

# **Gambling and Problem Gambling Prevalence Among Adults in Florida\***

## **A Report to the Florida Council on Compulsive Gambling, Inc.**

237 Lookout Place, Suite 100

Maitland, FL 32751

Office: 407-865-6200

E-mail: [flccg@gamblinghelp.org](mailto:flccg@gamblinghelp.org)

Website: [www.gamblinghelp.org](http://www.gamblinghelp.org)

Nathan A. Shapira, M.D., Ph.D.<sup>1</sup>

Mary Ann Ferguson, Ph.D.<sup>2</sup>

Kimberly Frost-Pineda, M.P.H.<sup>1</sup>

Mark S. Gold, M.D.<sup>3</sup>

University of Florida

1. College of Medicine, Department of Psychiatry

2. College of Journalism and Communications, Department of Public Relations

3. College of Medicine, Departments of Psychiatry, Neuroscience and Community and Family Health,  
Chief, Division of Addiction Medicine

P.O. Box 100183

Gainesville, FL 32610-0183

352-392-3681

October 2002

\*Revision of Final Report Submitted 12/12/01

# Acknowledgements

The investigators for this study would like to thank the residents of the State of Florida who agreed to be interviewed for this crucial research on the prevalence of gambling participation and problem gambling among Florida adults.

The Florida Council on Compulsive Gambling, Inc., (FCCG) provided the primary financial and technical support under a grant from the Florida State Lottery, without which this research could not have been completed.

The following staff members are the backbone of this work and deserve special recognition for their hard work, dedication to excellence and commitment to finishing a project that was initiated shortly before a time of national tragedy on September 11, 2001. In spite of their own personal stresses, Beata Beatty, Mijong Chae, Samantha Chattaraj, Eyun-Jung Ki, Liang Sun, Derrick McGhee, and Andrew Ragsdale, who work in the Departments of Psychiatry and the College of Journalism and Communications at the University of Florida, gave selflessly of their time and energy when it was often difficult to do so.

In addition, the University of Florida would be remiss if it did not acknowledge the significant contributions of Pat Fowler, FCCG Executive Director, Paul Ashe, FCCG Board President, and Laura Letson, Owner, Integrity 1<sup>st</sup> and FCCG Program/Grant Consultant.

Finally, we would like to thank the staff of the Florida Research Institute who carried out the interviews for this survey at a time when telephone survey research was a particular challenge.

# Executive Summary

This report presents the results of the first statewide survey in Florida to evaluate adult gambling participation and the prevalence of problem and pathological gambling in the State. The main purpose of this study is to examine the prevalence of gambling related problems among adults, ages 18 and older, within the State of Florida. A secondary purpose is to identify the types of gambling causing the greatest difficulties for adults in the State. Additional objectives include comparing Florida's findings with national and state data, determining availability and scope of gambling specific treatment statewide and identifying other areas of interest related to problem gambling.

A large sample (1,504) of residents, interviewed between October 16 and December 2, 2001, were asked about participation in various gambling activities, financial indebtedness, problems related to gambling, alcohol and drug use, mental health and demographic information. Considering the interviews were conducted one month after the September 11, 2001 terrorist attacks, a troubling and stressful time for all, the response rate for this study was high, in that of those eligible, 76% contacted responded to the survey.<sup>1</sup>

The findings of this study are intended to serve as a guide in the development of prevention, education, outreach, research, training and treatment related activities and to stand as a baseline over time in which the State can examine the ongoing relationship and associated impacts of gambling among its citizenry.

## **Key Findings**

- In 2001, lifetime participation in gambling was about 90% among Florida residents, ages 18 and older, and highest for lottery (73%), raffles (63%), casino gambling (60%), pari-mutuels (horses, dogs or other animals) and Off-Track-Betting/OTB (30%). From nearly one-third to almost 75% of respondents acknowledged wagering on these forms of gambling. In order of prominence, participation levels for other forms of gambling included bingo (24%), stock market (23%), cards-not at a casino (20%), slot machines-not at a casino (18%), pool (18%), sports (16%) and Jai Alai (14%).
- Similarly, past year participation rates were the highest for lottery, raffle, casino and stock market gambling. Other popular forms of gambling in Florida in the past year, reported by more than 5% of respondents, were bingo, cards-not at a casino, day trading, horses, dogs or other animals and OTB, pool, sports and slot machines-not at a casino. Of respondents participating in one or more of these activities, 32% visited a casino, 16% frequented a convenience store, 13% gambled at the supermarket and nearly 8% bet in their own homes.
- Approximately 10% of Floridians report they have never gambled, another 20% gamble infrequently (i.e. not placed a bet in the past year), 45% are past year gamblers and 25% gamble weekly.
- Males are significantly more likely to be weekly gamblers than females (30.5% versus 20.2%)
- Florida residents in the 50 to 65 year-old range are most likely to be weekly gamblers, while those ages 18 through 29 are least likely to gamble weekly.
- Two percent of the adult population are past year problem and pathological gamblers and 3.6% are lifetime problem and pathological gamblers based on the South Oaks Gambling Screen (SOGS). Given these numbers, approximately ½ million Floridians have suffered from serious to severe gambling related difficulties at some point during the course of their lives and presently, approximately ¼ million

---

<sup>1</sup> The fact that residents were traveling much less than prior to September 11<sup>th</sup> may have also contributed to the high response rate.

are experiencing such problems. It is important to note that these statistics do not include the millions of residents adversely affected by the gamblers' activities.

- While the SOGS does not classify individuals as “at-risk”, 7.1% of Floridians currently have one or two problems related to gambling (SOGS items) and 12.1% have had one or two problems at some point in their lifetime.
- Serious to severe difficulties were still documented among the adult population using the stricter and more conservative National Opinion Research Center’s NORC DSM Screen for Gambling Problems. More specifically, 0.8% of adults are current problem and pathological gamblers and 1.0% are lifetime problem and pathological gamblers, reflecting that while more than 125,000 adults have had severe problems at some point in time, over 100,000 are currently undergoing significant challenges. It is also important to note that Florida has a larger percentage of problem and pathological gamblers (0.8%) than reported in the national survey (0.5%). Particularly challenging is that the State of Florida’s at-risk population (4.0%) is about two times that of the national study (2.3%) and a greater proportion of Floridians are **currently** experiencing problems. It is apparent that unless some type of intervention and/or awareness effort is realized, persons falling within the at-risk category now are likely to shift to problem or pathological stages, creating a potential epidemic in future years.
- Based upon DSM-IV lifetime criteria, Hispanics are most likely to be lifetime pathological gamblers and Native Americans, Asians and other minorities are most likely to be lifetime problem gamblers.
- Caucasians are most likely to be low-risk gamblers and least likely to have never gambled in the past year.
- Males are more likely than females to be lifetime and current at-risk, problem and pathological gamblers.
- Floridians who are students, disabled, unemployed, or others are most likely to be lifetime pathological gamblers. Persons who are working full time are most likely to be lifetime problem gamblers.
- Students, disabled, unemployed or others are most likely to be current pathological gamblers.
- Many earlier studies collapsed problem and pathological gamblers into one category (i.e. "problem gamblers") for purposes of drawing comparisons with non-problem gamblers. Using the collapsed groups lifetime problem gamblers are most likely to be male and most likely to be ages 30-39, Native American, and have a high school degree or less. Past year problem gamblers are most likely to be males and have a high school degree or less.
- When comparing Floridians who are lifetime or current pathological or problem gamblers with their counterparts who never gamble or are low risk gamblers (no DSM-IV criteria) the following results were observed
  - a. Observations of the type of gambling by DSM-IV scores indicate that more than 15% of those who gamble on policy/numbers/Bolita are lifetime pathological gamblers and more than 15% of those who gamble on dog fights are lifetime problem gamblers.
  - b. A large proportion of those who gamble on table Mah Jongg (30%), pull-tabs or keno (about 26% each), pool (about 24%), trading cards or video games (about 22% each), and card games or table games (about 20% each) are in the DSM-IV lifetime at-risk category.
  - c. Reasons for gambling are related to DSM-IV scores such that 10% of those who gamble to impress people and approximately 6% for a sense of power or control, to feel high or peer pressure are current pathological gamblers whereas about 12% of those who gamble due to peer pressure and 10% who gamble to impress people are current problem gamblers.

- d. More than 80% of low-risk gamblers report gambling to be around other people, to feel good, to win money or out of curiosity.
- Of those who play the lottery, about 4.5% of respondents playing instant tickets, 7.6% preferring Cash 3 and 4.2% of those buying Fantasy 5 are problem or pathological gamblers. About 30.0% that play Mega Money are at-risk gamblers.
  - Interesting differences in gambling participation are noteworthy when respondents with military experience are compared to respondents who report no military experience. Male and female respondents who have military experience are likely to participate in more gambling activities
  - Past year problem and/or pathological gamblers use tobacco, alcohol, and other drugs for non-medical reasons on a greater mean number of days than other groups while at-risk gamblers are most likely to use marijuana or cocaine. At-risk gamblers used cocaine about 38 days during the past year compared with only 0.4 of a day for low-risk gamblers. Pathological gamblers report drinking more than three times as much when they drink as those in the other groups.
  - Those who report depression, being arrested or being treated for a drug or alcohol problem are likely to be past year pathological or problem gamblers at a greater rate than chance would dictate.
  - Lifetime problem and pathological gamblers (combined) use tobacco products, alcohol, cocaine, and tranquilizers for non-medical reasons significantly more often than non-problem gamblers. They also report depression, being arrested, being treated for a drug or alcohol problem, and describe difficulties with family members or friends significantly more often than non-problem gamblers.
  - Religion has a relationship to scores on the DSM-IV such that about 2% of those who said they were “something else” when asked about their religion are likely to be pathological or problem gamblers. Of those that reported being Jewish, 10% fell into the at-risk gambler category.
  - When faced with mental health problems, males and females seek help in different ways and from different sources: men from a family doctor or a substance abuse treatment program, while women from other counselors. Men are more likely than women to have stayed overnight in a treatment program. Large numbers of both males and females (33% and 40% respectively) who have had treatment overnight report that it was for depression.
  - Women are more likely than men to report that someone in their family has experienced physical (11.5%), verbal or emotional abuse (23.3%), or alcohol or substance abuse (27.8%).
  - Comparisons for gambling prevalence scores for Florida with other states is difficult because nearly 45% of Florida’s population is 50 plus compared with about 33% nationally. Overall Florida’s participation levels are greater than those reported for Oregon (2000), Louisiana (1998) and Mississippi (1996) but lower than for Montana (1998), New York (1996) and Texas (2000).
  - Although Florida has lower rates of current combined problem/pathological gambling based on the SOGS compared to other states, Florida’s combined rates of problem/pathological gambling (2.0%) is similar to rates found in a recent comparably sized phone survey done in Washington in 1998 (2.3%) and Oregon in 2000 (2.3%).
  - Florida’s current rates of combined problem/pathological gambling (0.8%) is higher than that found in the national study (0.5%) by DSM-IV criteria. Finally, the at-risk population in Florida for problem/pathological gambling (4.0%) is about two times that found in the national study (2.3%).

- When comparing demographics and types of gambling in Florida and the nation, it is important to highlight that a higher proportion of Floridians are currently at-risk, problem and pathological gamblers than found in the national study.
- The results of the survey reveal that the presence of gambling specific treatment statewide appears substantially below adequate levels, is supplied by professionals with varying levels of competency, does not seem to generally meet the age, gender and/or cultural needs of the populations experiencing difficulty and is not supported via state funding and/or widely through private, public or managed care insurance options.

## Recommendations

With the expansion of gambling opportunities and in light of the recent research on the epidemiology and neurobiology of problem and pathological gambling, it is essential that current services continue and expand. Equally important is that research remain ongoing, to examine multi-factorial causes, while preventive measures, early intervention and safe and effective treatments are developed and implemented.

In addition to securing ongoing and dedicated state funding for FCCG programs and services, provisions for culturally diversified, age and gender specific gambling treatment must be instituted across the state with government support and certified professionals. Prevention efforts, especially among the at-risk and underserved populations, must be culturally specific and appropriate. Similarly, education efforts must be packaged in a format that is presentable for dissemination in various environments, most notably where problem and compulsive gamblers frequent. Along these lines, the FCCG must broaden its efforts in working with gambling industry operators in the establishment and implementation of site-specific Responsible Gaming Programs to ensure problem gambling protocols, including a self-exclusionary component and a plan for widespread distribution of the HelpLine number.

There are also active roles that policy makers, researchers, treatment providers, educators, gambling operators and others can play in an effort to curtail an increase in the prevalence of problem and compulsive gambling, especially among the existing at-risk population in the State. Additionally, screening tools should be utilized by medical, mental health and addiction professionals, as well as by law enforcement authorities to ensure persons are being assessed for gambling related difficulties. It is also imperative that public, private and managed care providers assure appropriate, consistent and comprehensive insurance coverage for pathological diagnoses in problem gamblers, as well as for persons adversely affected by gambling.

# Table of Contents

<b>TITLE PAGE .....</b>	<b>1</b>
<b>ACKNOWLEDGEMENTS.....</b>	<b>2</b>
<b>EXECUTIVE SUMMARY .....</b>	<b>3</b>
<b>TABLE OF CONTENTS.....</b>	<b>7</b>
<b>LIST OF TABLES.....</b>	<b>9</b>
<b>INTRODUCTION.....</b>	<b>10</b>
<b>Florida Council on Compulsive Gambling, Inc .....</b>	<b>10</b>
<b>Gambling in Florida .....</b>	<b>11</b>
History .....	11
Today in Florida .....	12
<b>Defining At-Risk, Problem and Pathological Gambling.....</b>	<b>13</b>
<b>Assessing At-Risk, Problem and Pathological Gambling Among Adults.....</b>	<b>15</b>
<b>Screening for Prevalence .....</b>	<b>15</b>
South Oaks Gambling Screen.....	16
NORC DSM-IV Screen for Gambling Problems .....	16
<b>LITERATURE REVIEW .....</b>	<b>18</b>
<b>National Prevalence.....</b>	<b>18</b>
<b>Gambling and the Internet.....</b>	<b>18</b>
<b>Gambling, Mental Health and Risk-Taking Behaviors.....</b>	<b>19</b>
Gambling and Mental Health.....	19
Gambling, Substance Abuse and Addiction .....	19
<b>METHODS.....</b>	<b>21</b>
<b>Questionnaire Design.....</b>	<b>21</b>
<b>Sample Design.....</b>	<b>22</b>
Response Rate.....	22
Actual v. Weighted Sample.....	23
Challenges and Biases of Telephone Surveys.....	24

<b>Call Center.....</b>	<b>25</b>
<b>Data Analysis and Reporting.....</b>	<b>25</b>
<b>FINDINGS.....</b>	<b>28</b>
<b>Gambling in Florida .....</b>	<b>28</b>
Gambling in the General Population in Florida.....	31
<b>At-Risk, Problem and Pathological Gambling in Florida .....</b>	<b>33</b>
Lifetime and Current Prevalence.....	33
Gambling Participation (based on DSM-IV lifetime scores).....	38
Reasons for Gambling—Compared with DSM-IV Current Year Scores .....	39
Reasons for Gambling by Age Groups.....	40
Expenditures.....	40
Age of Gambling Initiation and Preference.....	40
First Person Gambled With.....	41
Occupation .....	41
Gambling, Alcohol and Drug Use, and Mental Health Among Florida Adults .....	41
Other Significant Associations .....	43
Gender, Mental Health and Gambling.....	44
<b>Comparing Non-Problem and Problem Gamblers in Florida.....</b>	<b>46</b>
Demographics.....	46
<b>Comparing Gamblers Nationally and Across States.....</b>	<b>47</b>
Demographics.....	47
Comparing Problem Gambling Across States.....	48
<b>Comparing the SOGS and the DSM-IV .....</b>	<b>49</b>
Background.....	49
Development of the NORC DSM-IV (NODS).....	50
The Florida Survey.....	50
Differences and Similarities between SOGS and DSM-IV Problem and Pathological Gamblers in the Florida Study.....	51
Gambling Specific Treatment in Florida.....	52
<b>SUMMARY .....</b>	<b>54</b>
<b>RECOMMENDATIONS.....</b>	<b>56</b>
<b>REFERENCES .....</b>	<b>58</b>
<b>COUNTIES OF RESPONDENTS.....</b>	<b>APPENDIX A</b>
<b>FLORIDA ADULT QUESTIONNAIRE.....</b>	<b>APPENDIX B</b>
<b>GAMBLING SPECIFIC TREATMENT IN FLORIDA.....</b>	<b>APPENDIX C</b>



# List of Tables

<b>Table 1. History of Gambling Opportunities in Florida.....</b>	<b>12</b>
<b>Table 2. DSM-IV Criteria for Pathological Gambling (APA, 1994) .....</b>	<b>14</b>
<b>Table 3. DSM-IV Criteria and Matched NODS Lifetime Questions. ....</b>	<b>17</b>
<b>Table 4. Criteria for Classifying Respondents (NORC, 1999).....</b>	<b>17</b>
<b>Table 5. NODS Prevalence Rates (NORC, 1999).....</b>	<b>18</b>
<b>Table 6. Average National Disposition Data and Response Rates .....</b>	<b>23</b>
<b>Table 7. Florida Disposition Data and Response Rate.....</b>	<b>23</b>
<b>Table 8. Comparing the Demographics of the Actual and Weighted Sample .....</b>	<b>24</b>
<b>Table 9. Classification in Past Prevalence Studies .....</b>	<b>26</b>
<b>Table 10. Years of Education or Highest Degree Earned .....</b>	<b>27</b>
<b>Table 11. Income levels.....</b>	<b>27</b>
<b>Table 12. Gambling Participation-Lifetime and Past Year. ....</b>	<b>29</b>
<b>Table 13. Lifetime Gambling Participation by Age Groups .....</b>	<b>30</b>
<b>Table 14. Type of Gambling by Respondent's Race or Ethnicity .....</b>	<b>31</b>
<b>Table 15. Demographics in the Florida Population for Frequency of Gambling .....</b>	<b>33</b>
<b>Table 16. Scores on Lifetime and Current DSM-IV Items for Florida Study.....</b>	<b>34</b>
<b>Table 17. Scores on Lifetime and Current SOG Items.....</b>	<b>34</b>
<b>Table 18. DSM-IV Lifetime Prevalence by Demographics .....</b>	<b>35</b>
<b>Table 19. DSM-IV Past Year Prevalence by Demographics .....</b>	<b>36</b>
<b>Table 20. Gambling Participation (based on DSM-IV lifetime scores) .....</b>	<b>38</b>
<b>Table 21. Reasons for Gambling Compared with DSM-IV Past Year Scores.....</b>	<b>39</b>
<b>Table 22. Gambling Venue and Risk .....</b>	<b>41</b>
<b>Table 23. Alcohol and Drug Use.....</b>	<b>42</b>
<b>Table 24. Percentage of Lifetime and Past-Year Gambler Types by Health, Mental Health, Substance Abuse, and Other Problems. ....</b>	<b>43</b>
<b>Table 25. Gambling and Religion .....</b>	<b>43</b>
<b>Table 26. Comparison of Types of Gambling and Males and Females on Social and Mental Health Questions.....</b>	<b>45</b>
<b>Table 27. Comparison of Types of Gamblers on Social and Mental Health Questions .....</b>	<b>46</b>
<b>Table 28. Demographics of Problem and Non-Problem Gamblers in Florida .....</b>	<b>46</b>
<b>Table 29. Comparing Key Characteristics with National Figures .....</b>	<b>47</b>
<b>Table 30. Percentage Gambling Types Based on Lifetime and Past-Year DSM-IV Scores. ....</b>	<b>48</b>
<b>Table 31. Comparison of National and Florida Lifetime and Past-Year Prevalence of Gambling Problems Among Demographic Groups .....</b>	<b>48</b>
<b>Table 32. Participation Across States .....</b>	<b>49</b>
<b>Table 33. Prevalence Across States Studies .....</b>	<b>49</b>
<b>Table 34. Comparing SOGS and DSM-IV Problem and Pathological Gamblers. ....</b>	<b>52</b>

# Introduction

Gambling, in one form or another, has been part of human behavior since ancient times. Games of chance and related artifacts have been discovered among the ruins of the ancient city of Babylon dating from 300 B.C. Both the Old and New Testaments and the classic literature of many cultures mention gambling. Gambling for most people is a highly enjoyable social activity that does not negatively impact their lives, but for some individuals it can become compulsive and addictive.

Today, gambling is a socially accepted form of entertainment and opportunities to gamble continue to increase. Lotteries, casinos, bingo, sports betting, horse racing, card and dice games not at a casino, and stocks and commodities are just some of the various forms of gambling available. With the advancement of computer technology, gambling via the Internet has increased dramatically over the last few years. Forms of Internet gambling include online casinos, stocks, commodities, sports betting, card games and roulette. The Internet provides ready access by persons of all ages and encourages continuous action with little to no consumer protections.

With the booming growth of the gambling industry, individuals prone to compulsive gambling are increasingly at risk for exposure and encouragement to gamble. Evidence indicates that increased accessibility to gambling facilities can lead to a rise in problem and pathological (i.e. compulsive) gambling.

Compulsive gambling is a significant public health issue. It has high personal and social costs that have only recently received attention. The ramifications of problem gambling are widespread. The financial demands a problem gambler faces can destroy family relationships and careers. Society bears the financial burden of increased rates of personal bankruptcy. Many pathological gamblers become caught in a downward spiral of depression resulting in suicide. Yet, despite the prevalence of gambling related problems, there is little Federal and State funding for mental health services specifically aimed towards the needs of compulsive gamblers or persons adversely affected.

This study was prepared for the Florida Council on Compulsive Gambling (FCCG) by researchers at the University of Florida. This report presents the results of the first statewide study in Florida to evaluate adult gambling participation and the prevalence of problem and pathological gambling in the State. The main purpose of this study is to examine the prevalence of gambling related difficulties among Florida adults, ages 18 and older. A secondary purpose is to identify the types of gambling causing the greatest significant challenges in Florida. Additional objectives include comparing Florida's findings with national and other state data, determining availability and scope of gambling specific treatment statewide and identifying other areas of interest related to problem gambling.

## **Florida Council on Compulsive Gambling, Inc.**

The Florida Council on Compulsive Gambling, Inc. (FCCG), established in 1988, is a not-for-profit 501(c)(3) educational and advocacy organization, under contract with Florida State government. The FCCG's primary mission is to help persons adversely affected by difficulties due to problem and compulsive gambling. The FCCG maintains a neutral stance on the issue of legalized gambling, while seeking to assist citizens in need of supports. Governed by a volunteer Board of Directors, the FCCG is an affiliate of the National Council on Problem Gambling and offers the following services:

- Statewide, toll-free confidential 24-hour Problem Gambling HelpLine
- Prevention, education and outreach programs on problem and compulsive gambling
- Training for medical and other health care professionals to assess and treat
- Representation on gambling related issues before local, state and federal policymakers

- Conduct and Sponsor research
- Education and training programs on problem gambling for governmental agencies, gaming operators and others
- Coordination and assistance in establishing alternative sentencing options in conjunction with the judicial system, probation and parole departments, public defenders, prosecutors and private attorneys regarding compulsive gambling related cases
- Statewide Speakers Bureau
- Impaired Professionals Program
- Adolescent and Senior Outreach Programs

This report presents background and research related to problem and pathological gambling on a state and national level. Following a literature review, the methods section details the survey design, testing and data analysis. Next, the findings section presents an analysis of the data and comparisons to the National Gambling Impact and Behavior study and other state surveys. The recommendation section discusses the implications of these findings in regard to identifiable needs and short and long-term resolutions to conditions or challenges presented.

In addition to presenting data about the prevalence of problem and pathological gambling behavior (current and lifetime) and overall gambling participation among adults in Florida, the report includes information on demographics, types of gambling and gambling activities, locations where gambling occurs most frequently, the age of gamblers, information about gambling debts and financial indebtedness, gambling-related problems (such as alcohol and drug abuse and other mental health difficulties), relational impact of gambling and differences between non-problem, at-risk, problem and pathological gamblers.

Finally, the report includes the results of the first statewide survey in Florida to examine the availability of gambling specific treatment in the State. The main purpose of the review is to determine the presence and scope of gambling treatment available to Florida residents and to establish the willingness of providers to furnish such specialized assistance.

## **Gambling in Florida**

### **History**

Gambling in the South can be mapped to the 1600's. Since then, three historical cycles of legalized gambling have occurred: the colonial period, the post-Civil War Reconstruction era and present day (Westphal, Johnson, Stodghill & Stevens, 2000).

In 1716, the Virginia Company of Jamestown asked the King of England to conduct a lottery to finance the colony. Although there were other types of gambling, the lottery was the main form of legalized gambling during the first two cycles and in fact, contributed substantially to the economic need of the times. After the Revolutionary War, lotteries primarily funded public services such as healthcare and education (Westphal, Johnson, Stodghill & Stevens).

By the 1830s, legislation that banned gambling began to appear. Florida, along with some other southern states (Georgia, Kentucky, Louisiana, Mississippi, North and South Carolina, and Tennessee) passed laws prohibiting gambling in public places, but not for all people. Many of these laws were a result of "moral objections to the social influence of gambling" (Westphal, Johnson, Stodghill & Stevens, p. 851). Anti-gambling legislation continued to pass throughout the United States in much of the 1800's. (Westphal, Johnson, Stodghill & Stevens).

This trend changed when Nevada legalized gambling in 1931 and soon this renewal in gambling spread to the South when Florida, Louisiana, and nine other states allowed horse racing. There were no other legal

gambling activities in the South until Maryland began a lottery program (Westphal, Johnson, Stodghill & Stevens).

In 1978, the State of Florida allowed the Seminole Indians to hold high-stakes bingo games (Westphal, Johnson, Stodghill & Stevens). Following the approval of the Florida Lottery Law, the Seminole Indian facilities were then entitled to conduct similar games on the reservation which were interpreted by the Tribe to include video lottery terminals (VLTs). However, this has been a longstanding battle between the Seminoles and the State.

Moreover, while “cruises to nowhere” are also present within the State of Florida, as they operate in international waters, these gambling venues fall under the jurisdiction of maritime law versus state or federal government authority.

## Today in Florida

In 1988, by a two-to-one margin, Florida voters approved a constitutional amendment authorizing the State to operate a lottery. Currently, legal forms of gambling in Florida include dog and horse racing, Jai Alai, lottery, bingo and casino gambling on Indian reservations and “cruises to nowhere.”

In 1998, gamblers in Florida wagered over \$4 billion on lottery, bingo, pari-mutuels, card rooms and charitable games. This estimate excludes money spent on Internet and stock market gambling, Indian reservations, as well as illegal forms of gambling. The Florida Lottery alone netted almost \$2.3 billion for fiscal year 2000-2001 of which \$970 million subsidized education (Florida Lottery, 2001, retrieved on November 29, 2001 at <http://www.flalottery.com>). Yet, prior to last year, the State of Florida’s funding barely paid for operation of the FCCG HelpLine, at \$100,000 annually. However, in addition to a n increase in the HelpLine grant to \$134,000, the Florida Lottery initiated a proactive commitment by issuing a second grant to the FCCG, in the amount of \$1.3 million, to support prevention, education, outreach and research activities. The Lottery also implemented an active in-house problem gambling awareness program, in cooperation with the FCCG. But, it is essential to note that state funding for gambling treatment in Florida, to assist persons adversely affected by gambling, remains unavailable.

Since the late 1980s, calls to the FCCG HelpLine, as well as to self-help groups such as Gamblers Anonymous, have increased dramatically. In fact, the FCCG’s Problem Gambling HelpLine service receives more than 600 calls a month. Since the date of the HelpLine’s inception, June 1992, the FCCG crisis service has responded to more than 80,000 calls.

Both legal and illegal forms (e.g. Internet and sports betting) of gambling opportunities have increased dramatically in the State of Florida in recent decades. In addition to the stock market, Florida residents can also gamble legally on six different lottery games, at six casinos on Native American territory, 26 casino “cruises to nowhere”, bingo, pari-mutuel and Jai Alai facilities, and more recently on simulcast racing and card rooms.

**Table 1. History of Gambling Opportunities in Florida**

<i><b>Forms of Legalized Gambling in Florida</b></i>	<i><b>Year</b></i>
Jai Alai	1926
Bingo	1929
Dog racing	1931
Horse racing	1931
Tribal Bingo	1979
Day Cruises (There are presently a total of 26 ships)	1984
Tribal Video Lottery Terminals (VLT's)	1985
Florida Lottery	1988
Card Rooms	1996

Another measure of increased gambling participation is the number of persons seeking help for gambling related problems. In recent years, self-help groups (e.g. Gamblers Anonymous and Gam-Anon) have been started in various communities throughout Florida and have grown from less than 10 in 1985 to more than 50 in 2001. Due to an increased number of persons experiencing difficulties due to gambling and requesting assistance by the FCCG, in the past five years alone, the FCCG has registered 24 health care professionals to furnish treatment supports to gamblers and others adversely affected (e.g. spouses or partners and other family members), and utilizes this network of providers for referral purposes. However, services are limited and not state-supported. Along these lines, the only organized and state-recognized gambling prevention, education and outreach program in the State is operated by the FCCG. Although FCCG services are statewide in scope, government funding is uncertain year to year. Further, the organization does not provide counseling or treatment supports to persons sick and suffering.

The demographic makeup of Florida may pose some additional concerns in regard to problem gambling. While 15.6% of Floridians are age 65 and older (Census 2000), over the years, calls received by the HelpLine involving senior gamblers, have consistently been approximately 17% and more recently nearing 20%. FCCG reports that some seniors gamble away their retirement savings, social security and pensions at a time in life when this money cannot be recouped leaving some destitute and suicidal. (FCCG, 2001) In fiscal year 2000-2001, callers to the FCCG HelpLine, involving persons ages 55 and older, revealed that debts ranged from \$300 to \$1 million. The mean debt for the year was \$477,495 and the median was \$26,500. Credit card debt varied from \$750 to \$300,000, with a mean of \$49,493 and a median of \$24,000. Moreover, 11.5% indicated they had gone through bankruptcy (FCCG, 2001).

## **Defining At-Risk, Problem and Pathological Gambling**

Researchers have defined gambling as “placing something of value at risk with the hope of gaining something of greater value” (Potenza, Kosten, & Rounsaville, 2001, p.141). An overwhelming majority of American adults (86%) have gambled in their lifetime (National Gambling Impact Study Commission (NGISC & NORC), 1999). In fact, most people are able to gamble without negative consequences, commonly referred to as “social gamblers.” The progression from gambling initiation to pathological gambling is, in some ways, similar to the development of alcoholism; only some progress to problematic levels and most who do will deny this is the case and those with a problem will often hit bottom before they seek help (Gold, 2001). Pathological gambling, like addiction to drugs and alcohol, is characterized by preoccupation, narrowing of interests, compulsivity, relapse, guilt, dishonesty and overall loss of control.

To describe varying levels of participation in gambling activities, in this report, the categories of non-gamblers, low risk gamblers, at-risk, problem and pathological gamblers are distinguished. The National Council on Problem Gambling defines problem gambling as a “...behavior which causes disruptions in any major area of life: psychological, physical, social or vocational. The term “problem gambling” includes, but is not limited to, the condition known as “pathological”, or “compulsive” gambling, a progressive addiction characterized by increasing preoccupation with gambling, a need to bet more money more frequently, restlessness or irritability when attempting to stop, “chasing” losses, and loss of control manifested by continuation of the gambling behavior in spite of mounting, serious, negative consequences.” (National Council on Problem Gambling (2001), Retrieved at <http://www.ncpgambling.org/>, on October 29, 2001).

At one end of the spectrum lies social gambling, whereas at the other end lies pathological gambling. The American Psychiatric Association first recognized and defined pathological/compulsive gambling in 1980, as a progressive mental health disorder of impulse control. Since this time, its Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) defines pathological gambling as a “persistent and recurrent maladaptive gambling behavior” (APA, 1994, p. 615).



Ten criteria, from preoccupation to bailout, guide the diagnosis as outlined in Table 2. For an individual to be diagnosed as a pathological gambler, he or she must have five or more of these characteristics. Individuals with three or four criteria are considered “problem” gamblers and those with one or two are classified as “at-risk” (Table 2).

In some prevalence surveys, individuals are categorized as “problem gamblers” or “probable pathological gamblers” based upon responses to questions included in the South Oaks Gambling Screen (SOGS), a clinical tool used to diagnose persons with varying levels of gambling difficulty. Respondents scoring three or four, out of a possible 20 points, on the SOGS items are classified as “problem gamblers,” whereas those scoring five or more are categorized as “probable pathological gamblers.”

**Table 2. DSM-IV Criteria for Pathological Gambling (APA, 1994)**

<b>Preoccupation</b>	Is 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)
<b>Tolerance</b>	Needs to gamble with increasing amounts of money in order to achieve the desired excitement
<b>Withdrawal</b>	Is restless or irritable when attempting to cut down or stop gambling
<b>Escape</b>	Gambles as a way of escaping from problems or relieving dysphoric mood (e.g., feelings of helplessness, guilt, anxiety or depression)
<b>Chasing</b>	After losing money gambling, often returns another day in order to get even (“chasing one’s losses”)
<b>Lying</b>	Lies to family members, therapists or others to conceal the extent of involvement with gambling
<b>Loss of control</b>	Has made repeated unsuccessful efforts to control, cut back or stop gambling
<b>Illegal acts</b>	Has committed illegal acts (e.g., forgery, fraud, theft or embezzlement) in order to finance gambling
<b>Risked significant relationship</b>	Has jeopardized or lost a significant relationship, job or educational or career opportunity because of gambling
<b>Bailout</b>	Has relied on others to provide money to relieve a desperate financial situation caused by gambling

In prevalence surveys conducted since 1990, a distinction is also made between “lifetime” (someone who ever in his or her lifetime met the SOGS or DSM-IV criteria) and “current” (individuals who met SOGS or DSM-IV criteria in the past twelve months) problem and probable pathological gamblers (Volberg, 1997).

The National Research Council notes that “although the causes of problem and pathological gambling remain unknown...” there are certain factors, dispositions and behaviors that indicate a predisposition to gambling problems (National Gambling Impact Study Commission Final Report, 1999, pp. 4-3). These include:

1. Individuals with behavioral problems such as mood or personality disorders and substance abuse often have a predisposition to such problems.
2. Children of pathological gamblers are more likely to become problem gamblers (genetic and environmental factors).
3. Individuals who begin gambling at an early age are at a higher risk for developing pathological habits.

According to the FCCG, “Compulsive gambling starts quietly. Winning enhances the gambler’s self-image and ego. Losses are rationalized as poor advice or bad luck. However, as losses increase and self-esteem is jeopardized, the gambler borrows money to “invest” in gambling in hopes of breaking even. The need then arises to hide new losses and borrow more money to make up the difference. At this point, lies, loan fraud, absenteeism, family disputes and job changes are common danger signals. Finally, desperation occurs as the gambler becomes obsessed with getting even to cover stolen money, withdrawals from family bank accounts and secret loans. The gambler panics at the thought that the gambling action will cease if the credit or bailouts stop. This results in the eventual destruction of the gambler’s personal life, family relationships and

career. The gambler can experience severe mood swings and suicide may be attempted as a way out.”  
<http://www.gamblinghelp.org/gambling/lotsmore.htm>, 2001

As our understanding of functional neurobiochemistry improves, more light has been shed on the neurochemistry that underlies addictive disorders. Dopamine is thought to play an important role in all addictive disorders. Like all drugs of abuse, compulsive gambling is thought to stimulate the release of dopamine, a neurotransmitter involved in the regulation of emotions, movement and survival drive that starts in an area of the brain called the reward pathway. The reward pathway originates in the nuclei of the ventral tegmental area (VTA), is sent forward to the nucleus accumbens (NAC) where there is a marked increase in synaptic dopamine and finally to the prefrontal cortex where rational thought and judgment are centered. In addition, serotonin is believed to have a significant role in inhibition and disinhibition of behavior, as does norepinephrine, which appears to play a part in arousal that often accompanies the high of compulsive gambling. The most recent neuroimaging research in this area by Breiter and colleagues (2001) at Harvard has shown there are striking similarities in the brain mechanisms involved in the anticipation and experience of monetary prospects, such as those in gambling, as well as with cocaine addicts and new users of opiate drugs. Compulsive gamblers, like cocaine addicts, have acute and chronic brain changes that drive continued use, despite ruination (Breiter).

Recent studies have shed light on the multi-factorial causes of pathological gambling. One factor is genetics. A family history of any addictive disorder (gambling, alcohol or drugs) increases the risk of becoming a compulsive gambler. Recent research has shown that compulsive gamblers have a higher frequency of having the dopamine receptor gene that is commonly seen in alcohol and drug addicts. Blum and colleagues (1995) term the association of DRD2 (dopamine D2 receptor gene) polymorphisms and impulsive-addictive-compulsive behavior (IACB), the "Reward Deficiency Syndrome." Most commonly reported are variants of DRD2 and DRD4 that have been linked to drug, alcohol and nicotine dependence, pathological gambling, obesity, attention-deficit-hyperactivity disorder (ADHD) and other related impulsive/compulsive behavior (Blum et al., & Comings, et al, 1999).

## **Assessing At-Risk, Problem and Pathological Gambling Among Adults**

Despite its long history, there was little interest in scientific research in the epidemiology of gambling or in screening or treatment of problem gambling until the 1970's and the 1980's.

Since the 1980's, several screening and diagnostic tools have been developed, including the South Oaks Gambling Screen (SOGS) (Lesieur & Blume, 1987), the Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition (DSM-IV) (APA, 1994), Gambler's Anonymous 20 questions (Gamblers Anonymous 2001), the Lie/Bet Screen (Johnson, Hamer, & Nora, 1998), the NORC DSM-IV Screen for Gambling Problems NODS (National Gambling Impact Study Commission, 1999) and the Gambling Symptom Rating Scale (Kim, Grant, Adson, & Shin, 2001).

### **Screening for Prevalence**

Generally, to date, the two most widely recognized screening tools in prevalence studies are the South Oaks Gambling Screen (SOGS) and the Diagnostic Statistical Manual of Mental Disorders (DSM-IV) Screen.

In an effort to satisfactorily compare Florida's findings to other states, as well as with the 1998 National study (NGISC, 1999), the University of Florida and the FCCG determined it appropriate to use the SOGS for state-to-state comparisons and the National Opinion Research Center's (NORC) DSM-IV screen known as the NODS (NORC DSM Screen for Gambling Problems-National Gambling Impact Study Commission, 1999) for comparisons with the national study.

**South Oaks Gambling Screen (SOGS)**

The South Oaks Gambling Screen (SOGS) is a questionnaire developed by Drs. Henry Lesieur and Sheila Blume to screen and distinguish between persons with serious ("problem") to severe ("pathological") gambling difficulties from those receiving treatment for substance abuse problems (Lesieur & Blume, 1987).

The SOGS is a 20-item scale based upon the 1987 DSM-III criteria for pathological gambling. It includes items to determine if the respondent is hiding evidence of gambling, spending more time or money gambling than intended, arguing with family or friends over gambling, or borrowing money to pay for gambling debts. Researchers for the 1988 New York State study (Volberg) were the first to use the SOGS outside of a clinical environment, and thereafter its use became widespread for prevalence research conducted within the United States and abroad. It remained the "Gold Standard" until early 1990 when the new DSM-IV criteria were published. Since then there are three different screening instruments that have been developed based upon the DSM-IV criteria. However, the National Opinion Research Center, under contract with the National Gambling Impact Study Commission, elected to develop a new instrument based upon the DSM-IV criteria (National Gambling Impact Study Commission, 1999).

**NORC DSM-IV Screen for Gambling Problems**

While the SOGS was initially based upon the DSM-III, the next generation diagnostic criteria in the DSM-IV were different, requiring a revised standard. The new standard for determining a pathological gambler incorporated research that associated gambling with the characteristics of other addictive disorders (National Gambling Impact Study Commission, 1999, p. 16).

Researchers working for the National Gambling Impact Study Commission developed a new screening instrument, called the NORC DSM-IV Screen for Gambling Problems or "NODS." The DSM-IV and NODS criteria for pathological gambling are listed in Table 3.

The NODS is composed of 17 lifetime items and corresponding past-year items, compared to the 20 lifetime and 20 past-year items that comprise the SOGS. The maximum score on the NODS is 10, compared to 20 for the SOGS. Although there are fewer items in the NODS and the maximum score is lower, the NODS is designed to be more demanding and restrictive in assessing problematic behaviors than the SOGS or other screens based upon the DSM-IV criteria (Gambling Impact and Behavior Study, National Opinion Research Center, 1998, page 18).



**Table 3. DSM-IV Criteria and Matched NODS Lifetime Questions. (This table is reproduced from National Gambling Impact Study Commission, 1999, p. 18)**

<b>Preoccupation</b>	1	Have there ever been periods lasting 2 weeks or longer when you spent a lot of time thinking about your gambling experiences or planning out future gambling ventures or bets? OR
	2	Have there ever been periods lasting 2 weeks or longer when you spent a lot of time thinking about ways of getting money to gamble with?
<b>Tolerance</b>	3	Have there ever been periods when you needed to gamble with increasing amounts of money or with larger bets than before in order to get the same feeling of excitement?
<b>Withdrawal</b>	4	Have you ever tried to stop, cut down or control your gambling?
	5	On one or more of the times when you tried to stop, cut down or control your gambling, were you restless or irritable?
<b>Loss of control</b>	6	Have you ever tried but not succeeded in stopping, cutting down or controlling your gambling?
	7	If so, has this happened three or more times?
<b>Escape</b>	8	Have you ever gambled as a way to escape from personal problems? OR
	9	Have you ever gambled to relieve uncomfortable feelings such as guilt, anxiety, helplessness or depression?
<b>Chasing</b>	10	Has there ever been a period when, if you lost money gambling one day, you would return another day to get even?
<b>Lying</b>	11	Have you ever lied to family members, friends or others about how much you gamble or how much money you lost on gambling?
	12	If so, has this happened three or more times?
<b>Illegal acts</b>	13	Have you ever written a bad check or taken money that didn't belong to you from family members or anyone else in order to pay for your gambling?
<b>Risked significant relationship</b>	14	Has your gambling ever caused serious or repeated problems in your relationships with any of your family members or friends? OR
	15	ASK ONLY IF R IS IN SCHOOL Has your gambling caused you any problems in school, such as missing classes or days of school or your grades dropping? OR
	16	Has your gambling ever caused you to lose a job, have trouble with your job, or miss out on an important job or career opportunity?
<b>Bailout</b>	17	Have you ever needed to ask family members or anyone else to loan you money or otherwise bail you out of a desperate money situation that was largely caused by your gambling?

Table 4 indicates the criteria for classifying gamblers using the DSM-IV.

**Table 4. Criteria for Classifying Respondents (NORC, 1999).**

<b>Low-risk gambler</b>	Gambles, but reports no DSM-IV criteria
<b>At-risk gambler</b>	One or two DSM-IV criteria
<b>Problem gambler</b>	Three or four DSM-IV criteria
<b>Pathological gambler</b>	Five or more DSM-IV criteria

# Literature Review

## National Prevalence

In a recent national study, also conducted by a Random Digit Dial (RDD) telephone sample, comprised of 2,417 adults, the National Gambling Impact Study Commission reported that about 2.5 million American adults are pathological gamblers and another 3 million are problem gamblers. Fifteen million more adults are at risk for problem gambling and approximately 148 million are low-risk gamblers (NORC, 1999). The first national study since the mid-1970's, this study revealed an increase in gambling opportunities and participation.

**Table 5. NODS Prevalence Rates (NORC, 1999)**

	<i><b>RDD Sample Lifetime (2417)%</b></i>	<i><b>RDD Sample Past Year (2417)%</b></i>
<b>Non-Gamblers</b>	14.4%	36.7%
<b>Gamblers with no problems</b>	75.6	60.4
<b>Gamblers with 1-2 problems</b>	7.9	2.3
<b>Gamblers with 3-4 problems</b>	1.3	0.4
<b>Gamblers with 5+ problems</b>	0.8	0.1

In an attempt to offer a comprehensive view of the studies that estimate the prevalence of disordered gambling in the United States and Canada, Shaffer, Hall, and Vanderbilt (1999) conducted a meta-analysis of all prevalence studies conducted in North America and found the prevalence rates of pathological gambling in adults to be 1.1% (past-year) and 1.6% (lifetime). Another 2.8% (past-year) and 3.9% (lifetime) of the adult population were estimated to be problem gamblers.

## Gambling and the Internet

One area of interest that has not been addressed is Internet-based addiction and compulsion. Internet gambling is escalating. The National Gambling Impact Study Commission reported that, in 1997, online gambling facilities brought in \$300 million from 6.9 million Internet gamblers. By 1998, the number of gamblers rose to 14.5 million and revenues increased to \$651 million (NORC, 1999). The Internet gambling market is anticipated to be worth as much as \$5 billion by the year 2003 (Stearns, 2001).

Based on a recent study of 9,000 Internet users, researchers speculate that the Internet might be reinforcing or even increasing problem and pathological behaviors. Cooper (1998) found that there are three major factors that may be causing individuals with compulsive addictions to turn to the Internet. Termed the "Triple A" effect, Cooper attributes increased interest due to accessibility, affordability and anonymity. Other experts hypothesize that these factors help to explain why more compulsive gamblers than ever are turning to the Internet (McCormick, 2000).

In addition, upon applying the "REALITY" method, the impacts of Internet gambling, in relationship to problem and compulsive gambling, can be better understood. Gambling via the Internet is of particular concern because it is **R**eadily accessible by persons anytime of day via computer; **E**ncourages continuous play and action; **A**bsent a visual turning over of money; **L**ack of consumer protections (e.g. privacy, bonding); **I**mage distortion by gambler (i.e. perception that money or loss is not real – cognitive distortion); **T**racks preferences and links to gaming operators and others; and provides **Y**outh access and inadequate oversight. (Letson, 2001)

Shapira, Goldsmith, Keck, Khosla, & McElroy, (2000) also found that problematic Internet use may be a characteristic of other psychiatric disorders such as gambling. However, further research is necessary to determine whether it is a distinct illness, a symptom of other disorders or both.

## **Gambling, Mental Health and Risk-Taking Behaviors**

Researchers often speculate about possible correlations between compulsive gambling and other risk-taking behaviors (Powell, Hardoon, Derevensky, & Gupta, 1999). However, such studies usually reflect research based upon pathological gamblers in treatment programs (Steel & Blaszczynski, 1998). It is uncertain whether these findings are applicable to the general population of gamblers.

### **Gambling and Mental Health**

Petry (2001) speculates that pathological gambling and substance abuse may be related to underlying personality traits such as impulsivity. Although pathological gambling is defined as an impulse-control disorder, there is no definitive evidence that such gamblers are more impulsive than non-gamblers (Petry, 2001). In fact, some studies reveal that pathological gamblers score lower in scales assessing impulsivity and similar traits (Allcock & Grace, 1988, Dickerson et al., 1987). However, recent research suggests that substance abusers have a greater impulsivity than control groups and individuals with both substance abuse and pathological gambling disorders have the highest degrees of impulsivity. Petry (2001) suggests that impulsiveness may be regarded as “a behavioral adaptation to chaotic and unpredictable environments,” and these types of environments may increase an individual’s susceptibility to substance abuse and problem gambling.

Pathological gambling had been associated with depression (Graham & Lowenfield, 1986; McCormick & Taber, 1988; and Becona, Lorenzo, & Fuentes, 1996). Becona, Lorenzo, & Fuentes (1996) evaluated gamblers based on a Beck Depression Inventory and found the scores of pathological gamblers to be positively correlated with the severity of their addiction as determined by the DSM-IV characteristics reported.

Pathological gambling frequently co-occurs with affective disorders (Crockford DN & el-Guebaly, 1998). High rates of major depression, bipolar and cyclothymic disorders exist among patients with compulsive gambling (Crockford DN & el-Guebaly). However, it is unclear whether these disorders predate the compulsive gambling or occur as a result of the consequences of gambling. This is especially true of depressive disorders.

The co-occurrence of compulsive gambling with attention deficit disorder is fairly consistent (Crockford DN & el-Guebaly). These disorders both involve poor impulse control manifested in different but related forms. Consistent with this finding is that recovering gamblers have EEG (electroencephalogram) patterns similar to those of children with attention deficit disorder. However, most studies were retrospective and had small sample sizes. Thus, additional research in this area is needed to better determine the relationship between these disorders.

### **Gambling, Substance Abuse and Addiction**

Several studies indicate that approximately 50% of the problem gambling population has drug or alcohol problems. According to research cited in the American Journal of Public Health (March 1998), almost 20% of all clinical patients suffering from drug or alcohol difficulties are also problem gamblers. This suggests that a significant percentage of persons suffering from substance and alcohol abuse may not be receiving any treatment for their problems associated with gambling. Similarly, 50% of pathological gamblers have been found to have a history of drug or alcohol abuse (Lesieur, et al., 1986). Gold et al. (2001) reports

“prevalence rates for pathological gambling are also higher among patients who are in treatment for substance abuse disorders than in the general population” (p. 9).

The relationship between gambling and substance abuse is complex. The two activities are often combined. Alcohol is served in casinos and at sporting events. Both licit and illicit gambling activities are frequently centered at bars where illicit drugs are also sold. Substance dependence may develop simultaneously with pathologic gambling or may surface before or afterward. Therefore, it is important to assess the risk in substance dependent patients who do and do not report current gambling problems. Patients with a history of intense interest in gambling before the onset of substance dependence, or a family history of pathological gambling or a history of gambling problems in remission, are at special risk. The altered psychological state experienced during gambling may lead to relapse in newly abstinent substance dependent patients. Alternatively, abstinence from alcohol and drugs may be sustained, but a switch of addictions experienced. The action of gambling is easily substituted for the substance abuse high in the patient's pattern of dependence, leading to a rapid development of pathological gambling. Patients in treatment for substance use disorder, who have a history of gambling problems, either current or in remission, should be treated simultaneously for both disorders.

# Methods

This chapter outlines the methods used to execute this prevalence study including questionnaire development, sampling, response rates and data analysis. The study was reviewed and approved by the University of Florida Health Sciences Center Institutional Review Board for the protection of the human subjects in research. The research team complied with University, State and Federal rules and regulations regarding research with human subjects.

This study is based upon a random digit dial (RDD) telephone survey. A professional call center, the Florida Research Institute (FRI), interviewed a large sample of Florida residents (1,504), 18 years of age and older, between October 16 and December 2, 2001. Interviewers asked respondents about participation in various gambling activities, financial indebtedness, problems related to gambling, alcohol and drug use, mental health and demographic information.

The confidence interval for results based on the total sample of 1,504 is plus or minus 2.6 percentage points<sup>2</sup> at the 95% confidence level.<sup>3</sup>

## Questionnaire Design

Any research involving the development of new questionnaires requires extensive review, pilot testing, revising and re-testing of the instruments to assure the reliability and validity of the measures, something outside the scope of the timeframe for this project, which was less than six months.<sup>4</sup> In addition, new questions or rephrasing of old ones would make it impossible to compare Florida's data with that gathered in other states, one of the goals of this project. Therefore, the researchers reviewed already established and validated gambling questions, categorized the questions and used those that appeared to best represent the constructs of concern.

After creating the preliminary test questionnaire, an extensive pre-testing process began. The early drafts of the survey included questions from nearly every earlier study and required more than one hour to administer. In the next test phase, the researchers removed duplicative questions and initiated an editing process to maximize ease of understanding and comprehension via telephone and to minimize redundancy.<sup>5</sup>

The final instrument was comprised of seven sections with questions asked in the following order:

1. Gambling involvement (respondents were asked if they participated in an array of gambling activities, ranging from raffles and lottery play to stock market trading. Further, respondents were questioned about reasons for gambling, gambling preferences and time spent gambling);
2. South Oaks Gambling Screen (SOGS);

---

<sup>2</sup> This estimate is appropriate only for binomial variables where the population distribution is about 50/50. For binomial variables where this is less balanced (for example, 10-90%) the standard error will be smaller (plus or minus 2%). For variables in this study that have more than two classifications or categories, such as education, the confidence intervals will be larger; generally the more categories represented by a variable, the larger the confidence intervals.

<sup>3</sup> Another way to express sampling error is to state that if this study were conducted 100 times, 95 to 100 of these surveys would present results within the confidence intervals reported.

<sup>4</sup> The contract with the FCCG was signed on July 31, 2001.

<sup>5</sup> This version was then pre-tested and revised. The questionnaire was still much longer than could be completed successfully, so FCCG's help was sought in selecting screens and pinpointing other questions it deemed essential. In this phase it was particularly important to retain questions that had been asked in more than one prevalence study in other states, or in the NORC study. The reduced form was again pre-tested, this time for logical order. The researchers estimated that it would take a non-gambler 15 minutes on average to respond to the survey and problem gamblers 30 minutes on average for the survey to be completed.

3. Financial indebtedness;
4. Screen for pathological gambling based on the DSM-IV diagnostic criteria (NORC DSM-IV Screen for Gambling Problems–NODS);
5. Alcohol and drug use;
6. Mental health status; and
7. Demographic characteristics.

## Sample Design

Prior to purchasing the sample, the University of Florida research team sought bids from Survey Sampling, Inc., and Genesys Sampling. Based on the bid properties, Genesys Sampling was selected as the sampling list source. The sample for this survey was a random-digit sample of telephone exchanges in Florida. The random-digit method of choosing numbers prevents listing bias and allows for representation of both listed and unlisted numbers (including not-yet-listed).<sup>6</sup>

At least six attempts were made to complete an interview on every sampled telephone number. The calls were staggered at varying times throughout the day and on days of the week to increase possible respondent contact. All refusals and break-offs were contacted at least once in order to try to convert to completed interviews. To maximize variance and reduce gender bias of phone surveys, interviewers asked to speak to the person “18 years of age and older whose birthday was closest to that day.” The average interview lasted 18 minutes and 54 seconds.

## Response Rate

The procedures used to collect the data are as important as the sample selection process in determining how well a sample describes the population.

Fowler (2001) explains that the accuracy of survey data depends on the respondent. There are usually three categories of people who do not provide information: callers who are unreachable, unwilling to participate, or unable to provide data due to circumstances, such as illness and language barriers (Fowler, 2001).

Table 6 represents disposition data from a meta-analysis of 75 randomly selected telephone surveys with respondents between the ages of 18 and 54 (Backstrom & Hursh-Cesar 1986). The average response rate for this meta-analysis with the model of “completes” as a proportion of initial-refusals-plus-completes was about 14%.

For the Florida adult gambling study, the response rate calculated by the initial-refusals-plus-completes model was 76% (Table 7). This is much greater than is commonly found in telephone survey research as indicated in Table 6. A total of six attempts were made to every viable phone number before retiring the number. While this greatly increases the time it takes to complete the survey process, it increases the likelihood that all eligible respondents are reached by telephone. It should be noted that the number of calls that never went beyond an answering machine are greater for the Florida study than for the data reported in the meta-analysis. There is no doubt this is due to the increasing use of answering machines as call screening devices since the meta-analysis report was conducted 15 years ago.

Like other states with a large Hispanic population, for this survey the decision was made to translate the questionnaire into Spanish if 5% or more of respondents requested that the interview be conducted in

---

<sup>6</sup> Please see <http://www.genesys-sampling.com/intro/introgen.htm#rddsamplingmeth> for a complete review of sampling methodology used by Genesys Sampling.

Spanish. As Table 7 shows, only 3.3% of the sample had a language barrier and therefore the questionnaire was not translated.

This survey began within one month of the September 11, 2001 terrorism attacks, a time of great national stress and when many other survey research projects were placed on hold because of concerns about response rates and bias. The researchers conducting this study were concerned that these events would affect the response rates for this study, but the high participation rate attests to the careful job performed by the call center to assure that an answered phone resulted in a completed survey.

**Table 6. Average National Disposition Data and Response Rates<sup>7</sup>**

Non-contacts	~49%
Ineligible	~13%
Initial refusal	~12%
Non-working/business	~11%
Answering machines	~10%
Qualified refusal/terminates/break offs	~3%
Language problems	~0.2%
Completed	~2%
Response rate (Initial refusals plus completes)	~14%

**Table 7. Florida Disposition Data and Response Rate**

Non-contacts	40.1%
Ineligible	-
Initial refusal	4.0%
Non-working/business	23.5%
Answering machines	15.9%
Qualified refusal/terminates/break offs	0.5%
Language problems	3.3%
Completed	12.7%
Total	100.0%
<b>Response Rate</b>	<b>76.0%</b>

## Actual vs. Weighted Sample

In survey research, it is important the sample represent the given population, in this case Florida adults age 18 and older. The Florida researchers compared the survey demographics to the 2000 Florida Census demographics and found some differences (Table 8). As is common in phone surveys, because in the U.S. women are more likely than men to answer the telephone, males were below Census 2000 levels for Florida, while women were above. Age was well distributed within predicted confidence levels; however, individuals in the 50 to 65-age category were slightly over census levels. Thus, the researchers weighted results of this study by both age and gender. (Earlier gambling studies in other states have only weighted by age, but Florida is a unique state in that it has large numbers of elderly who are disproportionately women.) Weighting by both age and gender brings Florida's data close to the 2000 census proportions as can be observed in Table 8.

The survey sample also had more Caucasians than the census would suggest, while the number of Hispanics was disproportionately smaller than reflected by the census (10 vs. 16%). There are some likely reasons for

<sup>7</sup> Backstrom, C., & Hursh-Cesar, G. (1986). *Survey Research* (2<sup>nd</sup> ed.). New York: John Wiley.



this, but the most probable is that while, compared to many other states, Florida has a large number of Hispanics who may not have identified themselves as Hispanic. This is even more likely because following the September 11, 2001 terrorism attacks, Americans were much more likely to say “American” when asked their race or ethnicity than prior to these events or simply to refuse to give an ethnicity or race response judging it non-patriotic. On the other hand, the self-reports of African Americans are close to the proportions that would be suggested by the census data, thereby indicating there may be other unexplored reasons for the differentials between the census proportions for Hispanics and those of this study.

**Table 8. Comparing the Demographics of the Actual and Weighted Sample (18 years of age and older)**

<b>Variable</b>	<b>Attribute</b>	<b>Actual Sample</b> (N=1,504)	<b>2000 Census<sup>8</sup></b>	<b>Weighted Sample</b> (N=1,504)
<b>Gender</b>	Male	41.6%	48.1%	47.6%
	Female	58.4	51.9	52.4
<b>Age</b>	18-29	15.7	19.5	18.9
	30-39	17.4	18.5	19.0
	40-49	18.1	18.4	18.7
	50-65	25.8	21.1	21.8
	Over 65	23.0	21.6	21.6
<b>Race/Ethnicity</b>	Caucasian	75.1	68.4	74.3
	African American	10.1	12.3	10.8
	Hispanic	9.3	16.1	9.4
	Native American	2.1	0.3	2.0
	Asian	1.0	1.6	1.1
	Other Race or Ethnicity	2.5	1.3	2.4
<b>Marital Status</b>	Married	52.1		51.5
	Widowed	10.6		9.6
	Divorced	14.6		14.0
	Separated/Other	2.2		2.1
	Never Married	20.6		22.8

## Challenges and Biases of Telephone Surveys

Potential limitations to a telephone survey include the possibility that only people with a telephone are included, that it is difficult to inquire about in-depth questions, to clarify responses and/or to collect open-ended data. The prevalence of answering machines used as call screening devices or caller I.D. also creates concerns for random sample integrity, a problem now faced by all survey researchers. Florida’s elderly population adds other challenges, as it is sometimes more difficult to get the confidence of an elderly person who answers the phone.

Telephone studies generally underestimate the percentage of the population that are at-risk, problem or pathological gamblers as these groups may be more likely to have their phone disconnected if they are deeply in debt, may be less likely to answer the phone to avoid debt collectors or the like, or be less likely to trust the interviewer or provide truthful responses to questions regarding concealing the extent of their gambling, financial indebtedness, illegal acts, etc. These points were further confirmed by the National Gambling Impact Study Commission, which found that “the actual prevalence rates may be significantly higher than those reported.” (NGISC, p. 4-9)

<sup>8</sup> Statistics were compiled from 2000 Florida Census Data. For data please see: [http://factfinder.census.gov/servlet/QTTable?ds\\_name=DEC\\_2000\\_SF1\\_U&geo\\_id=04000US12&qv\\_name=DEC\\_2000\\_SF1\\_U\\_QTP1](http://factfinder.census.gov/servlet/QTTable?ds_name=DEC_2000_SF1_U&geo_id=04000US12&qv_name=DEC_2000_SF1_U_QTP1) and [http://www.floridacensus.com/census/tables/fl\\_tab\\_1.xls](http://www.floridacensus.com/census/tables/fl_tab_1.xls)



Other disadvantages in conducting telephone surveys include sampling limitations, a higher non-response rate than with personal interviews, questionnaire and measurement constraints, limits on response alternatives, an absence of visual comprehension aids, interviewer's visual observations and difficulties with asking sensitive questions (Fowler, 2001).

Advantages include lower costs, random-digit dialing (RDD) sampling of populations, access to certain populations that are otherwise difficult to reach, shorter data collection periods, more direct interviewer administration, fewer staffing and management issues and a better response rate than mail surveys (Fowler, 2001).

## **Call Center**

The University of Florida contracted with Florida Research Institute, Inc. (FRI) to conduct the interviews. Based on the project criteria, FRI selected the interviewers, and trained and tested them to ensure they were well versed on project requirements.

The interview staff had half-day training sessions to ensure maximum effectiveness. The questionnaire was scripted on computer-assisted telephone interviewing (CATI) stations to meet all branch, skip pattern assignments and data entry needs. This training and scripting made the interviewing process more efficient for the interviewer and easier for the interviewee, thus increasing survey completion rates. Each successfully completed interview was automatically archived for future documentation and availability. Research project staff made regular visits to the call center to monitor the call processes.

## **Data Analysis and Reporting**

There has been little consistency in the categorization schemes used for demographic variables in past prevalence studies as is illustrated by Table 9. Thus, the findings for the Florida study used an equal-cell-size model because it makes it less likely that some cells will be smaller than others and affect the comparisons due to a difference in statistical power.

**Table 9. Classification in Past Prevalence Studies**

	<i>Washington (1998)</i>	<i>Oregon (1997)</i>	<i>National (1999)</i>	<i>New York ('96)</i>
<b>Age</b>	18-24 25-34 35-44 45-54 55-64 65+	18-20 21-29 30-54 55+	18-24 25-44 45-64 65+	18-20 21-29 30-54 55+
<b>Race/Ethnicity</b>	White Black Hispanic Other	White Non-white	White Black Hispanic Other	White Black Other
<b>Education</b>	Elementary/Some HS HS Grad Some College BA Degree Graduate Study	Less Than HS HS Grad	Less Than HS HS Grad Some College College Grad	Less Than HS HS and over
<b>Employment</b>	Working Full Time Working Part Time Keeping House Retired Student/Disabled/Other	Working Unemployed Other	Current Full Time Employment Part Time Employment Not Employed	Working Unemployed Other
<b>Income</b>	Up to \$15,000 \$15,001--\$25,000 \$25,001--\$35,000 \$35,001--\$50,000 \$50,001--\$75,000 \$75,001 and higher	Less than \$25,000 \$25,000 to \$50,000 \$50,000 more	Up to \$24,000 \$24,000--\$49,999 \$50,000--\$99,999 \$100,000 more	Less Than \$25,000 More than \$25,000
<b>Distance to gamble</b>	Not categorized	0-15 miles 15-60 miles 60 and more miles	0-50 miles 51-250 miles 250 +	0-15 miles 15 to 60 miles 60 or more
<b>Largest amount lost in a day</b>	Less than \$1 \$1 to \$9 \$10 to \$99 \$100 to \$999 \$1,000 or more	Less than \$1 to \$9 \$10 to \$99 \$100 to \$999 \$1,000 or more	Not categorized	<\$1 to \$9 \$10 to \$99 \$100 to \$999 \$1,000 or more
<b>Time spent for gambling</b>	Not categorized	Less than 1 to 2 hours 3 to 5 hours 6 or more hours	Not categorized	<1 to 2 hours 3 to 5 hours 6 or more hours

To achieve relatively equal-size cells, the Florida study collapses demographic data about age, race/ethnicity, education, income and marital status in the following ways. Age was collapsed into five groups (18 to 29, 30 to 39, 40 to 49, 50 to 65, and 66 and older). Race/ethnicity was collapsed into four groups: Caucasian, African American, Hispanic and Native American/Asian/Other as was also done in the Washington and the National studies.

Education was consolidated into five groups (high school degree or less, some college, college degree, masters degree or less, and Ph.D., Law or Advanced Degree) (See Table 10).

**Table 10. Years of Education or Highest Degree Earned<sup>9</sup>.**

	<b><i>Frequency</i></b>	<b><i>Percent</i></b>
High School Degree or Less	516	34.3%
Some College	603	40.1
College Degree	234	15.6
Masters Degree or Less	97	6.5
Ph.D., Law Degree, Advanced Degree	55	3.6
Total	1504	100.0

Income was collapsed to six groups (\$20,000 or less, over \$20,000 to \$40,000, over \$40,000 to \$60,000, over \$60,000 to \$80,000, over \$80,000 to \$120,000 and over \$120,000). (See Table 11 for this breakdown.)

**Table 11. Income Levels<sup>9</sup>**

<b><i>Income</i></b>	<b><i>Frequency</i></b>	<b><i>Percent</i></b>
\$20,000 and below	184	21.5%
Over \$20,000 to \$40,000	169	19.8
Over \$40,000 to \$60,000	167	19.5
Over \$60,000 to \$80,000	126	14.8
Over \$80,000 to \$120,000	112	13.1
Over \$120,000	97	11.3
Total	856	100.0
Refusal	648	
	1504	

<sup>9</sup> The weighting function applied to these data contributes to some of the Ns varying such that the summed numbers for a table may vary by 1 or 2 cases because of rounding. For example, in Table 10, while the frequency numbers add to 1505 due to weighting, the total reads 1504, as this is how many adults were surveyed. Similarly, in Table 11, the total frequency before refusals adds to 855 because of weighting, but there were actually 856 in this total.

# Findings

## Gambling in Florida

To determine the level of participation in gambling activities among Florida residents, respondents were asked if they had ever spent money on the following activities in the order printed below. The questions were prefaced with “People bet on many different things, including raffles, lottery tickets, horses, football and card games. I’m going to ask you about some of these things. Just say yes if you’ve ever spent any money on this activity within the time frame asked.” Respondents were then asked if they had “ever in your lifetime, bet or spent money on...” If the response was yes, this was followed by a question about “in the past year?” If the answer to that question was yes, respondents were asked “at least once a week?”

1. Raffles or charitable games	12. Keno
2. Lottery tickets, instant scratch tickets or Lotto	13. Arcade or video games for money
3. Bingo	14. Playing pool, bowling, basketball or other games of skill for money
4. Jai Alai	15. Trading or sports cards
5. Land-based casino	16. Sporting events (via pools, bookies, etc.)
6. Day cruise/floating casino	17. Policy, numbers or Bolita
7. Cards, dice or domino games (not at a casino)	18. Cock or dog fighting
8. Slot machines, poker machines or other gambling machines (not at a casino)	19. Mah Jongg
9. Pull tabs	20. Table games other than cards, dice, or dominos
10. Horses, dogs or other animals at the track, at Off-Track-Betting, or with a bookie	21. Day-trading in stock market
11. Internet/World Wide Web gambling	22. Other stocks or market trades

As indicated in Table 12, past year participation rates were the highest for:

1. lottery tickets, instant scratch tickets or Lotto,
2. raffles or charitable games,
3. land-based casinos, and
4. stocks or market trades.

Other popular forms of gambling in Florida in the past year, reported by more than five percent of respondents were:

1. bingo,
2. cards, dice, or dominos (not at a casino),
3. day trading,

4. horses, dogs, or other animals at the track, at Off-Track-Betting, or with a bookie,
5. playing pool, bowling, basketball or other games of skill for money,
6. sporting events (via pools, bookies, etc.), and
7. slot, poker, or other gaming machines (not at a casino).

For Floridians, the most popular lifetime gambling activities are the lottery, raffles, land-based casino gambling, and horses, dogs, or other animals at the track, at OTB, or with a bookie. From nearly one-third to almost three-quarters of respondents acknowledge wagering on these forms of gambling.

**Table 12. Gambling Participation-Lifetime and Past Year<sup>10</sup>**

<i><b>Types of Gambling</b></i>	<i><b>Lifetime Participation (N=1504)</b></i>	<i><b>Past Year Participation (N=1504)</b></i>
Lottery tickets, instant scratch tickets, or Lotto	72.7%	56.8%
Raffles or charitable games	63.0	22.8
Casinos-land based	32.0	11.6
Horses, dogs or other animals at the track, at Off-Track-Betting, or with a bookie	30.5	8.2
Day cruise/floating casino	27.7	8.4
Bingo	23.6	6.5
Other stocks or market trades	22.8	18.0
Cards, dice or dominos, not at a casino	19.6	9.6
Slot machines, poker machines, or other gaming machines not at a casino	18.2	5.5
Playing pool, bowling, basketball, or other games of skill for money	17.8	8.6
Sporting events via pools, bookies, etc.	16.1	7.7
Jai Alai	14.5	1.2
Day trading in stock market	7.8	5.1
Pull tabs	7.0	3.0
Arcade or video games	6.6	3.4
Table games other than cards, dice or dominos	5.3	2.0
Keno	4.9	1.6
Trading or sports cards	4.8	1.9
Cock or dog fighting	1.5	0.5
Internet/World Wide Web gambling	1.1	0.5
Policy, numbers or Bolita	1.0	0.3
Mah Jongg	0.6	0.3
Other	2.9	--

Of respondents participating in one or more of these activities, 32% visit a casino, 16% frequent a convenience store, 13% gamble at the supermarket and nearly 8% bet in their own homes.

Of those who visited any type of casino, 33% traveled to Las Vegas, 11% to Atlantic City, 9% to Biloxi and 8% to the Bahamas. The other 39% reported visiting Florida-based casinos and other locations.

Lifetime gambling participation by age groups is presented in Table 13. Respondents ages 18-29 wager on cards and pool, bowling, and other games of skill at rates higher than chance would dictate. A higher percentage of 30-39 year olds reported Internet gambling and a higher percentage of 40-49 year olds gamble on Pari-mutuels and OTB than would be expected by chance. Persons ages 50-65 had participation rates

<sup>10</sup> This table presents the actual phrase used in asking this question. For the sake of parsimony, the wording is shortened in the text, but the reader should be cautioned, for example, that "casino" refers to land-based casinos only and not casinos on day cruises or other cruises, while "cards" refers to cards, dice or dominos not at a casino.

higher than would be expected by chance for Casinos, Jai Alai, Lottery, Pari-mutuels and OTB, Sports and Stocks. For many gambling activities, the ages 66+ group participated at percentages lower than would be expected by chance, with the exception of Mah Jongg and Policy, Numbers and Bolita.

**Table 13. Lifetime Gambling Participation by Age Groups<sup>11</sup>**

<b>Gambling Participation (ever in lifetime)</b>	<b>18-29</b>	<b>30-39</b>	<b>40-49</b>	<b>50-65</b>	<b>66+</b>	<b>Total</b>
Bingo	14.0% <sup>a</sup>	27.2%	21.6%	27.4%	22.9%	23.2%
Cards, dice or dominos, not at a casino	26.2 <sup>b</sup>	22.0	16.3	18.9	11.6 <sup>a</sup>	18.4
Casino (land-based)	18.3 <sup>a</sup>	34.3	34.8	41.2 <sup>b</sup>	27.7	32.1
Day Cruise/floating casino	18.8 <sup>a</sup>	32.7	28.8	32.7	25.9	28.2
Day trading	8.7	8.7	7.6	7.4	4.5 <sup>a</sup>	7.2
Cock & dog fighting	.9	1.2	1.9	1.1	.9	1.2
Internet	1.7	2.4 <sup>b</sup>	.0	1.6	.0 <sup>a</sup>	1.1
Jai Alai	5.7 <sup>a</sup>	15.4	17.4	21.5 <sup>b</sup>	11.6	14.9
Keno	2.6	3.5	6.1	7.2	5.4	5.2
Lottery, Instant scratch, Lotto	62.9	76.4	76.9	81.6 <sup>b</sup>	64.6	73.0
Mah Jongg	.0	.0	.8	.5	1.8	.7
Horses, dogs or other animals at the track, at OTB, or with a bookie	15.7 <sup>a</sup>	27.2	38.3 <sup>b</sup>	39.9 <sup>b</sup>	30.1	31.3
Policy, Numbers, Bolita	.4	.4	1.1	.5	2.1	1.0
Pool, Bowling, Basketball, games of skill	30.1 <sup>b</sup>	18.9	16.3	14.9	6.3 <sup>a</sup>	16.2
Pull tabs	7.9	7.9	6.4	7.7	3.9 <sup>a</sup>	6.6
Raffles and charitable games	56.3	67.7	70.1	72.1	56.3 <sup>a</sup>	64.8
Slot machines, poker machines, gaming machines, not at a casino	16.2	19.7	14.8	18.1	20.2	18.0
Sporting events via pools, bookies, etc	14.4	18.9	15.9	19.1 <sup>b</sup>	8.3 <sup>a</sup>	15.3
Stock or market trading	14.8 <sup>a</sup>	26.0	25.4	29.8 <sup>b</sup>	19.0	23.5
Table games, other than cards, dice or dominos	6.6	6.3	5.7	5.9	2.1 <sup>a</sup>	5.1
Trading or sports cards	10.0 <sup>b</sup>	5.1	4.2	3.5	.6 <sup>a</sup>	4.2
Arcade or video games	16.6 <sup>b</sup>	4.7	7.2	3.2 <sup>a</sup>	1.5 <sup>a</sup>	5.9

Lifetime gambling participation by race/ethnicity is reported in Table 14. A higher percentage of Caucasians wagered at land-based Casinos, on Pari-mutuels and OTB, and on Sports than would be expected by chance. African-Americans had higher percentages of ever gambling on Cock/Dog fighting, bingo, and Numbers, Policy, Bolita and lower percentages wagered on Lottery, land-based Casinos, Pari-mutuels and OTB, Bingo and Sports than would be expected by chance. The percentage of Hispanics is lower than would be expected by chance for lifetime gambling at land-based Casinos, Pari-mutuels and OTB, and Sports, and higher on arcade and video games. For Native Americans, Asians, and Others, lifetime participation in Mah Jongg is higher, and for Pari-mutuels and OTB it is lower than chance would dictate.

<sup>11</sup> Numbers with superscripts in the cells have standardized residuals less than or greater than 2.0. This does not constitute a test of significance, as the Chi-square test is solely for the entire table, however, these values are likely to be different from the overall expected value for the cell. The superscript<sup>a</sup> marks cells where the actual observed values are likely to be less than chance expectation, while superscript<sup>b</sup> marks those cells where the observed values are likely to be higher than chance.

**Table 14. Type of Gambling by Respondent's Race or Ethnicity<sup>12</sup>**

	<i>p</i> <	<i>Caucasian</i>	<i>African-American</i>	<i>Hispanic</i>	<i>Native American, Asian, Other</i>	<i>Overall</i>
Lottery tickets	.001	74.7%	57.8% <sup>a</sup>	68.8%	57.5%	71.4%
Raffles, Charitable Games	.001	68.2	52.4	54.6	48.8	64.1
Land-based casinos	.001	39.0 <sup>b</sup>	20.0 <sup>a</sup>	20.3 <sup>a</sup>	26.6	34.7
Horse, Dogs, Track, OTB	.001	38.1 <sup>b</sup>	18.5 <sup>a</sup>	21.1 <sup>a</sup>	15.6 <sup>a</sup>	33.4
Day Cruises, Floating Casinos	.042	31.9	27.6	21.1	23.4	30.0
Stock Market	n.s.	28.3	11.8	19.7	18.8	25.3
Bingo	.001	25.5	12.1 <sup>a</sup>	17.7	16.3	22.8
Cards, Dice, Dominos	n.s.	21.7	16.4	20.2	21.9	21.0
Slot, Poker Machines	n.s.	20.5	11.8	20.3	22.2	20.5
Pool, Bowling, Basketball, Games of Skill	n.s.	18.1	16.2	25.0	18.8	18.6
Sports w/Pools, Bookies	.001	19.4 <sup>b</sup>	4.4 <sup>a</sup>	9.4 <sup>a</sup>	14.1	16.6
Jai Alai	n.s.	17.1	12.4	11.9	11.3	15.9
Day Trading	n.s.	8.3	5.1	7.8	14.1	8.2
Pull-tabs	n.s.	8.5	3.7	7.1	4.7	7.7
Arcade, Video Games	.001	5.8	8.8	16.4 <sup>b</sup>	7.8	7.2
Table Games Other Than Cards, Dice	n.s.	5.3	5.1	7.8	9.2	5.7
Keno	n.s.	6.2	3.0	4.8	.0	5.4
Trading Cards, Sports Cards	n.s.	5.2	2.2	7.0	6.3	5.1
Cock, Dog Fights	.009	.8	3.7 <sup>b</sup>	3.1	3.1	1.4
Internet	n.s.	1.2	2.2	.8	.0	1.2
Numbers, Policy, Bolita	.009	.7	3.7 <sup>b</sup>	.8	.0	1.0
Mah Jongg	.008	.8	.0	.0	3.2 <sup>b</sup>	.8
Some Other Type of Gambling	.001	2.6	1.2	3.6	1.3	2.4

## Gambling in the General Population in Florida

To determine gambling frequency, respondents were asked if they had gambled on any of the 22 activities mentioned above either weekly, within the past year and ever in their lifetime. If respondents reported they had never in their life gambled, they were classified as “non-gamblers.” “Infrequent gamblers” gambled sometime in their life on one of these activities, “past year gamblers” were persons gambling within the prior 12-month period on one or more of these activities and “weekly gamblers” were residents who wagered at least weekly on one or more gambling activities. See Table 15 for detailed information about gambling in the general population.

<sup>12</sup> Numbers with superscripts in the cells have standardized residuals less than or greater than 2.0. This does not constitute a test of significance, as the Chi-square test is solely for the entire table, however, these values are likely to be different from the overall expected value for the cell. The superscript<sup>a</sup> marks cells where the actual observed values are likely to be less than chance expectation, while superscript<sup>b</sup> marks those cells where the observed values are likely to be higher than chance.

Approximately 10% of Floridians report they have never gambled on any of these activities, another 20% gamble infrequently (at least sometime in their lifetime), 45% are past year gamblers on at least one activity and 25% gamble weekly on one or more activities.

Frequency of gambling varies by gender and age. Males are more likely than females to be weekly gamblers (30.5% vs. 20.2%). Females are more likely to be infrequent gamblers or non-gamblers. Florida residents, ages 50 to 65 are most likely to be weekly gamblers (32.3%) than persons within other age categories. It is important to note that nearly one-fifth to nearly one-third of respondents within each age group reported they gamble weekly on at least one activity.

Hispanics and Caucasians have the highest percentages of weekly (26.4% and 25.2%, respectively) and past year gamblers (43.6% and 47.8%, respectively). About 20% of African-Americans and Native American/Asian/Other, also reported weekly gambling and another 34% or more of African-Americans and Native American/Asian/Other gambled in the past year.

Gambling frequency (past year and weekly) appeared to be the highest among married persons and those divorced, separated or other. Widows and widowers were the least likely to report participation in the past year and/or on a weekly basis.<sup>13</sup>

Florida residents, with less than a high school diploma or less academic experience, and those who completed some college were most likely to report weekly gambling. However, the reverse was true for past year gamblers, where persons with a college, masters or advanced degree were most likely to fall within this category.

Full-time persons have the highest percentage of weekly gamblers. The highest percentage of past year gamblers were persons working part-time and the lowest percentage was for retirees.

Florida residents with incomes of \$80,000 to \$120,000 were most likely to be weekly gamblers while individuals with \$20,000 or less income were least likely to be last year gamblers and most likely to be infrequent gamblers.

---

<sup>13</sup> The FCCG reports this is contrary to its experience with this group and attribute it to the possible withholding of information and/or underreporting.



**Table 15. Demographics in the Florida Population for Frequency of Gambling<sup>14</sup>**

<i>(N=1504)</i>	<i>Non- Gamblers</i>	<i>Infrequent Gamblers</i>	<i>Past Year Gamblers</i>	<i>Weekly Gamblers</i>
<b>N =</b>	149	306	679	368
<b>%</b>	9.9%	20.4%	45.2%	24.5%
<b>Gender (p&lt; .001)</b>				
Male	6.9	16.6	46.0	30.5
Female	12.0	23.1	44.7	20.2
<b>Age (p&lt; .001)</b>				
18-29	11.0	21.6	48.2	19.1
30-39	6.7	18.5	51.1	23.7
40-49	10.0	15.6	48.7	25.7
50-65	5.6	12.7	49.4	32.3
65 +	14.3	31.8	32.2	21.7
<b>Race/Ethnicity (p&lt; .001)</b>				
Caucasian	8.1	19.0	47.8	25.2
African-American	17.6	27.3	35.2	20.0
Hispanic	9.3	20.7	43.6	26.4
Native American/Asian/Other	20.0	23.8	33.8	22.5
<b>Marital Status (p&lt; .001)</b>				
Married	8.7	17.9	47.4	26.0
Widowed	14.9	34.5	31.5	19.0
Divorced/Separated/other	8.4	16.4	49.6	25.6
Never Married	10.7	21.2	44.6	23.5
<b>Education (p&lt; .005)</b>				
HS or less	11.8	21.7	40.1	26.4
Some College	9.4	19.8	43.4	27.4
College Degree	7.8	18.2	57.1	16.9
Masters Degree or less	7.2	19.6	52.6	20.6
Ph.D. or other Advanced Degree	12.0	24.0	50.0	14.0
<b>Employment (p&lt; .001)</b>				
Working Full Time	7.7	15.0	49.3	28.1
Working Part Time	9.2	19.0	54.2	17.6
Homemaker	10.6	29.8	46.8	12.8
Retired	12.5	29.3	32.9	25.4
Student / Disabled /Unemployed/ Other	14.2	22.4	40.4	23.0
<b>Income (p&lt;.03)</b>				
\$20,000 or less	10.9	23.0	42.1	24.0
Over \$20,000 to \$40,000	9.4	17.6	45.9	27.1
Over \$40,000 to \$60,000	5.5	18.4	52.1	23.9
Over \$60,000 to \$80,000	8.6	14.8	45.3	31.3
Over \$80,000 to \$120,000	5.5	6.4	50.9	37.3
Over \$120,000	7.9	16.7	47.8	27.6

## At-Risk, Problem and Pathological Gambling in Florida

### Lifetime and Current Prevalence

Based on the more conservative DSM-IV criteria, 0.8 % of Florida adults are current problem or pathological gamblers and an additional 4.0% are currently at-risk of becoming a problem gambler. Lifetime

<sup>14</sup> Note: N sums to 1501, as there was missing data on three individuals. The N for each variable will change because not all data are available on all categories. What we report in this table is the situation where we had the largest number in the data set. On income, for example, the numbers will be much less because many respondents refuse to report income.

prevalence of at-risk, problem and pathological gambling and the percentages of Floridians who are non-gamblers or low-risk gamblers (no DSM-IV criteria) are presented in Table 16.

**Table 16. Scores on Lifetime and Current DSM-IV Items for Florida Study**

		<b><i>Lifetime</i></b>	<b><i>Past Year</i></b>
<b>Non-Gamblers</b>		9.9%	29.2%
<b>Low-Risk</b>	No DSM-IV criteria	82.2	66.0
<b>At-Risk</b>	Gamblers with 1-2 criteria	6.9	4.0
<b>Problem</b>	Gamblers with 3-4 criteria	0.5	0.5
<b>Pathological</b>	Gamblers with 5+ criteria	0.5	0.3

Table 17 reports prevalence based on the lifetime and current SOGS criteria for the Florida study. For the SOGS, 2.0% of Florida adults scored as current problem/probable pathological gamblers and 3.6% scored as lifetime problem/probable pathological gamblers. While the SOGS does not classify individuals as “at-risk”, 7.1% of Floridians currently have one or two problems related to gambling (SOGS items) and 12.1% have had one or two problems at some point in their lifetime. Nearly 44.5% of respondents reported they had not gambled or if they did they had spent less than a total of \$12 in the past year.

**Table 17. Scores on Lifetime and Current SOGS Items**

	<b><i># SOGS Items</i></b>	<b><i>Lifetime</i></b>	<b><i>Past Year</i></b>
<b>Non-Gamblers (or not spent more than \$12 in past year)</b>		<b>9.9%</b>	<b>44.5%</b>
<i>Gambled but had a zero SOGS score</i>	0	74.4%	46.4%
	1	7.8	4.3
	2	4.3	2.8
<b>Total Non-Problem Gamblers</b>		<b>86.5%</b>	<b>53.4%</b>
	3	1.8	1.1
	4	0.7	0.3
<b>Total Problem Gamblers</b>		<b>2.5%</b>	<b>1.4%</b>
	5	0.4	0.3
	6	0.3	0.2
	7	0.0	0.0
	8+	0.3	0.1
<b>Total Probable Pathological</b>		<b>1.1%</b>	<b>0.6%</b>
<b>Combined Problem/Probable Pathological</b>		<b>3.6%</b>	<b>2.0%</b>

Lifetime prevalence by demographics is presented in Table 18. Based on DSM-IV lifetime scores, men are more likely than women to be at-risk, problem or pathological gamblers. Women are more likely than men to have never gambled.

Floridians over 65 are most likely to have never gambled and are least likely to be at-risk gamblers. Those 50 to 65 are most likely to be low risk gamblers. Those 30 to 39-years old are most likely to be lifetime at-risk and problem gamblers.

Hispanics are most likely to be pathological gamblers, while Native Americans, Asians and Other are most likely to be lifetime problem gamblers. Caucasians are most likely to be at risk-gamblers and Caucasians and Hispanics are least likely to have never gambled.

**Table 18. DSM-IV Lifetime Prevalence by Demographics<sup>15</sup>**

		<b><i>Never gambled</i></b>	<b><i>Low-risk gambler</i></b>	<b><i>At-risk gambler</i></b>	<b><i>Problem gambler</i></b>	<b><i>Pathological gambler</i></b>
<b>Gender (p&lt; .001)</b>	Male	6.9%	80.7%	10.3%	1.1%	1.0%
	Female	12.0	83.2	4.4	0.1	0.2
<b>Age (p&lt; .04)</b>	18 – 29	11.0	80.5	7.8	0.4	0.4
	30 – 39	6.7	81.8	9.7	1.1	0.7
	40 – 49	10.0	81.8	6.7	0.7	0.7
	50 – 65	5.6	87.0	6.8	0.3	0.3
	Over 65	14.2	81.0	4.1	0.3	0.3
<b>Race/Ethnicity – race (p&lt; .001)</b>	Caucasian (Non Hispanic)	8.0	83.7	7.4	0.5	0.4
	African American	17.6	77.0	4.2	0.6	0.6
	Hispanic	9.2	83.0	5.7	0.0	2.1
	Native American, Asian, other	20.0	71.3	6.3	2.5	0.0
<b>Marital status (n.s.)</b>	Married	8.7	83.6	6.9	0.4	0.4
	Widowed	14.9	81.0	3.0	1.2	0.0
	Divorced, separated, other	8.3	83.8	6.7	0.4	0.8
	Never married	10.7	78.8	9.0	0.6	0.9
<b>Education (n.s.)</b>	High School Degree or Less	11.8	80.7	5.4	1.0	1.2
	Some college	9.4	83.2	6.9	0.2	0.3
	College Degree	7.8	83.6	7.8	0.9	0.0
	Masters degree or less	7.2	81.4	11.3	0.0	0.0
	Ph.D., law degree, advanced degree	12.0	82.0	6.0	0.0	0.0
<b>Employment (p&lt;.03)</b>	Working full time last week	7.7	83.2	7.7	0.9	0.5
	Part time last week	9.0	86.1	4.9	0.0	0.0
	Student, disabled, unemployed, other	14.0	77.4	6.5	0.0	2.2
	Homemakers	10.7	82.9	6.4	0.0	0.0
	Completely retired	12.5	80.8	6.4	0.4	0.0

Floridians who are students, disabled, unemployed, or others are most likely to be pathological gamblers and least likely to be low-risk gamblers and most likely to have never gambled. Persons who are working full time are most likely to be problem gamblers and least likely to have never gambled.

In the DSM-IV lifetime category, marital status and education were not statistically significant.

Table 19 details DSM-IV current (past year) prevalence by demographics. Based on current DSM-IV scores, men in Florida are more likely than women to be problem and pathological gamblers and are almost twice as likely to be at-risk gamblers. Persons between the ages of 18-29 are most likely to be classified as problem gamblers, whereas adults 30-39 and 40-49 are equally likely to be pathological gamblers. Floridians ages 18-29 and 30-39 are most likely to be at-risk gamblers, whereas persons 50-65 are least likely to be at-risk gamblers.

<sup>15</sup> The reader should note that unlike “traditional” models of table development, these tables sum to 100% across rather than down the cells. While ordinarily the researchers would have used the traditional approach to table presentation and presented the demographic variables as column rather than row variables for cross-classification purposes, these tables were constructed as was done in earlier state gambling prevalence studies to make comparisons with other studies easier for readers. The “correct” way to read the table then is to compare the numbers in a column. For example, it would be appropriate to compare those who are non-gamblers at different age groupings to see where differences occur by age groups.

African Americans and Native Americans/Asians/Other are least likely to be low-risk gamblers while Caucasians are most likely to be low-risk gamblers and least likely to have never gambled in the past year.

**Table 19. DSM-IV Past Year Prevalence by Demographics**

		<b><i>Never gambled</i></b>	<b><i>Low-risk gambler</i></b>	<b><i>At-risk gambler</i></b>	<b><i>Problem gambler</i></b>	<b><i>Pathological gambler</i></b>
<b>Gender (p&lt; .001)</b>	Male	22.0%	71.1%	5.1%	1.1%	0.6%
	Female	34.2	62.3	3.3	0.1	0.1
<b>Age (p&lt; .001)</b>	18 – 29	33.1	60.6	5.3	1.1	0.0
	30 – 39	24.2	67.7	6.7	0.7	0.7
	40 – 49	23.1	72.0	3.4	0.7	0.7
	50 – 65	17.6	78.9	2.8	0.3	0.3
	Over 65	44.8	52.4	2.9	0.0	0.0
<b>Race/Ethnicity – race (p&lt; .001)</b>	Caucasian (Non Hispanic)	25.8	69.3	4.0	0.5	0.3
	African American	44.2	52.1	2.4	0.6	0.6
	Hispanic	29.8	63.8	5.7	0.0	0.7
	Native American, Asian, other	41.3	52.5	5.0	1.3	0.0
<b>Marital status (p&lt; .001)</b>	Married	25.3	70.4	3.6	0.5	0.1
	Widowed	48.5	47.9	3.0	0.6	0.0
	Divorced, separated, other	23.8	71.3	3.8	0.4	0.8
	Never married	31.6	62.0	5.4	0.6	0.6
<b>Education (n.s.)</b>	High School Degree or Less	32.9	62.2	3.3	1.2	0.4
	Some college	27.6	67.3	4.8	0.0	0.3
	College Degree	25.9	70.7	3.0	0.4	0.0
	Masters degree or less	25.0	68.8	5.2	1.0	0.0
	Ph.D., law degree, advanced degree	34.0	62.0	4.0	0.0	0.0
<b>Employment (p&lt; .001.)</b>	Working full time last week	21.6	72.4	4.4	1.1	0.4
	Part time last week	25.9	72.0	2.1	0.0	0.0
	Student, disabled, unemployed, other	36.0	58.1	4.8	0.0	1.1
	Homemakers	39.2	56.0	4.3	0.0	0.0
	Retired	40.7	56.1	3.2	0.0	0.0

Divorced, separated, and others are most likely to be past year pathological gamblers while the proportion who are problem gamblers do not vary much by marital status. Those who never married are most likely to be at-risk gamblers. Married Floridians and those who are divorced, separated and other are most likely to be low-risk gamblers. Those who are widowed are most likely not to have gambled in the past year.

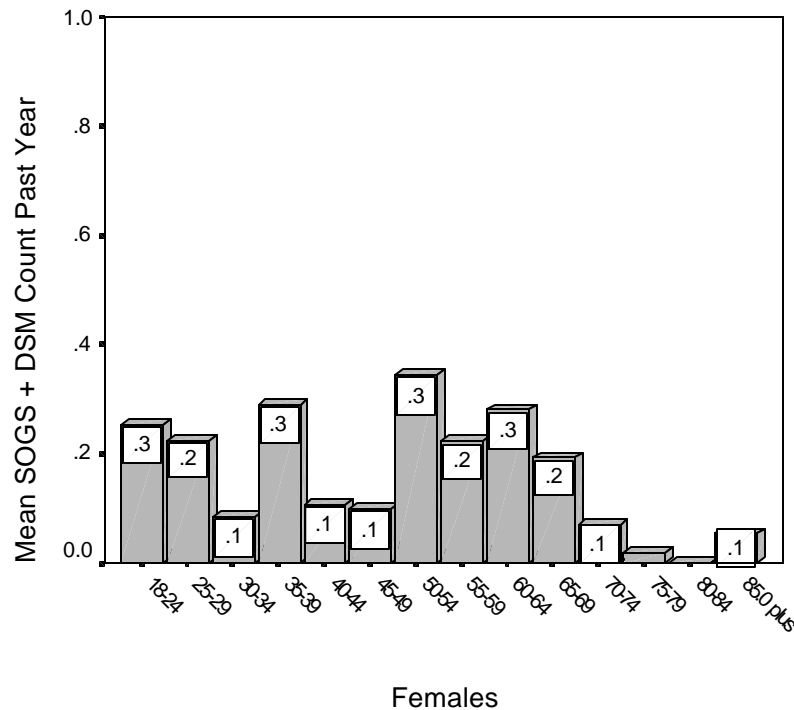
No statistically significant differences were found for current DSM-IV by education levels.

Floridians who are students, disabled, unemployed are most likely to be pathological gamblers. Those employed full time are most likely to be problem gamblers and least likely to have never gambled and are most likely to be low-risk gamblers as are part time workers. Homemakers and retired Floridians are least likely to be current at-risk gamblers. Those who are working full time are least likely not to have gambled in the past year.

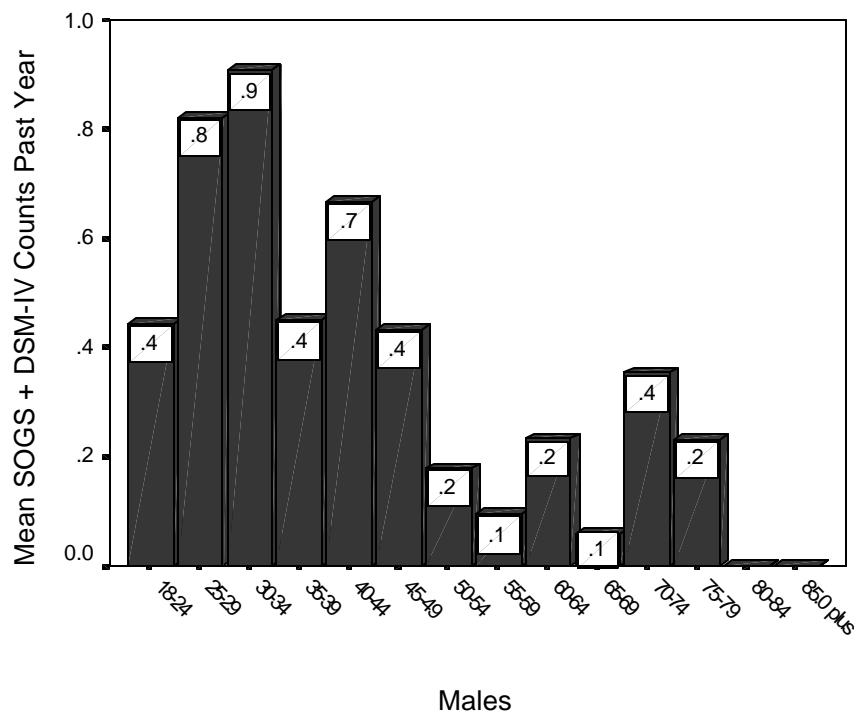
While the SOGS and DSM-IV finding are usually reported separately, notable differences in mean number of gambling problems (SOGS plus DSM-IV for past year) were found for age groupings of males and females. As

detailed in Figure 1, the mean number of problems is highest for females ages 50-54 and for males ages 30-34. Additionally, the mean number of problems for females and males is lowest for ages 80 and above (See Figure 2).

**Figure 1. Mean DSM-IV plus SOGS Score for Females by Age Grouping**



**Figure 2. Mean DSM-IV plus SOGS Score for Males by Age Grouping**



## Gambling Participation (based on DSM-IV lifetime scores)

Table 20 presents gambling participation proportions for the various DSM-IV lifetime categories.

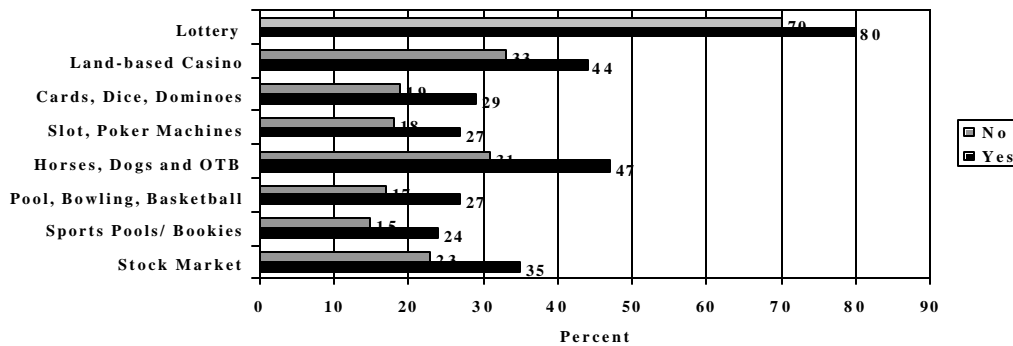
The differences here may be instructive. More than 15% of those who report gambling on policy/numbers/Bolita received a score of five or more on the DSM-IV lifetime rating. More than 15% of respondents who gamble on the cock or dog fighting received a DSM-IV score high enough to be placed in the problem gambling group. About 30% of those who gamble on Mah Jongg and 20% or more of those who bet on card games, keno, pool, pull-tabs, table games, trading cards, and video games received a DSM-IV lifetime score sufficient to put them in the at-risk group.

**Table 20. Gambling Participation (based on DSM-IV lifetime scores)**

<b>Gambling Activity</b>	<b>Significance</b>	<b>Low-risk</b>	<b>At-risk</b>	<b>Problem</b>	<b>Pathological</b>
	(p<				
Bingo	.001	82.6	15.3	1.2	0.9
Cards, dice or dominos, not at casinos	.001	77.0	20.8	1.8	0.4
Casino (land-based)	.001	84.0	14.1	1.1	0.9
Day cruise/floating casino	.001	82.7	15.1	1.2	1.0
Day trading	.001	79.3	16.2	3.6	0.9
Cock or dog fighting	.001	68.4	15.8	15.8	0.0
Horse, dog or other animals and OTB	.001	84.4	14.0	0.9	0.7
Internet	.02	76.5	17.6	5.9	0.0
Jai Alai	.001	82.7	15.4	0.9	0.9
Keno	.002	71.2	26.0	2.7	0.0
Lottery, scratch tickets, Lotto	.001	89.4	9.2	0.7	0.8
Mah Jongg	n.s.	70.0	30.0	0.0	0.0
Policy, numbers, Bolita	.001	69.2	7.7	7.7	15.4
Pool, bowling, basketball, games of skill	.001	72.9	23.5	2.0	1.6
Pull tabs	.001	70.3	25.7	2.0	2.0
Raffles or charitable games	.002	89.7	9.4	0.3	0.5
Slot machines, poker machines	.008	86.1	11.7	1.1	1.1
Sports (via pools or bookies)	.001	76.4	19.6	2.2	1.8
Stock or market trading	.001	84.3	13.4	1.5	0.9
Table games	.001	77.3	20.0	2.7	0.0
Trading or sports cards	.001	73.9	21.7	2.9	1.4
Arcade or video games	.001	72.9	21.9	3.1	2.1

Of those who play the lottery, about 4.5% of respondents playing instant tickets, 7.6% preferring Cash 3 and 4.2% of those buying Fantasy 5 are problem or pathological gamblers. About 30% that play Mega Money are at-risk gamblers. Interesting differences in gambling participation are noteworthy when respondents with military experience are compared to respondents who report no military experience. Male and female respondents who have military experience are likely to participate in more gambling activities. Those with military experience are also more likely to have gambled on certain types of activities (see Figure 3, all comparisons are statistically significant at  $p < .05$ ). However, some of these differences may be related to the larger proportion of men who have military experience.

**Figure 3. Gambling Participation by Military Experience**



### Reasons for Gambling—Compared with DSM-IV Current Year Scores

The reasons respondents furnished for gambling are informative (Table 21). Of those who indicated they gamble to impress people, 10% received scores high enough to be placed in the DSM-IV current pathological gambler group. This was also true for approximately 6% who advised “for a sense of power or control”, “to feel high” or “peer pressure”. Approximately 12% of those who asserted their reason for gambling was due to “peer pressure” and 10% who described they gambled to “impress people” were problem gamblers. Over 24% of respondents reported gambling “to feel high,” scored as at-risk gamblers as did around 20% of those who asserted they gambled “for personal services from gambling location staff”, “for excitement,” or “to socialize”. On the other hand, more than 80% of those who said they gamble “to be around people”, “to feel good”, “to win money” or “out of curiosity” scored as low risk gamblers.

**Table 21. Reasons for Gambling Compared with DSM-IV Past Year Scores**

	<i>Significance (p &lt;)</i>	<i>Low-risk gambler</i>	<i>At-risk gambler</i>	<i>Problem</i>	<i>Pathological</i>
<b>To impress people</b>	.001	75.0	5.0	10.0	10.0
<b>For a sense of power or control</b>	.001	68.8	16.7	8.3	6.3
<b>To feel high</b>	.001	63.6	24.2	6.1	6.1
<b>Peer pressure</b>	.001	70.6	11.8	11.8	5.9
<b>As a hobby</b>	.001	76.7	16.5	2.9	3.9
<b>For personal service from gambling location staff</b>	.006	75.4	19.7	1.6	3.3
<b>To escape loneliness or Boredom</b>	.001	73.2	18.6	5.2	3.1
<b>For excitement</b>	.001	75.9	19.4	2.6	2.1
<b>To socialize</b>	.002	78.4	19.0	0.9	1.7
<b>As a distraction</b>	.002	79.5	14.8	4.1	1.6
<b>To be around people</b>	.02	82.6	13.9	2.0	1.5
<b>To feel good</b>	.008	83.9	11.6	3.1	1.3
<b>To win money</b>	.001	84.3	12.7	2.0	1.0
<b>For entertainment or fun</b>	n.s.	86.4	11.5	1.2	0.9
<b>Out of curiosity</b>	.008	86.3	9.5	3.7	0.5
<b>To support worthy causes</b>	n.s.	88.8	9.7	1.0	0.5

## Reasons for Gambling by Age Groups

When examining differences for reasons for gambling by age group, only two significant differences can be reported - for excitement and to feel good. Gamblers ages 18-39 are significantly more likely to gamble for excitement than individuals ages 66 and over. Gamblers ages 66 and over are significantly more likely to gamble to feel good than gamblers ages 40 to 49.

## Expenditures

When asked what is the largest amount ever gambled in a single day, lifetime pathological gamblers gambled on the average over \$3,000, while problem gamblers expended over \$12,000, at-risk gamblers spent over \$1,400 and low-risk gamblers exhausted a little over \$125.

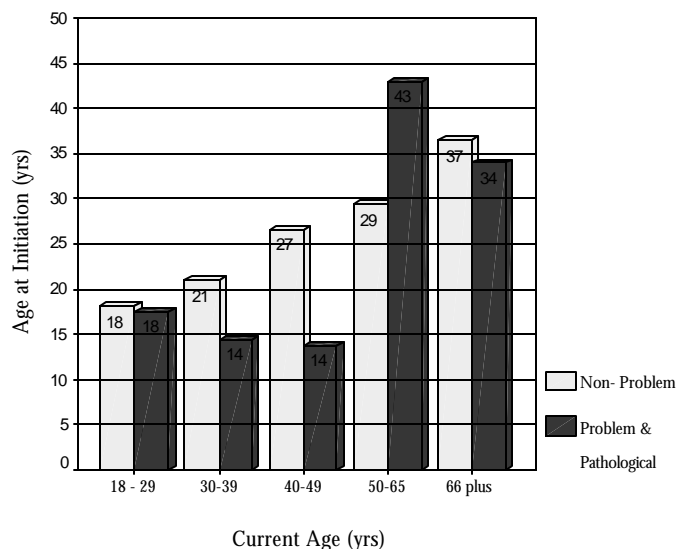
Further, when they gamble, the largest loss total for a single day ever for lifetime pathological gamblers averaged around \$5,500, while problem gamblers averaged at \$13,000, at-risk gamblers at around \$2,900 and low-risk gamblers at approximately \$200.

Of those who reported feeling nervous about the amount of money they were gambling, 57.2% were lifetime low-risk gamblers, while 35.5% were at-risk gamblers, 3.6% were problem gamblers, and 3.6% were pathological gamblers. Although more than half of low risk gamblers reported feeling nervous about the amount of money they were gambling, it is essential to highlight that at-risk, problem, and pathological gamblers reported feeling nervous at rates five to six times greater than the percentage of the sample represented by these groups.

## Age of Gambling Initiation and Preference

There is a statistically significant difference ( $p < .001$  for analysis of low risk, at-risk, and problem gamblers and a trend of  $p < .058$  for analysis of all four groups) in the average starting age for gambling by lifetime DSM-IV categories. The average starting age for pathological gamblers was 18.3 years old; whereas problem gamblers were age 18.1, at-risk gamblers were age 22.0 and low-risk gamblers were age 27.3. Notable differences exist between non-problem and problem gamblers when examining age of gambling initiation by age groups. Current problem and pathological gamblers in Florida within the age categories 50-65 and 66 plus appear to have started gambling later in life (34-43), in comparison to problem and pathological gamblers in other age groups who were introduced to gambling at ages 14-18. (see Figure 4).

**Figure 4. Current Age by Gambling Initiation & DSM-IV Lifetime Scores**





It appears that persons who started gambling via certain venues are most likely in their life to be pathological, problem or at-risk gamblers. As Table 22 details (for venues where more than 10 started gambling there), those who began gambling with playing poker machines (not at a casino), games of skill for money, some other gambling activity and card games not at a casino are most likely to be pathological or problem gamblers. Individuals who start betting on sports pools, games of skill for money, and some other gambling activity are most likely to be at-risk gamblers. Individuals who started gambling with lottery tickets are least likely to be at-risk and most likely to be low-risk gamblers.

**Table 22. Gambling Venue and Risk**

	<b><i>Low-risk</i></b>	<b><i>At-risk</i></b>	<b><i>Problem</i></b>	<b><i>Pathological</i></b>
Bingo	84.6%	15.4%	-	-
Casino	82.3%	16.7%	-	1.0%
Dog races (not at OTB)	77.8%	22.2%	-	-
Floating casino or day cruise	88.2%	11.8%	-	-
Games of skill for money	58.3%	33.3%	-	8.3%
Horse races (not at OTB)	82.6%	17.4%	-	-
Lottery tickets	90.5%	8.3%	0.6%	0.6%
Playing cards (not at a casino)	70.5%	25.3%	3.2%	1.1%
Playing poker machines (not at a casino)	69.2%	15.4%	7.7%	7.7%
Slot machines (not at a casino)	88.6%	11.4%	-	-
Sports pools	63.6%	36.4%	-	-
Some other gambling activity	62.5%	31.3%	6.3%	-

Respondents were asked with whom they usually gamble when they participate in their favorite type of gambling. For persons betting alone, 4.8% are problem or pathological gamblers. For those who bet with friends, 4.2% are problem or pathological gamblers. Individuals gambling with some other person or group are usually low-risk gamblers.

### **First Person Gambled With**

Of identified individuals with who gamblers started gambling with, low risk gamblers were most likely to start gambling with a spouse/partner (87.3%). Starting gambling with a brother had the highest rate of at-risk gamblers (46.7%) and problem/pathological gamblers (13.4%) although the overall number of individuals (15 of 531) who started gambling with a brother was small.

### **Occupation**

The highest percentage of current pathological gamblers can be found among people working as operatives (4.2%). Similarly, the largest proportion of problem gamblers is found among operators (12.5%) followed by those working as non-farming laborers (5.9%). At-risk gamblers are most likely found in managerial jobs (8.1%) followed by professional/technical workers (5.0%). There were no at-risk gamblers found in the operators and nonfarm laborers categories. Past-year non-gamblers are most likely in professional/technical jobs (27.5%), clerical (26.1%), and least likely in operators (8.3%).

### **Gambling, Alcohol and Drug Use, and Mental Health among Florida Adults**

Table 23 presents associations among gambling and alcohol, drug use and other mental health issues. Problem and pathological gamblers use drugs and alcohol more frequently than non-gamblers and low-risk gamblers. The number of days using tobacco among pathological and problem gamblers is higher than low and at-risk gamblers and three times higher than in non-gamblers.

The number of days of alcohol use among pathological gamblers is more than twice as often as in low and at-risk gamblers and about four times than non-gamblers with the average pathological gambler drinking about ten drinks per day when drinking.

At-risk gamblers use marijuana the most frequently (about 18 days a year), while problem gamblers use other drugs for non-medical reasons most frequently (about 21 days a year). At-risk gamblers report using crack or cocaine over 30 days more than any other group, while problem gamblers use tranquilizers about 60 days more often than persons falling into other categories.

At-risk and pathological gamblers are most likely to encounter difficulties with family members or friends because of drugs.

**Table 23. Alcohol and Drug Use**

<i>Days in the past year:</i>	<i>Past Year Non-gambler</i>	<i>Past Year Low-risk</i>	<i>Past Year At-risk</i>	<i>Past Year Problem</i>	<i>Past Year Pathological</i>
Days using tobacco?	53.2	97.7	69.29	159.0	146.4
Days drinking alcohol?	35.6	62.0	62.7	79.1	165.2
When drinking, how many drinks per day?	1.7	1.8	2.1	3.0	10.3
Days used marijuana or hashish?	8.2	10.9	18.1	3.0	6.4
Days used other drugs for non-medical reasons?	1.1	1.6	2.0	21.2	0.2
Days used crack or cocaine?	0.9	0.4	37.8	4.4	0.8
Days using other stimulants to feel the effects?	1.5	0.8	2.5	0.2	1.0
Days using tranquilizers to feel the effects?	0.9	0.3	0.1	60.2	2.3
Days gotten into difficulties with family or friends because of drugs?	0.5	0.2	14.8	0.2	3.0

Table 24 indicates there are important relationships between responses to questions about health, mental health, substance abuse and other social problems and DSM-IV scores.

Of those who said they had two or more weeks when they had lost interest in work or other things, 3.5% were lifetime problem or pathological gamblers and another 9.5% were at risk.

Of those who have at some point in time been arrested, 3.5% are lifetime problem or pathological gamblers and another 14.6% are at-risk.

Of those who have been treated for a drug problem, 8% are lifetime problem or pathological gamblers and another 14.0% are at risk.

**Table 24. Percentage of Lifetime and Past-Year Gambler Types by Health, Mental Health, Substance Abuse and Other Problems<sup>16</sup>**

<b>Problem (Percent represents only those who said yes to the following:)</b>	<b>Non-Gamblers</b>		<b>Low-Risk Gamblers</b>		<b>At-Risk Gamblers</b>		<b>Problem Gamblers</b>		<b>Pathological Gamblers</b>	
	Past Year	Life time	Past Year	Life time	Past Year	Life time	Past Year	Life time	Past Year	Life time
Had 2 weeks or longer when lost interest in things do/enjoy? (p< .001)	31.0%	11.1%	61.4%	75.9%	4.7%	9.5%	1.9%	1.3%	0.9%	2.2%
Had 2 weeks or longer when nearly everyday felt sad, empty or depressed? (LT p< .001)	27.0	8.5	67.3	79.7	4.4	8.9	0.3	0.6	1.0	2.2
Been arrested? (p< .001)	14.5	7.5	75.5	74.4	7.0	14.6	1.5	1.5	1.5	2.0
Been treated for a drug or alcohol problem? (LT p< .005) (PY n.s)	14.0	2.3	79.1	76.7	2.3	14.0	2.3	2.3	2.3	4.7

## Other Significant Associations

Table 25 below presents cross-classifications for religion by DSM-IV scores. Interestingly, of those who stated they do not adhere to any religion, 1.9% had scores that placed them in the past year DSM-IV category for problem or pathological gambling – the highest percentage of any group. For those with another religious affiliation beyond Protestant, Catholic or Jewish, 1.6% fell into the problem or pathological gambling classification. Of those who said they are Jewish, 10% were in the past year at-risk DSM-IV group, as did more than 5% of the no-religion group and 5% of some other religion. The highest rate of non-gamblers and low-risk gamblers were Protestants with 96% past year and 92.4% lifetime.

**Table 25. Gambling and Religion**

<b>Religion</b>	<b>Non-Gamblers</b>		<b>Low-Risk Gamblers</b>		<b>At-Risk Gamblers</b>		<b>Problem Gamblers</b>		<b>Pathological Gamblers</b>	
	Past Year	Lifetime	Past Year	Lifetime	Past Year	Lifetime	Past Year	Lifetime	Past Year	Lifetime
Protestant	33.6	10.7	62.4	81.7	3.2	5.5	0.4	0.5	0.4	0.6
Catholic	14.3	4.3	81.1	87.3	4.0	7.5	0.3	0.3	0.3	0.6
Jewish	28.0	18.4	62.0	71.4	10.0	10.2	0.0	0.0	0.0	0.0
Something Else	38.7	16.0	55.5	75.6	5.0	7.6	0.8	0.8	0.0	0.0
No Religion	29.9	9.0	63.0	79.4	5.2	10.3	1.3	0.6	0.6	0.6

<sup>16</sup> The reader is again reminded that unlike traditional cross-classification tables these sum across the cells to 100%. The above table is more complex, however, in that it sums to 100% across the rows for past year and for lifetime separately making values comparable. The correct way to read the table is to compare values within columns. The researchers ordinarily would have used the traditional model of table construction but replicated the model used in the earlier state studies to facilitate the FCCG and other readers' comparisons with data in those studies.

## Gender, Mental Health and Gambling

While men are more likely to be problem or pathological gamblers than women, treatment for gambling may require an understanding of how men and women view mental illness differently. It is also important to examine which gender is most likely to seek treatment for mental health difficulties, the type of problem that will provide an incentive for men to present for treatment and the type of service provider(s) used. Table 26 presents associations for gender with mental health questions.

Males in Florida are four times more likely to report having been arrested than females. They also report drinking two times as much, in frequency and consumption, than their female counterparts. In addition, males use marijuana or hashish nearly twice as many days as females.

Men are much more likely to have sought treatment or have been treated for an alcohol or drug problem. While the proportion of women who have ever been treated for an alcohol or drug problem is lower than the proportion of men, about equal proportions of men and women are likely to seek help from a 12-step self-help group. Males are less likely to visit counselors and more apt to seek assistance from a family doctor or substance abuse treatment program for alcohol or drug related problems than are females.<sup>17</sup>

Overall, female Floridians are more likely than males to seek mental health treatment. Regardless, when either gender does seek help, the most common reason is for depression followed by bipolar disorder and anxiety with women more likely reporting the latter two than men. Males, on the other hand, are more likely than females to have given the response schizophrenia as their reason for treatment. Males are almost twice as likely as females to have experienced an overnight stay for treatment.

Differences in how males and females discuss and view mental health are particularly important. When asked whether anyone in the immediate family has experienced or been treated for mental health problems, males are much more likely than females to report that a female relative has experienced or been treated and less likely than females to admit that a male relative has experienced or been treated for such. On the other hand, men are less likely than women to claim it was their mother or daughter and more likely to assert it was a sister. Females are less likely than males to acknowledge it was a father, but more likely to claim it was a son. Particularly notable is that 22% of males report that a wife has experienced or been treated for mental health problems, while only 4.7% of females report that a husband has experienced or been treated for same.

Understanding how differently males and females report incidences of physical, verbal, emotional, alcohol and substance abuse is helpful. More than twice as many females report physical abuse in the family and many more females than males report either verbal, emotional, alcohol and/or substance abuse in the family.

Problem and pathological gamblers (combined) use tobacco products, alcohol, cocaine, and tranquilizers for non-medical reasons significantly more often than non-problem gamblers. Problem and pathological gamblers use tobacco products or consume alcohol on almost twice as many days and consume more than three times as much alcohol when they are drinking than non-problem gamblers. Problem and pathological gamblers are most likely to have gotten into any difficulties, are almost 4 times as likely to have been arrested, more than 3 times as likely to have had two or more weeks of loss of interests and almost 3 times as likely to have had two or more weeks of depression. (See Table 27.)

---

<sup>17</sup> The number of male vs. female problem and pathological gamblers in this survey who reported seeking treatment for a gambling problem is not high enough to ascertain statistically significant gender differences.

**Table 26. Comparison of Types of Gamblers and Males and Females on Social and Mental Health Questions**

	<i>Males</i>	<i>Females</i>	<i>% of Sample</i>
Arrested ever	24.3%	5.9%	14.6%
Days drink in past year	79.5	37.3	57.2
Number of drinks when drink	2.2	1.4	1.9
Days used marijuana or hashish	14.5	7.8	10.9
Sought help for alcohol, marijuana or other drug use problems	5.2	3.7	4.5
Ever treated for an alcohol or drug problem	5.4	2.9	4.2
<b>Type of help most commonly sought</b>			
12 step group	28.6	27.8	28.3
Other Counselor	17.9	27.8	21.7
Family or friend	3.6	5.6	4.4
Family doctor	14.3	5.6	10.9
Substance treatment program	17.9	0.0	10.9
Psychiatrist/psychologist	7.1	5.6	6.5
Unhappy or very unhappy with personal life in past month	6.9	9.0	8.0
Often or sometimes anxious, worried or upset in past month	36.6	40.9	40.9
Health only fair or poor in past year	18.9	19.0	19.0
Gone for mental health treatment	5.5	9.7	7.7
Ever had two or more weeks of depression	19.8	22.3	21.1
Ever had two or more weeks of loss of interests	22.4	20.4	21.4
Every experienced or treated for mental health problem	5.5	9.7	7.7
Ever stayed overnight for treatment	44.7	24.1	31.7
Past year stayed overnight	33.3	25.0	29.3
For what: Depression	33.3	40.0	36.4
Anyone in family treated	13.6	16.9	15.3
<b>Female relative</b>	68.8	54.3	
Mother	21.3	24.8	23.3
Wife	22.0	-----	-----
Sister	22.3	19.4	20.6
Daughter	3.2	10.1	7.2
<b>Male relative</b>	23.4	29.8	
Father	8.5	6.2	7.2
Husband	-----	4.7	-----
Brother	10.6	10.1	10.3
Son	4.3	7.8	6.3
<b>For what:</b>			
Depression	43.4	42.5	42.9
Bipolar Disorder	10.8	13.3	12.3
Anxiety	8.4	10.8	9.9
Schizophrenia	9.6	6.7	7.9
Nerves	3.6	4.2	3.9
Alcoholism	1.2	4.2	3.0
Addiction	2.4	1.7	2.0
Physical abuse in family	4.9	11.5	8.3
Verbal or emotional abuse in family	16.8	23.3	20.2
Alcohol or substance abuse in family	21.5	27.8	24.8

**Table 27. Comparison of Gamblers on Social and Mental Health Questions**

	<b>DSM-IV Lifetime</b>	<b>Non- Problem Gamblers</b>	<b>Problem and Pathological</b>	<b>Overall</b>
Days used cigarettes, chewing tobacco or snuff	p < .001	87.6	161.9	84.0
Days drink in past year	p. < .05	56.0	99.1	54.7
Number of drinks when drink	p < .001	1.8	5.6	1.8
Days used crack or cocaine	p < .001	0.4	20.6	0.8
Days used tranquilizers such as Valium or Xanax for non-medical reasons, such as to the feel the effects.	p < .001	0.2	31.5	0.8
Arrested ever	p < .002	13.3%	50.0%	13.8%
Gotten into difficulties of any kind, including family criticism	p < .001	5.7%	30.0%	6.0%
Ever treated for an alcohol or drug problem	p < .03	4.2%	21.4%	4.4%
Ever had two or more weeks of depression	p < .003	21.1%	56.3%	21.5%
Ever had two or more weeks of loss of interests	p < .001	20.2%	68.8%	20.8%

## Comparing Non-Problem and Problem Gamblers in Florida Demographics

**Table 28. Demographics of Problem and Non-Problem Gamblers in Florida**

		<b>Lifetime Non- Problem</b>	<b>Lifetime Problem</b>	<b>Past Year Non-Problem</b>	<b>Past Year Problem</b>
<b>Gender</b>	Male	97.8%	2.2%	97.7%	2.3%
	Female	99.7	0.3	99.7	0.3
<b>Age</b>	18 – 29	98.8	1.2	98.4	1.6
	30 – 39	97.6	2.4	98.0	2.0
	40 – 49	98.3	1.7	98.1	1.9
	50 – 65	99.3	0.7	99.2	0.8
	Over 65	99.3	0.7	100.0	0.0
<b>Race/Ethnicity – race</b>	Caucasian (Non Hispanic)	99.1	0.9	99.0	1.0
	African American	98.5	1.5	97.8	2.2
	Hispanic	97.7	2.3	99.0	1.0
	Native American, Asian, other	96.9	3.1	97.9	2.1
<b>Marital status</b>	Married	99.1	0.9	99.1	0.9
	Widowed	98.6	1.4	98.8	1.2
	Divorced, separated, other	98.6	1.4	98.4	1.6
	Never married	98.1	1.9	98.3	1.7
<b>Education</b>	High School Degree or Less	97.6	2.4	97.4	2.6
	Some college	99.5	0.5	99.5	0.5
	College Degree	99.1	0.9	99.4	0.6
	Masters degree or less	100.0	0.0	98.6	1.4
	Ph.D., law degree, advanced degree	100.0	0.0	100.0	0.0
<b>Income</b>	\$20,000 or less	97.5	2.5	99.2	0.8
	Over \$20,000 to \$40,000	98.0	2.0	97.6	2.4
	Over \$40,000 to \$60,000	98.1	1.9	97.6	2.4
	Over \$60,000 to \$80,000	100.0	0.0	99.0	1.0
	Over \$80,000 to \$120,000	100.0	0.0	100.0	0.0
	Over \$120,000	97.7	2.3	98.6	1.4

Many of the earlier studies have reported the demographics for the group that collapses problem and pathological gamblers into one category (i.e. “problem gamblers”) for purposes of drawing comparisons with non-problem gamblers. When problem and pathological gambler are collapsed into “problem

gamblers” and compared to non-problem gamblers, males, persons between the ages 30-39, Native American, Asian, others, and Floridians who have a high school degree or less are the most likely to be in the lifetime “problem gamblers” groups). Past year “problem gamblers are most likely to be males and have a high school degree or less (see Table 28.

## Comparing Gamblers Nationally and Across States

### Demographics

Table 29 compares the demographics of the Florida survey with those of the 1999 national study.

One of the notable differences between Florida and the nation is the percentage of respondents who are in the 50+ age groupings, which directly reflect Florida’s large population of retirees. Nationally, about 33% of the population is 50 or older, while in Florida the percentage is substantially higher at 45%. These age differentials impacts education comparisons, in that the number of persons with college degrees in Florida is less than in the nation at large. Since Florida has a larger proportion of people over the age of 50, it also has a higher percentage of persons who are widowed. Another significant difference is that more than 50% of Floridians who gamble report traveling less than 50 miles to frequent a venue, versus one-fifth of respondents in the national study. Problem and pathological gamblers may be willing to travel greater distances than their non-problem gambler counterparts as reported in other studies, but differences in distance traveled for these gamblers did not reach statistical significance in this survey.

**Table 29. Comparing Key Characteristics with National Figures**

<i><b>Demographic Characteristics</b></i>	<i><b>1999 NORC (N=2,417)</b></i>	<i><b>Florida (N=1,540)</b></i>
<b>Gender</b>		
Female	51.9%	52.4%
Male	48.1	47.6
<b>Race/Ethnicity</b>		
Caucasian	71.5	74.3
African American	11.1	10.8
Hispanic	10.2	9.4
Other	7.3	5.5
<b>Age</b>		
18-29	22.5	18.9
30-39	24.0	19.0
40-49	20.2	18.7
50-64 (65 in Florida)	17.1	21.8
65+ (66 + in Florida)	16.2	21.6
<b>Education</b>		
HS or less	39.3	34.3
Some College	31.2	40.1
College Graduate	29.5	25.6
<b>Marital Status</b>		
Married	58.0	51.5
Widowed	10.0	16.1
Divorced, separated, other	24.7	22.8
Never married	7.4	9.6
<b>Employment</b>		
Current Full-time Employment	59.1	50.4
Part-Time Employment	11.4	9.4
Not Employed	29.5	30.2
<b>Distance traveled to gamble</b>		
0-50 miles	21.2	57.2
51-250 miles	64.1	5.5
251+ miles	14.7	37.3



Table 30 compares Florida DSM-IV scores with the scores in the national study.

**Table 30. Percentage Gambling Types Based on Lifetime and Past-Year DSM-IV Scores**

	<b>1999 NORC</b>		<b>Florida</b>	
	(N=2417)		(N=1504)	
	Lifetime	Past Year	Lifetime	Past Year
Non-gambler	14.4%	36.7%	9.9%	29.2%
Low-Risk	75.6	60.4	82.2	66.0
At-Risk	7.9	2.3	6.9	4.0
Problem	1.3	0.4	0.5	0.5
Pathological	0.8	0.1	0.5	0.3

In the national study 0.5% were problem or pathological gamblers in the past year, whereas in Florida 0.8% fell into these categories. The percentage of those who are at risk in Florida is also greater than in the national study (4.0% vs. 2.3%), while the proportion of non-gamblers is less in Florida than in the national study.<sup>18</sup>

Table 31 compares demographic statistics of types of gamblers for the Nation and Florida.

**Table 31. Comparison of National and Florida Lifetime and Past-Year Prevalence of Gambling Problems Among Demographic Groups**

<b>Demographic Characteristic</b>		<b>National Survey (%)</b>			<b>Florida Survey (%)</b>		
		<b>At-Risk</b>	<b>Problem</b>	<b>Path.</b>	<b>At-Risk</b>	<b>Problem</b>	<b>Path.</b>
		<i>Life/Year</i>	<i>Life/Year</i>	<i>Life/Year</i>	<i>Life/Year</i>	<i>Life/Year</i>	<i>Life/Year</i>
<b>Gender</b>							
	Male	9.6 / 3.2	1.6 / 0.4	0.9 / 0.1	10.3/5.1	1.1/1.1	1.0/0.6
	Female	6.3 / 1.6	1.0 / 0.4	0.7 / 0.2	4.4/3.3	0.1/0.1	0.2/0.1
<b>Race</b>							
	Caucasian	6.8 / 2.2	1.2 / 0.2	0.6 / 0.1	7.4/4.0	0.5/0.5	0.4/0.3
	African-American	8.1 / 2.9	2.3 / 1.2	1.9 / 0.0	4.2/2.4	0.6/0.6	0.6/0.6
	Hispanic	13.7 / 3.6	0.8 / 0.8	0.9 / 0.0	5.7/5.7	0.0/0.0	2.1/0.7
	Other	9.6 / 1.4	1.1 / 0.5	0.6 / 0.3	6.3/5.0	2.5/1.3	0.0/0.0
<b>Age</b>							
	18–29	10.3 / 4.3	1.9 / 0.8	1.2 / 0.1	7.8/5.3	0.4/1.1	0.4/0.0
	30–39	6.9 / 1.4	1.0 / 0.4	0.5 / 0.2	9.7/6.7	1.1/0.7	0.7/0.7
	40–49	9.2 / 2.3	1.5 / 0.5	0.9 / 0.3	6.7/3.4	0.7/0.7	0.7/0.7
	50–64 (65 in Florida)	5.3 / 2.3	1.7 / 0.0	1.1 / 0.0	6.8/2.8	0.3/0.3	0.3/0.3
	65+ (66+ in Florida)	6.9 / 1.3	0.2 / 0.2	0.1 / 0.0	4.1/2.9	0.3/0.0	0.3/0.0

<sup>18</sup> The differential among past year at-risk gamblers may be of concern because without some type of intervention and/or awareness effort in the State of Florida, persons who now fall in the at-risk category may shift to problem or pathological stages, creating a potential social problem in future years.

## Comparing Problem Gambling Across States

Table 32 compares gambling participation across states. Florida has a current participation level of approximately 71%, much higher than Mississippi, somewhat higher than Oregon and Louisiana, lower than Texas, New York and Montana, and about equal to Minnesota and Washington. Participation and prevalence rates may be impacted by age, whereas Florida has a larger elderly population and the 30 – 39 year old age group, which is notable in its gambling activities, represents 5% less of the total population in Florida than nationally.

**Table 32. Participation Across States**

STATE	MS	OR	LA	FL	MN	WA	MT	NY	TX
YEAR	1996	2000	1998	2001	1997	1998	1998	1996	2000
N=	1,014	1,500	1,800	1,504	2,400	1,501	1,227	1,829	7,015
Lifetime Participation	64.0%	80.0%	70.0%	90.1%	89.0%	89.0%	-	90.0%	-
Current Participation	49.0	61.0	62.0	70.8	73.0	74.0	78.0%	80.0	98.0%

When the comparison is made for the South Oaks Gambling screen scores in the following table, the proportion in Florida scoring as current problem gamblers is identical to the proportion reported in 2000 Oregon survey and slightly lower than the 1998 Washington survey. The proportion of Floridians scoring as current pathological gamblers is slightly higher than the Washington survey and slightly less than the Oregon and the 2000 Texas survey.

**Table 33. Prevalence Across States**

STATE	WA	FL	OR	TX	MT	NY	LA	MS
YEAR	1998	2001	2000	2000	1998	1996	1998	1996
N=	1,501	1,504	1,500	7,015	1,227	1,829	1,800	1,014
SOGS Lifetime Problem	3.7	2.5	2.7	Not reported	2.9	4.7	3.3	3.7
SOGS Lifetime Pathological	1.3	1.1	1.9	Not reported	2.8	2.6	2.5	3.1
SOGS Current Problem	1.8	1.4	1.4	2.2	2.0	2.2	2.3	2.8
SOGS Current Pathological	0.5	0.6	0.9	0.8	1.6	1.4	1.6	2.1

## Comparing the SOGS and the DSM-IV

### Background

Epidemiological research into the prevalence of problem gambling began in the 1980's, which coincided with the rapid growth of legal gambling. After pathological gambling was included in the DSM-III, researchers began to develop new tools and examine and expand existing screens to measure problem gambling. The SOGS was originally used as a screen for clinical populations (Lesieur & Blume, 1987), but was later used for population research (Volberg & Steadman, 1988). The SOGS had been used in multiple state prevalence studies and several international studies. Use continues, because it is a well established tool that can be compared to other studies.

Volberg (2001) writes:

[T]he *lifetime* South Oaks Gambling Screen is very good at detecting pathological gambling among those who currently experience the disorder. However, as expected, the screen identifies at-risk individuals at the expense of generating a substantial number of false positives. The *current* South Oaks Gambling Screen produces fewer false positives than the lifetime measure but more false negatives and thus provides a weaker screen for identifying pathological gamblers in the clinical sense.

There were several factors that led to dissatisfaction of using the SOGS in the general population (Volberg, 2001). These reasons included:

- ? Rapidly expanding legalized gambling led to more people experimenting with these activities and those seeking help became less homogeneous.
- ? Gambling problems increased in the early 1990's among women, younger adults, the middle-class and many of the SOGS criteria did not apply to these gamblers. There were also concerns about specific SOGS items among low-income and minority groups.
- ? As states began to fund education, prevention, referral and treatment programs, measurement of problem and pathological gambling became increasingly important.

The *Diagnostic and Statistical Manual*, fourth edition (DSM-IV) (American Psychiatric Association, 1994) set new criteria for the diagnosis of pathological gambling. The DSM-IV criteria for pathological gambling resembled other addictive disorders and is now primarily used by treatment professionals and researchers.

Nine adult screening instruments and three adolescents screens have become available since 1990, but Volberg (2001) writes:

Despite this proliferation, the psychometric properties of most of these new tools remain unexamined. Even more significantly, few of these new screens have been tested for their differential performance in clinical settings, population research, and program evaluation. Another concern is how to calibrate the performance of these new screens with the results of more than a decade of SOGS-based research.

## Development of the NORC DSM-IV (NODS)<sup>19</sup>

The National Opinion Research Center (NORC) conducted a National gambling prevalence study in 1998. The National Gambling Impact Study Commission, which guided the study, specified that the DSM-IV criteria be used to identify gambling problems in this survey. The researchers developed the NODS (the National Opinion Research Center DSM Screen for Gambling Problems), based on the DSM-IV criteria. The NODS is reported to be more restrictive in assessing problem gambling behaviors than the SOGS or any other screen based on the DSM-IV criteria (Volberg, 2001).

In the national survey, the NODS was only asked of those who reported ever losing \$100 or more in a single day of gambling and/or those who acknowledged that they had been behind at least \$100 across an entire year of gambling in their lives.

Like alcohol and drug addiction, pathological gambling is a chronic disorder. Once an individual has developed pathological gambling symptoms, s/he is vulnerable throughout his or her lifetime, even when not experiencing symptoms. Therefore, lifetime prevalence rates are particularly important. The lifetime NODS appears to be a more sensitive measure than the past year NODS, meaning that it is more likely to identify the proportion of those screened who are pathological gamblers.

## The Florida Survey

In the Florida survey, researchers used both the South Oaks Gambling Screen and the DSM-IV items. The South Oaks Gambling Screen was used in order to compare Florida data to other state studies and the DSM-IV criteria were used to enable comparisons with the 1999 national study.

In some state studies, 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

<sup>19</sup> This section is based on the final report to the National Gambling Impact Study Commission (1999).

Screen first. 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, Oregon elected to analyze the results as a single sample. (Volberg, 1997, retrieved from <http://www.gamblingaddiction.org/oregonreport/frame.htm> on December 5, 2001 at paragraph 5).

Because the Oregon study reported no differences for order of screen, Florida survey screens were administered in the same order during each interview with the SOGS items first followed by the DSM-IV items next.

The researchers for the 1997 Oregon Study did an in-depth analysis of reliability and validity for each screen. Their research focused on tests of the internal consistency component of reliability, item analysis (to determine how well different items discriminate between problem and non-problem gamblers), as well as, criterion validity (judgment against a respected method that judges the same variable), congruent validity (judgment against the same items in a respected method that judges the same variable), and construct validity (assessing similarities between items in the screen and behaviors not included in the screen, but that also are associated with problem gambling). In summary, the researchers reported that, “comparison of the South Oaks Gambling Screen and the DSM-IV Screen...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” (Volberg, 1997, <http://www.gamblingaddiction.org/oregonreport/frame.htm> on December 5, 2001).

### **Differences and Similarities between SOGS and DSM-IV Problem and Pathological Gamblers in the Florida Study**

Table 34 compares the Florida study for the SOGS and DSM-IV scores for both the past year and for the respondent's lifetime. The DSM-IV is clearly a more rigorous indicator in that it is much less likely to classify respondents as problem or pathological gamblers than is the SOGS index. There are only one demographic groupings where this is not the case, for 30 to 39-year-olds where the SOGS would classify only 1.1% as problem/pathological gamblers in the past year while the DSM-IV would classify 1.5% as problem/pathological gamblers.

Further research should explore why particular anomalies might occur.

**Table 34. Comparing SOGS and DSM-IV Problem and Pathological Gamblers**

		<b><i>SOGS (Past Year)</i></b>	<b><i>DSM-IV (Past Year)</i></b>	<b><i>SOGS (Lifetime)</i></b>	<b><i>DSM-IV (Lifetime)</i></b>
<b>Gender</b>					
	Male	2.7%	1.8%	5.9%	2.1%
	Female	1.5	0.2	1.8	0.2
<b>Age</b>					
	18-29	4.9	1.1	7.1	1.1
	30-39	1.1	1.5	3.3	2.2
	40-49	1.9	1.5	3.0	1.5
	50-65	2.2	0.6	4.0	0.6
	Over 65	0.3	0.0	1.0	0.6
<b>Race/ethnicity</b>					
	Caucasian	1.7	0.7	3.4	1.6
	African American	3.7	1.2	4.2	1.2
	Hispanic	2.8	0.7	4.3	2.1
	Native American, Asian, other	1.3	1.3	2.5	2.5
<b>Marital Status</b>		(n.s.)		(n.s.)	(n.s.)
	Married	2.0	0.7	3.2	0.8
	Widowed	1.2	0.6	1.3	1.2
	Divorced, Separated, Other	1.7	1.3	2.5	1.3
	Never Married	2.9	1.8	6.1	1.7
<b>Education</b>		(n.s.)	(n.s.)	(n.s.)	
	HS or Less	2.1	1.7	3.9	2.1
	Some College	1.7	0.3	3.1	0.5
	College	1.7	0.4	3.5	0.9
	Master's or less	5.2	1.0	5.2	0.0
	Advanced degree	0.0	0.0	0.0	0.0
<b>Employment</b>					
	Working full-time	2.8	1.3	5.0	1.5
	Part-time	0.7	0.0	1.4	0.0
	Student, disabled, unemployed, other	3.8	1.1	5.4	2.2
	Homemakers	0.0	0.0	0.7	0.0
	Retired	0.7	0.0	1.1	0.4

## Gambling Specific Treatment in Florida

The FCCG, in cooperation with the University of Florida conducted a statewide review of treatment professionals to determine whether Florida residents have adequate access to gambling-specific treatment. The impetus of this evaluation and the funding support received was in response to the FCCG's concern that persons suffering from gambling related difficulties within the State of Florida have few to no professional treatment options available statewide. This observation was made by the FCCG following more than a decade of providing prevention, education and outreach referral activities throughout Florida and operating the State's 24-hour Problem Gambling HelpLine.

The report, attached as Appendix C, presents the results of the first statewide survey in Florida to examine the availability of gambling specific treatment in the State. The main purpose of this review is to determine the presence and scope of gambling treatment supports available to Florida residents and to establish the willingness of providers to furnish such specialized assistance.

In an effort to identify the largest number of treatment providers in the State of Florida, 740 surveys were forwarded to psychiatrists, psychologists, other health care providers, mental health and behavioral health centers, substance abuse facilities, and rehabilitation and correction centers. Survey respondents were questioned about primary services offered; substance abuse, alcohol, gambling and other mental health

related supports; licensure status; staff qualifications; client base served; targeted counseling programs for women, adolescents, older adults, minorities and others; insurance and cost options; referrals to Gamblers Anonymous and Gam-Anon; and interest in providing gambling-specific treatment in the future.

It is also important to note that gambling problems are not generally taught to students in medical schools and first came to the forefront after most physicians in the State of Florida were in practice. Certification for counselors, remedial re-training for MDs, CMEs and so on are not widely available to improve access and ability to make an early diagnosis as part of an office or hospital visit.

The results of the survey reveal that the presence of gambling specific treatment statewide appears substantially below adequate levels, is supplied by professionals with varying levels of competency, does not seem to generally meet the age, gender and/or cultural needs of the populations experiencing difficulty and is not supported via state funding and/or widely through private, public or managed care insurance options.

# Summary

The costs of gambling problems can be high, not only for individuals but for families and communities. This report presents the results of the first statewide survey in Florida to evaluate adult gambling participation and the prevalence of problem and pathological gambling in the State. The main purpose of this study was to examine the prevalence of gambling related problems among adults, ages 18 and older, within the State of Florida. A secondary purpose was to identify the types of gambling causing the greatest difficulties for adults in the State. Additional objectives included comparing Florida's findings with national and other state data, determining availability and scope of gambling specific treatment statewide and identifying other areas of interest related to problem gambling. The information provided by this survey is crucial for refining services for adults who experience difficulties due to gambling.

This study shows while most Florida adults gamble without negative consequences, a sizeable number of individuals experience significant negative impacts related to their gambling. Based upon the SOGS criteria, it is estimated that approximately 500,000 Floridians have suffered from serious to severe gambling related difficulties at some point during the course of their lives and nearly 250,000 other residents are currently suffering from such gambling problems. It is important to note that these figures do not include the millions of residents adversely affected by the gamblers' activities.

Based upon the more conservative NORC DSM Screen for Gambling Problems, it is estimated that there are at least 100,000 Florida adults currently experiencing serious to severe gambling related difficulties. Like other state prevalence studies, the actual prevalence is probably higher than the numbers reported here, due to the limitations of telephone surveys and the tendency to underreport illegal activities. Unfortunately, these estimates also do not speak to the millions of Florida residents who are adversely affected by the gamblers' activities.

Demographic data indicates that men in Florida are almost twice as likely as women to be current at-risk gamblers and 6 to 10 times more likely than women to be problem and pathological gamblers by DSM-IV criteria. Floridians ages 30 to 39-year-olds and 40-49 year olds are most likely to be lifetime pathological gamblers. Floridians between ages 18-29 are most likely to be classified as problem gamblers. Floridians ages 18-29 and 30-39 are most likely to be at-risk gamblers, whereas persons 50-65 are least likely to be at-risk gamblers. Divorced, separated, and others are most likely to be past year pathological gamblers. Those who never married are most likely to be at-risk gamblers. In this survey, Caucasians were most likely in their life to have ever gambled and most likely to be current low-risk gamblers. Hispanics were most likely to be lifetime pathological gamblers and Native Americans, Asians and other minorities were most likely to be lifetime problem gamblers.

As has been demonstrated in other research on gambling, problem and/or pathological gamblers in Florida use tobacco, alcohol, and other drugs for non-medical reasons on a greater mean number of days than other groups while at-risk gamblers are most likely to use marijuana or cocaine. Pathological gamblers report drinking more than three times as much when they drink as those in the other groups. Lifetime problem and pathological gamblers (combined) use tobacco products, alcohol, cocaine, and tranquilizers for non-medical reasons significantly more often than non-problem gamblers. They also report depression, being arrested, being treated for a drug or alcohol problem, and describe difficulties with family members or friends significantly more often than non-problem gamblers.

For Floridians, the three most popular lifetime gambling activities are the lottery, raffles, and casino gambling. Problem and pathological gamblers report starting gambling at a much younger age than non-problem gamblers and were most likely to start gambling at such venues as playing poker (not at a casino), floating casino or day cruise, playing cards (not at a casino), and gambling at a casino. In terms of the at-risk population, a large proportion of those who gamble on table Mah Jongg (30%), pull-tabs or keno (about 26% each), pool (about



24%), trading cards or video games (about 22% each), and card games or table games (about 20% each) are in the DSM-IV lifetime at-risk category as about 30% who pay Mega Money (lottery).

Although Florida has lower rates of current combined problem/pathological gambling based on the SOGS compared to other states, Florida's combined rates of problem/pathological gambling (2.0%) is similar to rates found in recent comparably sized phone surveys done in Washington in 1998 (2.3%) and Oregon in 2000 (2.3%). Furthermore, the proportion in Florida scoring as current problem gamblers is identical to the proportion reported in the Oregon survey and slightly lower than the Washington survey. The proportion of Floridians scoring as current pathological gamblers is slightly higher than the Washington survey and slightly less than the Oregon and the 2000 Texas survey. Additionally, Florida's current rates of combined problem/pathological gambling (0.8%) is higher than that found in the national study (0.5%) by DSM-IV criteria. The at-risk population in Florida for problem/pathological gambling (4.0%) is about two times that found in the national study (2.3%). When comparing demographics and types of gambling in Florida and the nation, it is important to highlight that a higher proportion of Floridians are currently at-risk, problem, and pathological gamblers than found in the national study.

The examination of gambling specific treatment throughout Florida (Appendix C) reveals that despite the need for targeted supports statewide for age, gender and culturally diversified populations, there are currently inadequate levels of services available. Exacerbating the situation is that state funding has also not been readily available nor has insurance coverage by public, private and managed care providers for persons adversely affected by gambling.

This report is reflective of an essential first step in the State of Florida in acquiring the knowledge and insight associated with adult gambling and gambling problems. This data provides a benchmark for future assessments among this population. It also provides background and guidance for policymakers, service providers, gaming industry operators and others when addressing mutual issues of concern. Action must now be taken to ensure that Floridians are getting the message about gambling risks, prevention and treatment and that State government will institute measures to establish the funding necessary to broaden existing efforts and establish new provisions, including treatment for suffering persons. This is particularly essential given the State of Florida's high at-risk population. Again, if some type of intervention and/or awareness effort is not realized in the State of Florida in a realistic timeframe, persons falling within the at-risk category now are likely to shift to problem or pathological stages, creating a potential epidemic in future years.

# Recommendations

With the expansion of gambling opportunities and in light of the recent research on the epidemiology and neurobiology of problem and pathological gambling, it is essential that current services continue and expand. Equally important is that research remain ongoing, to examine multi-factorial causes, while preventive measures, early intervention and safe and effective treatments are developed and implemented.

In addition to securing ongoing and dedicated State funding for FCCG programs and services, provisions for treatment must be instituted across the State with government support. Education efforts to raise awareness should be encouraged and prevention curriculum for the public school system, such as that developed by the Florida Council for middle and high school students, should be considered.

There are also active roles that policy makers, researchers, treatment providers, educators, gambling operators and others can play in an effort to curtail an increase in prevalence of problem and compulsive gambling, especially among the existing at-risk population in the State. Additional highlights follow:

**Public Education, Prevention and Outreach**– Secure dedicated funding stream to continue FCCG programs and services, including its public awareness campaign, consisting of radio and televised public service announcements, billboards, docudramas and other outreach approaches. Prevention efforts, especially among the at-risk and underserved populations, must be culturally specific and appropriate. Similarly, education efforts must be packaged in a format that is presentable for dissemination in various environments, most notably where problem and compulsive gamblers frequent. Along these lines, the FCCG must broaden its efforts in working with gambling industry operators in the establishment and implementation of site-specific Responsible Gaming Programs to ensure problem gambling protocols, including a self-exclusionary component and a plan for widespread distribution of the HelpLine number.

**Treatment** – The FCCG HelpLine provides referral supports to persons in need of assistance for a gambling problem. Currently, state supports are not available and treatment provider options are few. The FCCG, in cooperation with state government must formalize a gambling counselor certification program to expand the number of treatment professionals equipped to provide diversified supports to individuals inflicted or adversely affected. Upon securing certification and state funding for treatment, provisions for outcome reporting must be established to best determine effective and innovative treatment modalities, including psychopharmacologic options.

**Insurance** – Obtain support of public, private and managed care providers to assure appropriate, consistent and comprehensive insurance coverage for pathological diagnoses in problem gamblers, as well as for persons adversely affected by gambling. Also, facilitate treatment for problem gambling for persons presenting with co-morbid psychiatric illnesses.

**Screening** – Screening tools should be utilized by addiction professionals, law enforcement and criminal justice authorities and mental health/human service organizations to ensure that clients of all ages are being assessed for gambling problems and provided with necessary treatment regardless of location or ability to pay.

**Research** – As this study is the first assessment of gambling participation and prevalence, it will be required to stand as the official baseline for the State. In keeping with this responsibility, the FCCG ought to pursue other research endeavors to further the field's understanding and long term utility to residents in need. Moreover, state government should consider the establishment of a funding mechanism for the conduct of replication studies that will be needed in the future to document the incidence and rate of change for

problem gambling and associated behaviors, in addition to a prevalence review. Target specific research, particularly among adolescents, college age students, minority groups, geriatric populations and individuals drawn to newer forms of gambling, including the Internet are also worthy of such state support. Furthermore, research funding must be secured to conduct a comprehensive examination of true treatment need among Florida residents, as well as requests for assistance, waiting lists and treatment availability following initial contact by persons seeking help.

Additional research is also needed in the areas of risk and protective factors for gambling prevention; review of the neurobiology and genetics of problem gambling, effective prevention and treatment modalities and economic impacts of problem and compulsive gambling on the State as a whole.

**Training-** Expand existing training opportunities to heighten awareness about problem gambling and provide preliminary screening techniques for professionals within the medical, mental health and addictions fields. Such training should be incorporated into the medical and nursing education programs of future primary care providers, including physician assistants and nurse practitioners, as well as students in various health professions. Along these lines, development of continuing education courses for current and potential providers are imperative to ensure an ongoing level of expertise and awareness among professionals servicing the problem gambling population.

**Ongoing Monitoring –State and Nationally** - In order to assess impact of newer forms of gambling such as day trading and online casinos, it is essential to monitor the marketplace for offerings and impacts. Ongoing efforts to monitor existing gambling organizations nationwide to maximize effectiveness and minimize negative impacts of various approaches should also be undertaken.

**Community Service** – The FCCG should continue working with community service members, such as police officers and others in furnishing supports to as broad a population as possible.

# References

- Allcock CC & Grace DM. (1988). Pathological gamblers are neither impulsive nor sensation seekers. *Australian and New Zealand Journal of Psychiatry*, 22, 307-311.
- American Psychiatric Association. (1994). *Diagnostic and Statistical Manual of the American Psychiatric Association*, Fourth Edition. Washington, DC.
- Backstrom, C & Hursh-Cesar G. (1986). *Survey Research* (2<sup>nd</sup> ed.). New York: John Wiley.
- Becona E, del Carmen Lorenzo M, & José Fuentes M. (1996). Pathological gambling and depression. *Psychological Reports*, 78, 635-640.
- Blum K, Sheridan PJ, Wood RC, Braverman ER, Chen TJ, Comings DE. (1995). Dopamine D2 receptor gene variants: association and linkage studies in impulsive-addictive-compulsive behaviour. *Pharmacogenetics*, 5(3):121-141.
- Breiter HC, Aharon I, Kahneman D, Dale A, Shizgal P. (2001). Functional imaging of neural responses to expectancy and experience of monetary gains and losses. *Neuron*,; 30(2):619-639.
- Center for Addiction Studies. (n.d.). Retrieved November 20, 2001 from <http://www.d.umn.edu/~jlaunde3/addiction.html>
- Cooper A. (1998). Sexuality and the internet: Surfing into the new millennium. *CyberPsychology & Behavior*, 1: 181-187.
- Comings DE, Gonzalez N, Wu S, Gade R, Muhleman D, Saucier G, Johnson P, Verde R, Rosenthal RJ, Lesieur HR, Ruge LJ, Miller WB & MacMurray JP (1999). Studies of the 48 bp repeat polymorphism of the DRD4 gene in impulsive, compulsive, addictive behaviors: Tourette syndrome, ADHD, pathological gambling, and substance abuse. *Am J Med Genet*;;88(4):358-368.
- Cox S, Lesieur H., Rosenthal R & Volberg R. (1997). *Problems and Pathological Gambling in America: The National Picture*. New York: National Council on Problem Gambling.
- Crockford DN & el-Guebaly N. (1998). Psychiatric comorbidity in pathological gambling: a critical review. *Can J Psychiatry*, 43(1):43-50.
- Cunningham-Williams R M, Cotter LB, Compton W & Spitznagel EL. (1998). "Taking chances: problem gamblers and mental health disorders: Results from the St. Louis Catchment Area (ECA) study," *American Journal of Public Health* 88 (7): 1093-1096.
- Dunstan R. (1997) *Gambling in California* Report to California State Library
- Florida Council on Compulsive Gambling (2001). Report on Senior Citizen Gamblers in Florida. HelpLine Calls-Ninth Year.
- Fowler FJ. (2001). *Survey Research Methods*. Series: Applied Social Research Methods (third edition). Thousand Oaks. Sage Publications, Inc.
- Gamblers Anonymous. (2001). Twenty Questions <http://www.gamblersanonymous.org/20questions.html>
- Gold MS, Teitelbaum S & Frost-Pineda K. (2001, July-August). Compulsive gambling. *Psychiatric Issues, House Calls*, 8-11.
- Graham JR & Lowenfeld BH (1986). Personality dimensions of the pathological gambler. *Journal of Gambling Behavior*, 2: 58-66.

- Griffiths M. (2001). Internet gambling: Preliminary results of the first U.K. prevalence study. *The Electronic Journal of Gambling Issues*, 5. Retrieved on November 20, 2001 from [http://www.camh.net/egambling/issue5/research/griffiths\\_article.html](http://www.camh.net/egambling/issue5/research/griffiths_article.html)
- Johnson EE, Hamer RM & Nora RM (1998). The Lie/Bet questionnaire for screening pathological gamblers: a follow-up study. *Psychol Rep*, 83(3 Pt 2):1219-1224
- Kim SW, Grant JE, Adson DE & Shin YC. (2001). Double-blind naltrexone and placebo comparison study in the treatment of pathological gambling. *Biol Psychiatry* 49(11):914-921
- Kallick M., Suits D, Dielman T & Hybels J. (1976). *Survey of American Gambling Attitudes and Behavior*. Research Report Series, Survey Research Center, Institute for Social Research. Ann Arbor: University of Michigan Press.
- Lesieur HR. (1994). Epidemiological surveys of pathological gambling: Critique and suggestions for modification. *Journal of Gambling Studies* 10 (4):385–398.
- Lesieur HR. (1998). Costs and treatment of pathological gambling. *Annals of the American Academy of Political and Social Science* (Gambling: Socioeconomic Impacts and Public Policy, J. H. Frey, special editor). March 1998.
- Lesieur HR, Blume SB & Zoppa RM. (1986). Alcoholism, drug abuse, and gambling. *Alcohol Clin Exp Res*, 10(1):33-38.
- Lesieur HR. & Blume SB. (1987). The South Oaks Gambling Screen (SOGS): A new instrument for the identification of pathological gamblers. *American Journal of Psychiatry*, 144(9): 1184-1188.
- Lesieur HR. & Rosenthal RJ. (1991). Pathological gambling: A review of the literature (prepared for the American Psychiatric Association Task Force on DSM–IV Committee on Disorders of Impulse Control Not Elsewhere Classified). *Journal of Gambling Studies* 7:5–40.
- Lesieur HR. & Rosenthal RJ. (1998). Analysis of Pathological Gambling. In. Widiger TA, Francis AJ, Pincus HA, Ross R, First MB, Davis W & Kline M(eds.). *DSM–IV Sourcebook*. Volume 4. Washington, D.C.: American Psychiatric Association, pp. 393–401.
- Letson, LM. (2001) Gambling Addiction Epidemic, presented by Paul Ashe at the Southern Coastal International Conference, 2001 Medical-Legal Conference on Addiction, February 28, 2001.
- McCormick B. (2000). Internet addiction: Hooked on the net. *American Medical New*, Retrieved October 29, 2001, from [http://www.ama-assn.org/sci-pubs/amnews/pick\\_00/hlsa0619.htm](http://www.ama-assn.org/sci-pubs/amnews/pick_00/hlsa0619.htm)
- McCormick RA, & Taber JI. (1988). Attributional style in pathological gamblers in treatment. *Journal of Abnormal psychology*, 97: 1003-1009.
- National Gambling Impact Study Commission (NGISC). (1999, August 3). Retrieved November 20, 2001 from <http://www.ngisc.gov/>
- North American Association of State and Provincial Lotteries. (n.d.). Retrieved November 20, 2001 from <http://www.naspl.org/>
- Petry NM. (2001). Substance abuse, pathological gambling, and impulsiveness. *Drug and alcohol Dependence*, 63, 29-38.
- Potenza MN, Kosten TR, Rounsaville BJ. (2001) Pathological gambling. *JAMA*. 286(2):141-144.
- Powell J, Hardoon K, Derevensky, JL, Gupta R. (1999). Gambling and risk-taking behavior among university students. *Substance Use and Misuse*, 34: 1167-1184.



- Shaffer HJ, Hall MN, & Vanderbilt J. (1999). Estimating the prevalence of disordered gambling behavior in the United States and Canada: a research synthesis. *American Journal of Public Health*; 89(9); 1369-1376.
- Shapira NA, Goldsmith TD, Keck PE, Khosla UM & McElroy SL. (2000). Psychiatric features of individuals with problematic internet use. *Journal of Affective Disorders*, 57, 267-272.
- Steel Z, & Blaszczynski A. (1998). Impulsivity, personality disorders and pathological gambling severity. *Addiction*, 93(6), 895-905.
- Stearns B. (2001) Equity Research, Consumer. Retrieved January 7, 2001 from [www.bearstearns.com](http://www.bearstearns.com).
- Taylor S, Nemecek B, Brod R, Williams P, Caldwell R. (1998). *The 1998 Montana Gambling Study*. Report to the Governor and the 56th Legislature by the Gambling Study Commission. Retrieved from [http://leg.state.mt.us/reports/reference/past\\_interim/gsc\\_ch6.pdf](http://leg.state.mt.us/reports/reference/past_interim/gsc_ch6.pdf) on December 9, 2001.
- Volberg RA. (1988). *Compulsive Gambling Treatment Program Evaluation: Final Report*. Report to the New York State Office of Mental Health.
- Volberg RA. (1992) *Gambling Involvement and Problem Gambling in Montana*. Report to the Montana Department of Corrections.
- Volberg RA. (1994). Assessing Problem and Pathological Gambling in the General Population: A Methodological Review. In *Gambling in Canada: The Bottom Line*, Colin S. Campbell (ed.). Vancouver: Simon Fraser University Press. Pp. 137-146.
- Volberg RA. (1996). *Gambling and Problem Gambling in New York: a 10-Year replication survey, 1986 to 1996*. Report to the New York Council on Problem Gambling.
- Volberg RA (1997a). *Gambling and Problem Gambling in Mississippi* <http://www.msgambler.org/> Report to the Mississippi Council on Compulsive Gambling
- Volberg RA. (1997b). *Gambling and Problem Gambling in Colorado*. Report to the Colorado Department of Revenue.
- Volberg RA. (1997c). *Gambling and Problem Gambling in Oregon*. Report to the Oregon Gambling Addiction Treatment Foundation.
- Volberg RA. (2001). *Changes in Gambling and Problem Gambling in Oregon: Results from a Replication Study, 1997 to 2000*. Report to the Oregon Gambling Addiction Treatment Foundation. Available at <http://www.gamblingaddiction.org/>
- Volberg RA. & Banks SM. (1990). "A Review of Two Measures of Pathological Gambling in the United States." *Journal of Gambling Behavior* 6(2): 153-163.
- Volberg RA & Dickerson MG(eds.). (1996). Special Issue on International Prevalence Studies and Related Treatment Developments. *Journal of Gambling Studies* Vol. 12, No. 2.
- Volberg RA. & Moore WL. (1999a). *Gambling and Problem Gambling in Washington State: A Replication Study, 1992-1998*. Report to Washington State Lottery.
- Volberg RA. & Moore WL. (1999b) *Gambling and Problem Gambling in Louisiana: A Replication Survey, 1995-1998*. Report to College of Administration, University of New Orleans
- Volberg RA. (2001). *Gambling and Problem Gambling in North Dakota: A Replication Study, 1992 to 2000*. Report to the North Dakota Office of the Governor.
- Wallis L. (1996) *Gambling in Texas: 1995 Surveys of Adult and Adolescent Gambling Behavior, Executive Summary*. Austin, TX: Texas Commission on Alcohol and Drug Abuse.

Westphal JR, Johnson LJ, Stodghill S, Stevens L (2000). Gambling in the South: Implications for Physicians. *Southern Medical Journal* 93(9): 850-858.

Yaffee RA. (1990). *Severity of Compulsive Gambling and Co-Addiction in Maryland, 1990*. Report to Maryland Task Force on Gambling Addiction.



# Appendix A

The following table presents the percentages of respondents residing in each county in Florida. There were no statistically significant differences by county or regions by types of gamblers.

Florida County	Percent (note: due to rounding, adds to over 100%)
<b>Alachua Total</b>	2.7
<b>Baker Total</b>	0.1
<b>Bay Total</b>	1.5
<b>Bradford Total</b>	0.2
<b>Brevard Total</b>	2.1
<b>Broward Total</b>	6.2
<b>Calhoun Total</b>	0.1
<b>Charlotte Total</b>	1.1
<b>Citrus Total</b>	1.1
<b>Clay Total</b>	0.8
<b>Collier Total</b>	2.1
<b>Columbia Total</b>	0.3
<b>Dade Total</b>	7.4
<b>DeSoto Total</b>	0.2
<b>Dixie Total</b>	0.1
<b>Duval Total</b>	5.4
<b>Escambia Total</b>	1.8
<b>Flagler Total</b>	0.6
<b>Franklin Total</b>	0.2
<b>Gadsden Total</b>	0.3
<b>Gilchrist Total</b>	0.4
<b>Glades Total</b>	0.1
<b>Gulf Total</b>	0.1
<b>Hamilton Total</b>	0.2
<b>Hardee Total</b>	0.2
<b>Hendry Total</b>	0.2
<b>Hernando Total</b>	1.3
<b>Highlands Total</b>	0.4
<b>Hillsborough Total</b>	6.4
<b>Holmes Total</b>	0.1
<b>Indian River Total</b>	0.5
<b>Jackson Total</b>	0.6

<b>Jefferson Total</b>	0.1
<b>Lake Total</b>	1.4
<b>Lee Total</b>	3.2
<b>Leon Total</b>	2
<b>Levy Total</b>	0.4
<b>Liberty Total</b>	0.1
<b>Manatee Total</b>	1.8
<b>Marion Total</b>	3.3
<b>Martin Total</b>	0.9
<b>Monroe Total</b>	0.5
<b>Nassau Total</b>	0.3
<b>Okaloosa Total</b>	1.4
<b>Okeechobee Total</b>	0.2
<b>Orange Total</b>	6.1
<b>Osceola Total</b>	1.5
<b>Palm Beach Total</b>	5
<b>Pasco Total</b>	2.1
<b>Pinellas Total</b>	6.3
<b>Polk Total</b>	4.1
<b>Putnam Total</b>	0.9
<b>Santa Rosa Total</b>	0.9
<b>Sarasota Total</b>	2.2
<b>Seminole Total</b>	1.9
<b>St. Johns Total</b>	0.4
<b>St. Lucie Total</b>	1
<b>Sumter Total</b>	0.3
<b>Suwannee Total</b>	0.2
<b>Taylor Total</b>	0.3
<b>Union Total</b>	0.2
<b>Volusia Total</b>	3.3
<b>Wakulla Total</b>	0.1
<b>Walton Total</b>	0.2
<b>Washington Total</b>	0.1
<b>Other Total</b>	3.3
<b>Refused Total</b>	5.5

# Appendix B

# Appendix C