GAMBLING AND PROBLEM GAMBLING IN OREGON

Report to the
Oregon Gambling Addiction Treatment Foundation

Rachel A. Volberg, Ph.D.

Gemini Research, Ltd.
P.O Box 628
Northampton, MA 01061
Tel: 413-584-4667
Email: rvolberg@geminiresearch.com

August 26, 1997

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACKNOWLEDGEMENTS

We would like to thank the residents of Oregon who were interviewed for this survey. Their contribution has been vital in adding to our knowledge of changes in gambling and gambling-related problems in the United States. We would also like to thank the Oregon Lottery, the Spirit Mountain Foundation and the Oregon Restaurant Foundation for funding this study and the Oregon Gambling Addiction Treatment Foundation for commissioning the study. Finally, we would like to thank Patricia Fullmer and the staff of Gilmore Research Group who carried out the interviews for the survey and Thomas Moore of Herbert & Louis who assisted with the administration of the project.

EXECUTIVE SUMMARY

The purpose of this study is to establish a baseline measure of the prevalence of gambling-related problems among adults in Oregon. An additional purpose of this study is to identify the types of gambling causing the greatest difficulties for the citizens of Oregon. A large sample of Oregon residents aged 18 and over (N=1,502) were interviewed in May and June, 1997 about the types of gambling they have tried, the amounts of money they spend on gambling and about gambling-related difficulties. The results of this study will be useful in documenting the impacts of legal gambling and will contribute to the formulation of statewide policy with regard to legal gambling in Oregon.

Findings

- In 1997, 87% of the respondents in Oregon acknowledged having ever tried one or more of 14 gambling activities. This lifetime participation rate is comparable to lifetime participation rates in Central and Midwestern states such as Iowa, Minnesota and Montana.

- Lifetime gambling participation in Oregon is highest for lottery play, charitable gambling and casino gambling including Indian Gaming Centers. From one-half to three-quarters of the respondents acknowledge they have done these types of gambling. Approximately one-third of the respondents have ever tried playing video poker.

- Respondents in Oregon spend an average of $43 in a typical month on gambling activities. This average monthly expenditure is in the same range as monthly expenditures identified in Colorado ($37) and Iowa (($40) and lower than monthly expenditures identified in Washington State ($53).

- In Oregon, 3.1% (±0.9%) of the respondents scored as lifetime problem gamblers and an additional 1.8% (±0.7%) of the respondents scored as lifetime probable pathological gamblers. The combined lifetime prevalence rate of problem and pathological gambling in Oregon is 4.9%.

- In Oregon, 1.9% (±0.7%) of the respondents scored as current problem gamblers and an additional 1.4% (±0.6%) of the respondents scored as current probable pathological gamblers. The combined current prevalence rate of problem and pathological gambling in Oregon is 3.3%.

- The combined lifetime prevalence rate in Oregon is similar to the lifetime prevalence rate in Washington State (5.1%) and lower than the prevalence rate in Colorado (6.2%). The current prevalence rate in Oregon is higher than current prevalence rates in Washington State (2.8%) and Colorado (2.5%).

- We estimate that the State of Oregon should plan to provide problem gambling treatment services to between 600 and 1,400 individuals per year based on population projections, the prevalence of current pathological gambling and the proportion of individuals in need who are expected to seek services for addictive disorders.

- Reported gambling expenditures of non-problem gamblers in Oregon account for less than 2% of median annual household income for different income groups. Reported gambling expenditures of problem gamblers in Oregon account for 5% to 14% of median annual household income for different income groups.

- One important difference between non-problem and problem gamblers is the age at which they start gambling. While the mean age at which non-problem gamblers in Oregon started gambling is 24 years old, the mean age at which problem and pathological gamblers in Oregon started gambling is significantly younger at 21 years old.

- In Oregon, prevalence rates are highest among individuals who have ever participated in illegal types of gambling, particularly sports, dice and games of skill. Among legal types of gambling, prevalence rates are highest among respondents who have ever gambled on video poker, card games and non-Indian bingo.

- In Oregon, lifetime problem and probable pathological gamblers are significantly more likely than other respondents to be male, under the age of 30 and non-White as well as divorced, separated or never married. Current problem and probable pathological gamblers are significantly more likely than other respondents in Oregon to be under the age of 30, non-White and divorced, separated or never married. While young non-White individuals in Oregon are at greatest risk for developing gambling problems, it is important to note that the majority of problem and probable pathological gamblers in Oregon are White individuals between 30 and 54 years of age.

- Six out of every ten individuals who have ever experienced gambling problems in Oregon are experiencing those difficulties now. One important difference between lifetime and current problem gamblers is that current problem and probable pathological gamblers are nearly as likely to be female as male.

- Problem gamblers in Oregon are most likely to gamble weekly on legal forms of gambling in the state, including the lottery, video poker and Indian Gaming Centers. Problem gamblers in Oregon spend significantly more than non-problem gamblers on many types of gambling although the differences are greatest for wagering at casinos or Indian Gaming Centers, on video poker and on non-Indian bingo. Lifetime prevalence is highest among those who have ever wagered legally on video poker and illegally on games of skill.

- Problem gamblers in Oregon are significantly more likely than non-problem gamblers to have felt nervous about their gambling, to believe that one or both parents has had a gambling problem, to spend three or more hours gambling at a time and to have lost $100 or more in a single day.

Future Directions

Given the possible expansion of legal gambling in Oregon, it will be important to maintain current services for problem gamblers. In making decisions about implementing services for problem gamblers and their families in Oregon, policy-makers and others may wish to give consideration to developing additional treatment modalities, expanded training opportunities for treatment professionals, a gambling counselor certification program and development of public education and prevention services as well as responsible gaming policies and programs and continued monitoring of gambling and problem gambling prevalence.

INTRODUCTION

Until recently, the legalization of gambling has proceeded apace with little consideration of the potentially negative impacts that gambling can have on individuals, families and communities. 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). This study, funded by the Oregon Gambling Addiction Treatment Foundation, examines the extent of gambling and problem gambling in Oregon in 1997 and compares these findings to similar studies conducted elsewhere in the United States.

The main purpose of this study is to establish a baseline measure of the prevalence of gambling-related problems among the adult population in Oregon. An additional purpose of this study is to identify the types of gambling causing the greatest difficulties for the citizens of Oregon. The results of this study will be useful in documenting the impact of legal gambling on the citizens of the State of Oregon. The results will also contribute to the formulation of statewide policy with regard to legal gambling in Oregon.

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 four sections detail findings from the survey in the following areas:

- gambling in Oregon
- prevalence of problem gambling in Oregon
- comparing non-problem and problem gamblers
- comparing two measures of problem gambling

The report concludes with a summary, a review of the activities that other states have undertaken in response to the issue of problem gambling and recommendations for the future.

Background[1]

As in many other states, the modern development of legal gambling in Oregon began in the mid-1980s. Although casino gambling is prohibited in Oregon, an amendment to the state constitution was passed in 1984 to permit the state to operate a lottery with the proceeds earmarked for education and economic development. Since its inception, the games offered by the Oregon Lottery have grown to include scratch tickets and break-open games, several lotto games and the nation's only sports lottery, Sports Action.

In 1992, the Oregon Lottery received approval to operate video poker. This approval included a measure directing that 3% of gross revenues from video poker be returned to the counties' mental health departments to establish treatment programs for problem gamblers. Counties received a percentage of these revenues proportional to their video poker spending. There are strict controls on the location of these machines as well as the size of wagers and jackpots. Establishments where video poker is permitted must have a license to sell alcoholic beverages and there is a limit of six machines per establishment (increased from the initial limit of five machines). The maximum bet is $2 and the maximum jackpot is $600. There are now approximately 8,800 video poker machines located at 1,800 establishments throughout the State of Oregon. Gross revenues from lottery sales in Oregon in 1996 were $486 million with 73% coming from video poker. Video poker has strong

[1] Information in this section was obtained from several sources including Mapes (1997), North American Gaming Report (1997), Suo (1997) and Whittemore & Baumgartner (1996) as well as Paul Potter of Project Stop and Thomas Moore of Herbert & Louis.

supporters among retailers whose commissions on video poker machines were $119 million in FY 1995.

In addition to the state lottery, Oregon has two commercial horse tracks, one located in Portland and the other in Salem, as well as one commercial greyhound track in Portland. Racing events are regulated by statute and overseen by the Oregon Racing Commission. In addition, there are 19 off-track betting (OTB) outlets in the state which offer parimutuel wagering on races held elsewhere in the United States. Parimutuel handle in Oregon for 1996 was $111 million which generated approximately $1.6 million in taxes (calculated as 1.5% of handle).

Charitable gambling, including bingo and raffles, has existed in Oregon for many years and is overseen by the Department of Justice. Bingo and raffle sales in 1996 were approximately $83 million which generated approximately $9 million in revenues to their sponsoring charities as well as $700,000 in taxes to the State of Oregon. In addition to state-regulated gambling, Oregon also permits commercial card rooms to operate if approved by local voters. Since these operations are overseen locally, there are no statewide statistics available for this activity. Furthermore, all nine of the federally-recognized tribes in Oregon have negotiated Class III gaming compacts with the state although only six tribes have opened gaming centers to date. All of these centers are on reservation land and all are tribally owned although some of the centers are operated by professional management firms. Games permitted at the Indian Gaming Centers include video lottery games, blackjack, keno and off-track wagering as well as card and dice games.

The introduction of video poker in Oregon sparked numerous protests and legal challenges. One lawsuit, filed by Ecumenical Ministries of Oregon in 1994 charged that locating the video poker machines in age-restricted establishments made them into casinos which are illegal in Oregon. While the suit was eventually overturned, the unintended consequence was to cut off funding for problem gambling treatment programs in Oregon. This is because the court ruled that setting aside funds for treatment programs from video poker revenues violated the constitutional amendment that required all lottery revenues to be dedicated to economic development. After a hiatus during which the problem gambling treatment programs received no funding, legislative action was taken to finance these programs from the general fund rather than using video poker revenues.

In recent sessions, there has been serious debate in the Oregon Legislature concerning the state's dependence on lottery earnings to fund education and economic development programs. Revenues to the state from the lottery have grown from $59 million in 1986 to $550 million in 1996. While some believe that state-sponsored gaming is a harmless entertainment and a simple substitute for taxation, others question whether the state has come to rely too heavily on this revenue source. Gambling revenues now account for 9% of the current state budget.

Legislative actions to curb the activities of the lottery include curtailing promotional advertising for traditional lottery games as well as bills to eliminate video poker altogether, to cut commissions to retailers and to require that a larger proportion of retailers' revenues come from food and beverage sales than is presently allowed. These actions have come in the face of simultaneous pressures to expand legal gambling in Oregon to include video slot machines. Proponents of video slot machines believe that their implementation is necessary to enable the state to compete with the Indian gaming centers.

While there has been heated debate about the state's reliance on gambling, the Oregon Legislature did provide for problem gambling treatment and education services at the time video poker was authorized. Although the original legislation called for 3% of gross lottery revenues to be spent on services for problem gamblers, the legislature later changed this approach and substituted an allocation process. Based on prior expenditures, the legislature now allocates $4 million per biennium for problem gambling services.

When funding for problem gambling services was established, the revenues were distributed to county mental health agencies through the Association of Oregon County Mental Health Programs

(AOCMHP). AOCMHP contracts for independent data collection and program evaluation services. Additionally, AOCMHP has started to provide training for mental health and alcohol and drug abuse treatment professionals as well as gambling addiction counselors. There are now 26 programs throughout the state that receive funding to address the issue of problem gambling, including education and outreach as well as treatment services and a 24-hour helpline that handles several thousand calls each year.

Since video poker became operational in 1993, the number of Gamblers Anonymous meetings around the state has grown from three to over 30. Approximately 1,000 individuals have entered the state-subsidized treatment programs since January 1995. The majority of these problem gamblers (81%) have gambled primarily on video poker and they have an average gambling debt of $16,000 which is more than half the average annual income of this group.

In 1996, Governor Kitzhaber convened a 14-member task force to investigate the role played by gambling in the state. While the task force recommended that a prevalence survey be carried out to determine the number of problem gamblers in Oregon, the state government has not taken any action in this direction. Instead, the survey reported here was funded by grants from the Oregon Lottery, Spirit Mountain Foundation and the Oregon Restaurant Foundation through the Oregon Gambling Addiction Treatment Foundation (OGATF).

Defining Problem and Pathological Gambling

Since the 1970s, legalized gambling has become a popular recreational pastime throughout North America. In 1974, the first, and only, national survey of gambling in the United States found that 68% of the adult respondents had at some time wagered on one or more types of legal or illegal gambling (Kallick-Kaufmann 1979). In the 1980s and 1990s, studies in different states have found lifetime gambling participation rates that range from a low of 64% in Mississippi to a high of 92% in New Jersey (Volberg 1994c, 1997a). The majority of people who participate in legal gambling are ***social gamblers*** who gamble responsibly, for entertainment and to socialize with friends and family.

The term ***problem gambling*** has been used in different ways. The term is sometimes used to refer to individuals who fall short of the diagnostic criteria for pathological gambling but are assumed to be in a preliminary stage of this progressive disorder (Lesieur & Rosenthal 1991). The term has also been used to refer to individuals who lose excessive amounts of money through gambling, relative to their income, although without reference to specific difficulties that they may experience (Rosecrance 1988). The National Council on Problem Gambling uses this term to indicate ***all of the patterns of gambling behavior that compromise, disrupt or damage personal, family or vocational pursuits*** (National Council on Problem Gambling 1997).

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

In prevalence surveys, individuals are categorized as ***problem gamblers*** or ***probable pathological gamblers*** on the basis of their responses to the questions included in the South Oaks Gambling Screen (see Appendix A for a discussion of the methods used to assess problem and pathological gambling in the general population). The term ***probable*** distinguishes the results of prevalence surveys, where classification is based on responses to questions in a telephone interview, from a clinical diagnosis. Respondents scoring three or four out of a possible 20 points on the South Oaks Gambling Screen items are classified as "problem gamblers" while those scoring five or more points are classified as "probable pathological gamblers." In prevalence surveys conducted since 1990, a

distinction is also made between "lifetime" and "current" problem and probable pathological gamblers.

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

METHODS

The gambling and problem gambling survey in Oregon was completed in three stages. In the first stage of the project, Gemini Research consulted with the Board of Directors from the Oregon Gambling Addiction Treatment Foundation as well as from Gilmore Research Group, the organization responsible for data collection, regarding the final design of the questionnaire and the stratification of the sample. In the second stage of the project, staff from Gilmore Research completed telephone interviews with a sample of 1,502 residents of Oregon aged 18 years and older. All interviews were completed between May 1 and June 8, 1997 and the average length of these interviews was 13 minutes. Gilmore Research 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 Oregon was composed of four major sections (see Appendix B for a copy of the questionnaire). The first section included questions about 14 different types of gambling available to residents of the state. For each type of gambling, respondents were asked whether they had ever tried this type of gambling, whether they had tried it in the past year, and, if so, how often they had done so in the past month. 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 alternative screen for pathological gambling based on the DSM-IV, the most recent diagnostic criteria for pathological gambling. These two sections of the questionnaire were rotated so that half of the respondents answered the SOGS questions first and half of the respondents answered the DSM-IV questions first. The final section of the questionnaire included questions about the demographic characteristics of each respondent.

Sample Design

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

To obtain a representative sample for the Oregon survey, random selection of households and random selection of respondents within households were used during the first part of the data collection process. During data collection, completed interviews were monitored to determine whether the sample was meeting quotas for males and young adults.

After completing approximately 1,000 interviews, we elected to begin screening for male respondents and for respondents under the age of 35 in eligible households in order to obtain adequate representation of men and young adults in the sample. Rather than exclude an eligible household once it was contacted, we changed the introductory screen to recruit eligible respondents within the household in the following order:

- male under 35
- female under 35
- male over 18
- female over 18

Response Rate

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

The consequence has been that response rates for telephone surveys are now calculated in several different ways although all of these approaches involve dividing the number of respondents by the number of contacts believed to be eligible.[2] Differences in response rates result from different ways of calculating the denominator, i.e. the number of individuals eligible to respond. The most liberal approach is called the Upper Bound method and takes into account only those individuals who refuse to participate or who terminate an interview. This approach is used by the federal government because of controversies about the eligibility of numbers that could not be reached. The Upper Bound method of calculating the response rate for the Oregon survey yields a response rate of 61%.

The most 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 Oregon survey yields a completion rate of 51% if over-quota eligible respondents are assumed to be disqualified and 48% if over-quota eligibles are assumed to qualify as "good numbers."

While the CASRO approach yields response rates that are lower than desired for the Oregon survey, the crucial question is the impact that these response rates have on our confidence in the results of the survey and, in particular, the prevalence estimates of problem and pathological gambling in Oregon. Lesieur (1994) has noted that all of the potential biases introduced by the telephone interview process lead to the assumption that problem gambling prevalence rates established through telephone surveys are highly ***conservative***. In further support of our belief that problem gambling prevalence estimates are conservative but reliable, work in British Columbia to investigate potential sources of non-response in problem gambling surveys found no significant differences between respondents and refusers in gambling behavior, SOGS items or demographics (Angus Reid & Gemini Research 1994).

Weighting the Sample

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

After comparing the demographic characteristics of the sample with the known demographics of the population in Oregon, we elected to weight the sample for age. While the difference between the

[2] We would like to express our appreciation to Patricia Fullmer of Gilmore Research Group for her assistance in clarifying the different approaches to calculating response rates.

actual sample and the known characteristics of the population was not great (six percentage points), we were concerned about the impact that such age differences would have, given what is known about the demographic characteristics of problem gamblers in the general population. ***Table 1*** shows key demographic characteristics of the actual and weighted samples and compares these characteristics to information from the 1990 census (the most recent information available on detailed characteristics of the population). The table shows that the weighted Oregon sample is representative of the population in terms of gender, age, ethnicity and marital status.

Table 1: Comparing the Demographics of the Actual and Weighted Sample and the General Population

		Actual Sample %	Weighted Sample %	1990 Census %
		(N=1,502)	(N=1,502)	
Gender	Male	44.8	45.2	48.0
	Female	55.2	54.8	52.0
Age	18 - 20	4.2	5.2	5.6
	21 - 29	14.0	17.0	17.0
	30 - 54	50.3	48.9	47.7
	55 and over	31.5	29.0	29.6
Ethnicity	White	92.5	92.3	92.8
	Non-White	7.5	7.7	7.2
Marital Status	Married	57.7	57.2	57.3
	Widowed	14.3	9.0	6.9
	Divorced/Separated	9.7	13.4	12.7
	Never Married	18.4	20.4	23.0

Data Analysis and Reporting

For easier comparisons of data from the survey with results of similar surveys in other states, detailed demographic data on age, ethnicity, education, income and marital status were collapsed to have fewer values. Age was collapsed into four groups ("18 to 20," "21 to 29," "30 to 54" and "55 and Over") for purposes of analysis. Ethnicity was collapsed from six groups into two groups ("White" and "Non-White" which includes Native Americans, Asians and Hispanics as well as Blacks). Marital status was collapsed from five groups into four groups ("Married," "Widowed," "Separated/Divorced" and "Never Married"). Education was collapsed from five groups into two groups ("Less than High School" and "High School Graduate"). Employment was collapsed from seven groups into three groups ("Working," "Unemployed" and "Other" which includes respondents who are going to school, keeping house, disabled or retired). Household income was collapsed from six groups into three groups ("Less than $25,000," "$25,000 to $50,000" and "$50,000 or More") for purposes of analysis and comparison.

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

GAMBLING IN OREGON

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

- charitable games apart from bingo
- bingo in a non-Indian bingo hall
- Oregon Lottery video poker
- traditional lottery games such as Scratch-Its, Megabucks or Keno
- at a casino or Indian Gaming Center
- card games for money not at a casino or Indian Gaming Center
- horses, dogs or other animals at the track, at an OTB or with a bookie
- slot machines not at a casino or lottery retailer
- games of skill, such as bowling, pool or golf
- dice games not at a casino or Indian Gaming Center
- stocks or commodities markets
- sports events other than the Lottery's Sports Action game
- telephone or computer wagering including the Internet or the Worldwide Web
- any other type of gambling

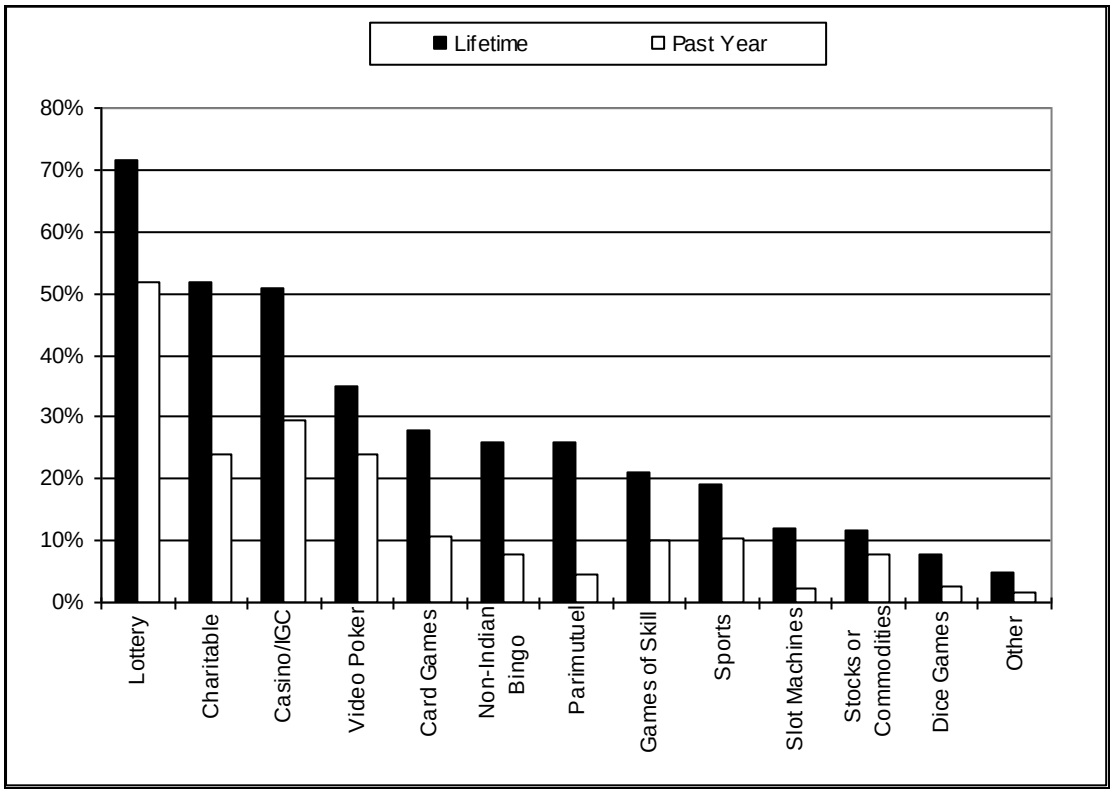
Gambling in the General Population

In every recent survey of gambling and problem gambling, the majority of respondents acknowledge participating in one or more of the gambling activities included in the questionnaire. In the United States, the proportion of respondents who have ever gambled ranges from 64% in Mississippi in 1996 to 92% in New Jersey in 1989 (Volberg 1994c, 1997a). In 1997, 87% of the respondents in Oregon acknowledged participating in one or more of 14 gambling activities. This lifetime participation rate is comparable to lifetime participation rates in Central and Midwestern states such as Iowa, Minnesota and Montana.

Figure 1 on the following page shows lifetime and past-year participation rates for the types of gambling included in the survey. Lifetime participation among Oregon respondents is highest for lottery, charitable games (not including bingo) and casinos or Indian Gaming Centers. Over half of the respondents acknowledge that they have tried these types of gambling. One-quarter to one-third of the respondents have wagered on video poker, card games not at a casino and non-Indian bingo while 21% of the respondents have wagered on games of skill and 19% have wagered on sports events. Lifetime participation rates are below 15% for all of the other types of gambling included in the survey.

The majority of respondents who have ever gambled in Oregon have done so in the past year. While 87% of the respondents acknowledged lifetime gambling, 70% of the respondents acknowledged gambling in the past year. Past-year participation is highest for lottery, casinos or Indian Gaming Centers, charitable games (not including bingo) and video poker.

Figure 1: Lifetime and Past Year Gambling Participation in Oregon



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 (13% of the total sample);
- ***infrequent gamblers*** who have participated in one or more types of gambling but not in the past year (17% 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 (52% of the total sample); and
- ***weekly gamblers*** who participate in one or more types of gambling on a weekly basis (18% of the total sample).

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

Table 2: Demographics of Gamblers in Oregon

		Non-Gamblers %	Infrequent Gamblers %	Past Year Gamblers %	Weekly Gamblers %	
		(N=197)	(N=257)	(N=775)	(N=273)	
Gender						**
	Male	37.7	42.1	43.9	57.3	
	Female	62.3	57.9	56.1	42.7	
Age						**
	18 - 20	6.8	1.0	5.7	6.3	
	21 - 29	17.4	11.0	19.4	15.7	
	30 - 54	36.4	48.8	51.6	50.1	
	55 and over	39.4	39.3	23.3	27.8	
Ethnicity						
	White	90.6	95.7	91.9	91.3	
	Non-White	9.4	4.3	8.1	8.7	
Marital Status						**
	Married	56.5	58.3	57.5	55.8	
	Widowed	13.3	14.9	5.9	9.2	
	Divorced/Separated	9.0	13.8	14.7	12.8	
	Never Married	21.1	13.0	21.9	22.3	
Education						**
	Less than HS	14.3	6.7	6.2	11.0	
	HS and Over	85.7	93.3	93.8	89.0	
Employment						**
	Working	47.6	51.6	71.0	66.3	
	Unemployed	3.1	2.1	1.4	2.2	
	Other	49.3	46.3	27.6	31.5	
Income						**
	Less than $25,000	53.7	36.9	28.7	29.1	
	$25,000 to $50,000	31.6	34.6	37.6	43.7	
	$50,000 or More	14.7	28.5	33.7	27.2	
Mean Lifetime Gambling Activities		---	2.5	4.2	5.6	**

* Significant (p<=.05)
** Highly significant (p<=.01)

Table 2 shows that, as in other jurisdictions, infrequent gamblers and non-gamblers in Oregon are significantly more likely than more frequent gamblers to be older women with relatively low education and income. These individuals are also significantly more likely than more frequent gamblers to be keeping house, retired or disabled. Past-year and weekly gamblers are significantly more likely than less frequent gamblers to be young or middle-aged men with relatively high income. Past-year and weekly gamblers are also significantly more likely than respondents who gamble less frequently or not at all to be employed. Past-year and weekly gamblers are significantly more likely than less frequent gamblers to be single, divorced or separated. Finally, the table shows that the average number of different activities ever tried increases significantly with the frequency of a respondent's current gambling.

Expenditures on Gambling

Reported estimates of expenditures obtained in this and similar surveys are based on recollection and self-report. In addition, there are fundamental uncertainties about the tacit definitions that people have for the term "spending" when considering different types of gambling. It is also important to note that these estimates of expenditures will not include amounts spent on gambling within a jurisdiction by non-residents and tourists. 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 general population, 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 the past month per respondent.

Adjustments to Expenditures

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

In every jurisdiction where similar surveys have been completed, amounts spent on stocks and commodities reflect large amounts of money spent by a relatively small number of respondents. Amounts spent on stocks and commodities in Oregon constituted 92% of the unadjusted total monthly expenditure although only 8% of the respondents had participated in this activity in the past year. This is because of the very large amounts ($1,000 to $500,000) that a small number of respondents (N=33) estimated that they bet or spent on stocks or commodities in a typical month.

Variations in Expenditures

Using the approach detailed above, we calculate that respondents in Oregon (N=1,502) spent an average of $43 in a typical month on gambling activities. This average monthly expenditure is in the same range as monthly expenditures identified in Colorado ($37) and Iowa ($40) and lower than monthly expenditures identified in Washington State ($53).

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

Table 3: Monthly Expenditures on Gambling

	Monthly Expenditure $	% of Total
	(N=1,502)	
Casino/Indian Gaming Center	22,397	34.7
Video Poker	10,198	15.8
Lottery	8,499	13.2
Games of Skill	5,190	8.0
Non-Indian Bingo	4,496	7.0
Charitable (not bingo)	4,241	6.6
Sports	3,610	5.6
Card Games	2,452	3.8
Horses, Dogs, Other Animals	1,671	2.6
Total	64,568	100.0

Table 3 shows that monthly expenditures at casinos or Indian Gaming Centers account for just over one-third of total gambling expenditures. Monthly expenditures on Oregon Lottery video poker account for another 16% and expenditures on lottery products account for 13% of total monthly gambling expenditures. Expenditures on all other types of gambling are lower than 10% of the total.

As in other jurisdictions, the majority of respondents in Oregon report spending rather small amounts on gambling in a typical month. The majority of respondents in Oregon (60%) report spending less than $10 on gambling in a typical month. Another 31% of the respondents report spending between $10 and $99 on gambling in a typical month and 9% of the respondents report spending $100 or more on gambling in a typical month. However, this small group of respondents accounts for 73% of reported monthly expenditures on gambling in Oregon.

Respondents in the highest spending group in Oregon are significantly more likely to be male, under the age of 30 and divorced, separated or never married than respondents in lower spending groups. While these higher spending respondents are significantly less likely to have graduated high school than other respondents, they are significantly more likely to be working than respondents who spend less on gambling and to have annual household incomes over $25,000.

As in other jurisdictions, there are statistically significant differences in monthly expenditures on gambling across demographic groups. ***Table 4*** on the following page shows significant differences in the mean reported expenditures on gambling in the past month by different demographic groups.

Table 4: Past Month Expenditures by Different Groups in Oregon

		Mean Monthly Expenditure	
		(N=1,502)	
Gender			**
	Male	58.77	
	Female	30.01	
Age			
	18 - 20	31.81	
	21 - 29	66.37	
	30 - 54	43.30	
	55 and over	30.75	
Ethnicity			**
	White	38.57	
	Non-White	97.60	
Marital Status			
	Married	35.90	
	Widowed	27.17	
	Divorced/Separated	56.84	
	Never Married	61.71	
Education			
	Less than HS	39.17	
	HS or higher	43.35	
Employment			
	Working	49.51	
	Unemployed	30.47	
	Other	31.76	
Income			*
	Less than $25,000	27.79	
	$25,000 to $50,000	41.95	
	$50,000 or More	65.61	

* Significant (p<=.05)
** Highly significant (p<=.01)

Table 4 shows that men in Oregon estimate that they spend about twice as much on gambling in a typical month as women. Non-White respondents report that they spend about two and a half times more on gambling in a typical month than White respondents. Finally, respondents with annual household incomes over $50,000 report spending significantly more than respondents with lower annual household incomes. In contrast to other jurisdictions, there are no significant differences in monthly expenditures by age, marital status, education or employment status among Oregon respondents.

Gambling Preferences

For several types of gambling, respondents who acknowledged participation in the past year were asked about their preferences for particular products or places. These types of gambling included playing the lottery and going to casinos both within and outside Oregon.

Lottery: Respondents who acknowledged playing traditional lottery games in the past year were asked which games they preferred. Among respondents who played the lottery in the past year (N=778), 39% of these respondents indicated that Scratch-Its was their preferred game while 32% indicated that MegaBucks was their preferred game. While 9% of the respondents indicated that they preferred to play Powerball, only small numbers of respondents indicated a preference for any other lottery games including Daily Four, Keno, pulltabs or Sports Action.

There is a significant difference in average expenditures among lottery players based on their preferred game. Respondents who indicated that Keno was their preferred lottery game spend significantly more in a typical month than respondents whose preference is for other traditional lottery games. Keno players acknowledge spending an average of $40 in a typical month compared to the average of $9 acknowledged by respondents whose preference is for other lottery games.

Video Poker: Respondents who acknowledged playing Oregon Lottery video poker in the past year were asked where they usually played video poker. Among respondents who played Oregon Lottery video poker in the past year (N=359), 49% indicated that they usually played at a tavern or bar while another 27% indicated that they usually played at a restaurant or lounge. Video poker players acknowledge spending an average of $29 in a typical month compared to the $40 spent by Keno players and the $9 spent by respondents whose preference is for other lottery games. Average expenditures by respondents who prefer video poker and Keno may reflect the location of these games in bars and taverns as well as the impact of alcohol consumption on gambling behavior.

Casinos and Indian Gaming Centers: Respondents who had gambled at a casino or Indian Gaming Center in the past year were asked whether they usually went to a casino in Oregon or outside Oregon. Among respondents who had been to a casino or Indian Gaming Center in the past year (N=444), 68% preferred to go to a casino in Oregon while 24% preferred to go to a casino outside Oregon. Among respondents who had been to a casino or Indian Gaming Center in the past year, the great majority (92%) indicated that they usually visit casinos once a month or less.

In terms of their game preferences, 64% of respondents who had been to a casino or Indian Gaming Center in the past year prefer to play slot machines, 26% prefer card games and 10% prefer other games including bingo, Keno, dice games or roulette. There are no significant differences in game preference between respondents who prefer to go to casinos outside Oregon and those who prefer to go to casinos or Indian Gaming Centers in Oregon.

Although the differences are not significant, respondents who prefer to go to casinos outside Oregon report spending an average of $93 in a typical month while respondents who prefer to go to casinos within Oregon report spending an average of $44 in a typical month. There are no significant differences between respondents who prefer slot machines and those who prefer card games in the average amount spent in a typical month on casino-style games.

Summary

In this section, we examined patterns of gambling participation in the Oregon sample as a whole. In 1997, 87% of the respondents in Oregon acknowledge participating in one or more gambling activities at some time, 70% acknowledge participating in one or more gambling activities in the past year and 18% acknowledge participating in one or more gambling activities once a week or more. Lifetime participation is highest for the lottery, charitable games (not including bingo) and casinos or Indian Gaming Centers while past year participation is highest for the lottery and casinos. Young and middle-aged employed men with relatively high income are the respondents most likely to have ever gambled in Oregon.

Typical monthly expenditures at casinos or Indian Gaming Centers, on video poker and on other lottery games account for 64% of reported expenditures on gambling in Oregon. As in other jurisdictions, young, unmarried men with relatively high income report spending the largest amounts of money on gambling. These patterns of gambling participation identified in Oregon are similar to patterns identified in many other jurisdictions.

Relationships between respondents' preferences for lottery and casino games and their estimated expenditures on these types of gambling are most interesting. While only small numbers of respondents who played the lottery in the past year prefer Keno, these respondents report spending significantly more on lottery games than respondents who prefer other traditional lottery games. While only 24% of respondents prefer to go to casinos outside Oregon, these respondents report spending significantly more on casino games than respondents who prefer to go to casinos in the State of Oregon. In the next section, we turn our attention to the prevalence of problem and probable pathological gambling in the Oregon sample.

PROBLEM AND PATHOLOGICAL GAMBLING IN OREGON

As noted in the section *Defining Problem and Pathological Gambling* on Page 3, 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. It is important to remember that not all lifetime problem and probable pathological gamblers meet sufficient criteria to be classified as current problem and probable pathological gamblers.

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 accuracy 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.

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

- ***lifetime problem gamblers*** are those respondents who score 3 or 4 points on the lifetime SOGS items. In Oregon, 3.1% (±0.9%) of the respondents scored as lifetime problem gamblers.

- ***lifetime probable pathological gamblers*** are those respondents who score 5 or more points on the lifetime SOGS items. In Oregon, 1.8% (±0.7%) of the respondents scored as lifetime probable pathological gamblers.

- ***current problem gamblers*** are those respondents who score 3 or 4 points on the past year SOGS items. In Oregon, 1.9% (±0.7%) of the respondents scored as current problem gamblers.

- ***current probable pathological gamblers*** are those respondents who score 5 or more points on the past year SOGS items. In Oregon, 1.4% (±0.6%) of the respondents scored as current probable pathological gamblers.

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

Lifetime Prevalence

According to the most recent population projections from the University of Portland Center for Population Research, the population aged 18 and over in Oregon in 1996 is 2,362,617 individuals. Based on these figures, we estimate that between 52,000 (2.2%) and 94,500 (4.0%) of Oregon residents aged 18 and over can be classified as lifetime problem gamblers. In addition, we estimate that between 26,000 (1.1%) and 59,000 (2.5%) of Oregon residents aged 18 and over can be classified as lifetime probable pathological gamblers.

Table 5 shows that lifetime problem and probable pathological gamblers in Oregon are significantly more likely than other respondents in the sample to be male, under the age of 30, non-White and divorced, separated or never married. Despite these significant differences, it is important to note that the majority of lifetime problem and probable pathological gamblers are White and between the ages of 30 and 54. Differences between lifetime problem and probable pathological gamblers and other respondents in education, income and employment status are relatively small and do not attain statistical significance.

In terms of their gambling involvement, lifetime problem and probable pathological gamblers are significantly more likely than other respondents to gamble once a week or more on one or more activities and to spend $100 or more on gambling in a typical month. In addition, the average number of types of gambling tried by lifetime problem and pathological gamblers is significantly higher than the average number of types of gambling tried by other respondents.

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

		Non-Problem Respondents %	Problem & Pathological Respondents %	
		(N=1,427)	(N=75)	
Gender				**
	Male	44.2	63.8	
	Female	55.8	36.2	
Age				*
	18 - 20	4.8	11.5	
	21 - 29	16.7	23.0	
	30 - 54	49.2	43.3	
	55 and over	29.3	22.3	
Ethnicity				**
	White	93.0	78.6	
	Non-White	7.0	21.4	
Marital Status				**
	Married	58.4	35.4	
	Widowed	9.1	7.4	
	Divorced/Separated	12.9	23.5	
	Never Married	19.7	33.7	
Education				
	Less than HS	7.9	14.0	
	HS and Over	92.1	86.0	
Employment				
	Working	63.4	71.5	
	Unemployed	1.8	2.5	
	Other	34.8	26.0	
Income				
	Less than $25,000	32.6	39.3	
	$25,000 to $50,000	37.8	33.9	
	$50,000 or More	29.7	26.8	
Gambled Past Week (1 or more activities)		16.3	53.9	**
Spent $100 or more Past Month		6.8	43.2	**
Mean Lifetime Gambling Activities		3.5	6.0	**

* Significant (p<=.05)
** Highly significant (p<=.01)

Current Prevalence

Based on current prevalence and 1990 census information, we estimate that between 28,300 (1.2%) and 61,400 (2.6%) of Oregon residents aged 18 and over can be classified as current problem gamblers. In addition, we estimate that between 18,900 (0.8%) and 47,200 (2.0%) of Oregon residents aged 18 and over can be classified as current probable pathological gamblers.

Comparison of ***Table 5*** and ***Table 6*** shows that most of the differences between respondents who score as lifetime problem or probable pathological gamblers and the remainder of the sample in Oregon hold true for current problem and probable pathological gamblers. One important difference is that current problem and probable pathological gamblers in Oregon are not significantly different from other respondents in terms of gender.

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

		Non-Problem Respondents %	Problem & Pathological Respondents %	
		(N=1,453)	(N=50)	
Gender				
	Male	44.8	55.9	
	Female	55.2	44.1	
Age				**
	18 - 20	4.8	14.9	
	21 - 29	16.7	24.8	
	30 - 54	48.9	47.3	
	55 and over	29.5	13.1	
Ethnicity				**
	White	92.7	78.3	
	Non-White	7.3	21.7	
Marital Status				*
	Married	57.7	42.2	
	Widowed	9.1	5.6	
	Divorced/Separated	13.3	17.4	
	Never Married	19.9	34.7	
Education				
	Less than HS	8.1	11.2	
	HS and Over	91.9	88.8	
Employment				
	Working	63.5	72.1	
	Unemployed	1.9	---	
	Other	34.6	27.9	
Income				
	Less than $25,000	32.7	40.6	
	$25,000 to $50,000	37.7	34.1	
	$50,000 or More	29.6	25.4	
Gambled Past Week (1 or more activities)		16.9	55.3	**
Spent $100 or more Past Month		7.3	44.7	**
Mean Lifetime Gambling Activities		3.6	6.2	**

* Significant (p<=.05)

** Highly significant (p<=.01)

As with lifetime problem gamblers, current problem and probable pathological gamblers are significantly more likely than other respondents to gamble once a week or more on one or more activities and to spend $100 or more on gambling in a typical month. In addition, the average number of types of gambling tried by current problem and pathological gamblers is significantly higher than the average number of types of gambling tried by other respondents.

Natural Recovery

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

The proportion of problem and pathological gamblers in natural recovery in the general population ranges from 29% in New Brunswick to 57% in British Columbia (Baseline Market Research 1992; Angus Reid Group & Gemini Research 1994). As in other jurisdictions, a proportion of the Oregon respondents who score as lifetime problem or probable pathological gamblers do not score as having a current problem or pathology. In Oregon, 43% of lifetime problem and probable pathological gamblers do not score as having a current problem or pathology. Another explanation of this number is that six out of every ten individuals who have ever experienced gambling problems in Oregon are currently experiencing such difficulties.

Comparing Problem Gambling Prevalence Across States

The jurisdictions where problem gambling surveys have been done in the United States differ substantially in the types of gambling available, in levels of gambling participation and in the demographic characteristics of the general population. ***Figure 2*** shows prevalence rates of lifetime problem and probable pathological gambling in all of the United States jurisdictions where surveys based on the South Oaks Gambling Screen have been completed. The data in ***Figure 2*** are arrayed geographically from West to Northeast. In states where replication surveys have been completed (Iowa, New York, South Dakota and Texas), the most recent prevalence rates are shown.

Figure 2: Lifetime Prevalence Rates in the United States

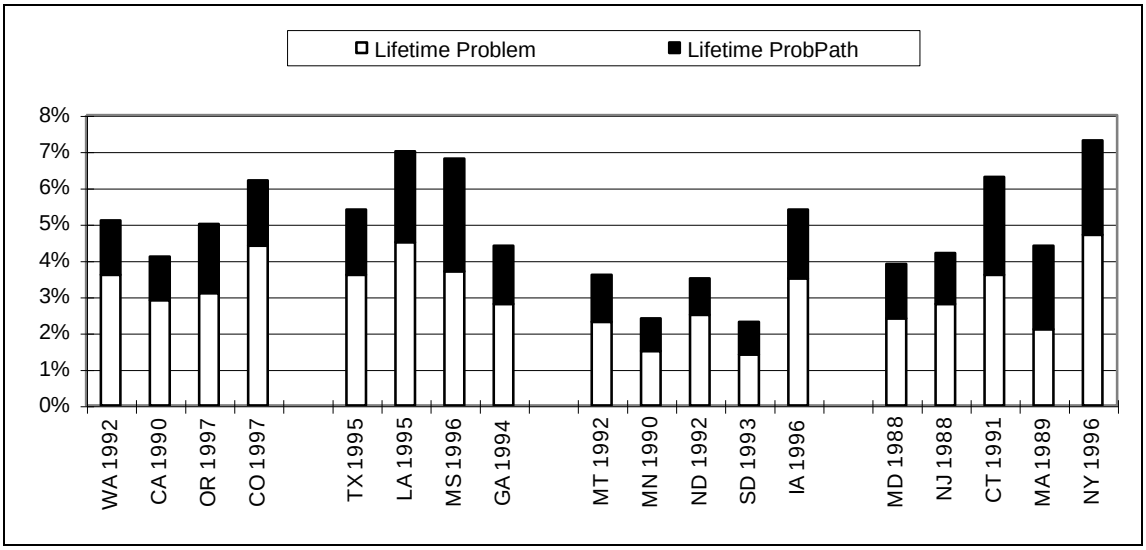
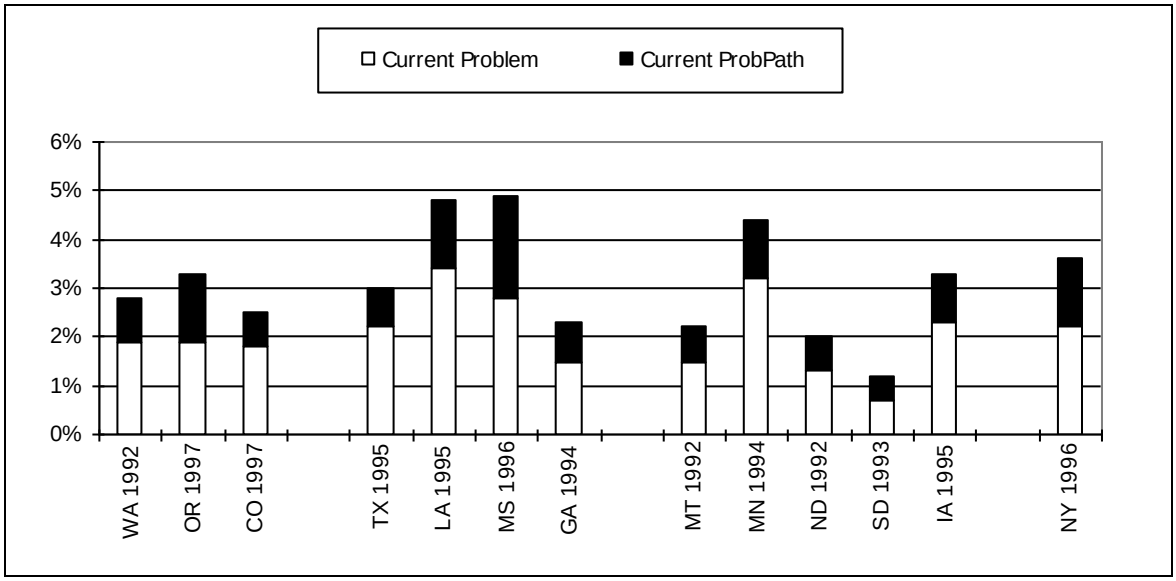


Figure 2 shows that, in general, lifetime prevalence rates are lower in Central and Midwestern states than in the Northeast, South and West. In contrast to the Midwest, states in the Northeast and West tend to be ethnically more diverse and to have had access to legal gambling for longer periods of time. Like the Northeast and West, states in the South tend to be ethnically diverse. However, legal gambling is a recent introduction in all of the Southern states where surveys of gambling and problem gambling have been completed. The lifetime prevalence rate in Oregon in 1997 is similar to lifetime prevalence rates in Washington State in the West, Texas and Georgia in the South and Iowa in the Midwest. The lifetime prevalence rate in Oregon is lower than in Colorado in the West, Louisiana and Mississippi in the South and New York and Connecticut in the Northeast but higher than in the Midwestern and Central states as well as in Northeastern states surveyed in the 1980s.

Figure 3 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. As in ***Figure 2***, the data in ***Figure 3*** are arrayed geographically from West to Northeast. The current prevalence rate in Oregon in 1997 is lower than in Louisiana and Mississippi in the South and Minnesota in the Midwest. The current prevalence rate in Oregon is similar to current prevalence rates in other Western states as well as to Texas and Georgia in the South, Montana and Iowa in the Midwest and Central region and New York in the Northeast.

Figure 3: Current Prevalence Rates in the United States



Current prevalence rates tend to be higher in jurisdictions where casino gambling has recently been introduced. In the Midwest, Iowa and Minnesota have the highest current prevalence rates of problem and pathological gambling. Iowa legalized riverboat casinos in 1992 and Minnesota has nearly 20 Native American casinos which have become operational since the passage of the Indian Gaming Regulatory Act in 1988. In the South, current prevalence rates in Louisiana and Mississippi, where casinos have become operational since 1992, are also high.

Summary

In Oregon, 3.1% of the respondents scored as lifetime problem gamblers and an additional 1.8% scored as lifetime probable pathological gamblers. In Oregon, 1.9% of the respondents scored as current problem gamblers and another 1.4% scored as current probable pathological gamblers. While the lifetime prevalence of problem and pathological gambling in Oregon is lower than in many other states where similar surveys have been completed, the current prevalence of problem and, particularly, pathological gambling in Oregon is higher than in many other jurisdictions.

In Oregon, lifetime problem and probable pathological gamblers are significantly more likely than other respondents to be male, under the age of 30 and non-White. As we noted above, it is important to remember that the majority of lifetime problem and probable pathological gamblers are White and between the ages of 30 and 54. Lifetime problem and probable pathological gamblers in Oregon are also significantly more likely than other respondents to be divorced, separated or never married. Current problem and probable pathological gamblers are significantly more likely than other respondents in Oregon to be under the age of 30, non-White and divorced, separated or never married. Six out of every ten individuals who have ever experienced gambling problems in Oregon are experiencing those difficulties now.

In this section, we have examined the prevalence of problem and probable pathological gambling among respondents in the Oregon survey. Here, and in the first section of the report on *Gambling in Oregon*, our focus has been on the entire sample of 1,502 respondents. In the next section, we turn our attention to differences between non-problem and problem gamblers in the Oregon survey. Only those respondents who have ever tried one or more types of gambling (N=1,305) are included in analyses of the differences between non-problem and problem gamblers in the following section.

COMPARING NON-PROBLEM AND PROBLEM GAMBLERS IN OREGON

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

In addition to looking only at respondents who gamble, our analysis in this section is limited to differences between non-problem gamblers and ***lifetime*** problem and probable pathological gamblers. 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, we use information about the characteristics of respondents who score as ***lifetime*** problem and pathological gamblers when considering 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. As in the previous 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 7 on the following page shows that, as in other jurisdictions, problem gamblers in Oregon are demographically distinct from non-problem gamblers in the sample. Problem gamblers in Oregon are significantly more likely than non-problem gamblers to be male, under the age of 30, non-White and divorced, separated or never married. Problem gamblers in Oregon are significantly less likely than non-problem gamblers to have graduated from high school. As we noted earlier, however, the majority of lifetime problem and probable pathological gamblers are White and between the ages of 30 and 54. While none of the other demographic differences between non-problem and problem gamblers attain statistical significance, it is interesting to note that problem gamblers are more likely to be employed and more likely to have annual household incomes under $25,000 than non-problem gamblers in Oregon.

Table 7: Demographics of Non-Problem and Problem Gamblers in Oregon

		Non-Problem Gamblers %	Problem Gamblers %	
		(N=1,230)	(N=75)	
Gender				**
	Male	45.3	63.8	
	Female	54.7	36.2	
Age				*
	18 - 20	4.5	11.5	
	21 - 29	16.6	23.0	
	30 - 54	51.2	43.3	
	55 and over	27.7	22.3	
Ethnicity				**
	White	93.4	78.6	
	Non-White	6.6	21.4	
Marital Status				**
	Married	58.7	35.4	
	Widowed	8.4	7.4	
	Divorced/Separated	13.5	23.5	
	Never Married	19.4	33.7	
Education				*
	Less than HS	6.9	14.0	
	HS and Over	93.1	86.0	
Employment				
	Working	65.9	71.5	
	Unemployed	1.6	2.5	
	Other	32.5	26.0	
Income				
	Less than $25,000	29.8	39.3	
	$25,000 to $50,000	38.6	33.9	
	$50,000 or More	31.6	26.8	

* Significant (p<=.05)
** Highly significant (p<=.01)

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

Weekly Gambling

Behavioral correlates of problem gambling include regular gambling and involvement with ***continuous*** forms of gambling (Dickerson 1993; Ladouceur, Gaboury, Dumont & Rochette 1988; Walker 1992). Regular gambling is defined as weekly or more frequent involvement in one or more types of gambling. ***Continuous*** forms of gambling are characterized by rapid cycles of play as well as the opportunity for players to immediately reinvest their winnings. Legal forms of continuous gambling in Oregon include video poker, games at Indian Gaming Centers, wagering on horses and dogs and card games at card rooms. Illegal forms of continuous gambling include betting on sports (except the Oregon Lottery's Sports Action game), dice games not at a casino, wagering on games of skill and wagering on illegal slot machines.

Problem gamblers in Oregon are significantly more likely than non-problem gamblers to have ever tried many of the different types of gambling included in the survey. This includes purchasing lottery products, wagering at casinos or Indian Gaming Centers and wagering on non-Indian bingo, video poker, card and dice games not at a casino, games of skill, sports and other types of gambling. Problem gamblers are also significantly more likely than non-problem gamblers to have purchased lottery products and wagered on video poker, at casinos or Indian Gaming Centers, on games of skill, card games not at a casino, non-Indian bingo and on horses or dogs in the past year.

There are fewer differences in the weekly participation of problem and non-problem gamblers in Oregon. ***Table 8*** shows differences in the past week involvement in different types of wagering by non-problem and problem gamblers in Oregon. Although past week participation for many types of gambling is significantly higher for problem gamblers than for non-problem gamblers in Oregon, the number of respondents involved can be extremely small. Only those types of gambling for which weekly participation among problem gamblers is 7% (N=5) or higher are shown.

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

Games Played Weekly	Non-Problem Gamblers %	Problem Gamblers %	
	(N=1,230)	(N=75)	
Lottery	13.0	27.1	**
Video Poker	2.4	25.1	**
Games of Skill	2.5	11.1	**
Casino/Indian Gaming Center	0.3	9.0	**
Weekly Gambling (1+ activities)	18.9	53.9	**

* Significant (p<=.05)
** Highly significant (p<=.01)

Table 8 shows that problem gamblers in Oregon are significantly more likely than non-problem gamblers to have gambled in the past week on ***continuous*** types of gambling including video poker, games at casinos or Indian Gaming Centers and games of skill. Problem gamblers in Oregon are also significantly more likely than non-problem gamblers to have purchased lottery products. While not shown in the table, it is interesting to note that, among past-year lottery players, problem gamblers are significantly more likely to prefer instant scratch tickets than non-problem gamblers. ***Table 8*** also shows that nearly three times as many problem gamblers as non-problem gamblers in Oregon wager at least one or more times per week on one or more activities.

In addition to gambling involvement, respondents were asked about their preferred type of gambling. One-quarter (26%) of non-problem gamblers in Oregon identified the lottery as their favorite type of gambling in contrast to only 18% of the problem gamblers. One-quarter (26%) of non-problem gamblers and 36% of the problem gamblers identified casinos or Indian Gaming Centers as their

preferred gambling activity. Only 5% of the non-problem gamblers, compared to 13% of the problem gamblers, identified Oregon Lottery video poker as their preferred gambling activity.

Expenditures

In addition to gambling regularly on continuous types of wagering, an important behavioral correlate of problem gambling is heavy gambling losses (Dickerson 1993). In this regard, it is interesting to examine the proportion of annual household income accounted for by the gambling expenditures of non-problem and problem gamblers. ***Table 9*** on the following page provides a rough estimate of the proportion of annual household income that non-problem and problem gamblers spend on gambling. These figures are derived by multiplying the average total monthly expenditures for non-problem and problem gamblers by 12 (to estimate total annual expenditures) and then dividing by the median of each income category ($12,500 for the lowest income category, $37,500 for the middle income category and $75,000 for the highest income category).

Table 9: Gambling Expenditures as Proportion of Household Income

Income Category	Non-Problem Gamblers %	Problem Gamblers %
	(N=1,042)	(N=69)
Less than $25,000	2.3	14.2
$25,000 to $50,000	1.3	5.3
$50,000 or More	0.5	12.1

The table shows that the reported gambling expenditures of non-problem gamblers account for between 0.5% and 2% of median annual household income while the reported gambling expenditures of problem gamblers account for 5% to 14% of median annual household income. This estimate shows clearly that the gambling expenditures of problem gamblers have a greater impact on household income than the gambling expenditures of non-problem gamblers. Some treatment professionals believe that any expenditures on gambling over 5% of income constitute "over-gambling" (Robson 1995). This analysis suggests that the "5% rule" may be quite good.

Although gambling losses must be considered relative to income, comparisons of reported gambling expenditures of non-problem and problem gamblers provide further insight into the far greater financial impact of gambling involvement on problem gamblers and their families. ***Table 10*** on the following page shows differences in the reported past month expenditures on different types of gambling for non-problem and problem gamblers in Oregon. Although expenditures on every type of gambling except telephone and computer wagering are significantly higher for problem gamblers than for non-problem gamblers in Oregon, only those types of gambling for which average expenditures by problem gamblers exceed $10 in the past month are shown.

Table 10: Average Monthly Expenditures of Non-Problem and Problem Gamblers

	Non-Problem Gamblers $	Problem Gamblers $	
	(N=1,230)	(N=75)	
Casino/Indian Gaming Center	9.05	150.61	**
Video Poker	4.60	60.77	**
Non-Indian Bingo	2.18	24.23	**
Games of Skill	2.82	22.95	**
Lottery	5.68	20.18	**
Charitable (not bingo)	2.47	16.03	**
Sports	2.20	12.10	**
Card Games	1.26	12.06	**
Total Expenditures	32.11	335.20	**

* Significant (p<=.05)
** Highly significant (p<=.01)

Table 10 shows that the greatest differences between non-problem and problem gamblers in Oregon in average monthly expenditures on gambling are for gambling at casinos or Indian Gaming Centers, on video poker and on non-Indian bingo. ***Table 10*** also shows that average total monthly expenditures on gambling are far higher for problem gamblers than for non-problem gamblers in Oregon.

In our discussion of gambling expenditures in the total sample, we identified a small proportion of respondents (9%) who reported spending $100 or more on gambling in a typical month (see Page 11 and the discussion of *Variations in Expenditures*). This small group of respondents accounted for 73% of reported monthly expenditures on gambling in Oregon. In considering risk factors associated with problem gambling, it is worth noting that 43% of the problem gamblers in Oregon fall into this heavy-spending group.

Prevalence by Type of Gambling

The question most often asked about the relationship between gambling and problem gambling is: What type of gambling is most likely to add to the number of problem and pathological gamblers in the general population? We have examined the relationship between weekly involvement (see ***Table 8***), gambling expenditures (see ***Table 10***) and problem gambling among respondents in this survey to help answer this question for Oregon. Our analysis shows that for lifetime problem and pathological gamblers in Oregon, casino gambling and video poker present the greatest risk.

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

Figure 4: Prevalence by Type of Gambling

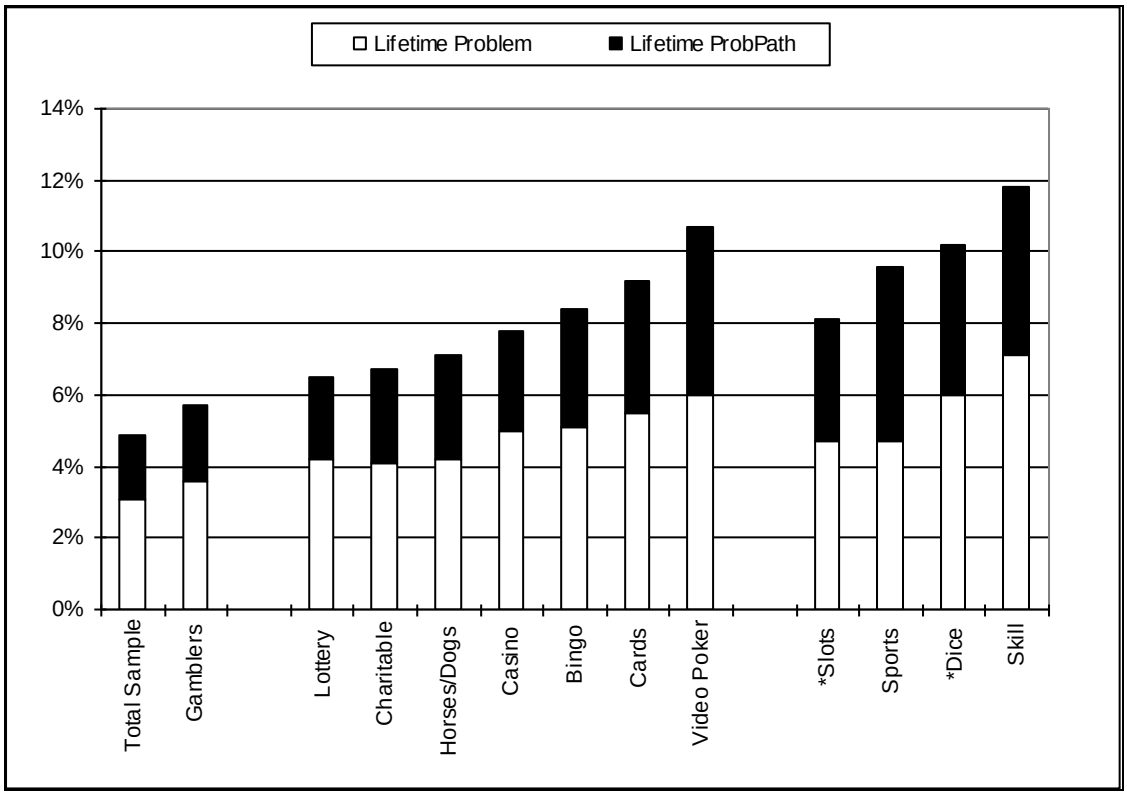


Figure 4 shows that lifetime prevalence rates are substantially higher among individuals who have participated in specific types of wagering than among the sample as a whole or among gamblers in general. In Oregon, prevalence rates are highest among individuals who have ever participated in illegal types of gambling, particularly sports and games of skill. Among legal types of gambling, prevalence rates are highest among respondents who have ever gambled on video poker, card games and non-Indian bingo.

Other Significant Differences

In addition to their demographic characteristics and gambling involvement, there are other significant differences between non-problem and problem gamblers in Oregon. 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. One important difference between non-problem and problem gamblers is the age at which they start gambling. While the mean age at which non-problem gamblers in Oregon started gambling is 24 years old, the mean age at which problem and pathological gamblers in Oregon started gambling is significantly younger at 21 years old.

Table 11 shows that problem gamblers are significantly more likely than non-problem gamblers in Oregon to have felt nervous about their gambling and to have felt that one or both parents had a gambling problem. ***Table 11*** also shows that there are significant differences between non-problem and problem gamblers in Oregon 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. There are no significant differences between non-problem and problem gamblers in the distance they usually travel in order to gamble.

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

	Non-Problem Gamblers %	Problem Gamblers %	
	(N=1,230)	(N=75)	
Ever Felt Nervous About Your Gambling	11.9	38.7	**
Parent Ever Have Gambling Problem	5.5	24.6	**
Usually Gamble With			
Alone	25.4	30.9	
Spouse/Partner	32.3	22.1	
Other Family	11.9	7.1	
Friends	25.8	37.5	
Other	4.6	2.6	
Usual Time Spent Gambling			**
< 1 to 2 hours	78.4	52.4	
3 to 5 hours	16.6	35.0	
6 or more hours	5.0	12.5	
Largest Amount Lost in One Day			**
< $1 to $9	29.7	4.5	
$10 to $99	49.9	30.4	
$100 to $999	18.6	51.9	
$1,000 or more	1.8	13.2	
Usual Distance to Gamble			
0 to 15 miles	62.2	54.6	
15 to 60 miles	10.6	12.1	
60 or more miles	27.1	33.4	

* Significant (p<=.05)
** Highly significant (p<=.01)

Help-Seeking

As in other jurisdictions, very few respondents in Oregon acknowledge desiring or seeking help for a gambling problem although these numbers are higher than in many other states. Only 1% (N=16) of the gamblers in Oregon have desired help for a gambling problem and only two individuals have sought such help. While half (N=9) of the 16 respondents who desired treatment for a gambling problem were classified as problem gamblers, the other seven were classified as non-problem gamblers. The two respondents who had sought help for a gambling problem had been to Gamblers Anonymous.

Location

In planning the availability of services for problem gamblers in Oregon, it is helpful to know where these individuals reside and where they prefer to gamble. In Oregon, 35% of the problem gamblers reside in the Portland metropolitan counties of Clackamas, Multnomah and Washington. Just over one-third of the problem gamblers (36%) identify casinos or Indian Gaming Centers as their preferred type of gambling while 18% prefer traditional lottery games and 13% prefer Oregon Lottery video poker. These findings suggest that the present concentration of treatment services for problem gamblers in the Portland metropolitan area is appropriate. However, it may be important to focus more outreach efforts on casino venues in order to reach the significant proportion of problem gamblers who prefer wagering at casinos.

Summary

As predicted by the research literature, regular gambling involvement and heavy gambling losses are the factors associated with gambling-related difficulties in Oregon. Problem gamblers in Oregon are most likely to gamble once a week or more often on legal forms of gambling in the state, including the lottery, video poker and Indian Gaming Centers. Problem gamblers in Oregon spend significantly more than non-problem gamblers on many types of gambling although the differences are greatest for wagering at casinos or Indian Gaming Centers, on video poker and on non-Indian bingo. Lifetime prevalence is highest among those who have ever wagered legally on video poker and illegally on games of skill. Problem gamblers in Oregon are also significantly more likely than non-problem gamblers to have felt nervous about their gambling, to believe that one or both parents has had a gambling problem, to spend three or more hours gambling at a time and to have lost $100 or more in a single day.

In this section, we have identified several major risk factors associated with gambling-related problems among respondents in Oregon. Our focus has been on respondents who have ever gambled, whether or not they experience difficulties related to this involvement. In the next section, we will examine similarities and differences between the two screens used in the Oregon survey to identify individuals as problem or pathological gamblers.

COMPARING THE SOGS AND THE DSM-IV

A variety of methodological questions have been raised in recent years about research on gambling and problem gambling in the general population (Dickerson 1993; Lesieur 1994; Walker 1992). One serious concern has to do with changes in the criteria for identifying pathological gamblers that have been adopted by the American Psychiatric Association. The South Oaks Gambling Screen was based on the original DSM-III criteria published in 1980 and was tested in clinical trials against the DSM-III-R criteria published in 1987. In the DSM-III, a diagnosis of pathological gambling required an individual to meet four of seven criteria with an exclusion of Anti-Social Personality Disorder. In the DSM-III-R, the same diagnosis required an individual to meet four of nine criteria and the exclusion of Anti-Social Personality Disorder was dropped. In the DSM-IV, a diagnosis of pathological gambling requires an individual to meet five of ten criteria with an exclusion of Manic Personality Disorder.

Since so many surveys have been carried out using the South Oaks Gambling Screen,[3] use of this instrument allows comparisons of gambling problems across jurisdictions as well as over time (Walker & Dickerson 1996). With the recent changes in the psychiatric criteria for pathological gambling, however, researchers have become concerned about whether the South Oaks Gambling Screen is the best tool for measuring the prevalence of pathological gambling in the community. Recent work in Minnesota suggests that while the South Oaks Gambling Screen is well-suited for identifying individuals at risk for developing a gambling pathology, the DSM-IV may be more useful if the goal of a study is to estimate the prevalence of pathological gambling in the general population (Stinchfield 1997).

In moving forward, it is essential that the performance of any new instrument, such as the DSM-IV, be compared to the South Oaks Gambling Screen as well as to clinical assessments so that findings based on these new measurements can be matched to findings based on the South Oaks Gambling Screen. In this way, the field of gambling research can move forward in an evolutionary, rather than revolutionary, manner.

The Oregon Survey

In the Oregon survey, the DSM-IV Screen 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 data from many other North American jurisdictions. The DSM-IV Screen was used in order to assess pathological gambling using the most current criteria and to contribute to the development of problem gambling research. While this and similar studies do not answer questions about the validity and reliability of the DSM-IV Screen in relation to clinical assessments, use of the DSM-IV Screen does provide an important opportunity to understand how the two most widely-used methods to identify problem and pathological gamblers operate in relation to one another.

In administering the questionnaire for the Oregon survey, the two problem gambling screens were rotated so that half of the sample answered the items from the South Oaks Gambling Screen first and the other half of the sample answered the items from the DSM-IV Screen first. There were no statistically significant differences between the two halves of the sample in terms of demographics, gambling involvement or scores on either of the problem gambling screens.

Since there were no statistically significant differences between the two halves of the sample, we elected to analyze the results as a single sample. Further, because both screens were

[3] Baseline studies based on the South Oaks Gambling Screen have been carried out in 29 United States and Canadian jurisdictions, including Oregon, as well as in Australia, New Zealand and Spain. Replication surveys based on the South Oaks Gambling Screen have been carried out in nine jurisdictions.

administered only to respondents who had ever gambled, all of the information reported in this section is based on the sample of gamblers (N=1,305) rather than on the total Oregon sample.

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

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
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

The DSM-IV criteria were adapted slightly for use in a survey of British casino patrons (Fisher 1996) and it is this DSM-IV Screen that was used in the surveys in Colorado, New York and Oregon (Volberg 1996 NY, 1997 CO). In developing the DSM-IV Screen, Fisher made some minor adjustments to the wording of the DSM-IV criteria and increased the number of response categories from “Yes/No” to “Never,” “Once or Twice,” “Sometimes” and “Often.” In the surveys in Colorado, New York and Oregon, respondents received a score of one for any of the DSM-IV

Screen items to which they gave a positive response ("Once or Twice," "Sometimes" or "Often").[4] Total scores were obtained by adding the positive items for each respondent.

In her analysis of problem gambling among British casino patrons, Fisher (1996) identified respondents who scored 3 or 4 points on the DSM-IV Screen as "problem gamblers" and respondents who scored 5 or more points as "severe problem gamblers." In our analysis of the DSM-IV Screen, we have followed Fisher's lead and used the terms "problem gambler" to identify respondents who score 3 or 4 points on the DSM-IV Screen and "severe problem gambler" to identify respondents who score 5 or more on the DSM-IV Screen.

Statistical Characteristics of the DSM-IV Screen

In this section, we examine the psychometric properties of the DSM-IV Screen among the Oregon respondents who have ever gambled. These psychometric properties are important in assessing the accuracy of the two different methods used to identify problem and pathological gamblers in the general population. There are different kinds of error inherent in any set of data. While random error is addressed by using statistical techniques to reject the "null hypothesis" and to calculate the probability that a particular result is not due to random error, measurement error is more difficult to assess.

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 DSM-IV 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 DSM-IV Screen.

Reliability

The most widely accepted test of reliability is a measure if the internal consistency of an instrument. The reliability of the DSM-IV Screen in the Oregon sample of gamblers is excellent with Cronbach's alpha at .80, substantially higher than the .70 that is generally accepted as representing good reliability.

In addition to testing the internal consistency of the DSM-IV Screen, we carried out a factor analysis of the screen to assess how the individual items cluster together. Factor analysis shows that 45% of the variance for the DSM-IV Screen was accounted for by one factor in Oregon, Preoccupation. The only other factor with an eigenvalue over 1.0 was Tolerance which accounted for an additional 13% of the variance. These findings suggest that the scale is homogeneous and measures the desired behavior.

Item Analysis

Endorsement of DSM-IV Screen items among Oregon gamblers ranged from a high of 14.3% (Preoccupation) to a low of 0.6% (Beyond the Legal). It is instructive to compare positive responses to specific items by problem gamblers and non-problem gamblers to see how well the different items discriminate between these groups. For this analysis, we have used the SOGS classification of non-problem and problem gamblers in order to prevent confusion between the

[4] The scoring method used with the Oregon 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 DSM-IV Screen items in these surveys compared to the sample of casino patrons used by Fisher.

method of classifying respondents and the items by which they were classified. Since all of the DSM-IV Screen items are framed in the past year, the ***current*** problem and probable pathological gamblers in Oregon were used in this analysis.

Table 12: Comparing Non-Problem and Problem Gamblers on the DSM-IV Items

DSM-IV Items	Non-Problem Gamblers %	Problem Gamblers %	
	(N=1,255)	(N=50)	
Preoccupation	12.6	59.0	**
Tolerance	2.0	35.4	**
Withdrawal	0.8	32.9	**
Escape	2.6	46.0	**
Chasing Losses	6.6	69.6	**
Lying	0.4	20.5	**
Tried to Stop	1.2	32.9	**
Illegal Acts	0.3	8.1	**
Risked Significant Relationship	0.5	6.2	**
Bailout	0.3	19.3	**
Mean DSM-IV Score	0.3	3.3	**

* Significant
** Highly significant

Table 12 shows that all of the DSM-IV items discriminate effectively between SOGS-defined problem and non-problem gamblers in Oregon. The most effective discriminator among the DSM-IV items was Chasing with 69.6% of the current problem and probable pathological gamblers scoring a positive response in contrast to only 6.6% of the non-problem gamblers. The next best discriminator was Preoccupation, with 59.0% of the problem and probable pathological gamblers scoring a positive response compared to 12.6% of the non-problem gamblers. ***Table 12*** also shows that there is a significant difference in the mean DSM-IV scores for non-problem and problem gamblers, supporting the notion that the DSM-IV Screen measures something similar to the SOGS.

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. The DSM-IV Screen has already been found to have good content validity by a variety of appropriate audiences including self-identified pathological gamblers as well as treatment professionals and survey researchers (Fisher 1996; Lesieur & Rosenthal 1991).

Criterion Validity

Criterion validity requires that the instrument be judged against some other method that is acknowledged as a “gold standard” for assessing the same variable. In the case of the DSM-IV Screen, we must use the SOGS as the “gold standard” since this is the primary method that has been used to identify problem and pathological gamblers since the late 1980s (Volberg & Banks 1990). As a first step, we calculated the correlation coefficient between the DSM-IV Screen and the current South Oaks Gambling Screen. The result of this analysis was statistically significant at 71% (correlation coefficient = .706, p = .000).

To better understand how the SOGS and the DSM-IV Screen operate in relation to one another, it is useful to examine how respondents scored on each of these instruments in more detail. Overall, the prevalence of the less severe DSM-IV category (3 or 4 points) is 2.37% while the prevalence of the more severe DSM-IV category (5 or more points) is 1.53% among respondents in Oregon who gambled. These figures compare to 2.22% and 1.61 for the current SOGS scores among respondents who gambled. ***Table 13*** shows the number of respondents who scored at different levels on the SOGS and the DSM-IV.

Table 13: Comparing Scores on the SOGS and the DSM-IV

	DSM-IV			
SOGS	0 - 2	3 - 4	5+	Total
0 - 2	1,232	18	6	1,255
3 - 4	21	5	3	29
5+	2	7	11	21
Total	1,255	30	20	1,305

Table 13 shows that the DSM-IV Screen operates quite well in relation to the SOGS. On the one hand, respondents who score low on the DSM-IV Screen also tend to score low on the SOGS. On the other hand, 70% of respondents who score high on the DSM-IV Screen (5 or more) score 3 or more points on the SOGS. In contrast to the Colorado and New York surveys, the SOGS also performs well in relation to the DSM-IV Screen. The majority of respondents who score as current probable pathological gamblers on the SOGS (86%) score 3 or more points on the DSM-IV Screen and 52% of these respondents score at the highest level on the DSM-IV Screen. This analysis shows that the DSM-IV Screen and the SOGS have a strong relationship to one another although it is still unclear whether the strictest DSM-IV criteria represent the best cutoff for identifying pathological gamblers in the general population.

Congruent Validity

Since several of the items on the SOGS and DSM-IV Screen are similar, it is possible to check whether respondents answered similar questions differently in different places in the interview. ***Table 14*** on the following page shows how respondents who gambled answered several similar questions from the current SOGS and the DSM-IV Screen.

Table 14: Comparing Scores on Similar SOGS and DSM-IV Items

	SOGS or DSM-IV Item	% Positive
		(N=1,305)
CHASING	Go back another day to win money you lost (chasing) (SOGS)	1.4
	Often return another day to get even (chasing) (DSM)	9.0
LYING	Claimed to win when in fact lost (SOGS)	1.6
	Hidden evidence of gambling (SOGS)	1.2
	Lies to others to conceal extent of gambling (DSM)	1.2
TOLERANCE	Spend more time or money gambling than intended (SOGS)	10.0
	Need to gamble with increasing amounts to achieve desired excitement (DSM)	3.2
LOSS OF	Would like to stop gambling but couldn't (SOGS)	1.2
CONTROL	Made repeated unsuccessful efforts to control or stop gambling (DSM)	2.4

Table 14 shows that respondents are less likely to give a positive answer to the DSM-IV questions than to the current SOGS items assessing Tolerance. Respondents are more likely to give a positive answer to the DSM-IV questions than to the current SOGS items assessing Chasing and Loss of Control. In the New York survey, we speculated that some of these differences might be the result of an ordering effect. However, the same differences were noted in Colorado where the screens were also rotated and a more likely explanation for these differences may be that they are the result of the specific wording of the items.

Construct Validity

In assessing the performance of a new instrument, it is helpful to examine differences between classified groups with respect to behaviors that are associated with problem gambling but are not included in the measurement scale. In gambling surveys, we can examine differences between DSM-IV-defined non-problem and pathological gamblers in their mean DSM-IV Screen scores as well as other measures related to gambling difficulties, including weekly gambling, time spent gambling per session, largest amount lost in a single day, total expenditures on gambling, parental gambling problems and age when gambling started.

There are significant differences in the mean scores of problem and non-problem gamblers, as defined by the DSM-IV Screen. The mean score of non-problem gamblers on the DSM-IV Screen is 0.2 compared with 3.2 for problem gamblers and 6.7 for severe problem gamblers.

There are numerous other behaviors that provide support for the construct validity of the DSM-IV Screen. For example, problem and severe problem gamblers, as defined by the DSM-IV Screen, are significantly more likely than non-problem gamblers to gamble weekly or more often, to gamble for 3 or more hours at a time, to have lost $1,000 or more in a single day, to have felt nervous about their gambling, to believe that a parent had a gambling problem and to have desired help for a gambling problem. Problem and severe problem gamblers, as defined by the DSM-IV Screen, acknowledge starting to gamble at a significantly younger age than non-problem gamblers. Problem gamblers also estimate that they spend significantly more on gambling in a typical month than non-problem gamblers. Finally, problem and severe problem gamblers as defined by the DSM-IV Screen are significantly more likely than non-problem gamblers to identify video poker as their preferred type of gambling.

Comparing the SOGS and DSM-IV Problem Gamblers

The prevalence of problem and severe problem gambling, measured by the DSM-IV Screen, is nearly identical to the prevalence rates identified with the South Oaks Gambling Screen. While 2.0% of the total sample (N=1,502) scored 3 or 4 points on the DSM-IV Screen, 1.9% of the total sample scored 3 or 4 points on the current South Oaks Gambling Screen. While 1.3% of the total sample scored 5 or more points on the DSM-IV Screen, 1.4% of the total sample scored 5 or more points on the current South Oaks Gambling Screen.

Table 15 compares the demographic characteristics of problem and severe problem gamblers as defined by the DSM-IV Screen with problem and pathological gamblers as defined by the SOGS. Since both the SOGS and the DSM-IV groups are small, and since the majority of the DSM-IV group is part of the SOGS problem group as well, we made no effort to test the differences for statistical significance. ***Table 15*** does show that problem gamblers, as defined by the DSM-IV, are more likely than problem gamblers as defined by the SOGS, to be male, under the age of 30, divorced or separated, working or unemployed and with annual household incomes between $25,000 and $50,000.

Table 15: Comparing Demographics of SOGS and DSM-IV Problem Gamblers

		SOGS Problem Gamblers %	DSM-IV Problem Gamblers %
		(N=50)	(N=50)
Gender			
	Male	55.9	62.2
	Female	44.1	37.8
Age			
	18 - 20	14.9	12.2
	21 - 29	24.8	26.8
	30 - 54	47.3	50.1
	55 and over	13.1	11.0
Ethnicity			
	White	78.3	77.4
	Non-White	21.7	22.6
Marital Status			
	Married	42.2	39.6
	Widowed	5.6	3.7
	Divorced/Separated	17.4	24.4
	Never Married	34.7	32.3
Education			
	Less than HS	11.2	12.8
	HS and Over	88.8	87.2
Employment			
	Working	72.1	78.0
	Unemployed	---	3.7
	Other	27.9	18.3
Income			
	Less than $25,000	40.6	39.2
	$25,000 to $50,000	34.1	41.2
	$50,000 or More	25.4	19.6

Summary

Comparison of the South Oaks Gambling Screen and the DSM-IV Screen in the Oregon survey shows that the two screens are highly consistent and appear to be measuring the same phenomenon. The DSM-IV Screen is slightly more strict than the South Oaks Gambling Screen in classifying individuals as problem or pathological gamblers. As in New York and Colorado, psychometric analysis of the results of the Oregon survey suggests that the cutoff point for the DSM-IV Screen (5+ = pathological) may be too severe. Separate identification of the group of individuals who score three or four points on the DSM-IV Screen, as recommended by Lesieur and Rosenthal (1991), would allow the screen to capture individuals whose pathology is well-developed but perhaps not yet extreme.

Use of the DSM-IV Screen in the Oregon survey provided a valuable opportunity to improve our understanding of the DSM-IV Screen in relation to the South Oaks Gambling Screen. In addition, use of this screen provides a basis for comparison in future surveys of gambling and problem gambling in Oregon if the DSM-IV Screen, or any other instrument based on the DSM-IV criteria, becomes the instrument of choice for identifying problem and pathological gamblers in the general population.

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

SUMMARY AND CONCLUSION

The main purpose of this study was to establish a baseline measure of the prevalence of gambling and gambling-related problems among the adult population in Oregon. An additional purpose of this study was to identify the types of gambling causing the greatest difficulties for the citizens of Oregon. The results of this study will be useful in documenting the impact of legal gambling on the citizens of the State of Oregon. The results will also be valuable in formulating statewide policy with regard to legal gambling in Oregon.

The results of this study show that significant numbers of Oregon residents participate in legal gambling, that these activities are widely accepted, and that most residents spend small to moderate amounts on gambling. However, the study also shows that there is a significant number of Oregon residents who are currently experiencing severe difficulties related to their gambling involvement. Contrary to arguments by the media and even some treatment professionals, video poker is not the only type of gambling causing difficulties for the citizens of Oregon nor are those difficulties disproportionately higher than in other jurisdictions. The implications of this finding for the field of problem gambling research as well as for gambling policy development in Oregon are far-reaching.

Summary

In 1997, nearly nine out of ten respondents in Oregon acknowledge participating in one or more types of gambling at some time in their lives. Lifetime gambling participation in Oregon is highest for the lottery, charitable games and casinos or Indian Gaming Centers. As in other jurisdictions, young men with relatively high income are the respondents in Oregon most likely to have ever gambled.

In Oregon, 3.1% of the respondents scored as lifetime problem gamblers and an additional 1.8% of the respondents scored as lifetime probable pathological gamblers. In contrast, 1.9% of the respondents scored as current problem gamblers while 1.4% of the respondents scored as current probable pathological gamblers. Overall, the lifetime prevalence of problem and pathological gambling in Oregon is 4.9% while the current prevalence rate in Oregon is 3.3%. The lifetime prevalence rate in Oregon is lower than in other Western states while the current prevalence rate is higher than in many other states.

Lifetime problem gamblers in Oregon are significantly more likely than other respondents to be male, under the age of 30, non-White and divorced, separated or never married. Despite these significant differences, however, it is important to remember that the majority of lifetime and current problem gamblers are White and between the ages of 30 and 54. In contrast to lifetime problem gamblers, current problem gamblers are just as likely to be women as men. Problem gamblers in Oregon are most likely to gamble weekly on the lottery, video poker, games of skill and at Indian Gaming Centers. Problem gamblers are more likely than non-problem gamblers to spend three or more hours gambling in a typical session and to have lost $100 or more in a single day.

Use of the DSM-IV Screen in the Oregon survey provided a valuable opportunity to improve our understanding of the DSM-IV Screen in relation to the South Oaks Gambling Screen. Comparison of these two screens shows that they are highly consistent. Our analysis suggests that the cutoff point for the DSM-IV Screen may be too severe and that using a separate classification for individuals who score three or four points on the DSM-IV Screen would allow the screen to capture individuals whose pathology is well-developed but perhaps not yet extreme.

Directions for the Future

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

The first step usually taken by governments in response to an emerging social problem is to determine the number of individuals who may be in need of assistance as a result of a specific government policy or activity. The next step is to develop a range of services for affected individuals and their families. In the wake of widespread gambling legalization in the 1980s and 1990s, governments have moved forward in implementing measures to educate the public as well as treatment professionals and gaming operators about problem gambling.

How Many To Plan For?

The first step in developing rational policy with regard to legal gambling has now been taken in Oregon by funding the prevalence study reported here. 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. 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, researchers in Australia have successfully used an approach adopted from the alcoholism treatment field to predict the proportion of individuals in need of problem gambling treatment services who would access such services. Research suggesting that approximately 3% of individuals with severe alcohol-related difficulties actually seek treatment was replicated in predicting the number of problem gamblers who would seek treatment in two Australian states (Dickerson 1997).

In calculating the number of problem and pathological gamblers who might seek treatment in Oregon, we focus on the group of individuals who score as current probable pathological gamblers (e.g. the 18,900 to 47,200 individuals represented by the confidence interval for current probable pathological gambling in Oregon). Based on this approach, we estimate that the State of Oregon should plan to provide problem gambling treatment services to between 600 and 1,400 individuals per year. The reliability of this estimate is enhanced when we consider that the problem gambling treatment programs in Oregon have an average monthly enrollment of 46 problem gamblers and 5 family members or an average of 550 problem gamblers and 60 family members per year.

Recommendations

Given the possible expansion of legal gambling in Oregon to include slot machines at restaurants, bars and taverns, it will be important to maintain current services for problem gamblers in Oregon as well as education and prevention services for individuals who are at risk for developing gambling-related difficulties. In making decisions about implementing services for problem gamblers and their families in Oregon, policy-makers, the Association of Oregon Community Mental Health Programs (AOCMHP), the Oregon Gambling Addiction Treatment Foundation (OGATF) and others may wish to give consideration to developing the following services and activities:

- ***research activities*** including a thorough examination of the prevalence and characteristics of problem gamblers among under-served and/or minority groups, among Oregon's youth, and at the county level in areas where Indian Gaming Centers may be located;

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

- expanded ***training opportunities*** to educate 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;

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

- development of ***responsible gaming policies and programs*** by the Oregon Lottery and the Native American gaming centers for staff and retailers;

- continued ***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 Oregon and to refine existing efforts to minimize the negative impacts of gambling.

This report represents the first assessment of rates of gambling and problem gambling in Oregon. The data from this survey provide insights that will be valuable in on-going policy and planning efforts in the state. In the future, it will be important for everyone involved with legal gambling in Oregon to continue to work together to develop ways to help the citizens of Oregon who experience difficulties related to their gambling and to prevent any future increases in the prevalence of problem gambling in the state.

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