.5	13.3	
Largest Amount Lost in One Day			
Less than $1	4.2	1.4	
$1 to $9	24.6	5.4	
$10 to $99	48.7	33.8	***
$100 to $999	20.7	45.9	
$1,000 or more	1.8	13.5	

Pearson Chi-Square or Wilcoxon   * p<.05   ** p<.01   *** p<.001

Awareness of Problem Gambling Services

As in other jurisdictions, very few respondents in Washington State acknowledge desiring or seeking help for a gambling problem. Only one problem gambler indicated a desire to seek help and two non-problem gamblers indicated that they had actually sought help for a gambling problem. Neither of these two respondents identified the source of help that they sought. It is interesting that nearly one-quarter of the problem gamblers and 12% of the non-problem gamblers indicated that they knew someone who had desired or sought help for a gambling problem.

In the Washington State survey, a question was included for the first time to assess respondents' awareness of information and services for problem gamblers. In response to this question, 31% of all the respondents indicated that they knew that the Washington State Council on Problem Gambling provided free information about gambling problems. Recognition and acknowledgement of the Washington State Council on Problem Gambling was significantly higher among lifetime and current problem gamblers (44% and 57% respectively) as well as among weekly gamblers (46%) than among the sample as a whole.

COMPARING THE 1992 AND 1998 SURVEYS

A critical purpose of replication studies is to determine whether gambling participation and problem gambling prevalence rates have changed over time in a given jurisdiction. Since 1993, a growing number of surveys that replicate baseline studies of gambling and problem gambling have been carried out in the United States. However, it is difficult to evaluate changes across these jurisdictions because of variations in the intervals between studies, the sample sizes, the demographic characteristics of the population and the availability of legal gambling in these jurisdictions.

In this section, we examine changes in gambling involvement and gambling-related problems in Washington State to determine whether enough statistical evidence exists to conclude that gambling involvement and gambling-related problems have changed significantly in Washington State between 1992 and 1998. In examining the evidence, we employ a general procedure called ***hypothesis testing***.

The tables in this section present several comparisons of the data from the two gambling surveys in Washington State. These include comparisons of the samples, of gambling involvement, of problem gambling prevalence rates and of lifetime problem gamblers. In presenting these data, we have adopted the convention of presenting the descriptive data for each sample, then the direction of any statistically significant change with the ***alpha*** value set relatively high at a 90% confidence interval (rather than the more conventional 95% confidence interval) and then the specific results of a one-tail test of significance.

Comparing the Surveys in Washington State

The baseline survey in Washington State was carried out in the Autumn of 1992 by Gemini Research and the Gilmore Research Group, the same team responsible for the present study (Volberg 1993). A random sample of 1,502 residents of Washington State aged 18 and over were interviewed over the telephone about their involvement in gambling, about their gambling-related problems and about their demographic characteristics.

Comparing the Questionnaires

In the ***Methods*** section, we noted that the questionnaire for the 1998 survey included five major sections: gambling involvement, the lifetime and current South Oaks Gambling Screen, the Fisher DSM-IV Screen, questions about the social impacts of problem gambling and questions about demographic characteristics. The 1992 survey included three major sections: gambling involvement, the lifetime and current South Oaks Gambling Screen and demographic questions.

Particular care was taken in designing the 1998 questionnaire to ensure that respondents' gambling participation could be compared with the earlier survey. There were several differences in the types of gambling included in the 1992 and 1998 surveys. ***Table 12*** on the following page shows the differences between the 1992 and 1998 surveys in the first section of the questionnaire about gambling involvement. In assessing several types of gambling, including large jackpot lottery games, daily lottery games and pulltabs, changes were made to the wording of questions to reflect changes in availability of these products. In 1992, charitable gambling and out-of-state gambling were each assessed with two sets of questions. In 1998, these types of gambling were assessed with a single set of questions. In 1992, sports betting was assessed with three sets of questions. In 1998, sports betting was assessed with a single set of questions. Finally, questions about speculative stock or commodity investments were dropped in the 1998 survey and questions about gambling on electronic slot machines in Washington State and telephone or computer wagering on the Internet were added.

Table 12: Comparing Types of Gambling in 1992 and 1998

1992	1998
Instant or scratch off lottery games	Instant or scratch off lottery games
Daily Game	Daily Game or Daily Keno
Lotto or Quinto	Lotto, Quinto or Lucky for Life
Pulltabs or punchboards	Pulltabs
Raffles FREs inc. casino nights	Raffles, FREs or Reno Nights
Indian bingo games	Indian bingo games
Bingo at halls or churches	Bingo at halls or churches
Card games w/friends or family	Card games w/friends or family
	Electronic gambling machines in WA
Card games in card rooms	Card games in card rooms, mini-casinos
Indian casino card or dice games	Indian casino cards, dice or other games
Out-of-state slot machines Out-of-state card, dice games	Out-of-state locations
Horses, dogs or other animals	Horses, dogs or other animals
Sports w/friends or family Formal sports pools Sports w/bookie	Sports (pools, friends/family, bookie)
	Telephone or computer wagering
Arcade or video games Speculative investments Other	Other

Two changes were made to the demographic section of the 1998 questionnaire. One change in the 1998 questionnaire was to use slightly different categories for income. The other change in the 1998 questionnaire had to do with the way in which ethnicity was determined.

In the mid-1990s, the Office of Management and Budget, which mandates how federal agencies keep records and presents data, instituted changes in how data on race and ethnicity were to be collected in order to promote consistency among federal agencies. One consequence has been a change in the way that the Bureau of the Census now collects these data. In the 1990 census, a single question was used to determine whether an individual was White, Black, Hispanic, American Indian or Asian. The Bureau now uses two questions, one to determine whether an individual is Hispanic or non-Hispanic and a second to determine whether the individual is White, Black, American Indian or Asian (United States Bureau of the Census 1999b).

In the 1992 survey, only one question was used to assess respondents' ethnicity. In 1998, two questions were used to assess "Hispanicity" and then "racial background." This change was made to conform with the revised standards adopted by the Bureau of the Census.

Comparing the Samples

In 1992, based on information from the 1990 census, we estimated that the population aged 18 and over in Washington State was 3,605,305. The most recent estimates from the Bureau of the Census show an increase in the adult population of approximately 550,000 individuals in Washington State. Given this change in the population, it is essential to identify differences in the characteristics of the samples from the two surveys. *Table 13* on the following page compares the demographic characteristics of the 1992 and 1998 samples.

Table 13: Comparing Samples in 1992 and 1998

	Total (1502) %	Total (1501) %	Direction (p≤.10)	p-value (1-tail)
Male	49.0	49.0		0.479
Female	51.0	51.0		0.479
18 – 24	10.0	10.0		0.345
25 – 34	24.0	21.0	-	0.052
35 – 54	42.0	43.0		0.178
55 – 64	11.0	11.0		0.466
65 +	14.0	14.0		0.350
White	90.0	86.0	-	0.002
Black	1.4	3.0	+	0.005
Hispanic	1.4	3.2	+	0.000
Other	7.3	7.6		0.377
Married	60.1	55.7	-	0.007
Widowed	6.4	6.9		0.324
Divorced/Separated	16.1	17.2		0.209
Never Married	17.3	20.2	+	0.020
Elementary / Some HS	14.5	5.1	-	0.000
HS Grad	19.4	30.6	+	0.000
Some College	33.2	34.6		0.209
BA Degree	21.4	17.2	-	0.002
Graduate Study	11.6	12.5		0.227
Working Full Time	54.9	59.6	+	0.005
Working Part Time	9.7	8.9		0.238
Keeping House	9.5	9.8		0.383
Retired	17.6	15.1	-	0.038
Student / Disabled / Other	8.3	6.5	-	0.032
Up to $15,000	14.7	10.8	-	0.002
$15,001 -- $25,000	18.4	15.4	-	0.025
$25,001 -- $35,000	19.6	15.6	-	0.004
$35,001 -- $50,000	20.9	20.7		0.471
$50,001 and higher	26.5	37.4	+	0.000

Table 13 shows several differences in the two samples. There is no difference in the proportion of men and women in the two samples and the difference in the proportion of Blacks and Hispanics in the two samples is largely due to changes in the way that ethnicity was determined in the 1998 survey. There is one small difference in the age distribution of the respondents in the two surveys. A slightly smaller proportion of the respondents in the 1998 sample is aged 25 to 34. Respondents in the 1998 sample are significantly less likely to be married or cohabiting and more likely to have never married than respondents in the 1992 sample. Respondents in the 1998 sample are more likely to have graduated from high school but less likely to have graduated

from college. Respondents in the 1998 sample are more likely to be working full time and less likely to be retired, disabled or in school those in the 1992 sample.

Changes in Gambling Participation

There have been substantial changes in gambling participation in Washington State between 1992 and 1998. **Table 14** provides an overview of these changes between 1992 and 1998. The table clearly shows a significant increase in the proportion of respondents who deny any gambling involvement and those who have not gambled in the past year. There is also a significant decrease in the proportion of respondents who acknowledge gambling on one or more activities once a week or more often.

Table 14: Comparing Gambling Involvement in 1992 and 1998

	1992 (1502) %	1998 (1501) %	Direction (p≤.10)	p-value (1-tail)
Non-Gamblers	9.3	11.1	+	0.051
Infrequent Gamblers	10.7	14.5	+	0.001
Past Year Gamblers	53.6	54.3		0.350
Weekly Gamblers	26.5	20.1	-	0.000

There are several possible explanations for the substantial drop in gambling participation in Washington State between 1992 and 1998. Since different individuals were interviewed in the two surveys, some of the differences are likely due to sampling errors inherent in all survey research. It is also possible that respondents may have been differentially affected in 1992 and 1998 by the social stigma or desirability associated with different gambling activities (Sudman, Bradburn & Schwarz 1996).

Another likely explanation is that the market for legal gambling in Washington State, as in the United States more generally, has matured and that the public appetite for many types of commercial gambling is satiated (Christiansen 1999). The baseline survey in Washington State was carried out in 1992, some years after the Washington State Lottery became operational and after bingo, card rooms and wagering on horse and dog races had been present for many years. Between the baseline and replication surveys in Washington State, there was an expansion in the types of lottery games available, electronic gambling machines were legalized and a substantial number of Indian casinos and gaming facilities opened.

It is likely that some of the decline in gambling involvement in Washington State between 1992 and 1998 reflects early experimentation followed by declining interest and participation. Since many Washington State residents likely participated in these activities only a few times, responses in the 1998 survey may also reflect a common type of response bias known as "recall decay" (Johnson, Gerstein & Rasinski 1998). Recall decay is a decline in the ability to recall an event as the event recedes in time.

The next table provides a more detailed picture of how gambling involvement has changed in Washington State between 1992 and 1998. **Table 15** shows changes in lifetime participation in all of the types of gambling included in the two surveys. **Table 15** shows that the number of gambling activities that have seen significant increases in lifetime participation is matched by the number of activities that have seen significant decreases between 1992 and 1998. Lifetime participation has increased in six of the 16 activities included in the 1998 survey while lifetime participation has decreased in five of these activities. Activities that have seen an increase in lifetime participation include the lottery's daily games (probably accounted for by the introduction of Daily Keno in 1992), pulltabs, Indian and non-Indian bingo, and card games at card rooms, mini-casinos and Indian casinos. Activities that have seen a decrease in lifetime participation include the lottery's

large jackpot games, card games with friends and family, wagering on horse and dog races and other types of gambling. There is no comparison possible for electronic gambling machines and telephone and computer wagering since these activities were not included in the baseline survey in 1992.

Table 15: Changes in Lifetime Gambling Participation

	1992 (1502) %	1998 (1501) %	Direction (p≤.10)	p-value (1-tail)
Instant or Scratch Lottery	65.4	65.3		0.479
Daily Game / Keno	14.4	20.5	+	0.000
Lotto / Quinto / Lucky for Life	62.5	53.2	-	0.000
Pulltabs	32.4	37.4	+	0.002
Fundraising Events / Reno Nights	55.7	56.6		0.322
Indian Bingo	5.7	10.7	+	0.000
Other Bingo Halls / Churches	17.9	23.3	+	0.000
Cards with Friends / Family	39.1	33.3	-	0.000
Electronic Gambling / Slots	-	14.6		
Card Games in Card Rooms	4.7	14.3	+	0.000
Cards / Dice / Other at Indian Casino	1.4	12.9	+	0.000
Gambling Locations Out of State	54.9	56.8		0.147
Horse/Dog / Track / OTB / Bookie	37.0	26.4	-	0.000
Sports	41.6	30.0	-	0.000
Telephone or Computer Wagering	-	0.5		
Other	22.3	5.5	-	0.000

There have been equally significant changes in past year and weekly participation in many of the different types of gambling available in Washington State between 1992 and 1998. Declines in past year participation in purchasing instant lottery tickets and large jackpot lottery games and in wagering on horse or dog races, sports and on card games with friends and family all meet the 1% or 5% hypothesis test. Increases in past year participation in the lottery's daily games (including Daily Keno), Indian bingo and card games in card rooms, mini-casinos and Indian casinos all meet the 1% or 5% hypothesis test.

Declines in weekly participation in the lottery's large jackpot games, pulltabs, sports betting and other types of gambling all meet the 1% or 5% hypothesis test as to increases in weekly participation in card games in card rooms, mini-casinos and Indian casinos. It is worth noting that while lifetime and past year participation in the lottery's daily games have both increased significantly, weekly participation in these games has not changed. This suggests that there is a small but extremely loyal group of players engaged in this activity on a regular basis.

Changes in Problem Gambling Prevalence

Table 16 on the following page shows that both the lifetime and current prevalence of problem and probable pathological gambling in Washington State have remained stable between 1992 and 1998. Only the decrease in current probable pathological gambling meets the hypothesis test for significant change and only at the relatively weak 90% confidence level. This stability of problem gambling prevalence rates, in spite of the introduction of new gambling opportunities, lends support to the notion that public education and awareness activities, as well as the availability of treatment services, can effectively mitigate the development of gambling problems in the general population.

Table 16: Changes in Problem Gambling Prevalence

	1992 Prevalence (1502) %	1998 Prevalence (1501) %	Direction (p≤.10)	p-value (1-tail)
Lifetime Problem	3.5	3.7		0.384
Lifetime Probable Pathological	1.5	1.3		0.268
Lifetime Combined	**5.1**	**5.0**		**0.500**
Current Problem	1.9	1.8		0.447
Current Probable Pathological	0.9	0.5	-	0.100
Current Combined	**2.8**	**2.3**		**0.210**

In considering changes in prevalence rates in more detail, it is important to focus on current rates. For reasons explained above and in *Appendix A*, it is more accurate to examine changes in current prevalence when considering the number of individuals in the general population who may be affected by gambling-related difficulties. *Table 17* presents changes in current prevalence of problem and probable pathological gambling between 1992 and 1998. Changes in prevalence by marital status and income level are not shown since no significant changes (even at the 90% confidence level) were detected. The only significant change in prevalence by employment status between 1992 and 1998 is that current problem gamblers in 1998 are less likely to be keeping house (p=0.07).

Table 17: Changes in Current Prevalence by Demographic Group

		1992 Current Problem (3+) %	1998 Current Problem (3+) %	Direction (p≤.10)	p-value (1-tail)
Total Sample		2.8	2.3		0.210
Gender	Male	3.7	3.8		0.445
	Female	2.0	0.9	-	0.044
Age	18 – 24	6.3	9.3		0.167
	25 – 34	4.2	1.9	-	0.040
	35 – 54	2.3	1.4		0.124
	55 – 64	-	1.2	+	0.077
	65 +	2.0	1.9		0.478
Ethnicity	White	2.6	1.6	-	0.033
	Black	4.5	4.8		0.485
	Hispanic	9.5	10.4		0.455
	Other	3.7	7.1		0.127
Education	Elementary / Some HS	4.7	5.3		0.415
	HS Grad	1.7	3.7	+	0.060
	Some College	4.0	1.5	-	0.008
	BA Degree	1.9	1.9		0.480
	Graduate Study	0.6	0.5		0.478

Table 17 shows that current problem gamblers in 1998 are significantly less likely than current problem gamblers in 1992 to be female, to be between the ages of 25 and 34, to be White and to have attended college. Current problem gamblers in 1998 are significantly more likely than

current problem gamblers in 1992 to be between the ages of 55 and 64 and to have graduated from high school.

Changes in Problem Gamblers

As noted several times in this report, research on the performance of the South Oaks Gambling Screen has shown that the *lifetime* screen is most useful when considering the characteristics of individuals in the population who are currently experiencing severe difficulties related to their gambling while the current screen is a more useful tool for detecting changes in the prevalence of problem gambling over time.

Table 18 shows changes in the demographic characteristics of individuals with gambling-related problems in Washington State between 1992 and 1998. Problem gamblers in Washington State in 1998 are significantly more likely (at the 10% confidence level) than problem gamblers in 1992 to be male and non-White. Problem gamblers in 1998 are also significantly more likely (at the 10% confidence level) to have graduated from high school, to be working full time and to have annual household incomes over $35,000.

Table 18: Comparing Lifetime Problem Gamblers in 1992 and 1998

	Total (1502) %	Total (1501) %	Direction (p≤.10)	p-value (1-tail)
Male	63.2	74.7	+	0.063
Female	36.8	25.3	-	0.063
18 – 24	17.3	24.0		0.157
25 – 34	32.0	24.0		0.138
35 – 54	37.3	36.0		0.433
55 – 64	5.3	6.7		0.365
65 +	6.0	9.3		0.386
White	83.8	68.0	-	0.012
Black	4.1	8.0		0.156
Hispanic	4.1	9.3	+	0.099
Other	8.1	14.7	+	0.104
Married	41.3	46.7		0.255
Widowed	6.7	1.3	-	0.048
Divorced/Separated	20.0	18.7		0.418
Never Married	32.0	33.3		0.431
Elementary / Some HS	21.3	6.7	-	0.005
HS Grad	17.3	36.0	+	0.005
Some College	36.0	33.3		0.366
BA Degree	20.0	16.0		0.262
Graduate Study	5.3	8.0		0.256

Table 18 (cont'd): Comparing Lifetime Problem Gamblers in 1992 and 1998

	Total (1502) %	Total (1501) %	Direction (p≤.10)	p-value (1-tail)
Working Full Time	50.7	61.3	+	0.094
Working Part Time	10.7	6.7		0.192
Keeping House	14.7	10.7		0.231
Retired	10.7	8.0		0.287
Student / Disabled / Other	13.3	13.3		0.500
Up to $15,000	14.1	11.9		0.354
$15,001 -- $25,000	26.8	13.4	-	0.026
$25,001 -- $35,000	21.1	14.9		0.172
$35,001 -- $50,000	11.3	20.9	+	0.061
$50,001 and higher	26.8	38.8	+	0.066

The most interesting change in the characteristics of problem gamblers in Washington State between 1992 and 1998 is that problem gamblers in 1998 are significantly more likely to be male. One possible explanation of this change may lie in the types of gambling that have been introduced in Washington State. In general, men are more likely to wager on card games and the introduction of Indian casinos (which primarily feature card games in Washington State) was well as increases in the number of card rooms and mini-casinos around the state may have been a major factor contributing to the increase in male problem gamblers in Washington State. This change in the gender of problem gamblers in Washington State is in contrast to the growing proportion of problem gamblers in other jurisdictions who are women (Polzin, Baldridge, Doyle, Sylvester, Volberg & Moore 1998; Volberg & Moore 1999).

COMPARING THE SOGS AND THE FISHER SCREEN

Since so many surveys have been carried out using the South Oaks Gambling Screen, use of this instrument allows comparisons of gambling problems across jurisdictions as well as over time (Walker & Dickerson 1996). Recent changes to the psychiatric criteria for pathological gambling, however, have led researchers to wonder whether the South Oaks Gambling Screen is the best tool for measuring the prevalence of pathological gambling in the community (see ***Appendix A*** for further discussion). In moving forward, it is essential that the performance of any new instrument be compared to the South Oaks Gambling Screen. In this way, the field of gambling research can move forward in an evolutionary, rather than revolutionary, manner.

The Washington State Survey

In the Washington State survey, a new problem gambling screen based on the DSM-IV criteria for pathological gambling was used in addition to the South Oaks Gambling Screen. The South Oaks Gambling Screen was used in order to obtain prevalence data comparable to the baseline survey in Washington State in 1992. The ***Fisher Screen*** was used in order to assess pathological gambling using the most current criteria. This and similar studies do not answer questions about the validity and reliability of the Fisher Screen in relation to clinical assessments. However, use of the Fisher Screen does provide an important opportunity to understand how the two most widely-used methods to identify problem and pathological gamblers in the general population operate in relation to one another.

The Fisher Screen

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

The Fisher Screen is a 10-item scale based on the most recent diagnostic criteria for pathological gambling (American Psychiatric Association 1994). In developing the DSM-IV criteria, 222 self-identified pathological gamblers and 104 substance abusers who gambled socially tested the individual items (Lesieur & Rosenthal 1991). Discriminant analysis was used to identify the items that best differentiated between pathological and non-pathological gamblers. While the results from this sample indicated that a cutoff of 4 points was appropriate, the American Psychiatric Association subsequently adopted a diagnostic cutoff of 5 points.

The DSM-IV criteria were adapted slightly for use in a survey of British casino patrons (Fisher 1996). The Fisher Screen has now been used in surveys in Colorado, Louisiana, Montana, New York and Oregon (Polzin et al 1998; Volberg 1996, 1997b, 1997c; Volberg & Moore 1999). In developing her screen, Fisher made some minor adjustments to the wording of the DSM-IV criteria, framed all of the questions in the past year, and increased the number of response categories from "Yes/No" to "Never," "Once or Twice," "Sometimes" and "Often." In the surveys in Colorado, Louisiana, Montana, New York and Oregon, respondents received a score of one for any of the Fisher Screen items to which they gave a positive response ("Once or Twice,"

Sometimes" or "Often").[2] Total scores were obtained by adding the positive items for each respondent.

Statistical Properties of the Fisher Screen

In this section, we examine the psychometric properties of the Fisher Screen among the Washington State respondents who have ever gambled. These psychometric properties are important in assessing the relationship between the two different methods used to identify problem and pathological gamblers.

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 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 Fisher Screen, 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 Fisher Screen.

Reliability

The most widely accepted test of reliability is a measure if the internal consistency of an instrument. The reliability of the Fisher Screen in the Washington State sample of gamblers is good with Cronbach's alpha at .77, higher than the .70 that is generally accepted as representing good reliability.

In addition to testing the internal consistency of the Fisher Screen, we carried out a factor analysis of the screen to assess how the individual items cluster together. Factor analysis shows that 37% of the variance for the Fisher Screen was accounted for by one factor in Washington State. Three other factors achieved an eigenvalue over 1.0 and these accounted for an additional 35% of the variance.

Item Analysis

Endorsement of Fisher Screen items among Washington State gamblers ranged from a high of 15.3% (Preoccupation) to a low of 0.4% (Bailout). 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 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. Since all of the Fisher Screen items are framed in the past year, the *current* problem and probable pathological gamblers in Washington State were used in this analysis.

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[2] The scoring method used with the Washington State sample is somewhat different from the scoring method used by Fisher (1996). In Fisher's approach, the first seven items were scored only if the response was "Often" while the last three items were scored for any positive response. The different scoring method was adopted because of the low response rate to the Fisher Screen items in these surveys compared to the sample of casino patrons used by Fisher.

Table 19: Comparing SOGS Non-Problem and Problem Gamblers

on the Fisher Screen Items

Fisher Items	Non-Problem Gamblers (1330) %	Problem Gamblers (35) %	p-value*
Preoccupation	14.1	57.1	.000
Tolerance	0.8	28.6	.000
Withdrawal	0.5	11.4	.000
Escape	2.4	31.4	.000
Chasing	5.4	51.4	.000
Lying	0.5	17.1	.000
Loss of Control	0.7	14.3	.000
Illegal Acts	0.4	5.7	.000
Risked Significant Relationship	0.5	5.7	.001
Bailout	0.2	8.6	.000
Mean DSM-IV Score	0.2	2.3	.000

* Pearson chi-square and Anova

Table 19 shows that all of the Fisher Screen items discriminate effectively between SOGS-defined problem and non-problem gamblers in Washington State. The most effective discriminator among the Fisher Screen items is Preoccupation with 57% of the current problem and probable pathological gamblers scoring a positive response in contrast to only 14% of the non-problem gamblers. The next best discriminator is Chasing, with 51% of the problem and probable pathological gamblers scoring a positive response compared to 5% of the non-problem gamblers. *Table 19* also shows that there is a significant difference in mean scores on the Fisher Screen items for non-problem and problem gamblers, supporting the notion that the Fisher Screen measures something similar to the 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 Fisher Screen is closely based on the DSM-IV criteria, and since these criteria have been shown to have good content validity, it is likely that the Fisher Screen also has good content validity (Fisher 1996; Lesieur & Rosenthal 1991).

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 Fisher Screen and the current South Oaks Gambling Screen. The result of this analysis was statistically significant (Pearson correlation coefficient=.532, p=.000).

To better understand how the SOGS and the Fisher Screen operate in relation to one another, it is useful to examine how respondents scored on each of these instruments in more detail. *Table 20* on the following page shows the number of respondents who scored at different levels on the SOGS and the Fisher Screen.

Table 20: Comparing Scores on the SOGS and the Fisher Screen

	Fisher Screen			
SOGS	0 - 2	3 - 4	5+	Total
0 - 2	1290	6	4	1300
3 - 4	21	5	1	27
5+	2	2	4	8
Total	1313	13	9	1335

Table 20 shows that the Fisher Screen does not operate quite as well in relation to the SOGS in Washington State as it does in other jurisdictions. Respondents who score low on the Fisher Screen also tend to score low on the SOGS. However, only 55% of respondents who score high on the Fisher Screen (5 or more) score 3 or more points on the SOGS. In contrast, the the SOGS appears to perform better in relation to the Fisher Screen in Washington State than in other jurisdictions. Half of the of the respondents who score 3 or more on the Fisher Screen (54%) also score 3 or more on SOGS and 50% of the current probable pathological gamblers on the SOGS also score at the highest level on the Fisher Screen.

Congruent Validity

Since several of the items on the SOGS and Fisher Screen are similar, it is possible to check whether respondents answered similar questions differently in different places in the interview. *Table 21* shows how respondents who gambled answered several similar questions from the current SOGS and the Fisher Screen.

Table 21: Comparing Scores on Similar SOGS and Fisher Screen Items

	SOGS or Fisher Item	Positive Score (1335) %
CHASING	Go back another day to win money you lost (chasing) (SOGS)	2.7
	Often return another day to get even (chasing) (Fisher)	6.6
LYING	Claimed to win when in fact lost (SOGS)	3.1
	Hidden evidence of gambling (SOGS)	0.7
	Lies to others to conceal extent of gambling (Fisher)	1.0
TOLERANCE	Spend more time or money gambling than intended (SOGS)	7.6
	Need to gamble with increasing amounts to achieve desired excitement (Fisher)	1.6
LOSS OF CONTROL	Would like to stop gambling but couldn't (SOGS)	0.9
	Made repeated unsuccessful efforts to control or stop gambling (Fisher)	1.0

Table 21 shows that respondents are less likely to give an answer that scores as a positive response to the Fisher Screen questions than to the current SOGS items assessing Tolerance. Respondents are more likely to give a positive answer to the Fisher Screen question than to the current SOGS item assessing Chasing. These same differences have been noted in the Colorado, Louisiana, Montana, New York and Oregon surveys and it is likely that they are due to the way that these items are understood by respondents. Further research is needed on the cognitive properties of all of the problem gambling screens presently in use.

Comparing SOGS and Fisher Problem Gamblers

The prevalence of problem gambling in Washington State, measured by the Fisher Screen, is somewhat lower than to the current prevalence of problem gambling identified with the South Oaks Gambling Screen. The main difference is in the less severe "problem gambling" category. While 0.9% of the total sample (N=1501) scored 3 or 4 points on the Fisher Screen, 1.8% of the total sample scored 3 or 4 points on the current South Oaks Gambling Screen. While 0.6% of the total sample scored 5 or more points on the Fisher Screen, 0.5% of the total sample scored 5 or more points on the current South Oaks Gambling Screen.

Table 22 compares the demographic characteristics of problem gamblers as defined by the Fisher Screen with current problem gamblers as defined by the SOGS. Since both the SOGS and the Fisher groups are small, and since several members of the Fisher problem group are part of the SOGS problem group as well, no effort has been made to test the differences for statistical significance. *Table 22* shows that problem gamblers identified with the Fisher Screen are more likely than problem gamblers identified with the current SOGS to be female, between the ages of 35 and 54 and non-White. Problem gamblers identified with the Fisher Screen are also more likely than those identified with the current SOGS to be married and keeping house. Finally, problem gamblers identified with the Fisher Screen have somewhat higher household income than those identified with the current SOGS.

Table 22: Comparing Demographics of SOGS and Fisher Screen Problem Gamblers

		SOGS Problem Gamblers (35) %	Fisher Problem Gamblers (22) %
Gender	Male	80.0	68.2
	Female	20.0	31.8
Age	18 – 24	40.0	18.2
	25 – 34	17.1	13.6
	35 – 44	14.3	27.3
	45 – 54	11.4	27.3
	55 – 64	5.7	9.1
	65 +	11.4	4.5
Ethnicity	White	57.1	54.5
	Black	5.7	4.5
	Hispanic	14.3	9.1
	Other	22.9	31.8
Marital Status	Married	37.1	50.0
	Widowed	2.9	-
	Divorced/Separated	17.1	9.1
	Never Married	42.9	40.9
Education	Elementary / Some HS	11.4	13.6
	HS Grad	48.6	45.5
	Some College	22.9	27.3
	BA Degree	14.3	13.6
	Graduate Study	2.9	-

Table 22 (cont'd): Comparing Demographics of SOGS and Fisher Screen Problem Gamblers

		SOGS Problem Gamblers (35) %	Fisher Problem Gamblers (22) %
Employment	Working Full Time	55.9	54.5
	Working Part Time	14.7	13.6
	Keeping House	5.9	22.7
	Retired	5.9	-
	Student / Disabled / Other	17.6	9.1
Income	Up to $15,000	15.2	15.0
	$15,001 -- $25,000	18.2	20.0
	$25,001 -- $35,000	21.2	20.0
	$35,001 -- $50,000	21.2	5.0
	$50,001 and higher	24.2	40.0

Comparing Fisher Screen Across States

Finally, it is instructive to compare the results of surveys from different jurisdictions that have included the Fisher Screen. **Table 23** compares scores for the total sample on the individual items that make up the Fisher Screen as well as overall scores on the screen for standard problem groups. The results of this analysis show that it is more difficult to detect differences across jurisdictions with the Fisher Screen than with the South Oaks Gambling Screen.

Table 23: Comparing the Fisher Screen Across Jurisdictions

	New York	Colorado	Oregon	Montana	Louisiana	Washington State
Year	1996	1997	1997	1998	1998	1998
Sample Size	1829	1810	1502	1227	1800	1501
Internal Consistency	.68	.65	.80	.91	.90	.77
0	79.8	76.0	81.4	84.7	85.6	81.5
1	14.4	18.0	12.1	9.1	8.4	13.3
2	3.3	3.9	3.1	3.7	3.1	3.7
3	1.2	1.0	1.6	1.2	1.2	0.7
4	0.4	0.7	0.4	0.3	0.8	0.1
5	0.3	0.1	0.4	0.1	0.3	0.2
6	0.5	0.3	0.3	0.3	0.1	0.1
7	0.1	0.1	0.2	0.3	0.2	0.2
8	-	0.1	0.2	-	0.2	-
9	-	-	0.1	0.2	0.1	0.1
10	-	-	0.1	0.2	0.1	0.1
Score = 3,4	1.6	1.7	2.0	1.5	1.9	0.9
Score = 5+	0.9	0.5	1.3	1.0	0.9	0.6
Combined Total	2.5	2.2	3.3	2.5	2.8	1.8

SUMMARY AND CONCLUSION

The main purpose of this study was to examine changes in the prevalence of gambling-related problems among the adult population in Washington State between 1992 and 1998. An additional purpose of this study was to compare prevalence rates of problem gambling in Washington State with prevalence rates from other jurisdictions. In addition to these goals, the results of this study will be useful in documenting the impact of legal gambling on the citizens of Washington State and in refining the services available to individuals in Washington State with gambling-related difficulties. The results may also be valuable in policy development with regard to legal gambling in Washington State.

Summary

In Washington State in 1992, 91% of the respondents acknowledged participating in one or more of the 19 gambling activities included in the questionnaire. In 1998, 89% of the respondents acknowledged participating in one or more of the 16 activities included in the questionnaire. Lifetime participation among Washington respondents is highest for instant or scratch lottery games, charitable gambling, out-of-state gambling and large jackpot lottery games.

Infrequent gamblers and non-gamblers in Washington State are significantly older, more likely to be widowed and more likely to be retired or keeping house than more frequent gamblers. While infrequent and non-gamblers are more likely than past year or weekly gamblers to have attended college, these respondents are less likely to have household incomes over $25,000. Weekly gamblers in Washington State are significantly more likely than less frequent gamblers to be men, between the ages of 35 and 64, divorced or separated and working full time. Weekly gamblers are less likely than other respondents to have attended college.

Based on recent population estimates, there are between 47,000 and 102,600 current problem gamblers in Washington State. In addition, there are between 6,200 and 35,300 current probable pathological gamblers in Washington State. Prevalence rates are substantially higher among men, among respondents aged 18 to 24, among non-Whites and among those who have never married. Current prevalence rates are substantially higher among respondents who have not attended college and among those who are disabled, working part time or going to school.

Current prevalence rates are highest among respondents who have wagered in the past year on pulltabs, at Indian casinos, at card rooms or mini-casinos and on Indian bingo. Expenditures by past year players at Indian casinos, card rooms and mini-casinos, and on electronic gambling machines come disproportionately from problem gamblers. Finally, prevalence rates in Washington State are lower than prevalence rates in most other states with the exception of three states all surveyed before 1995. While problem gambling rates in Washington State are similar to the North American average, prevalence rates of probable pathological gambling are lower in Washington State than the North American average.

Problem gamblers in Washington State are significantly more likely than non-problem gamblers to be male, under the age of 25, non-White and never married. Problem gamblers are significantly more likely than non-problem gamblers to have gambled in the past year in card rooms or mini-casinos and at Indian casinos. The greatest differences between non-problem and problem gamblers in Washington State in mean monthly expenditures on gambling are for gambling on card games at card rooms, mini-casinos and Indian casinos. Finally, problem gamblers in Washington State are significantly more likely than non-problem gamblers to spend six or more hours gambling per session and to have lost $1,000 or more in a single day.

Comparison of the results of this study to an earlier survey in Washington State shows a significant increase in the proportion of the population that denies any gambling involvement or gambling involvement in the past year. There is also a significant decrease in the proportion of the population that gambles on one or more activities once a week or more often. There are several possible explanations for these declines in gambling involvement in Washington State between 1992 and 1998, including response biases such as recall decay and social desirability as well as gambling market saturation.

The decline in gambling participation in Washington State between 1992 and 1998 has been accompanied by a stabilization in the prevalence of problem gambling. This stability of problem gambling prevalence rates, in spite of the introduction of many new gaming opportunities, lends support to the notion that public education and awareness activities, as well as the availability of treatment services, can effectively mitigate the development of gambling problems in the general population.

Directions for the Future

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

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?

Recently, research indicating that approximately 3% of individuals with severe alcohol-related difficulties actually seek treatment in any one year (Smith 1993) was successfully replicated in predicting the number of problem gamblers who would seek treatment in two Australian states (Dickerson 1997). This approach was further tested in Oregon, one of only a few jurisdictions where treatment services for problem gamblers are widely available. The results of the prevalence survey in Oregon suggested that between 600 and 1400 individuals would seek treatment per year. In fact, the problem gambling treatment programs in Oregon have an average annual enrollment of 610 problem gamblers and family members per year (Volberg 1997c).

In calculating the number of problem and pathological gamblers who might seek treatment in Washington State, we focus on the group of individuals who score as current probable pathological gamblers (e.g. the 6,200 to 35,300 individuals represented by the confidence interval for current probable pathological gambling in Washington State). Based on this approach, we estimate that Washington State should plan to provide problem gambling treatment services to between 200 and 1,100 individuals per year.

Recommendations

Given the stability of the prevalence of problem and pathological gambling in Washington State, it will be important to focus on strengthening what is already being done throughout the State to address issues related to problem gambling. In this regard, it will be essential to maintain current services and to expand those activities that appear to be most effective. It will also be important to evaluate services for individuals who are at risk for developing gambling-related difficulties. In making decisions about services for problem gamblers and their families in Washington State, policy-makers may wish to give consideration to developing the following services and activities:

- working with *insurance companies* to obtain coverage for treatment services for individuals with gambling-related difficulties;

- refinement of *public education and prevention services* targeted toward particular at-risk groups (youth, minorities) as well as gambling venues where problem gamblers are most likely to be found, including card rooms, mini-casinos and Indian casinos, pulltab outlets and establishments where electronic gambling machines are located;

- support of *industry policies and programs* to minimize gambling-related difficulties among patrons (an industry working group, representing many different organizations, has just started meeting on a quarterly basis to address problem gambling issues);

- development of specific *government-industry initiatives* to address problem gambling issues in Washington State;

- 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;

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

- *expansion* of the activities of the Washington State Council on Problem Gambling, including the helpline as well as training and referral services;

- *evaluation* of existing program services as well as those established in the future; and

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

REFERENCES

Abbott, M. W. & R. A. Volberg. 1996. "The New Zealand National Survey of Problem and Pathological Gambling," Journal of Gambling Studies, 12 (2): 143-160.

American Psychiatric Association. 1980. Diagnostic and Statistical Manual of Mental Disorders, Third Edition. Washington, DC: American Psychiatric Association.

American Psychiatric Association. 1994. Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition. Washington, DC: American Psychiatric Association.

Baldridge, J., W. L. Moore, J. T. Sylvester & R. A. Volberg. 1999. Research Note: Error in Respondent Estimates of Gambling Expenditures. Gemini Research Working Paper (April 1999).

Blaszczynski, A., V. Dumlao & M. Lange. 1997. "'How Much Do You Spend Gambling?' Ambiguities in Survey Questionnaire Items," Journal of Gambling Studies 13 (3): 237-252.

Christiansen, E. M. 1998. "The United States 1997 Gross Annual Wager: A New Entitlement," International Gaming & Wagering Business 19 (8). Supplement.

Christiansen, E. M. 1999. An Overview of Gambling in the United States. Testimony before the National Gambling Impact Study Commission (February 8, 1999). Virginia Beach, VA.

Dickerson, M. G. 1993. "Internal and External Determinants of Persistent Gambling: Problems in Generalising from One Form of Gambling to Another," Journal of Gambling Studies 9 (3): 225-245.

Dickerson, M. G. 1997. The Australian Experience of the Development of Strategies to Address Gambling Related Problems in the Community: Implications for Other Jurisdictions. Paper presented at the 10th International Conference on Gambling and Risk Taking. Montreal, CANADA.

Fisher, S. E. 1996. Gambling and Problem Gambling Among Casino Patrons. Report to the British Casino Industry Consortium.

Gabriel, K. 1996. Gambler Way: Indian Gaming in Mythology, History and Archaeology in North America. Boulder, CO: Johnson Books.

Johnson, R. A., D. R. Gerstein & K. A. Rasinski. 1998. "Adjusting Survey Estimates for Response Bias: An Application to Trends in Alcohol and Marijuana Use," Public Opinion Quarterly 62: 354-377.

Ladouceur, R., A. Gaboury, M. Dumont & P. Rochette. 1988. "Gambling: Relationship Between the Frequency of Wins and Irrational Thinking," Journal of Psychology 122: 409-414.

Lesieur, H. R. & S. B. Blume. 1987. "The South Oaks Gambling Screen (SOGS): A New Instrument for the Identification of Pathological Gamblers," American Journal of Psychiatry 144: 1184-1188.

Lesieur, H. R. & R. J. Rosenthal. 1991. "Pathological Gambling: A Review of the Literature
(prepared for the American Psychiatric Association Task Force on DSM-IV Committee on
Disorders of Impulse Control Not Elsewhere Classified)," Journal of Gambling Studies 7: 5-
40.

Litwin, M. S. 1995. How to Measure Survey Reliability and Validity. Thousand Oaks: Sage
Publications. Vol. 7 of the Survey Kit.

North American Gaming Report. 1997. International Gaming & Wagering Business. Supplement.
(Volume 18, No. 7).

Polzin, P. E., J. Baldridge, D. Doyle, J. T. Sylvester, R. A. Volberg & W. L. Moore. 1998. "From
Convenience Stores to Casinos: Gambling – Montana Style," Montana Business Quarterly
36 (4): 2-14.

Rosenthal, R. J. 1989. "Pathological Gambling and Problem Gambling: Problems of Definition and
Diagnosis." In Compulsive Gambling: Theory, Research, and Practice, H.J. Shaffer, S.A.
Stein, B. Gambino & T.N. Cummings (eds). Boston: Lexington Books.

Shaffer, H. J., M. N. Hall & J. Vander Bilt. 1997. Estimating the Prevalence of Disordered
Gambling Behavior in the United States and Canada: A Meta-analysis. Boston, MA:
Harvard Medical School Division on Addictions.

Smith, D. A. R. 1993. "Treatment Services for Pathological Gambling: A Mental Health
Perspective." In New Zealand Department of Internal Affairs, Papers from Problem
Gambling Seminar. Wellington: Department of Internal Affairs. Pp. 85-90.

Sudman, S., N. Bradburn & N. Schwarz. 1996. Thinking About Answers: The Application of
Cognitive Processes to Survey Methodology. San Francisco: Jossey-Bass.

Thompson, W. N. 1997. Legalized Gambling: A Reference Handbook. Santa Barbara, CA:
ABC-CLIO.

United States Bureau of the Census. 1999a. Population Estimates. Website:
www.census.gov/population/estimates (accessed February 20, 1999).

United States Bureau of the Census. 1999b. Explanation of Race and Hispanic Origin Categories.
Website: www.census.gov/population/estimates/rho.txt (accessed March 25, 1999).

Volberg, R. A. 1993. Gambling and Problem Gambling in Washington State. Report to the
Washington State Lottery.

Volberg, R. A. 1994. "The Prevalence and Demographics of Pathological Gamblers: Implications
for Public Health," American Journal of Public Health 84 (2): 237-241.

Volberg, R. A. 1996. Gambling and Problem Gambling in New York: A 10-Year Replication
Survey, 1986 to 1996. Report to the New York Council on Problem Gambling.

Volberg, R. A. 1997a. Gambling and Problem Gambling in Mississippi. Report to the Mississippi
Council on Compulsive Gambling. Social Research Report Series 97-1. Social Science
Research Center, Mississippi State University.

Volberg, R. A. 1997b. Gambling and Problem Gambling in Colorado. Report to the Colorado
Department of Revenue.

Volberg, R. A. 1997c. Gambling and Problem Gambling in Oregon. Report to the Oregon Gambling Addiction Treatment Foundation.

Volberg, R. A. & M. W. Abbott. 1994. "Lifetime Prevalence Estimates of Pathological Gambling in New Zealand," International Journal of Epidemiology 23 (5): 976-983.

Volberg, R. A. & M. G. Dickerson (eds.). 1996. Journal of Gambling Studies, Special Issue on International Prevalence Studies and Related Treatment Developments. Vol. 12, No. 2.

Volberg, R. A. & W. L. Moore. 1999. Gambling and Problem Gambling in Louisiana: A Replication Survey, 1995 to 1998. Report to the College of Business Administration, University of New Orleans.

Volberg, R. A., W. L. Moore, E. M. Christiansen, W. Cummings & S. M. Banks. 1998. "Unaffordable Losses: Estimating the Proportion of Gambling Revenues Derived from Problem Gamblers," Gaming Law Review 2 (4): 349-360.

Walker, M. B. 1992. The Psychology of Gambling. Oxford: Pergamon Press.

Walker, M. B. & M. G. Dickerson. 1996. "The Prevalence of Problem and Pathological Gambling: A Critical Analysis," Journal of Gambling Studies 12 (2): 233-249.

Washington State Council on Problem Gambling. 1996. 1996 Annual Report: Activities 1996. Website: http://www.wscpg.org/narritiv.htm, accessed July 3, 1998.

Washington State Council on Problem Gambling. 1999. Suggestions for a Comprehensive Approach to Problem Gambling in Washington State. (February 23, 1999).

APPENDIX A:

Methods to Assess Problem Gambling

in the General Population

When gambling is legalized, the operation and oversight of these activities become part of the routine processes of government. Gambling commissions are established, revenues are distributed, and constituencies of customers, workers and organizations develop. Governments become dependent on revenues from legal gambling to fund essential services. Many non-gambling occupations and businesses also become dependent on revenues from legal gambling to continue to operate profitably, including convenience stores, retail operators, restaurants, hotels, social clubs and charitable organizations. Ancillary services, including legal, accounting, architectural, public relations and advertising, security and financial organizations, expand their activities to provide for the needs of gambling operations (Volberg 1998).

A critical element in the growing legitimacy of gambling has been the "medicalization" of gambling problems and the professionalization of gambling treatment (Abt & McGurrin 1991; Rosecrance 1985), in other words, the acceptance of gambling problems as suitable subjects for disciplines such as psychiatry, clinical psychology, and epidemiology. A constituency of well-educated treatment professionals has emerged whose livelihoods come from providing services to governments and gaming operators. Organizations that provide services to these helping professions—hospitals, clinics, government health agencies, universities and colleges, the insurance industry—have growing interests in the development of legal gambling. These organizations are investing increasing though still relatively modest resources in training and certifying treatment professionals, in educating students, and in covering treatment for pathological gambling.

The Social Construction of Psychiatric Measures

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 (Becker 1961; Dean 1979; Gerson 1983). 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. The third, and latest, generation of studies began around 1980 and coincided, as did the first two generations, with dramatic changes in psychiatric nomenclature (Dohrenwend 1998). The publication of the third edition of the *Diagnostic and Statistical Manual* (DSM-III) (American Psychiatric Association 1980), with its systematic approach to psychiatric diagnoses, 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).

Measuring Gambling Problems: A Case Study

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, policy makers 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 the demographic characteristics of these individuals, and determine the likelihood that they would utilize treatment services if these became available.

Following the inclusion of the diagnosis of pathological gambling in the DSM-III for the first time in 1980 (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).

Adopting the South Oaks Gambling Screen in 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 (Shaffer, Hall & Vander Bilt 1997; Volberg & Dickerson 1996; Volberg & Moore 1999). 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 most concerned with the issue of false positives since this type of error affects their work in diagnosis and treatment and because treating someone who does not need treatment is extremely expensive. In population research, where the primary concern is accurately identifying the number of people with and without the disorder, both types of classification error are important since each has an independent impact on the overall efficiency of the screen. Indeed, the rate of false negatives may be of principal concern in population 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).

Let us 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 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 South Oaks Gambling Screen

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

Although there are questions about the validity of applying results from research in New Zealand to studies in the United States, the New Zealand research does suggest that estimates of the lifetime prevalence of problem and probable pathological gambling over-state the actual prevalence of pathological gambling. However, since the lifetime South Oaks Gambling Screen does a good job of identifying pathological gamblers in the general population, information about the characteristics of these respondents is valuable in planning the implementation and development of services for pathological gamblers in the community. The New Zealand research further suggests that estimates of the current prevalence of problem and probable pathological gambling are quite accurate.

A recent study in Minnesota supports the New Zealand work on the performance of the SOGS (Stinchfield 1997). In the Minnesota research, 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. As in New Zealand, Stinchfield found that the accuracy of the SOGS 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. However, he argued that the SOGS is best suited for identifying individuals at risk while the DIGS is more useful if the goal of a study is to estimate the prevalence of pathological gambling in the general population.

Decline of the South Oaks Gambling Screen

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 the eclipse of the South Oaks Gambling Screen in their efforts to discredit what they saw as unacceptably high prevalence rates (National Opinion Research Center 1998).

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. In 1996, 21 states funded an array of services for problem gamblers, including education, prevention, and referral; an increase of 600 percent in ten years (Cox, Lesieur, Rosenthal & Volberg 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 the DSM-IV

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 1991). Discriminant analysis was used to identify the items that best differentiated between pathological and non-pathological gamblers. While the results from this sample indicated that a cutoff of 4 points was appropriate, the American Psychiatric Association 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) criteria (listed in the table below), 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.

DSM-IV Criteria for Pathological Gambling

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	Restlessness or irritability when attempting to cut down or stop gambling
ESCAPE	Gambling 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 return another day in order to get even ("chasing one's losses")
LYING	Lies to family members, therapists or others to conceal the extent of involvement with gambling
LOSS OF CONTROL	Made repeated unsuccessful efforts to control, cut back or stop gambling

DSM-IV Criteria for Pathological Gambling (cont'd)

ILLEGAL ACTS	Committed illegal acts, such as forgery, fraud, theft or embezzlement, in order to finance gambling
RISKED SIGNIFICANT RELATIONSHIP	Jeopardized or lost a significant relationship, job, educational or career opportunity because of gambling
BAILOUT	Reliance on others to provide money to relieve a desperate financial situation caused by gambling

Most researchers conducting gambling studies and treatment professionals working with individuals with gambling problems have expressed satisfaction with the new DSM-IV criteria. At two recent international meetings of gambling researchers and treatment professionals,[1] the consensus was that the field needed to move fully into the new "DSM-IV era." 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.

At the end of the 1990s, 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, including the ISR screen used in the last national study; the CCSM; and the SOGS (Culleton 1989; Kallick et al. 1975; Lesieur & Blume 1987). Since 1990, in contrast, 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. This latter group includes:

- the Diagnostic Interview Schedule (DIS; Cunningham-Williams, Cottler, Compton & Spitznagel 1998);

- the Diagnostic Interview for Gambling Severity (DIGS; Winters, Specker & Stinchfield 1997);

- the Massachusetts Gambling Screen (MAGS; Shaffer, LaBrie, Scanlan & Cummings 1994); and

- the Fisher Screen (Fisher 1996).

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.

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[1] The first meeting took place in conjunction with the Twelfth National Conference on Problem Gambling in June, 1998 in Las Vegas and was hosted by Trimeridian, Inc. Invited participants included researchers and treatment professionals from Australia, Canada, Great Britain, Spain and the United States. The second meeting took place in September, 1998 in Malta at the 42nd ICAA International Institute on the Prevention and Treatment of Dependencies and included members of the newly-organized ICAA Gambling Section from the countries of Canada, Denmark, Great Britain, Italy, the Netherlands, Spain, Sweden and the United States.

The 1998 National Survey[2]

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. [3] This was the first national survey of gambling behavior conducted since 1975. 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.[4] 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). Due to the timing of critical decisions in the Washington State and national surveys, it was not possible to include the NODS in the present study.

Development of the NODS

The NODS is composed of 17 lifetime items and 17 past year items, compared to the 20 lifetime items and 20 past year items that make up the South Oaks Gambling Screen. The maximum score on the NODS is 10 compared to 20 for the South Oaks Gambling Screen. 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 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

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[2] This section is based on the final report to the National Gambling Impact Study Commission (National Opinion Research Center 1999).

[3] 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.

[4] A study recently funded by the National Institute for Alcohol Abuse and Alcoholism will include the South Oaks Gambling Screen in a nationally representative survey of approximately 3,000 adults (Welte 1997). Dr. Volberg is a consultant on this project.

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.

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 at-risk 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 believes that the **specificity** of the NODS will 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.

The following table presents NODS lifetime prevalence rates for three samples, the nationally representative adult survey, the patron survey and the clinical sample. Comparison of this table with **Table 7** on Page 17 of this report demonstrates that prevalence rates based on the NODS are lower than prevalence rates, lifetime or current, based on the South Oaks Gambling Screen.

NODS Prevalence Rates in Three Samples

	RDD Sample (2417) %	Patron Sample (530) %	Patient Sample (40) %
Non-Gamblers	14.4	0.6	-
Gamblers with no problems	75.6	68.3	-
Gamblers with 1-2 problems	7.9	17.9	-
Gamblers with 3-4 problems	1.3	5.3	5.0
Gamblers with 5+ problems	0.8	7.9	95.0

In the future, it will be important to examine whether the lifetime NODS, with its focus on the accumulation of symptoms over time, works better than the past year NODS, with its focus on the clustering of symptoms in time. It will also be important in the future to calibrate the lifetime NODS with the South Oaks Gambling Screen, both lifetime and past year.

Assessing Problem Gambling in the Future

The assumption underlying all of the existing gambling research is that gambling-related difficulties are a robust phenomenon and that gambling problems 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 impacts of legal gambling on society.

In the late 1990s, the issues surrounding legal gambling have become far more complex. Policy makers, government agencies, gambling regulators and gaming operators are concerned about the likely impacts of changing mixes of legal gambling on the gambling behavior of broad segments of the population as well as on the prevalence of gambling-related difficulties. Public health researchers and social scientists are concerned with minimizing the risks of legal gambling to particular subgroups in the population. Economists, financial institutions and law enforcement professionals are concerned about the relationship between legal gambling and bankruptcies, gambling and crime, and the reliance of the gaming industries on problem gamblers for revenues. Treatment professionals, government agencies and not-for-profit organizations are concerned about how to allocate scarce resources for the prevention and treatment of gambling problems (Volberg 1998). Finally, groups opposed to the expansion of legal gambling have started working to prevent the further expansion of legal gambling or repeal existing activities.

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. As research on problem gambling continues, our systems for classifying problem gamblers must change. The South Oaks Gambling Screen 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. These emerging methods must be tested against each other and against the South Oaks Gambling Screen in order to advance the field of problem gambling research in an orderly manner, ensuring the relevance of our past work as well as our work in the future.

References

Abbott, M. W. & R. A. Volberg. 1992. Frequent Gamblers and Problem Gamblers in New Zealand: Report on Phase Two of the National Survey. Research Series No. 14. Wellington: New Zealand Department of Internal Affairs.

Abbott, M. W. & R. A. Volberg. 1996. "The New Zealand National Survey of Problem and Pathological Gambling." Journal of Gambling Studies, 12 (2): 143-160.

Abt, V. & M. C. McGurrin. 1991. "The Politics of Problem Gambling: Issues in the Professionalization of Addiction Counseling." In Gambling and Public Policy: International Perspectives, W. R. Eadington & J. A. Cornelius (eds). Reno: University of Nevada Press. Pp. 657-670.

American Psychiatric Association. 1980. Diagnostic and Statistical Manual of Mental Disorders, Third Edition. Washington, DC: American Psychiatric Association.

American Psychiatric Association. 1994. Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition. Washington, DC: American Psychiatric Association.

Cox, S., H. R. Lesieur, R. J. Rosenthal & R. A. Volberg. 1997. Problem and Pathological Gambling in America: The National Picture. Report prepared by the Research and Public Policy Committees of the National Council on Problem Gambling.

Culleton, R. P. 1989. "The Prevalence Rates of Pathological Gambling: A Look at Methods," Journal of Gambling Behavior 5: 22-41.

Dickerson, M. G. 1993. "A Preliminary Exploration of a Two-Stage Methodology in the Assessment of the Extent and Degree of Gambling-Related Problems in the Australian Population." In Gambling Behavior and Problem Gambling. W. R. Eadington & J. A. Cornelius (eds). Reno: University of Nevada Press.

Dohrenwend, B. P. 1995. "The Problem of Validity in Field Studies of Psychological Disorders, Revisited." In Ming, T. Tsuang, Mauricio Tohen & Gwendolyn E. P. Zahner (eds), Textbook in Psychiatric Epidemiology. New York: Wiley-Liss. Pp. 3-20.

Dohrenwend, B. P. 1998. "A Psychosocial Perspective on the Past and Future of Psychiatric Epidemiology," American Journal of Epidemiology 147 (3): 222-231.

Becker, H. S. 1960. "Notes on the Concept of Commitment," American Journal of Sociology 66: 32-40.

Dean, J. 1979. "Controversy Over Classification: A Case Study From the History of Botany." In Natural Order: Historical Studies of Scientific Culture, B. Barnes & S. Shapin (eds). Beverly Hills, CA: Sage Publications.

Fisher, S. E. 1996. Gambling and Problem Gambling Among Casino Patrons. Report to the British Casino Industry Consortium.

Gerson, E. M. 1983. "Scientific Work and Social Worlds," Knowledge 4: 357-379.

Lesieur, H. R. 1994. "Epidemiological Surveys of Pathological Gambling: Critique and Suggestions for Modification," Journal of Gambling Studies 10 (4): 385-398.

Lesieur, H. R. & S. B. Blume. 1987. "The South Oaks Gambling Screen (SOGS): A New Instrument for the Identification of Pathological Gamblers," American Journal of Psychiatry 144: 1184-1188.

Lesieur, H. R. & R. Klein. 1985. Prisoners, Gambling and Crime. Paper presented at the Meetings of the Academy of Criminal Justice Scientists.

Lesieur, H. R. & R. J. Rosenthal. 1991. "Pathological Gambling: A Review of the Literature (prepared for the American Psychiatric Association Task Force on DSM-IV Committee on Disorders of Impulse Control Not Elsewhere Classified)," Journal of Gambling Studies 7: 5-40.

Lesieur, H. R., S. B. Blume & R. M. Zoppa. 1986. "Alcoholism, Drug Abuse, and Gambling," Alcoholism: Clinical and Experimental Research 10: 33-38.

National Opinion Research Center. 1998. National Survey and Community Database Research on Gambling Behavior. RFP #NGISC-R-001 Technical Proposal. Submitted to the National Gambling Impact Study Commission. (February 1998).

National Opinion Research Center. 1999. Gambling Impact and Behavior Study. Final Report to the National Gambling Impact Study Commission. In collaboration with Gemini Research, Ltd., The Lewin Group & Christiansen/Cummings Associates, Inc.

Porter, T. M. 1995. Trust in Numbers: The Pursuit of Objectivity in Science and Public Life. Princeton, NJ: Princeton University Press.

Rosecrance, J. 1985. "Compulsive Gambling and the Medicalization of Deviance," Social Problems 32: 275-284.

Shaffer, H. J., M. N. Hall & J. Vander Bilt. 1997. Estimating the Prevalence of Disordered Gambling Behavior in the United States and Canada: A Meta-analysis. Boston, MA: Harvard Medical School Division on Addictions.

Shaffer, H. J., R. LaBrie, K. M. Scanlan & T. N. Cummings. 1994. "Pathological Gambling Among Adolescents: Massachusetts Gambling Screen (MAGS)," Journal of Gambling Studies 10 (4): 339-362.

Stinchfield, R. 1997. Reliability, Validity and Classification Accuracy of the South Oaks Gambling Screen (SOGS). Paper presented at the 10th International Conference on Gambling and Risk Taking. Montreal, CANADA.

Volberg, R. A. 1992. Gambling Involvement and Problem Gambling in Montana. Report to the Montana Department of Corrections and Human Services.

Volberg, R. A. 1994. "Assessing Problem and Pathological Gambling in the General Population: A Methodological Review." In Gambling in Canada: The Bottom Line, Colin S. Campbell (ed). Vancouver: Simon Fraser University Press. Pp. 137-146.

Volberg, R. A. 1996. "Prevalence Studies of Problem Gambling in the United States," Journal of Gambling Studies 12 (2): 111-128.

Volberg, R. A. 1998. Methodological Issues in Research on Problem Gambling. Report to the National Research Council, National Academy of Sciences.

Volberg, R. A. 1998. Testimony: Research on Problem Gambling. Testimony before the National Gambling Impact Study Commission. Expert Panel on Pathological Gambling, January 22, 1998

Volberg, R. A. & S. M. Banks. 1990. "A Review of Two Measures of Pathological Gambling in the United States," Journal of Gambling Behavior 6(2): 153-163.

Volberg, R. A. & W. L. Moore. 1999. Gambling And Problem Gambling In Sweden. Report to the International Gambling Research Team of Sweden.

Volberg, R. A. & E. Silver. 1993. Gambling and Problem Gambling in North Dakota. Report to the North Dakota Department of Human Services, Division of Mental Health.

Volberg, R. A. & H. J. Steadman. 1988. "Refining Prevalence Estimates of Pathological Gambling," American Journal of Psychiatry 145: 502-505.

Volberg, R. A. & H. J. Steadman. 1992. "Accurately Depicting Pathological Gamblers: Policy and Treatment Implications." Journal of Gambling Studies 8 (4): 401-412.

Walker, M. B. 1992. The Psychology of Gambling. Oxford: Pergamon Press.

Walker, M. B. & M. G. Dickerson. 1996. "The Prevalence of Problem and Pathological Gambling: A Critical Analysis," Journal of Gambling Studies 12 (2): 233-249.

Welte, J. W. 1997. Co-Occurrence of Gambling and Substance Use in the U.S. Proposal to the Department of Health and Human Services. National Institute on Alcohol Abuse and Alcoholism.

Winters, K. C., S. Specker & R. Stinchfield. 1997. Brief Manual for Use of the Diagnostic Interview for Gambling Severity. Minneapolis, MN: University of Minnesota Medical School. (July 1997).

APPENDIX B:

Assessing the Proportion of Gambling Revenues

From Problem Gamblers

In addressing the issue of problem gambling, government responses tend to assume a three-stage form: first, efforts at measurement; then, allocation of public funds for treatment; and finally, because treatment must be funded by someone, attempts to assess the size of the bill and a debate over who should pay it. In the debate over who should pay for services to address problem gambling, the question of how heavily the different gambling industries rely on revenues from problem gamblers becomes salient. To date, the question of the extent to which gambling industry revenues (and hence the positive economic benefits of allowing gambling industries to operate) are being derived from the gambling of afflicted individuals has received little scientific attention.

While formulae for assessing responsibility for funding problem gambling services should not rest solely on the contribution made to gambling industry revenues by problem gamblers, this is a first, essential step in developing such formulae. Together with estimates of the costs associated with preventing gambling problems and with treating problem gamblers, estimates of the proportion of revenues derived from problem gamblers represent one of the most important factors in the calculus of rational public policy in this controversial field.

In a recent article, we described a method for determining the proportion of reported expenditures for different gambling activities that came from problem gamblers (Volberg, Moore, Christiansen, Cummings & Banks 1998). These proportions are based on responses from all past year participants within each activity. Survey estimates of the proportion spent by problem gamblers on a particular game are not affected by error in total expenditure estimates since the proportion is based on a comparison of reported expenditures by non-problem and problem gamblers for *that type of gambling*. However, further research is needed to examine gambling expenditure reporting errors (Baldridge, Sylvester, Volberg & Moore1999).

The results of applying this approach to the data from Washington State are presented below. In broad terms, the results of this analysis highlight the importance of working with Indian casinos, card rooms and mini-casinos in Washington State to prevent gambling-related problems among their patrons. The results of this analysis also underscore the importance of carefully considering the impact of expanding the number of electronic gambling machines in Washington State.

Explaining the Method

Survey data on reported gambling expenditures can be used to determine the proportion of gambling revenues that come from problem gamblers. For several reasons, these analyses are best limited to expenditures by past-year gamblers and current (or "past-year") problem gamblers.[2] First, current prevalence rates are the best reflection of the actual prevalence of problem gambling in the population. Second, respondents in gambling surveys are generally asked to report expenditures only for those types of gambling in which they have participated in the past year. Unless respondents have participated in a given type of gambling in the past year, they are not asked about expenditures. It is therefore inappropriate to include them in any calculation of expenditures. Finally, there have been extensive changes in the availability of different types of gambling over time. Past-year rates of participation are therefore the most accurate reflection of the availability of gambling in a particular jurisdiction.

Calculating the proportion of expenditures that comes from problem gamblers for any type of gambling requires three items of information:

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[2] In this analysis, current or past-year problem gamblers are defined as those individuals who score three or more points on the current items of the widely used South Oaks Gambling Screen.

- the prevalence rate of problem gambling among participants for *each type of gambling*;

- the mean expenditures of non-problem participants for *each type of gambling*; and

- the mean expenditures of participants who score as problem gamblers for *each type of gambling*.

The calculation requires several steps. First, it is necessary to determine the ratio of problem gamblers' expenditures to non-problem gamblers' expenditures for a given type of gambling. This ratio may be called the "Proportional Loss Factor" (PLF) and it is calculated by dividing the mean expenditure of problem gamblers by the mean expenditure of non-problem gamblers for any given type of gambling. Once the prevalence of problem gambling among participants in a particular type of gambling (PR) and the value of the PLF for that type of gambling have been established, it is possible to determine the proportion of expenditures for that activity that come from problem gamblers.

If problem gamblers make up (X) percent of the participants in a particular type of gambling, then the other participants make up (100 - X) percent of the total population of participants. Furthermore, in calculating the PLF, we divided problem gambler expenditures by the expenditures of non-problem participants. In mathematical terms, the problem gamblers' expenditures have been "normalized" with respect to the non-problem gamblers' expenditures. With the non-problem gamblers' average expenditures defined as 1, the aggregate average expenditure (AAE) for a specific gambling activity can be expressed as:

$$AAE = (PLF)(PR) + (100-PR)$$

To determine the contribution that problem gamblers make to expenditures on a specific gambling activity, the problem gambling contribution is divided by the average aggregate expenditure:

$$(PLF)(PR)/AAE$$

The Example of Washington State

The table on the following page provides the information needed to calculate the proportion of expenditures derived from problem gamblers for each of the types of gambling included in the Washington State adult survey. We have not included Indian bingo, non-Indian bingo, pari-mutuel wagering, telephone or computer wagering and "Other" activities in our analysis. This is because the number of past year players for these activities was too small to yield meaningful results. Despite a relatively high rate of past year participation in charitable gambling, the number of past year **problem gamblers** in this group was too small to include in this analysis. Finally, we did not examine gambling at out-of-state locations.

Elements for Calculating Expenditure Proportions

Type of Gambling	Group Size	PR	Mean $ Non-Problem	Mean $ Current Problem
Electronic Gambling / Slots	156	4.5	22.87	325.71
Card Games in Card Rooms	121	8.3	8.30	39.89
Cards / Dice / Other at Indian Casino	129	7.0	31.54	147.67
Instant or Scratch Lottery	630	4.0	8.94	20.48
Daily Game / Keno	201	4.5	12.41	24.56
Pulltabs	307	5.9	13.27	14.17
Lotto / Quinto / Lucky for Life	649	2.9	9.42	15.37
Sports	192	7.3	12.78	59.71
Cards with Friends / Family	234	5.6	11.18	18.85

The proportion of expenditures derived from problem gamblers for any type of gambling is driven by two factors. If the prevalence rate (PR) is low and the Proportional Loss Factor (PLF) is also low (i.e. problem gamblers do not spend a great deal more than non-problem gamblers on that activity), the proportion of total expenditures derived from problem gamblers will be low. In contrast, if both prevalence and PLF are high, then the proportion of total expenditures from problem gamblers will be high. If only one of these ratios is high, then the contribution of problem gamblers will fall somewhere in the middle.

The following table presents information about the proportion of expenditures that come from problem gamblers among past year players of different gambling activities in Washington State. For each of the types of gambling in the following table, we have identified the prevalence of current problem gambling, the Proportional Loss Factor (PLF; or the normalized relationship between expenditures reported by non-problem and problem gamblers), and the proportion of total expenditures that come from current problem gamblers.

Proportion of Expenditures Derived from Problem Gamblers

Type of Gambling	PR	PLF	AAE	Proportion
Electronic Gambling / Slots	4.5	14.24	1.60	40.2
Card Games in Card Rooms	8.3	4.81	1.32	30.3
Cards / Dice / Other at Indian Casino	7.0	4.68	1.26	26.1
Instant or Scratch Lottery	4.0	2.29	1.05	8.7
Daily Game / Keno	4.5	1.97	1.04	8.5
Pulltabs	5.9	1.07	1.00	6.3
Lotto / Quinto / Lucky for Life	2.9	1.63	1.02	4.6
Sports	7.3	4.67	1.27	26.9
Cards with Friends / Family	5.6	1.69	1.04	9.1

The table above shows that 40% of expenditures by past year players of electronic gambling machines come from problem gamblers. Nearly one-third of expenditures on card games in card rooms or mini-casinos and one-quarter of expenditures in Indian casinos come from problem gamblers. The high proportion of expenditures derived from problem gamblers for electronic gambling machines is explained by the extremely high PLF. Problem gamblers who had played electronic gambling machines in the past year reported spending $14 for every $1 reported by non-problem gamblers on this activity. In the case of Indian casinos, card rooms and mini-casinos, the high proportion of expenditures derived from problem gamblers is explained by high prevalence rates among past year players as well as substantial PLFs.

Addressing the Uncertainties

There are a number of potential sources of uncertainty in this approach to determine the proportion of expenditures from problem gamblers. From a purely mathematical point of view, there is the question of the confidence intervals around the ratios that we have identified. From a more practical point of view, there is the question of the relationship between the amounts that respondents in surveys report spending on different types of gambling and the amounts that we "know" they have spent, based on revenues reported to state agencies and taxed by state governments.

Calculating the Variance

The proportion of expenditures that comes from problem gamblers for any type of gambling depends on the ratio of problem gambler expenditures to non-problem gambler expenditures. These ratios vary across different types of gambling in different jurisdictions. To establish the statistical rigor of our estimates for these ratios, we must calculate the confidence intervals pertaining to them. This is done by calculating the standard error (or variance) of the estimated ratios for each type of gambling. The steps for calculating the variance of a ratio at the standard 95% confidence interval are complicated and we have elected not to present them here in the interests of readability. Readers who desire more information may contact the authors of this report.

The table on the following page presents the low and high ends of the 95% confidence interval around the proportions of expenditures that come from problem gamblers for each type of gambling in Washington State. Readers will immediately notice that the confidence interval for some types of gambling is relatively small while the confidence interval for other types of gambling is quite large; in several cases, the upper bound reaches 100 percent. This is because the confidence interval rises in proportion to the square root of the sample size of the groups engaged in each activity.

For those types of gambling in which a relatively small number of people participate, such as electronic gambling machines and card games in card rooms, mini-casinos and Indian casinos, the confidence intervals are relatively large. For those types of gambling in which a large number of people participate, such as lottery games and pulltabs, the confidence intervals are relatively small. Our results for those types of gambling in which small numbers of people participate should therefore be interpreted as suggestive rather than as conclusive.

Confidence Intervals for Proportions

Type of Gambling	Group Size	Proportion %	Low	High
Electronic Gambling / Slots	156	40.2	19.0	100.0
Card Games in Card Rooms	121	30.3	11.3	99.3
Cards / Dice / Other at Indian Casino	129	26.1	14.9	100.0
Instant or Scratch Lottery	630	8.7	5.2	25.7
Daily Game / Keno	201	8.5	3.9	53.1
Pulltabs	307	6.3	3.8	17.7
Lotto / Quinto / Lucky for Life	649	4.6	3.2	8.6
Sports	192	26.9	15.3	100.0
Cards with Friends / Family	234	9.1	6.5	14.8

Relationship Between Expenditures and Revenues

There is one failing common to studies that attempt to estimate the proportion of gambling revenues derived from problem gamblers. This is the question, common to many other research areas, of the accuracy of information reported in surveys compared with alternative sources of information about these activities. For example, it is estimated that only 40 to 60 percent of all alcohol sales are accounted for in surveys of alcohol consumption in the general population (Pernanen 1974; Polich & Orvis 1979). Similarly, there are large discrepancies in the number of sexual partners that men and women report in surveys of sexual activity.

For those gambling activities regulated, operated or taxed by the state, comparisons can be made between the levels of spending calculated from respondents' reports of their own behavior and data on gambling receipts available from state gambling regulatory agencies. Information available on gross gaming revenues can be used to assess the fit between reported and actual expenditures in Washington State in a preliminary manner (Christiansen 1998). The following table presents information about reported and actual expenditures for several activities in Washington State, presented in rank order by market share.

Reported Versus Estimated Actual Expenditures on Gambling

Type of Gambling	Reported ($/person/year)	Actual ($/person/year)	Ratio
Lottery	117.91	40.89	2.88
Casinos & Devices	86.36	37.20	2.32
Bingo	10.87	21.44	0.51
Charitable	36.37	9.23	3.94
Pari-mutuel	16.67	8.49	1.96
Card Rooms	44.43	4.31	10.31

This table shows that, as in other jurisdictions, "reported spending" substantially exceeds "actual spending" in most cases. There appear to be two principal factors underlying the gaps between "reported" and "actual" spending. The first involves the definition (or respondents' interpretations) of the term "spending." In some cases, respondents may be reporting their *gross* spending (which corresponds to lottery sales, casino table drop, or pari-mutuel handle) rather than spending net of prizes.

The second factor may involve respondents' interpretations of the term "typical." In statistical terms, this may be variously interpreted as the "mode" (the most common), the "median" (half the time better, and half the time worse) or the "mean" (the arithmetic average). There may be very substantial differences among gamblers playing at typical frequencies (by any of the definitions above). Much of the prize money returned by state lotteries, for example, comes in large "chunks;" for most players, the "typical" month will not include any sizable win even if one plays those lottery games which return many relatively small prizes, such as the instant games or daily numbers. Thus, even if the respondent is trying to accurately report his "net" spending, after the return of prizes, the "typical" month's spending defined as "most common" will likely be significantly larger than a "typical" month's spending defined as "mean." Similarly, most players of casino table games, pari-mutuel sports, and bingo are likely lose money at many more sessions than they win; unless they are very frequent gamblers, therefore, their "typical/mode" rate of spending will likely differ substantially from their "typical/mean" rate of spending.

Despite the complications which muddy these comparisons of "reported" and "actual" spending, there seems to be a general trend: for those games which large proportions of the public play, primarily state lotteries and to a lesser extent, casino slots, the gaps between "reported" and "actual" spending or sales are relatively small. As the number of players in the population shrinks, or in games where the distribution of winners is highly skewed, however, the gaps between "reported" and "actual" spending increase.

The proportion of gambling revenues (or consumer spending on commercial games) derived from problem gamblers can range widely depending on variables that include the menu of gambling games available in an area, the prize structures of these games, and the length of time these games have been operating. Not all forms of commercial gambling are alike in the extent of the negative externalities associated with their operation, a widespread assumption that seriously impedes the formulation of rational public policy in this area.

References

Baldridge, J., W. L. Moore, J. T. Sylvester & R. A. Volberg. 1999. Research Note: Error in Respondent Estimates of Gambling Expenditures. Gemini Research Working Paper (April 1999).

Christiansen, E. M. 1998. "The United States 1997 Gross Annual Wager: A New Entitlement," International Gaming & Wagering Business 19 (8). Supplement.

Pernanen, K. 1974. "Validity of Survey Data on Alcohol Use." In Gibbins, R. J., Y. Israel, H. Kalant, R. E. Popham, W. Schmidt & R. G. Smart (eds), Research Advances in Alcohol and Drug Problems, Volume One. New York: Wiley & Sons. Pp. 355-374.

Polich, R. M. & B. R. Orvis. 1979. Alcohol Problems: Patterns and Prevalence in the U.S. Air Force. Report to the United States Air Force. Rand R-2308-AF.

Volberg, R. A., W. L. Moore, E. M. Christiansen, W. Cummings & S. M. Banks. 1998. "Unaffordable Losses: Estimating the Proportion of Gambling Revenues Derived from Problem Gamblers," Gaming Law Review 2 (4): 349-360.

APPENDIX C:

Questionnaire for the 1998 Washington State Survey

```
Hello, my name is ____ and I am calling from Gilmore Research Group, a public
opinion and survey research firm.  First, I want to assure you that we are NOT
selling anything; we are conducting a survey of people in your community for
the
State of Washington concerning the gambling practices of Washington citizens.

Your household is one of 1,500 being surveyed throughout the state.  Your phone
number was randomly selected by a computer and I do not know your name.  All
of your answers will be kept strictly confidential and will only be used when
combined with those from all the other people in the survey for reporting
purposes.  If I come to questions that you would prefer not to answer, pelase
just say so and I will move on the the next question.

In order to interview the right person, I need to speak with the member of your
household who is aged 18 or over and has had the most recent birthday.

                    Would that be you?  @INT02
                    IF YES, CODE 51 TO CONTINUE
                    IF NO, ASK TO SPEAK TO THAT PERSON
             PRESS F1 AND DOWN ARROW TO SEE ALL CODES AVAILABLE
```

3:   **INT02**

```
People bet on many different things such as raffles, football games and card
games.  I am going to ask you about some activities such as these that you
may participate in.

IF SAYS NEVER GAMBLES, DOESN'T BELIEVE IN IT, SAY;
We understand that not everyone gambles, but your opinions are still very
important to us.

Have you ever bet or spent money on instant or scratch off lottery games?

                    1 Yes
                    2 No
                    3 Don't know
                    9 Refused

                    @G1
```

4:   **G1**

(1/ 51)

01..Yes 1		
02...No 2		=> G2
03...Don't know 3		=> G2
04.. Refused 9		=> G2

5:   **G1A**

Have you bet or spent money on instant or scratch off lottery games in the past
year?

(1/ 52)

01..Yes 1		
02...No 2		=> G2
03...Don't know 3		=> G2
04.. Refused 9		=> G2

6: **G1B**

Can you give me an idea of the amount that you spend on instant or scratch off lottery games in a typical month? IF NEEDED, SAY: I am only looking for an approximate amount, rounded to the nearest 5 dollars or so.

(1/ 53)

7: **G1C**

Do you bet or spend money on instant or scratch off lottery games at least once per week?

(1/ 59)

01	Yes	1
02	No	2
03	Don't know	3
04	Refused	9

8: **G2**

Have you ever bet or spent money on the lottery Daily Game or Daily Keno?

(1/ 60)

01	Yes	1	
02	No	2	=> G3
03	Don't know	3	=> G3
04	Refused	9	=> G3

9: **G2A**

Have you bet or spent money on lottery Daily Game or Daily Keno in the past year?

(1/ 61)

01	Yes	1	
02	No	2	=> G3
03	Don't know	3	=> G3
04	Refused	9	=> G3

10: **G2B**

Can you give me an idea of the amount that you spend on lottery Daily Game or Daily Keno in a typical month? IF NEEDED, SAY: I am only looking for an approximate amount, rounded to the nearest 5 dollars or so.

(1/ 62)

11: **G2C**

Do you bet or spend money on lottery Daily Game or Daily Keno at least once per week?

(1/ 68)

01	Yes	1
02	No	2
03	Don't know	3
04	Refused	9

12:   G3

Have you ever bet or spent money on the Lotto, Quinto or Lucky for Life?

(1/ 69)

01	Yes	1	
02	No	2	=> G4
03	Don't know	3	=> G4
04	Refused	9	=> G4

13:   G3A

Have you bet or spent money on Lotto, Quinto or Lucky for Life in the past year?

(1/ 70)

01	Yes	1	
02	No	2	=> G4
03	Don't know	3	=> G4
04	Refused	9	=> G4

14:   G3B

Can you give me an idea of the amount that you spend on Lotto, Quinto or Lucky for Life in a typical month? IF NEEDED, SAY: I am only looking for an approximate amount, rounded to the nearest 5 dollars or so.

(1/ 71)

15:   G3C

Do you bet or spend money on Lotto, Quinto or Lucky for Life at least once per week?

(1/ 77)

01	Yes	1
02	No	2
03	Don't know	3
04	Refused	9

16:   G4

Have you ever bet or spent money on pulltabs?

(1/ 78)

01	Yes	1	
02	No	2	=> G5
03	Don't know	3	=> G5
04	Refused	9	=> G5

17:   G4A

Have you bet or spent money on pulltabs in the past year?

(1/ 79)

01	Yes	1	
02	No	2	=> G5
03	Don't know	3	=> G5
04	Refused	9	=> G5

18: **G4P**

When you play pulltabs, do you usually play the paper game, or with validators?

(1/ 80)

01.. Paper   1
02.. Validator   2
03...No preference   3
04.. Refused   9

19: **Q4B**

Can you give me an idea of the amount that you spend on pulltabs in a typical month? IF NEEDED, SAY: I am only looking for an approximate amount, rounded to the nearest 5 dollars or so.

(1/ 81)

20: **Q4C**

Do you bet or spend money on pulltabs at least once per week?

(1/ 87)

01.. Yes   1
02...No   2
03...Don't know   3
04.. Refused   9

21: **G5**

Have you ever bet or spent money on raffles, fund-raising events or Reno Nights?

(1/ 88)

01.. Yes   1
02...No   2   => G6
03...Don't know   3   => G6
04.. Refused   9   => G6

22: **G5A**

Have you bet or spent money on raffles, fund-raising events or Reno Nights in the past year?

(1/ 89)

01.. Yes   1
02...No   2   => G6
03...Don't know   3   => G6
04.. Refused   9   => G6

23: **G5B**

Can you give me an idea of the amount that you spend on Raffles, fund-raising events or Reno Nights in a typical month? IF NEEDED, SAY: I am only looking for an approximate amount, rounded to the nearest 5 dollars or so.

(1/ 90)

24: G5C

Do you bet or spend money on raffles, fund-raising events or Reno Nights at least once per week?

(1/ 96)

01.. Yes	1	
02..No	2	
03...Don't know	3	
04.. Refused	9	

25: G6

Have you ever bet or spent money on Indian bingo games?

(1/ 97)

01.. Yes	1	
02..No	2	=> G7
03...Don't know	3	=> G7
04.. Refused	9	=> G7

26: G6A

Have you bet or spent money on Indian bingo games in the past year?

(1/ 98)

01.. Yes	1	
02..No	2	=> G7
03...Don't know	3	=> G7
04.. Refused	9	=> G7

27: G6P

When you play Indian bingo games, do you usually play the paper game, the electronic game, or the satelite game?

(1/ 99)

01...paper	1
02...electronic	2
03.. satelite	3
04...No preference	4
05.. Refused	9

28: G6B

Can you give me an idea of the amount that you spend on Indian bingo games in a typical month? IF NEEDED, SAY: I am only looking for an approximate amount, rounded to the nearest 5 dollars or so.

(1/ 100)

29: G6C

Do you play Indian bingo games at least once per week?

(1/ 106)

01.. Yes	1
02..No	2
03...Don't know	3
04.. Refused	9

30:   **G7**

Have you ever bet or spent money on other bingo games at bingo halls or churches?

(1/ 107)

01	Yes	1	
02	No	2	=> G8
03	Don't know	3	=> G8
04	Refused	9	=> G8

31:   **G7A**

Have you bet or spent money on other bingo games at bingo halls or churches in the past year?

(1/ 108)

01	Yes	1	
02	No	2	=> G8
03	Don't know	3	=> G8
04	Refused	9	=> G8

32:   **G7P**

When you play other bingo games at bingo halls or churches, do you usually play the paper game or the electronic game?

(1/ 109)

01	paper	1
02	electronic	2
03	No preference	4
04	Refused	9

33:   **G7B**

Can you give me an idea of the amount that you spend on other bingo games at bingo halls or churches in a typical month? IF NEEDED, SAY: I am only looking for an approximate amount, rounded to the nearest 5 dollars or so.

(1/ 110)

34:   **G7C**

Do you bet or spend money on other bingo games at bingo halls or churches at least once per week?

(1/ 116)

01	Yes	1
02	No	2
03	Don't know	3
04	Refused	9

35:   **G8**

Have you ever bet or spent money on card games with friends or family?

(1/ 117)

01	Yes	1	
02	No	2	=> G9
03	Don't know	3	=> G9
04	Refused	9	=> G9

36:   **G8A**

Have you bet or spent money on card games with friends or family in the past year?

(1/ 118)

01	Yes	1	
02	No	2	=> G9
03	Don't know	3	=> G9
04	Refused	9	=> G9

37:   **G8B**

Can you give me an idea of the amount that you spend on card games with friends or family in a typical month? IF NEEDED, SAY: I am only looking for an approximate amount, rounded to the nearest 5 dollars or so.

(1/ 119)

38:   **G8C**

Do you bet or spend money on card games with friends or family at least once per week?

(1/ 125)

01	Yes	1	
02	No	2	
03	Don't know	3	
04	Refused	9	

39:   **G9**

Have you ever bet or spent money on electronic gambling machines or slot machines in Washington State?

(1/ 126)

01	Yes	1	
02	No	2	=> G10
03	Don't know	3	=> G10
04	Refused	9	=> G10

40:   **G9A**

Have you bet or spent money on electronic gambling machines or slot machines in Washington State in the past year?

(1/ 127)

01 .... Yes	1	
02 ....No	2	=> G10
03 ....Don't know	3	=> G10
04 .... Refused	9	=> G10

41:   **G9B**

Can you give me an idea of the amount that you spend on electronic gambling machines or slot machines in Washington State in a typical month? IF NEEDED, SAY: I am only looking for an approximate amount, rounded to the nearest 5 dollars or so.

(1/ 128)

42:   **G9C**

Do you bet or spend money on electronic gambling machines or slot machines in Washington State at least once per week?

(1/ 134)

01 .... Yes	1	
02 ....No	2	
03 ....Don't know	3	
04 .... Refused	9	

43:   **G10**

Have you ever bet or spent money on card games in card rooms or minicasinos?

(1/ 135)

01 .... Yes	1	
02 ....No	2	=> G11
03 ....Don't know	3	=> G11
04 .... Refused	9	=> G11

44:   **G10A**

Have you bet or spent money on card games in card rooms or minicasinos in the past year?

(1/ 136)

01 .... Yes	1	
02 ....No	2	=> G11
03 ....Don't know	3	=> G11
04 .... Refused	9	=> G11

45: **G10P**

When you play card games in card rooms or minicasinos, do you usually play blackjack, poker or some other card game?

(1/ 137)

01...Blackjack 1
02...Poker 2
03...Other card games (Specify) 3   O
04...no preference 4
05.. Refused 9

46: **G10B**

Can you give me an idea of the amount that you spend on card games in card rooms or minicasinos in a typical month? IF NEEDED, SAY: I am only looking for an approximate amount, rounded to the nearest 5 dollars or so.

(1/ 138)

47: **G10C**

Do you bet or spend money on card games in card rooms or minicasinos at least once per week?

(1/ 144)

01.. Yes 1
02..No 2
03...Don't know 3
04.. Refused 9

48: **G11**

Have you ever bet or spent money on cards, dice or other games at an Indian casino?

(1/ 145)

01.. Yes 1
02..No 2   => G12
03...Don't know 3   => G12
04.. Refused 9   => G12

49: **G11A**

Have you bet or spent money on cards, dice or other games at an Indian casino in the past year?

(1/ 146)

01.. Yes 1
02..No 2   => G12
03...Don't know 3   => G12
04.. Refused 9   => G12

50:   **G11P**

PROBE TO FIT; DO NOT READ LIST

When you play card, dice or other games at an Indian casino, which game do you usually play?

(1/ 147 - 149 - 151 - 153 - 155 - 157)

01	Blackjack,	01
02	Poker,	02
03	Another card game, (SPECIFY)	03 O
04	Dice,	04
05	Roulette,	05
06	Keno,	06
07	Other Game (RECORD ON NEXT SCREEN)	07
08	--------------------------------	
09	No preference	08
10	Refused	99

51:   **G11P2**

RECORD GAME (OTHER) NOT CARD GAME

(1/ 159 - 161 - 163 - 165 - 167 - 169)

01 ....OTHER (SPECIFY) NOT CARD GAME   07   O

52:   **G11B**

Can you give me an idea of the amount that you spend on cards, dice or other games at an Indian casino in a typical month? IF NEEDED, SAY: I am only looking for an approximate amount, rounded to the nearest 5 dollars or so.

(1/ 171)

53:   **G11C**

Do you bet or spend money on cards, dice or other games at an Indian casino at least once per week?

(1/ 177)

01	Yes	1
02	No	2
03	Don't know	3
04	Refused	9

54:   **G12**

Have you ever bet or spent money on gambling locations out-of-state ?

(1/ 178)

01	Yes	1	
02	No	2	=> G13
03	Don't know	3	=> G13
04	Refused	9	=> G13

55:   **G12A**

Have you bet or spent money on gambling locations out-of-state in the past year?

                                                                        (1/ 179)

01..Yes	1	
02...No	2	=> G13
03...Don't know	3	=> G13
04.. Refused	9	=> G13

56:   **G12P**

When you play gambling locations out-of-state, which game do you usually play?

(1/ 180 - 182 - 184 - 186 - 188 - 190)

01...Blackjack	01
02...Poker	02
03.. Other card game (SPECIFY)	03 O
04...Dice	04
05...Roulette	05
06...Keno	06
07...............electronic gambling machines including video poker and slot machines	07
08.. Other (RECORD ON NEXT SCREEN)	08
09...No preference	09
10.. Refused	99

57:   **G12P2**

RECORD GAME (OTHER) NOT CARD GAME

(1/ 192 - 194 - 196 - 198 - 200 - 202)

01...OTHER (SPECIFY) NOT CARD GAME   07   O

58:   **G12B**

Can you give me an idea of the amount that you spend on gambling locations out-of-state in a typical month? IF NEEDED, SAY: I am only looking for an approximate amount, rounded to the nearest 5 dollars or so.

                                                                          (1/ 204)

59:   **G12C**

Do you bet or spend money on gambling locations out-of-state at least once per week?

                                                                         (1/ 210)

01.. Yes	1
02...No	2
03...Don't know	3
04.. Refused	9

60:   **G13**

Have you ever bet or spent money on horses, dogs or other animals at the track, at an OTB or with a bookmaker?

(1/ 211)

01.. Yes 1
02..No 2   => G14
03..Don't know 3   => G14
04.. Refused 9   => G14

61:   **G13A**

Have you bet or spent money on horses, dogs or other animals at the track, at an OTB or with a bookmaker in the past year?

(1/ 212)

01.. Yes 1
02..No 2   => G14
03..Don't know 3   => G14
04.. Refused 9   => G14

62:   **G13B**

Can you give me an idea of the amount that you spend on horses, dogs or other animals at the track, at an OTB or with a bookmaker in a typical month? IF NEEDED, SAY: I am only looking for an approximate amount, rounded to the nearest 5 dollars or so.

(1/ 213)

63:   **G13C**

Do you bet or spend money on horses, dogs or other animals at the track, at an OTB or with a bookmaker at least once per week?

(1/ 219)

01.. Yes 1
02..No 2
03..Don't know 3
04.. Refused 9

64:   **G14**

Have you ever bet or spent money on sports events in formal sports pools, with family, friends or acquaintances or with a bookmaker?

(1/ 220)

01.. Yes 1
02..No 2   => G15
03..Don't know 3   => G15
04.. Refused 9   => G15

65:   **G14A**

Have you bet or spent money on sports events in formal sports pools, with family, friends or acquaintances or with a bookmaker in the past year?

(1/ 221)

01	Yes	1	
02	No	2	=> G15
03	Don't know	3	=> G15
04	Refused	9	=> G15

66:   **G14B**

Can you give me an idea of the amount that you spend on sports events in formal sports pools, with family, friends or acquaintances or with a bookmaker in a typical month? IF NEEDED, SAY: I am only looking for an approximate amount, rounded to the nearest 5 dollars or so.

(1/ 222)

67:   **G14C**

Do you bet or spend money on sports events in formal sports pools, with family, friends or acquaintances or with a bookmaker at least once per week?

(1/ 228)

01	Yes	1	
02	No	2	
03	Don't know	3	
04	Refused	9	

68:   **G15**

Have you ever bet or spent money on telephone or computer wagering, including the Internet or the Worldwide Web?

(1/ 229)

01	Yes	1	
02	No	2	=> G16
03	Don't know	3	=> G16
04	Refused	9	=> G16

69:   **G15A**

Have you bet or spent money on telephone or computer wagering, in the past year?

(1/ 230)

01	Yes	1	
02	No	2	=> G16
03	Don't know	3	=> G16
04	Refused	9	=> G16

70:   **G15B**

Can you give me an idea of the amount that you spend telephone or computer wagering, in a typical month? IF NEEDED, SAY: I am only looking for an approximate amount, rounded to the nearest 5 dollars or so.

(1/ 231)

71:   **G15C**

Do you bet or spend money on telephone or computer wagering, at least once per week?

(1/ 237)

01	Yes	1
02	No	2
03	Don't know	3
04	Refused	9

72:   **G16**

Have you ever bet or spent money on any other type of gambling?

(1/ 238)

01	Yes	1	
02	No	2	=> XG1
03	Don't know	3	=> XG1
04	Refused	9	=> XG1

73:   **G16A**

Have you bet or spent money on this type of gambling in the past year?

(1/ 239)

01	Yes	1	
02	No	2	=> XG1
03	Don't know	3	=> XG1
04	Refused	9	=> XG1

74:   **G16B**

Can you give me an idea of the amount that you spend on this type of gambling in a typical month? IF NEEDED, SAY: I am only looking for an approximate amount, rounded to the nearest 5 dollars or so.

(1/ 240)

75:   **G16C**

Do you bet or spend money on this type of gambling at least once per week?

(1/ 246)

01	Yes	1
02	No	2
03	Don't know	3
04	Refused	9

94:   **P1**

Thinking about the sorts of activities we just discussed, which involve an element
of luck or chance, can you tell me which is your favorite gambling activity?

(1/ 266)

01	Instant or scratch off lottery games	01
02	Lottery Daily Game or Daily Keno	02
03	Lotto, Quinto or Lucky for Life	03
04	Pulltabs	04
05	Raffles, fund-raising events or Reno Nights	05
06	Indian bingo games	06
07	other bingo games at bingo halls or churches	07
08	card games with friends or family	08
09	electronic gambling machines or slot machines in Washington State	09
10	card games in card rooms or minicasinos	10
11	cards, dice or other games at an Indian casino?	11
12	gambling locations out-of-state	12
13	horses, dogs or other animals at the track, at an OTB or with a bookmaker?	13
14	sports events in formal sports pools, with family, friends or acquaintances or with	
15	a bookmaker	14
15	telephone or computer wagering, including the Internet or the Worldwide Web	15
16	any other type of gambling 16 >	16
17	Don't Know	98
18	Refused	99

95:   **P2**

When participating in your favorite type of gambling, do you usually do so:

(1/ 268)

01	alone,	1
02	with your spouse or partner,	2
03	with other family members,	3
04	with friends,	4
05	with co-workers, or	5
06	with some other individual or group?	6
07	--------------------------------	
08	Don't know	8
09	Refused	9

96:   **P3**

When participating in your favorite type of gambling, do you usually do so for:

(1/ 269)

01	less than 1 hour,	1
02	1 to 2 hours,	2
03	3 to 5 hours,	3
04	6 to 12 hours,	4
05	or more than 12 hours?	5
06	----------------------------	
07	Don't know	8
08	Refused	9

97:   **P4**

For any of the types of gambling you have tried, what is the largest amount of money you have ever lost in one day of gambling or wagering? IF NEEDED: Just give me your best estimate.

(1/ 270)

```
01........................................................................................less than $1   1
02.......................................................................................... $1 to $9   2
03........................................................................................ $10 to $99   3
04...................................................................................... $100 to $999   4
05.................................................................................. $1,000 to $9,999   5
06.................................................................................$10,000 or more   6
07................................................................................ ---------------------------
08.......................................................................................Don't know   8
09.......................................................................................... Refused   9
```

The next set of questions is part of a standard measurement scale which has been used throughout the United States. There are no right or wrong answers to the questions that follow. We want to know what your experiences have been. Please try to be as accurate as possible in your answers and remember that this information is confidential.

IF NEEDED, SAY: We realize that these questions may not apply to everyone, but we do need answers to all of the questions. It will only take a few more minutes.

                        1 Continue @xsogs

98:   **XSOGS**

99:   **S1A**

READ 1-4

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/ 272)

```
01....................................................................................................never,   1
02....................................................................................some of the time,   2
03.......................................................................... most of the time, or   3
04....................................................................................everytime?   4
05......................................................................--------------------------------
06....................................................................................Don't know   8
07.......................................................................................... Refused   9
```

100:   S1B

> => +1 if   NOT S1A=2 3 4 ; ASK IF 2,3,4

(READ 1-4)

How often have you done this in the past year?
      (Would you say)

(1/ 273)

01	never,	1
02	some of the time,	2
03	most of the time, or	3
04	every time?	4
05	------------------------------	
06	Don't know	8
07	Refused	9

101:   S2A

READ 1-4

Have you ever claimed to be winning money from these activities when in fact you lost?
      Is it..

(1/ 274)

01	never,	1
02	some of the time,	2
03	most of the time, or	3
04	everytime?	4
05	------------------------------	
06	Don't know	8
07	Refused	9

102:   S2B

(READ 1-4)

How often have you done this in the past year?
      (Would you say)

(1/ 275)

01	never,	1
02	some of the time,	2
03	most of the time, or	3
04	every time?	4
05	------------------------------	
06	Don't know	8
07	Refused	9

103:   S3A

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

(1/ 276)

01	Yes	1
02	No	2
03	Don't know	3
04	Refused	9

104:   **S3B**

Have you done this in the past year?

(1/ 277)

01.. Yes   1
02..No   2
03..Don't know   3
04.. Refused   9

105:   **S4A**

Have people ever criticized your gambling?

(1/ 278)

01.. Yes   1
02..No   2
03..Don't know   3
04.. Refused   9

106:   **S4B**

Have people criticized your gambling in the past year?

(1/ 279)

01.. Yes   1
02..No   2
03..Don't know   3
04.. Refused   9

107:   **S5A**

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

(1/ 280)

01.. Yes   1
02..No   2
03..Don't know   3
04.. Refused   9

108:   **S5B**

Have you felt this way in the past year?

(1/ 281)

01.. Yes   1
02..No   2
03..Don't know   3
04.. Refused   9

109: S6A

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

(1/ 282)

01... Yes 1
02..No 2
03...Don't know 3
04... Refused 9

110: S6B

Have you felt this way in the past year?

(1/ 283)

01... Yes 1
02..No 2
03...Don't know 3
04... Refused 9

111: S7A

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/ 284)

01... Yes 1
02..No 2
03...Don't know 3
04... Refused 9

112: S7B2

Have you done so in the past year?

(1/ 285)

01... Yes 1
02..No 2
03...Don't know 3
04... Refused 9

113: S8

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

(1/ 286)

01... Yes 1
02..No 2   => S9A
03...Don't know 3   => S9A
04... Refused 9   => S9A

114:   **S8A**

Have these arguments ever centered on your gambling?

(1/ 287)

01.. Yes   1
02...No   2
03...Don't know   3
04.. Refused   9

115:   **S8B**

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

(1/ 288)

01.. Yes   1
02...No   2
03...Don't know   3
04.. Refused   9

116:   **S9A**

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

(1/ 289)

01.. Yes   1
02...No   2
03...Don't know   3
04.. Refused   9

117:   **S9B**

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

(1/ 290)

01.. Yes   1
02...No   2
03...Don't know   3
04.. Refused   9

118:   **S10A**

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

(1/ 291)

01.. Yes   1
02...No   2
03...Don't know   3
04.. Refused   9

119:   **S10B**

Have you done this in the past year?

(1/ 292)

01.. Yes   1
02...No   2
03...Don't know   3
04.. Refused   9

120:   S11A

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

(1/ 293)

01... Yes   1
02...No   2
03..Don't know   3
04.. Refused   9

121:   S11B

Have you borrowed from household money in the past year?

(1/ 294)

01... Yes   1
02...No   2
03..Don't know   3
04.. Refused   9

122:   S12A

Have you ever borrowed money from your spouse or partner to gamble or pay gambling debts?

(1/ 295)

01... Yes   1
02...No   2
03..Don't know   3
04.. Refused   9

123:   S12B

Have you borrowed money from your spouse or partner in the past year?

(1/ 296)

01... Yes   1
02...No   2
03..Don't know   3
04.. Refused   9

124:   S13A

Have you ever borrowed money from other relatives or in-laws to gamble or pay gambling debts?

(1/ 297)

01... Yes   1
02...No   2
03..Don't know   3
04.. Refused   9

125: **S13B**

Have you borrowed money from other relatives or in-laws in the past year?

(1/ 298)

01.. Yes 1
02..No 2
03..Don't know 3
04.. Refused 9

126: **S14A**

Have you ever gotten loans from banks, loan companies or credit unions to gamble or pay gambling debts?

(1/ 299)

01.. Yes 1
02..No 2
03..Don't know 3
04.. Refused 9

127: **S14B**

Have you ever gotten loans from banks, loan companies or credit unions in the past year?

(1/ 300)

01.. Yes 1
02..No 2
03..Don't know 3
04.. Refused 9

128: **S15A**

Have you ever made cash withdrawals on credit cards to get money to gamble or to pay gambling debts? THIS DOES NOT INCLUDE INSTANT CASH CARDS FROM BANK ACCOUNTS.

(1/ 301)

01.. Yes 1
02..No 2
03..Don't know 3
04.. Refused 9

«S15A »

129: **S15B**

Have you made cash withdrawals on credit cards in the past year?

(1/ 302)

01.. Yes 1
02..No 2
03..Don't know 3
04.. Refused 9

130:   **S16A**

Have you ever gotten loans from loan sharks to gamble or to pay gambling debts?

(1/ 303)

01... Yes   1
02...No   2
03...Don't know   3
04... Refused   9

131:   **S16B**

Have you gotten loans from loan sharks in the past year?

(1/ 304)

01... Yes   1
02...No   2
03...Don't know   3
04... Refused   9

132:   **S17A**

Have you ever cashed in stocks, bonds or other securities to finance gambling?

(1/ 305)

01... Yes   1
02...No   2
03...Don't know   3
04... Refused   9

133:   **S17B**

Have you cashed in stocks, bonds or other securities in the past year ?

(1/ 306)

01... Yes   1
02...No   2
03...Don't know   3
04... Refused   9

134:   **S18A**

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

(1/ 307)

01... Yes   1
02...No   2
03...Don't know   3
04... Refused   9

135:   **S18B**

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

(1/ 308)

01... Yes   1
02...No   2
03...Don't know   3
04... Refused   9

136:   S19A

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

(1/ 309)

01.. Yes   1
02..No   2
03..Don't know   3
04.. Refused   9

137:   S19B

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

(1/ 310)

01.. Yes   1
02..No   2
03..Don't know   3
04.. Refused   9

138:   S20A

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

(1/ 311)

01.. Yes   1
02..No   2
03..Don't know   3
04.. Refused   9

139:   S20B

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

(1/ 312)

01.. Yes   1
02..No   2
03..Don't know   3
04.. Refused   9

140:   XDSM

Next, I would like to ask you some questions about how you feel about your
gambling. As before, this set of questions is part of a standard measurement scale.
There are no right or wrong answers to the questions that follow. We want to
know what your experiences have been. Please try to be as accurate as possible in
your answers and remember that this information is confidential.

(1/ 313)

01...continue   1   D

161: **DSM1**

In the past year, have you often found yourself thinking about gambling, for example reliving past gambling experiences, planning the next time you will play, or thinking of ways to get money to gamble?

(1/ 334)

01 ....never, 1
02 .... once or twice, 2
03 .... sometimes, or 3
04 .... often? 4
05 ....-------------------------------
06 ....Don't know 8
07 .... Refused 9

162: **DSM2**

In the past year, have you needed to gamble with more and more money to get the amount of excitement you are looking for?

(1/ 335)

01 ....never, 1
02 .... once or twice, 2
03 .... sometimes, or 3
04 .... often? 4
05 ....-------------------------------
06 ....Don't know 8
07 .... Refused 9

«DSM2 »

163: **DSM3**

In the past year, have you become restless or irritable when trying to cut down or stop gambling?

(1/ 336)

01 ....never, 1
02 .... once or twice, 2
03 .... sometimes, or 3
04 .... often? 4
05 ....-------------------------------
06 ....Don't know 8
07 .... Refused 9

164: **DSM4**

In the past year, have you gambled to escape from problems or when you were feeling depressed, anxious or bad about yourself?

(1/ 337)

01 ....never, 1
02 .... once or twice, 2
03 .... sometimes, or 3
04 .... often? 4
05 ....-------------------------------
06 ....Don't know 8
07 .... Refused 9

165:   DSM5

In the past year, after losing money gambling, have you returned another day in order to get even?

(1/ 338)

01..never, 1
02.. once or twice, 2
03.. sometimes, or 3
04.. often? 4
05...--------------------------------
06...Don't know 8
07... Refused 9

166:   DSM6

In the past year, have you lied to your family or others to hide the extent of your gambling?

(1/ 339)

01..never, 1
02.. once or twice, 2
03.. sometimes, or 3
04.. often? 4
05...--------------------------------
06...Don't know 8
07... Refused 9

167:   DSM7

In the past year, have you made repeated, unsuccessful attempts to control, cut back or stop gambling?

(1/ 340)

01..never, 1
02.. once or twice, 2
03.. sometimes, or 3
04.. often? 4
05...--------------------------------
06...Don't know 8
07... Refused 9

168:   DSM8

In the past year, have you been forced to go beyond what is strictly legal in order to finance gambling or to pay gambling debts?

(1/ 341)

01..never, 1
02.. once or twice, 2
03.. sometimes, or 3
04.. often? 4
05...--------------------------------
06...Don't know 8
07... Refused 9

169: DSM9

In the past year, have you risked or lost a significant relationship, job, educational or career opportunity because of gambling?

(1/ 342)

01	never,	1
02	once or twice,	2
03	sometimes, or	3
04	often?	4
05	--------------------------------	
06	Don't know	8
07	Refused	9

170: DSM10

In the past year, have you sought help from others to provide money to relieve a desperate financial situation caused by gambling?

(1/ 343)

01	never,	1
02	once or twice,	2
03	sometimes, or	3
04	often?	4
05	--------------------------------	
06	Don't know	8
07	Refused	9

171: H1

The next few questions ask about important parts of some people's lives as they relate to gambling. Do you feel that either of your parents ever had a problem with betting money or gambling?

(1/ 344)

01	Yes	1
02	No	2
03	Don't know	8
04	Refused	9

172: H1A

MULTIPLE RESPONSES ALOWED

Which parent was that?

(1/ 345 - 346 - 347 - 348)

01	Father	1
02	Mother	2
03	Stepfather	3
04	Stepmother	4
05	Don't know	8
06	Refused	9

173: **H2**

Has anyone you know ever desired or sought help for a gambling problem?

(1/ 349)

01 .... Yes   1
02 .... No   2
03 .... Don't know   8
04 .... Refused   9

175: **H3**

How old were you when you first gambled?

(1/ 351)

176: **H3A**

DO NOT READ; PROBE TO FIT

What type of gambling was that?

(1/ 353 - 355 - 357 - 359 - 361 - 363)

01 .... Instant or scratch off lottery games   01
02 .... Lottery Daily Game or Daily Keno   02
03 .... Lotto, Quinto or Lucky for Life   03
04 .... Pulltabs   04
05 .... Raffles, fund-raising events or Reno Nights   05
06 .... Indian bingo games   06
07 .... other bingo games at bingo halls or churches   07
08 .... card games with friends or family   08
09 .... electronic gambling machines or slot machines in Washington State   09
10 .... card games in card rooms or minicasinos   10
11 .... cards, dice or other games at an Indian casino?   11
12 .... gambling locations out-of-state   12
13 .... horses, dogs or other animals at the track, at an OTB or with a bookmaker?   13
14   sports events in formal sports pools, with family, friends or acquaintances or with
15   a bookmaker   14
15 .. telephone or computer wagering, including the Internet or the Worldwide Web   15
16 .... any other type of gambling 16 >   16   O
17 .... Don't Know   98
18 .... Refused   99

177: **H4**

Was there any time when the amount you were gambling made you nervous?

(1/ 365)

01 .... Yes   1
02 .... No   2
03 .... Don't know   8
04 .... Refused   9

178: **H4A**

How old were you when that happened?

(1/ 366)

179: H4B

What type of gambling were you doing when that happened?

(1/ 368 - 370 - 372 - 374 - 376 - 378)

01	Instant or scratch off lottery games	01
02	Lottery Daily Game or Daily Keno	02
03	Lotto, Quinto or Lucky for Life	03
04	Pulltabs	04
05	Raffles, fund-raising events or Reno Nights	05
06	Indian bingo games	06
07	other bingo games at bingo halls or churches	07
08	card games with friends or family	08
09	electronic gambling machines or slot machines in Washington State	09
10	card games in card rooms or minicasinos	10
11	cards, dice or other games at an Indian casino?	11
12	gambling locations out-of-state	12
13	horses, dogs or other animals at the track, at an OTB or with a bookmaker?	13
14	sports events in formal sports pools, with family, friends or acquaintances or with a	
15	bookmaker	14
15	telephone or computer wagering, including the Internet or the Worldwide Web	15
16	any other type of gambling 16 >	16 O
17	Don't Know	98
18	Refused	99

180: H5

Have you ever desired or sought help to stop gambling?

(1/ 380 - 381)

01	Yes, desired	1	
02	Yes, sought	2	
03	No	3	X
04	Don't know	8	X
05	Refused	9	X

181:   H6

What type of help was that?

(1/ 382 - 384 - 386 - 388 - 390 - 392 - 394 - 396 - 398 - 400 - 402 - 404 - 406 - 408 - 410 - 412)

01 .... Family member 01
02 .... Friend 02
03 .... Family doctor 03
04 .... Gamblers Anonymous 04
05 .... Washington State Council on Problem Gambling 05
06 .... problem gambling treatment program INSIDE Washington State 06
07 .... problem gambling treatment program OUTSIDE Washington State 07
08 .... Veteran's administration 08
09 .... Employee assistance program (EAP) 09
10 .... Psychologist or psychiatrist 10
11 .... Other counselor 11
12 .... Minister / priest / rabbi 12
13 .... Alcohol or drug abuse treatment program 13
14 .... Hospital in Washington State 14
15 .... Hospital outside Washington State 15
16 .... Other (SPECIFY) 16   O
17 .... Refused 99

182:   H8

Do you know that the Washington State Council on Problem Gambling provides
free information about gambling problems?

(1/ 414)

01 .... Yes 1
02 .... No 2
03 .... Don't know 8
04 .... Refused 9

183:   H11

Have you ever been in trouble with the law because of activities related to
gambling?

(1/ 415)

01 .... Yes 1
02 .... No 2
03 .... Don't know 8
04 .... Refused 9

184:   FEWQ

As you probably know, different types of people have different opinions and
experiences. The following questions are for statistical purposes only and the
answers to these questions, like all of the others, will be confidential.

(1/ 416)

01 .... Continue 1   D

185:   **D1**

Are you currently married, widowed, divorced, separated, or have you never been married?

(1/ 417)

```
01 ................................................ Married, common law, co-habitation  1
02 ....................................................................................... Widowed  2
03 ..................................................................................... Divorced  3
04 ................................................................................... Separated  4
05 ............................................................................ Never married  5
06 ...................................................................................... Refused  9
```

186:   **D2**

Including yourself, how many people aged 18 and over live in your household?

(1/ 418)

```
01 ...................................................................................... Refused  99
```

187:   **D3**

How many people in your household are under the age of 18?

(1/ 420)

```
01 ........................................................................................... None  00
02 ...................................................................................... Refused  99
```

188:   **D4**

DO NOT READ. PROBE TO FIT.
What is the last grade of school you completed?

(1/ 422)

```
01 ............................................................ Elementary or some high school  1
02 ................................................................ High school graduate or G.E.D.  2
03 .......... Some college or Associates degree (vocational, technical, or trade school)  3
04 .................................................................. Bachelors degree (4 year degree)  4
05 ................................................ Graduate study or degree (Including Doctorate)  5
06 ...................................................................................... Refused  9
```

189:   **D5**

Last week, were you working full-time, part-time, going to school, keeping house, or something else?

(1/ 423)

```
01 ................................................................................. Working full-time  1
02 ............................................................................... Working Part-time  2
03 ................................................................................. Going to school  3        => AGE1
04 ..................................................................................... keeping house  4        => AGE1
05 .................................................................. -----------------------------
06 ......................................................................................... Disabled  5        => AGE1
07 ........................................................................................... Retired  6        => AGE1
08 ................................................................................ Other (SPECIFY)  7   O    => AGE1
09 ...................................................................................... Refused  9        => AGE1
```

190:   **D6**

What kind of work do you normally do?

(1/ 424)

01	Farming, agriculture	01	
02	Mining	02	
03	Retail services	03	
04	Other services	04	
05	Professional, technical	05	
06	Manager, proprietor	06	
07	Skilled, craftsman	07	
08	Semi-skilled, operative	08	
09	Laborer	09	
10	Student	11	
11	Other (SPECIFY)	12	O
12	Refused	99	X

191:   **AGE1**

99 = Refused

What is your age?

(1/ 426)

01	Refused	99

192:   **AGE2**

Read 1-7

Is that....

(1/ 428)

01	18-24	1
02	25-34	2
03	35-44	3
04	45-54	4
05	55-64, or	5
06	65 or older?	6
07	-----------------------------	
08	REFUSED	8

193:   **AGE3**

Combines Ages Calculation only

(1/ 429)

01	18-24	1
02	25-34	2
03	35-44	3
04	45-54	4
05	55-64	5
06	65-74	6
07	OR 75 OR OLDER	7
08	REFUSED	8

194:   D8

Are you of Mexican, Puerto Rican, Cuban, or any other Spanish speaking background?

(1/ 430)

01	Yes	1
02	No	2
03	Don't know	8
04	Refused	9

195:   D8A

What best describes you? Are you Alaskan Native, Native American, Asian or Pacific Islander, Black, White or another group?

(1/ 431)

01	Alaskan Native	1	
02	Native American	2	
03	Asian or Pacific Islander	3	
04	Black or African American	4	
05	White	5	
06	Another Group (SPECIFY)	6	O
07	Refused	9	

196:   D9

READ 1-5

Which of the following best describes your current religious preference?

(1/ 432 - 433)

01	Protestant,	1	
02	Catholic,	2	
03	Jewish,	3	
04	Muslim, or	4	
05	Something Else? (SPECIFY)	5	O
06	--------------------------		
07	None	6	
08	Refused	9	

197:   D10

IF REFUSE, OR DON'T KNOW, READ 1-8

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

(1/ 434)

01	Up to $15,000	01
02	$15,001 to $25,000	02
03	$25,001 to $35,000	03
04	$35,001 to $50,000	04
05	$50,001 to $75,000	05
06	$75,001 to $100,000	06
07	$100,001 to $125,000	07
08	Over $125,000	08
09	-------------------------------	
10	Don't know	98
11	Refused	99

198:   D11

In what county do you live?

01	ADAMS	01
02	ASOTIN	03
03	BENTON	05
04	CHELAN	07
05	CLALLAM	09
06	CLARK	11
07	COLUMBIA	13
08	COWLITZ	15
09	DOUGLAS	17
10	FERRY	19
11	FRANKLIN	21
12	GARFIELD	23
13	GRANT	25
14	GRAYS HARBOR	27
15	ISLAND	29
16	JEFFERSON	31
17	KING	33
18	KITSAP	35
19	KITTITAS	37
20	KLICKITAT	39
21	LEWIS	41
22	LINCOLN	43
23	MASON	45
24	OKANOGAN	47
25	PACIFIC	49
26	PEND OREILLE	51
27	PIERCE	53
28	SAN JUAN	55
29	SKAGIT	57
30	SKAMANIA	59
31	SNOHOMISH	61
32	SPOKANE	63
33	STEVENS	65
34	THURSTON	67
35	WAHKIAKUM	69
36	WALLA WALLA	71
37	WHATCOM	73
38	WHITMAN	75
39	YAKIMA	77
40	Don't know	98
41	Refused	99

199:   C_D11

> => * if   IF((D11<98),D11,CNTY) ; RECORD COUNTY CODE FROM
> D11 ANSWER, OR CNTY SAMPLE IF DON'T KNOW /
> REFUSED D11_

combined question / county / d11 "'what county"?

(1/ 438)

01	ADAMS	01
02	ASOTIN	03
03	BENTON	05
04	CHELAN	07
05	CLALLAM	09
06	CLARK	11
07	COLUMBIA	13
08	COWLITZ	15
09	DOUGLAS	17
10	FERRY	19
11	FRANKLIN	21
12	GARFIELD	23
13	GRANT	25
14	GRAYS HARBOR	27
15	ISLAND	29
16	JEFFERSON	31
17	KING	33
18	KITSAP	35
19	KITTITAS	37
20	KLICKITAT	39
21	LEWIS	41
22	LINCOLN	43
23	MASON	45
24	OKANOGAN	47
25	PACIFIC	49
26	PEND OREILLE	51
27	PIERCE	53
28	SAN JUAN	55
29	SKAGIT	57
30	SKAMANIA	59
31	SNOHOMISH	61
32	SPOKANE	63
33	STEVENS	65
34	THURSTON	67
35	WAHKIAKUM	69
36	WALLA WALLA	71
37	WHATCOM	73
38	WHITMAN	75
39	YAKIMA	77

200: GENDR

DO NOT ASK!
RECORD GENDER

(1/ 440)

01 .... Male   01
02 ....Female   02
03 ....Cannot tell   03

202: INT01

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

(1/ 446)
01 ....Completed Interview   01   D   => END