

# **Gambling among Florida Middle and High School Students**

**A Report to the Florida Council on Compulsive Gambling**

Prepared by:

**Dr. Louis Lieberman**  
**Professor Emeritus, John Jay College of Criminal Justice (CUNY)**  
**Research Professor, USF Sarasota-Manatee**  
**Co-Director, Hispanic Addictions Studies Program**

**Dr. Mary Cuadrado**  
**Associate Professor of Criminology**  
**Director, Hispanic Addictions Studies Program**  
**University of South Florida Sarasota-Manatee**

**June 2006**

# Executive Summary

The analysis presented in this report is based upon a secondary analysis of data collected during the school year 2005, in a survey sponsored by the Florida Department of Children & Families (DCF). The DCF survey consists of a proportional representative sample of middle and high school students throughout the state of Florida.

It is chiefly concerned with assessing the prevalence of alcohol, tobacco and other drug (ATOD) use. The DCF study "...also measures the degree to which risk and protective factors exist in the community, family, school, and peer and individual environments."

Upon request of the Florida Council on Compulsive Gambling two (2) questions relevant to gambling among youth were added.

- \* Of the entire sample, 12.6% gambled once a month or more and 4.3% gambled once a week or more.
- \* In **all categories of drugs**, Gamblers were more likely than Non-Gamblers to have used that drug during the past 30 days.
- \* In all categories the Higher the gambling risk score, the greater the likelihood of using a drug.
- \* Not only were High Risk Gamblers more likely to use a specific drug than Low Risk Gamblers or Non-gamblers, they also used more different drugs than Lower Risk Gamblers or Non-gamblers.
- \* High Risk gamblers were four times as likely as non-gamblers to report that it would be very easy to get a gun if they want to (20.2% vs. 5.4%).
- \* Gamblers were nearly 6 times as likely to "Carry a Gun" at some time during the past year than were Non-gamblers.
- \* For each Antisocial Behavior, the higher the gambling risk score, the more likely to engage in that antisocial behavior.

- \* High Risk gamblers were four times as likely as non-gamblers to know 5 or more adult drug dealers (20.2% vs. 5.1%).
- \* High Risk gamblers were more than twice as likely to receive D's and F's than were non-gamblers (11.5% vs. 4.8%).
- \* High Risk gamblers were almost four times as likely as non-gamblers to skip school 6 or more days "DURING THE LAST FOUR WEEKS" (9.5% vs. 2.4%).
- \* High Risk gamblers were much more likely than Non-gamblers to have best friends who are considered to be juvenile delinquents.
- \* High Risk gamblers were much more likely than Non-gamblers to have best friends who are users of alcohol, tobacco and other drugs.
- \* High Risk gamblers were much more likely than Non-gamblers to have favorable attitudes toward such antisocial behaviors as taking a handgun to school, stealing, fighting and cutting school.
- \* High Risk gamblers were much more likely than Non-gamblers to have favorable attitudes toward the use of alcohol, tobacco and other drugs.
- \* High Risk gamblers were much more likely than Non-gamblers to be "sensation seekers".

In brief: gambling is a widespread fact of life among Middle and High School students in Florida. More than half of the students surveyed reported gambling during the last 12 months. Even assuming that recreational gambling is harmless, the data consistently show that there is a straight line correlation ranging from students who do not gamble, to those who may gamble very little, to those that are High Risk gamblers for all items analyzed. The High Risk gamblers are the most likely to use each of the drugs; to engage in each of the antisocial behaviors; to have trouble in school; to have more risk factors and to have less protective factors.

Clearly, the findings show that there is a large population of students who may benefit from preventive education programs on gambling. Indeed, there appears to be a considerable group of students who may already be in need of treatment or intensive intervention.

# Table of Contents

<b>PART I: Substance Abuse.....</b>	<b>2</b>
Sample.....	2
Sample Demographics (Before Weights applied).....	2
Demographics: Gamblers vs. Non-Gamblers .....	3
Number of Times Gambled in Past Year (Recoded) .....	5
Sample Demographics of Gamblers and Non-gamblers.....	5
Creation Of Gambling Type Index .....	7
ATOD Use .....	9
Gambling Risk and Drug Use .....	11
Antisocial Behaviors .....	14
<b>PART II: Risk and Protective Factors.....</b>	<b>17</b>
Construction Of Protective Risk Factors .....	18
Comparison of the Four Domains.....	22
Comparison of Strongest and Weakest Correlations .....	23
Analysis of Factors Compared with Gambling Risk Outcome.....	24
Community Domain.....	25
<i>Laws and Norms Favorable to Drug Use .....</i>	<i>25</i>
<i>Perceived Availability of Firearms .....</i>	<i>25</i>
Family Domain .....	26
<i>Family History of Antisocial Behavior .....</i>	<i>26</i>
<i>Parental Attitudes Favorable toward Antisocial Behavior .....</i>	<i>27</i>
<i>Poor Family Management .....</i>	<i>28</i>
School Domain.....	28
<i>Poor Academic Performance .....</i>	<i>28</i>

<i>Low School Commitment</i> .....	29
Peer and Individual Domain .....	30
<i>Social Skills</i> .....	30
<i>Belief in the Moral Order</i> .....	32
<i>Rebelliousness</i> .....	33
<i>Friends' Delinquent Behavior</i> .....	34
<i>Friends' Use of Drugs</i> .....	35
<i>Favorable Attitudes toward Antisocial Behavior</i> .....	35
<i>Favorable Attitudes toward ATOD Use</i> .....	36
<i>Sensation Seeking</i> .....	37
<i>Early Initiation of Drug Use</i> .....	37
<b>Conclusions</b> .....	<b>39</b>
<b>Appendix A: Discriminant Function Analysis</b> .....	<b>41</b>
<b>Appendix B: References</b> .....	<b>44</b>

# **GAMBLING AND SUBSTANCE ABUSE AMONG FLORIDA YOUTH**

## **A Report to the Florida Council on Compulsive Gambling**

**Dr. Louis Lieberman  
Dr. Mary Cuadrado**

**June, 2006**

The analysis presented in this report is based upon a secondary analysis of data collected in a survey sponsored by the Florida Department of Children & Families (DCF). The DCF survey consists of a representative sample of middle and high school students throughout the state of Florida. Based on this survey, the DCF issued a State Report titled *2005 Florida Youth Substance Abuse Survey (2005 FYSAS Report)*. It is chiefly concerned with assessing the prevalence of alcohol, tobacco and other drug (ATOD) use. The DCF study "...also measures the degree to which risk and protective factors exist in the community, family, school, and peer and individual environments." (*2005 FYSAS Report, p. 1*) Their data is analyzed in a manner so that they may compare school class percentile scores with national norms collected by the *Communities That Care<sup>®</sup> Youth Survey*.

Upon request of the Florida Council on Compulsive Gambling two (2) questions relevant to gambling among youth were added. These were: "How many times during the past year (12 months) have you made a bet of any kind (with money or other personal items)?" and "Has your betting ever caused arguments between you and friends, family members or others?"

# PART I

## Substance Abuse

The first part of this report is based on an analysis of the ATOD questions as they relate to the 2 questions concerning gambling. In effect, this report will be analyzed as a descriptive study comparing gambling youths to non-gambling youths on a variety of dimensions. Part II will examine the risk factors and how they relate to the youth who gamble.

### Sample

The sampling method used for the DCF study was a proportional representative sample with proportionality based on the number of students in a school. Within each school, "...survey coordinators were instructed on how to randomly select classrooms to fulfill the survey quota for each school." (2005 FYSAS Report, p. 2) To more accurately reflect the state as a whole, weights were applied during the analysis so that "(t)his creates a sample that proportionately matches student enrollments across all surveyed grades." (2005 FYSAS Report, p. 2) This report continues that convention of using the weighted sample in our analysis. After weeding out and deleting invalid questionnaires, the final number of records was 8,501.

### Sample Demographics (Before Weights applied)

- \* More than half of the sample (51.1%) is female.
- \* Ages ranged from 10 to over 19 with a mean age of 14.6 and a median of 15.
- \* The largest ethnic group is White (38.9%), followed by Latino (22.8%) and African American (19.1%). Nearly 30 percent (29.4%) reported that their fathers had a college degree or beyond as did 40.9 percent reporting that for their mothers.

## Demographics: Gamblers vs. Non-Gamblers

The two gambling questions that were used in the DCF study reflect the two main dimensions of the definition of problem or potential problem gambling: intensity and consequences. Limitations on the addition of only 2 gambling questions to the DCF study necessitated using those items that have shown productivity in past research. These were: number of times gambled in a specified time period and arguments with family or friends about gambling. This latter variable is often an indicator of the progression of problems to the point where the gambler's social world has become cognizant and concerned over his or her gambling. The frequencies of these two variables are presented in Tables 1 and 2.

**Table 1**

### How Many Times Gambled in the Past Year?

<b># of Times</b>	<b>N</b>	<b>%</b>
None	3701	45.3
1-2	2263	27.7
3-10	1172	14.4
About once a month	418	5.1
About once a week	264	3.2
More than once a week	350	4.3
Total	8170	100.0

Missing cases =331

**Table 2****Has your Betting Caused Any Problems?**

	N	%
I have never made a bet	3086	40.9
No	3333	44.2
Yes	1123	14.9
Total	7542	100.0

Note: Among Gamblers Only, Yes = 25.2%.

Missing cases=959.

- \* Of the entire sample, 12.6% gambled once a month or more and 4.3% gambled once a week or more.
- \* In Table 2 we see that 40.9% had never bet, 44.2% of the entire sample had bet at some time in the past but had not had arguments due to gambling, while 14.9% of the entire sample had arguments with family or friends due to gambling. Among Gamblers only, the percentage of those having arguments rises to 25.2%.

## Number of Times Gambled in Past Year (Recoded)

For purposes of ease of presentation and analysis, the categories of the item # of Times Gambled were grouped into three categories: Non-Gambler, Casual (Less than Monthly) and Frequent (Monthly or more), resulting in a distribution of:

- \* Non-gamblers were 45.3% of the entire sample.
- \* Casual gamblers constituted 42.1% of the entire sample.
- \* And, 12.6 % of the entire sample were classified as Frequent Gamblers, i.e., gambled once a month or more during the past year.

## Sample Demographics of Gamblers and Non-gamblers

In Chart 1 we present the demographics, for the entire sample, of those who gamble compared to those who have not during the past year.

**Chart 1**

<b>Demographic Characteristics of Gamblers vs. Non-Gamblers</b>	
<b>GENDER</b>	<b>Female</b> 45%/55% (N=4175) <b>Male</b> 68%/32% (N=3605)
<b>ETHNICITY</b>	<b>White</b> 56%/44% (N=3212)
	<b>Hispanic</b> 53%/47% (N=1811)
	<b>African American</b> 60%/40% (N=1500)
	<b>All Other</b> 53%/47% (N=1431)
<b>AGE (mean)</b>	<b>Gambler</b> 14.68
	<b>Non-gambler</b> 14.59
	(t = -2.15, df=8140, p < .05)

- \* Forty five percent of the females had gambled during the past year compared to 68% of the males.

- \* African Americans were most likely, among the different ethnic groups, to have gambled (60%).
- \* Gamblers were likely to be older than non-gamblers.

In Table 3 these same sample demographics are presented for to compare those who gambled more frequently to the casual gambler.

**Table 3**  
**Demographics by Gambling Frequency (past year)**

	<b>Non- Gambler</b> (N=3701) %	<b>Casual</b> (1-10 x per year) (N=3436) %	<b>Frequent</b> (Monthly+) (N=1033) %
<b>Gender</b>			
Female	56	38	6
Male	33	47	20
<b>Ethnicity</b>			
White	45	42	13
Hispanic	48	41	11
African American	41	44	15
Other	48	40	12
<b>Age</b> (F=12.68, df=8139, p < .001)	14.59	14.61	14.93

- \* Males were over three times as likely to be frequent gamblers than females (20% vs. 6%).
- \* Blacks were most likely to be frequent gamblers than other ethnic groups but not by much.
- \* The mean age for the more frequent gamblers was 14.93 compared to 14.59 for the non-gamblers.

## Creation Of Gambling Type Index

When examining the two variables of gambling during the past year and arguments caused by gambling, a decision was made by us to combine these into a single indicator to determine if the combined discriminating power was greater than each separately. In analyzing the resulting property space of these two variables simultaneously, contradictions and anomalies appeared in the data for several cells. Some respondents (66) cited that they had never made a bet but contradicted themselves by also checking one of the questionnaire responses indicating the frequency of their gambling during the past year. (See Table 4)

**Table 4**  
**Gamble Frequency During Past Year by Arguments**

	<b>No betting during the past year</b>	<b>Casual (1-10 times)</b>	<b>Frequent (Monthly+)</b>
<b>Never Bet</b>	Non Gambler 3013 82% Rank = 0	Contradictions 52 2%	Contradictions 14 1%
<b>Bet: No arguments</b>	Anomalies 522 14%	Low Risk 2712 78% Rank = 1	Medium Risk 609 59% Rank = 2
<b>Bet: Arguments</b>	Anomalies 140 4%	Medium Risk 701 20% Rank = 2	High Risk 418 40% Rank = 3

Not knowing which response was correct in these 66 cases, they were dropped from the subsequent analyses. Another anomaly concerned 140 respondents who cited that they did not make a bet during the past year but also cited that their betting has caused arguments and 522 who cited that they had not bet during the year and had also cited that their betting had not caused arguments. (See Table 4)

Since the time period for the arguments question was not specified, it is conceivable that the respondent's time frame of reference might be earlier than the last 12 months, but since they had not bet in the specified time period, they could not be analyzed in the same manner. However, the intriguing possibility exists that these 662 youth are respondents who had gambled in the period earlier than the last year, but has ceased due to arguments and concern of others or some other unspecified reason, Thus, they present the possibility of a sub-group of "recovering youth gamblers." Since this is merely speculative, we need to drop them from this presentation but may consider a separate analysis at some future time.

The cells were assigned to separate ordinal ranking categories, ranging from 0 to 3 based on judgments of the degree of involvement with gambling as indicated by the two questions combined. This is presented in Table 5.

**Table 5**  
**Gambling Risk Index**

	<b>N</b>	<b>%</b>
<b>Non-gambler</b>	3113	40
<b>Low Risk</b>	2712	36
<b>Medium Risk</b>	1309	18
<b>High Risk</b>	418	6
<b>Total</b>	7452	100%

Missing cases=1049

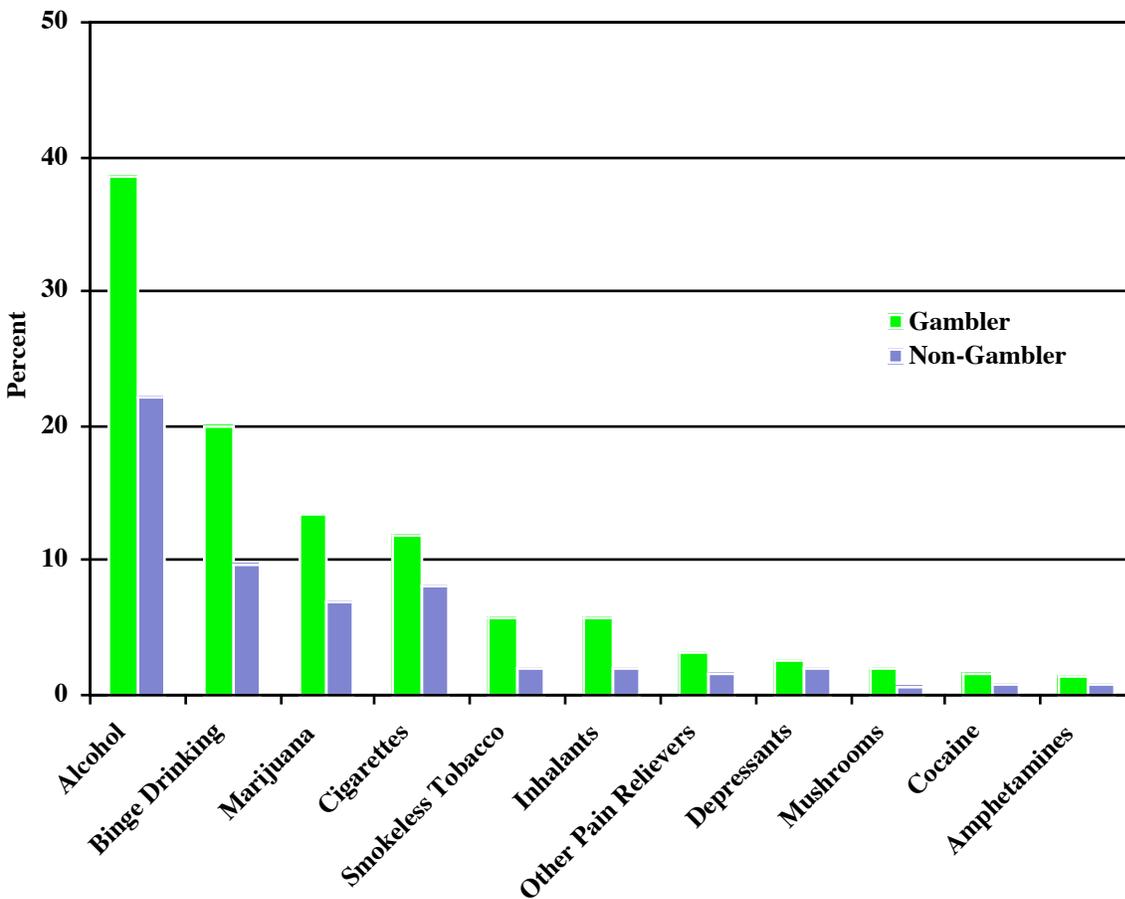
Table 5 shows the results of combining the two gambling questions into a single variable called the Gambling Risk Index. Validation of this Index with several ATOD questions chosen at random indicated that the Index showed greater discrimination ability than either gambling question did separately. It should be cautioned, however, that this Index is not the result of, or a substitute for, a diagnostic tool but only a relative ranking reflecting increasing likelihood that the higher the risk score, the more likely that respondents would be scored as a problem, at risk, or pathological gamblers on a diagnostic measure. Therefore, the DCF survey and this present secondary analysis of data cannot determine the prevalence of gambling pathology but rather the relationship of different degrees of at risk gambling to other variables in the DCF study.

### **ATOD Use**

The DCF survey collected data on over 20 categories of drug use for “Lifetime Use” and “Past 30 Days.” Since the gambling question referred only to “Past 12 Months” the following analysis is necessarily based on the data for “Past 30 days” of drug use.

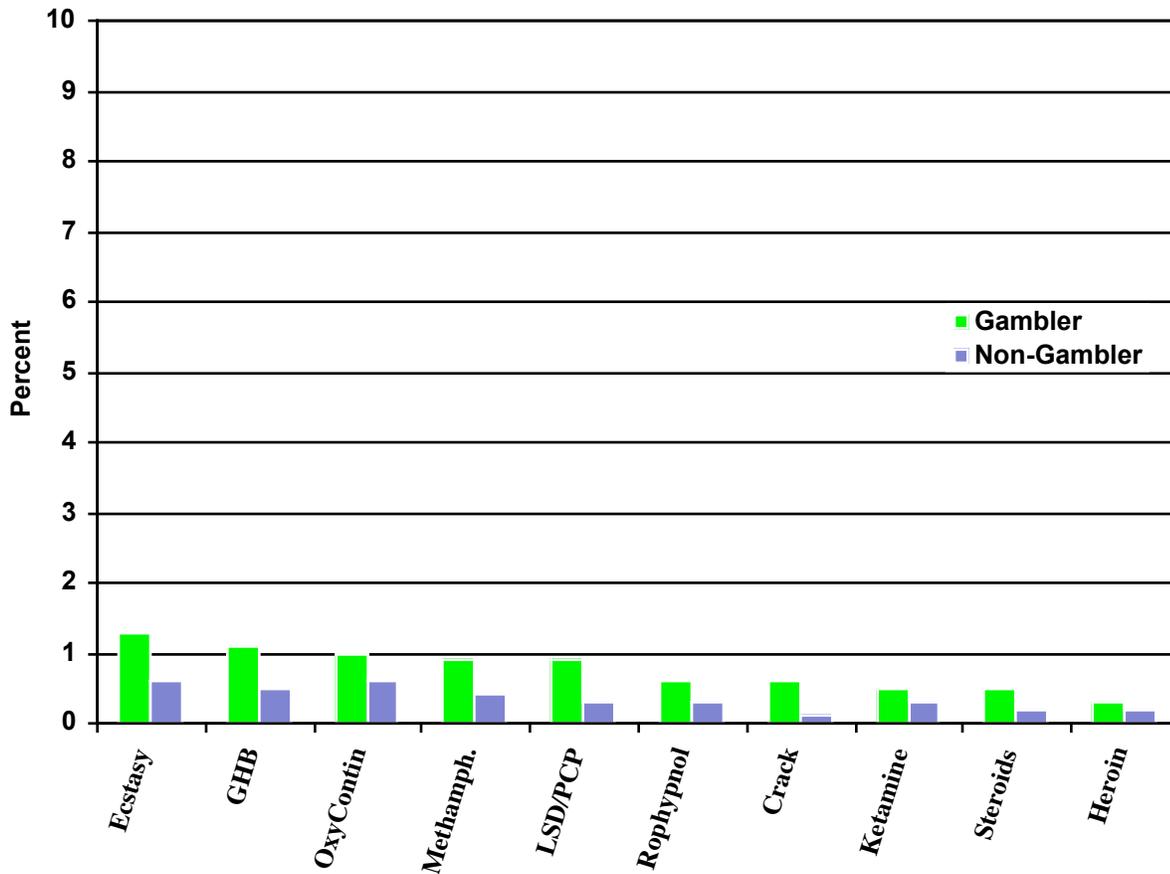
The comparative ATOD use for Gamblers and Non-gamblers for each drug is shown in Graphs 1 and 2.

**Graph 1**  
**Past 30 Days ATOD Use by Gambling Prevalence – Part I**



- \* In **all categories of drugs**, Gamblers were more likely than Non-Gamblers to have used that drug during the past 30 days.
- \* The most frequently used drugs were alcohol, marijuana, tobacco, and inhalants.
- \* The difference between Gamblers and Non-gamblers, for each drug, was statistically significant.

**Graph 2**  
**Past 30 Days ATOD Use by Gambling Prevalence – Part II**



\* The least frequently used drugs were Crack, Ketamine, Steroids and Heroin: all under 1 percent.

\* The difference between Gamblers and Non-gamblers, for each drug, was statistically significant.

### **Gambling Risk and Drug Use**

What is the relationship between the Gambling Risk Index and drug use? Table 6 shows clearly that, for all substances, the higher the gambling risk, the greater the likelihood of using that specific substance.

**Table 6**  
**Percent Used ATOD Past 30 Days by Gambling Risk Index**

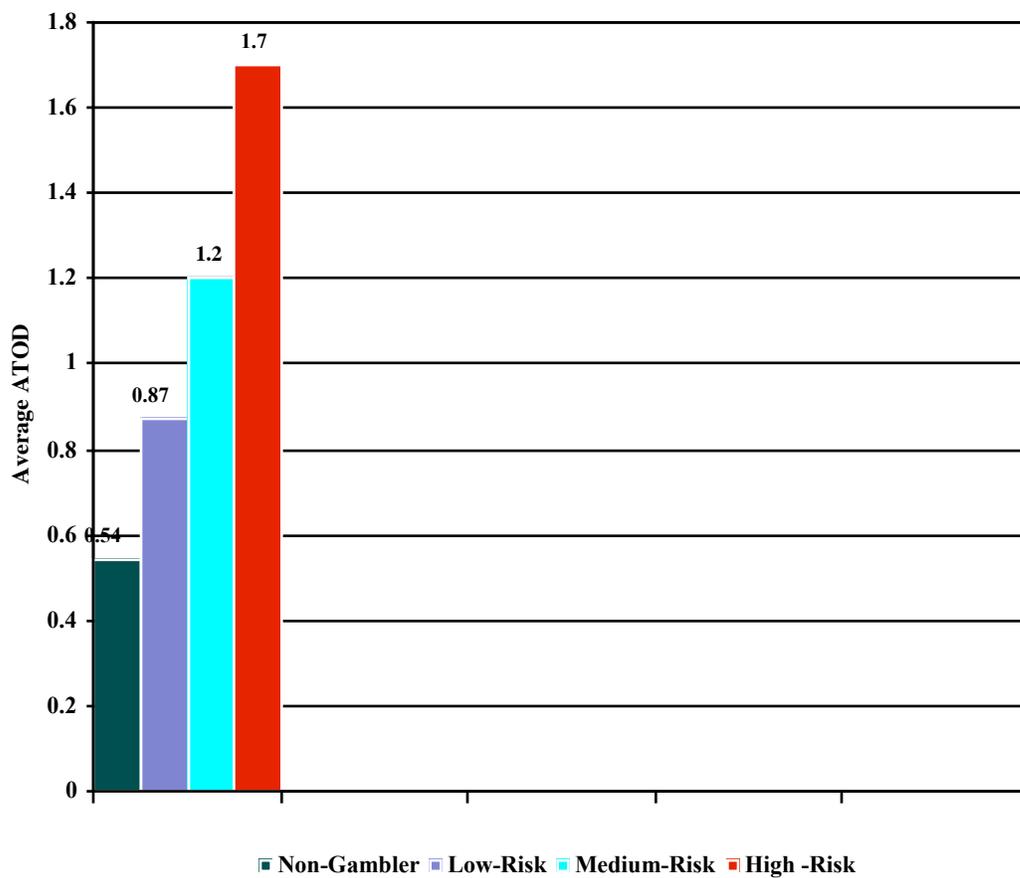
<b>Substance</b>	<b>Non-gambler (N=2798) %</b>	<b>Low Risk (N=2509) %</b>	<b>Medium Risk (N=1162) %</b>	<b>High Risk (N=375) %</b>
Alcohol	21.8	33.8	44.0	53.2
Binge Drinking	9.4	16.8	22.6	32.9
Marijuana	6.5	11.0	16.0	22.7
Cigarettes	7.8	10.7	13.1	16.9
Smokeless Tobacco	1.7	3.9	7.7	12.6
Inhalants	1.9	3.9	7.6	11.4
Prescription Pain Relievers	1.5	2.6	4.1	5.0
Depressants	1.9	2.2	3.4	2.7
Mushrooms	.3	1.2	2.9	4.9
Cocaine	.7	1.3	1.8	1.6
Amphetamines/Ritalin	.8	1.0	1.7	3.0
Ecstasy	.6	.6	2.4	2.9
GHB	.4	.7	1.2	3.8
OxyContin	.6	.5	1.6	1.9
Methamphetamine	.3	.4	1.1	3.5
LSD/PCP	.2	.4	1.3	2.7
Rohypnol	.2	.2	1.1	1.3
Crack	.2	.3	.9	1.6
Ketamine	.2	.2	.7	1.9
Steroids	.1	.1	1.0	2.2
Heroin	.2	.3	.3	.8

- \* In all categories the Higher the gambling risk score, the greater the likelihood of using a drug.
- \* The differences between groups for each drug were statistically significant.
- \* The largest proportional difference between Low and High Risk Gamblers was for the Inhalants. High Risk gamblers were three times as likely to use Inhalants as Low Risk gamblers.
- \* The largest percentage difference between Low and High Risk Gamblers was for Alcohol. (53.2% vs. 33.8%)

Not only were High Risk Gamblers more likely to use a specific drug than Low Risk Gamblers or Non-gamblers, they also used more different drugs than Lower Risk Gamblers or Non-gamblers. (See Graph 3)

**Graph 3**

**Average Number of ATOD (last 30 days) by Gambling Risk Index**



\* The High Risk Gamblers used an average of 1.7 drugs compared to 0.54 for Non-gamblers and 0.87 for the Low Risk Gamblers.

## Antisocial Behaviors

The study also collected data on antisocial behaviors during the past year. In every category, gamblers were more likely to engage in each behavior than were Non-gamblers.

**Table 7**  
**Percent Engaged in Antisocial Behavior Past Year by Gambling Prevalence**

<b>Antisocial Behavior</b>	<b>Non-Gambler (N=3272) %</b>	<b>Gambler (N=3949) %</b>
Attacked to Hurt	5.7	16.5
Arrested	2.5	7.7
Suspended From School	9.0	18.9
Carried a Gun	1.1	6.1
Drunk or High at School	7.0	16.4
Handgun to School	.4	1.4
Sold Illegal Drugs	1.8	7.3
Stole Vehicle	1.0	4.3

- \* The top three behaviors cited by for the Gamblers were: Suspended from School, Physical Violence, and Drunk or High at School.
- \* Gamblers were nearly 6 times as likely to “Carry a Gun” at some time during the past year than were Non-gamblers.

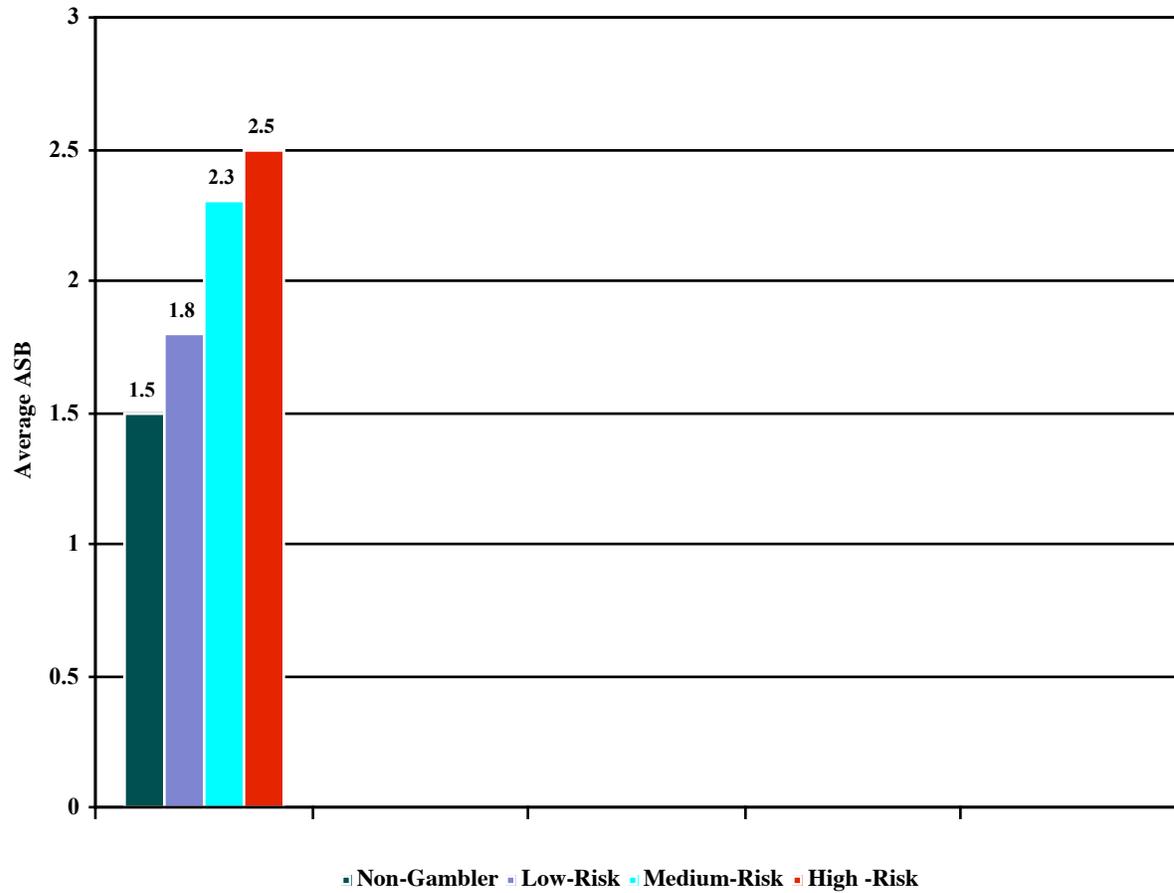
When we examine this relationship in more detail by correlating each anti-social behavior by the Gambling Risk Index (GRI), we find that the greater the degree of gambling involvement, the greater the likelihood of engaging in anti-social behavior. This is true for all of the anti-social behaviors. (See Table 8)

**Table 8**  
**Percent Engaged in Antisocial Behavior Past Year by Gambling Risk Index**

<b>Antisocial Behavior</b>	<b>Non-Gambler (N=2676) %</b>	<b>Low Risk (N=2432) %</b>	<b>Medium Risk (N=1143) %</b>	<b>High Risk (N=354) %</b>
Attacked to Hurt	5.6	11.5	22.1	33.3
Arrested	2.4	5.3	10.2	16.2
Suspended from School	8.4	15.0	23.2	32.2
Carried a Gun	1.0	2.9	10.0	15.3
Drunk or High at School	6.7	12.9	19.4	31.0
Handgun to School	.3	.7	2.6	2.8
Sold Illegal Drugs	1.8	5.4	9.2	14.7
Stole Vehicle	.9	2.4	6.7	9.4

Not only were High Risk Gamblers more likely to engage in a specific deviant behavior than Low Risk Gamblers, they also engaged in more different deviant behaviors than Lower Risk Gamblers. High Risk Gamblers averaged 2.5 antisocial behaviors compared to 1.8 for the Low Risk group and 1.5 for Non-gamblers. (See Graph 4)

**Graph 4**  
**Average Number of Antisocial Behaviors by Gambling Risk Index**



## PART II

### Risk and Protective Factors

The logic, methodology, and strategy of the 2005 FYSAS is based on the *Communities That Care*<sup>®</sup> *Youth Survey*. This survey

...was developed to provide scientifically sound information to state-level and community-level prevention planners and policy makers. It assesses the current prevalence of problem behaviors such as alcohol, tobacco and other drug (ATOD) use and other delinquent behaviors in the surveyed population. The survey also measures the degree to which risk and protective factors exist in the community, family, school, and peer and individual environments. This information is essential to support needs assessment, prevention planning, and intervention planning at the state and local levels. Risk and protective factors are characteristics of the community, family, school and peer environments, as well as individual characteristics of the students themselves, that are known to predict drug use, delinquency and gang involvement (Hawkins, Catalano & Miller, 1992). (*2005 FYSAS Report, p. 1*)

Although the focus of *Communities That Care*<sup>®</sup> *Youth Survey* and the 2005 FYSAS did not include gambling<sup>1</sup> as a deviant behavior concern, there is no compelling reason based on research findings or theory to assume that one cannot extend its value to the area of youthful gambling. In the subsequent analysis we have followed the form and intent of the original national and Florida studies in the belief that the FCCG can profit from the insights of this model and strategy to creatively develop new programs for intervention into the gambling behaviors of Florida's youth.

The emphases of the developers of this strategy were mainly on the concepts of "Protective factors" and "Risk factors." As they define them, protective factors are those

---

<sup>1</sup> With the exception of 2 gambling questions included in the 2005 study.

that “buffer children and youth from exposure to risk” and risk factors are “conditions that increase the likelihood of a young person becoming involved” in various acts of deviant or self-destructive behaviors.

The authors of the 2005 FYSAS go on to report that:

There is a substantial amount of research showing that adolescents’ exposure to a greater number of risk factors is associated with more drug use and delinquency. There is also evidence that exposure to a number of protective factors is associated with lower prevalence of these problem behaviors (Bry, McKeon & Pandina, 1982; Newcomb, Maddahian & Skager, 1987; Newcomb & Felix-Ortiz, 1992; Newcomb, 1995; Pollard et al., 1999)... (2005 FYSAS Report, p. 23)

## **Construction Of Protective Risk Factors**

Protective factors (those “known to decrease the likelihood that a student will engage in problem behaviors” - 2005 FYSAS Report, p. 29) and Risk factors (those “known to increase the likelihood that a student will engage in one or more problem behaviors” - 2005 FYSAS Report, p. 32) were delineated by *Communities That Care*<sup>®</sup> Youth Survey as consisting of four major domains:

Community Domain

Family Domain

School Domain

Peer and Individual Domain

Within each domain components were defined by what was considered to be the main factors comprising that domain and each factor was operationally defined by a number of questions considered by the creators of this model to accurately measure each factor. Some factors were considered as Risk factors and some as Protective factors. For example, within the School Domain, there are 4 factors: Poor Academic Performance; Low School Commitment; School Opportunities for Prosocial Involvement; and School

Rewards for Prosocial Involvement. The first two are considered Risk factors and the latter two are considered Protective factors. Each factor is measured by indices consisting of two or more questions, e.g., Poor Academic Performance is measured by an index consisting of Q13 – “Putting them all together, what were your grades like last year?” and Q23 – “Are your school grades better than the grades of most students in your class?” For consistency and comparison, we will loosely follow the order presented in the *2005 Florida Youth Substance Abuse Survey Report* but vary from it somewhat to fit the needs of the FCCG.

Since the questions asked in the 2005 Florida Youth Substance Abuse Survey were developed and oriented to follow the structure, and need for comparison, to the *Communities That Care*<sup>®</sup> *Youth Survey*, not all variables are relevant to the needs or venue of the FCCG.

In total there were 34 Risk and Protective factor Indices developed by researchers at DCF comprising the four domains. Each index was correlated, by us, with the Gambling Risk Index. The results are presented in Table 9.

Table 9

<b>Pearson Correlations of Domain Factor Indices with Gambling Risk Index</b>			
<b>Index</b>	<b>Risk</b>	<b>Protect</b>	<b>Pearson R**</b>
<b>Community Domain</b>			
Community Opportunities for Prosocial Involvement		X	-.04
Community Rewards for Prosocial Involvement		X	-.07
Low Neighborhood Attachment	X		.05
Community Disorganization	X		.17
Transition and Mobility	X		.05
Laws and Norms Favorable to Drug Use	X		.20*
Laws and Norms Favorable to Firearms	X		.15
Perceived Availability of Drugs	X		.19
Perceived Availability of Firearms	X		.20*
<b>Family Domain</b>			
Family Attachment		X	-.12
Family Opportunity for Prosocial Involvement		X	-.15
Family Rewards for Prosocial Involvement		X	-.15
Family Conflict	X		.15
Family History of Antisocial Behavior	X		.23*
Parental Attitudes Favorable to ATOD Use	X		.16
Parental Attitudes Favorable to Antisocial Behavior	X		.24*
Poor Family Management	X		.21*
<b>School Domain</b>			
School Opportunity for Prosocial Involvement		X	-.10
School Reward for Prosocial Involvement		X	-.15
Poor Academic Performance	X		.12
Low School Commitment	X		.23*
<b>Peer and Individual Domain</b>			
Religiosity		X	-.02
Social Skills		X	-.32*
Belief in Moral Order		X	-.38*
Rebelliousness	X		.34*
Friends' Delinquent Behavior	X		.28*
Friends' Use Drugs	X		.22*
Peer Rewards for Antisocial Behavior	X		.18
Favorable Attitudes Toward Antisocial Behavior	X		.35*
Favorable Attitudes Toward ATOD Use	X		.26*
Low Perceived Risks of Drug Use	X		.16
Sensation Seeking	X		.37*
Early Initiation of Drug Use	X		.27*

\* Reaches an acceptable minimal strength of association of .20.

\*\*All are significant at the .001 level.

In Table 9 we find that using an acceptable minimal strength of association of .20 for the Pearson Correlation, provides us with some interesting insights into the relative importance of the different domains in the etiology or prevention of developing higher risk gambling behaviors. While we are analyzing these factors in a slightly different manner than the DCF (their calculation of mean grade scores for each factor is compared to national norms in order to learn where efforts are needed in Florida for those factors below the norm) their strategy in the use of these factors has been established, researched and documented in the *2005 Florida Youth Substance Abuse Survey Report*:

### Prevention Planning with Risk and Protective Factor Data

The analysis of risk and protective factors is the most powerful tool available for understanding what promotes both positive and negative adolescent behavior and for helping design successful prevention programs for young people. To promote positive development and prevent problem behavior, it is necessary to address the factors that predict these outcomes. By measuring these risk and protective factors, specific factors that are elevated can be prioritized in the community. This process also helps in selecting tested-effective prevention programming shown to address those elevated factors and consequently provide the greatest likelihood for success.

### Risk and Protective Factor Prioritization

In general, a prevention strategy that focuses on a relatively narrow set of developmental factors can be more effective than a strategy that spreads resources across a broad set of factors. Risk and protective factor data from the *FYSAS* can provide critical guidance in this prioritization process. That is, prevention planners can use the information gathered by the survey to identify youth development areas where programs, policies and practices are likely to have the greatest positive impact. (*2005 FYSAS Report, p. 25*)

While the Risk and Protective Factors and the items from the survey questionnaire may always be questioned by another researcher, the logic and rationale for the strategy in their utilization is clearly described in the *2005 Florida Youth Substance Abuse Survey Report*. The original design and inclusion of the items that appear in the questionnaire and their inclusion into the different Factors as well as their validation and use is presented in a number of papers. (See References in *2005 Florida Youth Substance Abuse Survey Report*.) We will assume and will follow the designers overall conceptualization and structure of the Factors. We deviate statistically only to enable an analysis of their data appropriate to the needs of the FCCG and thus how the DCF survey data relates to the two gambling questions combined into the Gambling Risk Index (GRI).

### **Comparison of the Four Domains**

In analyzing Table 9, we first note that there is considerable disparity between the four domains and how they impact the Gambling Risk Index. While nearly half (45% or 15/33) of the factors have relatively high correlations with the GRI, they are not distributed equally among the domains. Ranking from Low to High based on the percentage of factors having correlations of .20 or higher, they are:

Community Domain	2 Factors of 9	22%
School Domain	1 Factor of 4	25%
Family Domain	3 Factors of 8	38%
Peer and Individual Domain	9 Factors of 12	75%

One may infer from this listing that the Peer and Individual Domain has the greatest impact, due to its domain factors, on the production of Higher Risk gambling behaviors and that the Community Domain has the least. Thus, one may be tempted to hypothesize that High Risk gambling is the product of the factor items in this Peer and Individual Domain. However, another possible hypothesis is that these Peer and Individual Factor items may be a secondary consequence of a High Risk gambler who has chosen a

lifestyle reflected by the negative aspects mainly of the Peer and Individual Domain. A corollary of this hypothesis is that Gambling Risk behaviors are not only mostly a function of peer and individual issues but that those related to community, school, or even family may be far less impacting.

We also find in Table 9 that Risk factors appear to have a greater proportional impact on Gambling Risk behavior than do Protective factors: 56% (13 of 23) of the Risk factors correlate with the .20 or higher Pearson R compared to 20% (2 of 10) of the Protective factors. What may also be gleaned from a reading of Table 9 is that if we delineate the highest correlations of .30 or above, all of them, both Risk and Protective, are found only in the Peer and Individual Domain, reinforcing our observations that if prevention or intervention is contemplated, it is within this domain that efforts and resources may most fruitfully be directed.

### **Comparison of Strongest and Weakest Correlations**

It is usually useful to compare the strongest and the weakest correlations. In this case, as seen in Table 9, the comparison appears to be of two items, both of which are classified as Protective Factors, that should be strongly related and not in contradistinction. However, they are direct statistical opposites as correlates of the Gambling Risk Index.<sup>2</sup> The strongest correlation was found for Belief in Moral Order (-.38), that is the greater the belief in a moral orders, the less the likelihood to score High on the Gambling Risk Index. However, the weakest correlation (-.02) was found for Religiosity. This finding appears to support the notion that "...attend[ance at] religious services or activities" (the measure of Religiosity used in the survey) may have little to do with having an impact on one's social behaviors and that internal social control mechanisms such as a Belief in the Moral Order is more powerful to effect behavior. The items measuring this factor were: A) "I think it is okay to take something without asking, if you can get away with it." B) "I think sometimes it's okay to cheat at school." C) "It is all right to beat up people if

---

<sup>2</sup> The Pearson correlation between the Factors of Religiosity and Belief in the Moral Order was of a relatively weak strength: .14.

they start the fight.” D) “It is important to be honest with your parents, even if they become upset or you get punished.” These are analyzed later in this report.

### **Analysis of Factors Compared with Gambling Risk Outcome**

Each Factor Index created by DCF consisted of data selected from a total of 134 questions in the survey. The questions were created and chosen to conform to a strategy and type of analysis consistent with the *Communities That Care*<sup>®</sup> *Youth Survey*. The focus of that survey as well as the DCF survey was on alcohol, tobacco and other drugs and community attitudes and behaviors related to these drugs. They were designed and validated as Factors to be compared to the national norms presented by the *Communities That Care*<sup>®</sup> *Youth Survey*. Since the individual questions comprising each factor was planned to be indicative of a high level of abstraction implicit in each Factor, they were not necessarily selected to be the most pertinent or relevant, based on a specific theory or pre-defined logic, for an analysis of an outcome, for example, one of gambling risk behavior. Nevertheless, a number of these questions that comprise the Factors are of interest in consideration of antecedent or correlates of the gambling outcome.

Apart from the variables previously considered in Part One of this report, we have selected an additional nearly 65 questions that should be of interest to FCCG concerning items that are not only correlated but may be reasonably associated with problem gambling among adolescents. These questions were all in the Factors making up the four Domains (including several that did not meet the Pearson .20 minimum but appeared of interest) and will be presented, where applicable, as part of the structure of the Four Domains and their Factors.

The findings will be presented as High Risk gamblers vs. Non-gamblers. This simpler form of presentation is possible since the cross-tabulations of the questions with the Gambling Risk Index indicated that in all cases, there is a straight-line correlation, at the extremes, from Non-gamblers to High Risk gamblers.

## **Community Domain**

In this Domain there were 2 Factors, both Risk, which reached the level of .20: Laws and Norms Favorable to Drug Use, and the Perceived Availability of Firearms.

### ***Laws and Norms Favorable to Drug Use***

The DCF Report states that “When laws and community standards are favorable toward drug use, violence and/or other crime, or even when they are just unclear, young people are more likely to engage in negative behaviors [Bracht and Kingsbury, 1990]” (2005 *FYSAS Report*, p. 32). One may also argue that when the perception of the possibility of being caught is low, risk-taking behavior is more likely to increase as a result of a weakening of perceived consequences. “Since nothing bad will come of it, I might as well do it.”

- \* High Risk gamblers were nearly four times as likely as Non-gamblers to believe that most adults think that using marijuana by “kids” their age is “Not Wrong at All” (5.5% vs. 1.4%).
- \* High Risk gamblers were over three times as likely as Non-gamblers to believe that most adults think that it is “Not Wrong at All” for “kids” their age to drink alcohol (7.0% vs. 2.2%).
- \* High Risk gamblers were over twice as likely as Non-gamblers to believe that most adults think that it is “Not Wrong at All” for “kids” their age to smoke cigarettes (7.4% vs. 3.4%).
- \* High Risk gamblers were much more likely than Non-gamblers to believe that if they drank alcohol in their neighborhood, they would not “be caught by the police” (88.9% vs. 70.8%).
- \* High Risk gamblers were much more likely than Non-gamblers to believe that if they smoked marijuana in their neighborhood, they would not “be caught by the police” (82.1% vs. 57.7%).

### ***Perceived Availability of Firearms***

While gun possession and its potential for violence is not generally seen as a characteristic or product of recreational gambling or problem gambling, for this

study knowledge of the perceived accessibility to guns helps in providing details of the portrait and life-style of Higher Risk youthful gamblers.

- \* High Risk gamblers were nearly four times as likely as Non-gamblers to report that it would be very easy to get a gun if they want to. (20.2% vs. 5.4%).

## **Family Domain**

In the Family Domain there were 3 Factors, all Risk, that reached the level of .20: Family History of Antisocial Behavior; Parental Attitudes Favorable to Antisocial Behavior; and, Poor Family Management.

### ***Family History of Antisocial Behavior***

A theoretical basis for the Survey, including this factor as part of their model, is the belief that children that grow up in families that are more tolerant of law breaking and deviance are then more likely to grow up manifesting their parents aberrant or dysfunctional attitudes and behaviors. We believe that this family tolerance may also be partially responsible for children who grow up with a specific “tolerance for deviance” in certain areas and thus for the tolerance necessary in the face of negative consequence of such behaviors as drug use, excessive drinking, problem gambling, etc. (See Brill & Lieberman, *Authority and Addiction*, pp. 201 - 208).

- \* High Risk gamblers were more likely than Non-gamblers to state that someone in their family had a “severe alcohol or drug problem (40.9% vs. 26.8%).
- \* Among those students who had siblings, 3.5% of the High Risk gamblers reported that a sibling had taken a handgun to school compared to less than one percent (.06%) of the Non-gamblers.
- \* High Risk gamblers were more likely than Non-gamblers to know at least one adult (over age 21) “who used marijuana, crack, cocaine, or other drugs” during the past year (61.1% vs. 38.1%).
- \* High Risk gamblers were nearly three times as likely as Non-gamblers to know 5 or more adults “who used marijuana, crack, cocaine, or other drugs” during the past year (23.8% vs. 8.6%).

- \* High Risk gamblers were over twice as likely to personally know adult drug dealers than Non-gamblers (48.7% vs. 23.4%).
- \* High Risk gamblers were four times as likely as Non-gamblers to know 5 or more adult drug dealers (20.2% vs. 5.1%).
- \* High Risk gamblers were more than twice as likely as Non-gamblers to know adults who committed illegal acts (53.3% vs. 23.6%).
- \* High Risk gamblers were over five times as likely as Non-gamblers to know 5 or more adults who committed illegal acts (23.2% vs. 4.3%).
- \* High Risk gamblers were more likely than Non-gamblers to personally know adults who got high or drunk (77.6% vs. 54.9%).
- \* High Risk gamblers were nearly three times as likely as Non-gamblers to personally know 5 or more adults who got high or drunk (51.4% vs. 18.1%).

### ***Parental Attitudes Favorable toward Antisocial Behavior***

According to the *2005 Florida Youth Substance Abuse Survey Report*

“Parental attitudes and behavior regarding crime and violence influence the attitudes and behavior of children. If parents approve of or excuse their children for breaking the law, then the children are more likely to develop problems with juvenile delinquency.” (*2005 FYSAS Report, p. 35*)

Although technically, High Risk gambling may not fall directly within a definition of delinquency, many of the specific acts of juvenile gambling would be, e.g., buying lottery tickets.

- \* High Risk gamblers were nearly five times as likely as Non-gamblers to report that their parents felt that the students stealing more than \$5 was “Not wrong at all” or “A little bit wrong” (9.8% vs. 2.1%).
- \* High Risk gamblers were five times as likely as Non-gamblers to report that their parents felt that the students drawing graffiti or defacing property was “Not wrong at all” or “A little bit wrong” (12.7% vs. 2.5%).

- \* High Risk gamblers were nearly four times as likely as Non-gamblers to report that their parents felt that the students picking a fight with someone else was “Not wrong at all” or “A little bit wrong” (34.2% vs. 9.5%).

### ***Poor Family Management***

This risk factor reflects both family supervision and family discipline. In many families, particularly Hispanic and other ethnic groups, these components often reflect “familism” or the cohesiveness of a family. In our research on Hispanic substance abuse, we have found that this cohesiveness is related to traditional values and serves as a prophylactic against alcohol and substance abuse as well as other deviant behaviors (See Cuadrado and Lieberman, *Traditional Family Values and Substance Abuse*, 2002).

- \* High Risk gamblers were almost twice as likely as Non-gamblers to cite “NO!” when asked if parents asked about homework (18.5% vs. 10.6%).
- \* High Risk gamblers over twice as likely as Non-gamblers to cite “NO!” when asked if parents knew if they were home on time (15.0% vs. 7.4%).
- \* High Risk gamblers were almost twice as likely as Non-gamblers to cite “NO!” when asked if parents know who they are with when they are not at home (15.7% vs. 9.1%).
- \* High Risk gamblers were almost twice as likely as Non-gamblers to cite “NO!” when asked if rules in the family were clear (7.5% vs. 3.8%).
- \* High Risk gamblers were likely than Non-gamblers to cite “NO!” when asked if the family had clear rules about alcohol and drug use (13.2% vs. 9.2%).

## **School Domain**

### ***Poor Academic Performance***

Poor academic performance did not meet the .20 Pearson criterion but, nevertheless, when we examined the individual components, we found relationships that we believe may be of some interest in the consideration of program development for Florida schools.

This factor was measured by the students reporting of past year grades and perception of grades relative to class peers.

- \* High Risk gamblers were more than twice as likely to receive D's and F's than were Non-gamblers (11.5% vs. 4.8%).
- \* High Risk gamblers were almost three times as likely as Non-gamblers to report that their grades were not better than their peers (18.3% vs. 6.8%).

### ***Low School Commitment***

The DCF Report indicates that school commitment is an important factor in the development of aberrant behaviors. "Lack of commitment to school means the child has ceased to see the role of student as a positive one. Young people who have lost this commitment to school are at higher risk for a variety of problem behaviors." (2005 *FYSAS Report*, p. 37).

- \* High Risk gamblers were three times as likely as Non-gamblers to report that their courses were "Very Dull" (20.5% vs. 7%).
- \* High Risk gamblers were four times as likely as Non-gamblers to report that learning in school was "Not at all important" for your later life. (12.9% vs. 3.1%).
- \* High Risk gamblers were over twice as likely as Non-gamblers to say that they "Never" enjoyed being in school (16.6% vs. 6.9%).
- \* High Risk gamblers were over twice as likely as Non-gamblers to report that they Almost Always "Hate being in school" (22.2% vs. 9.2%) and were over ten times as likely as Non-gamblers to say that they "Never [tried] to do [their] best work in school" (7.3% vs. 0.7%).

Is there any impact of the Gambling Behavior on the students' school performance?

While the data does not lend itself to proving causation, the data clearly show that there is a correlation between Gambling and Skipped school in the Last 4 Weeks.

- \* High Risk gamblers were almost four times as likely as Non-gamblers to skip school 6 or more days “DURING THE LAST FOUR WEEKS” (9.5% vs. 2.4%).
- \* The correlation is also strong when we examine the data for the different degrees of gambling. The High Risk gamblers were nearly three times as likely to have cut school than were the Low Risk gamblers (9.5% vs. 3.2%).

### **Peer and Individual Domain**

This domain contains the only Protective Factors that met the criterion of a Pearson .20. These were Social Skills and Belief in Moral Order. Earlier we commented on the apparent contradiction between Religiosity and Belief in Moral Order (See P. 23 above) when we noted that Belief in Moral Order had the strongest correlation with the gambling outcome.

#### ***Social Skills***

This section of the DCF survey is based on the assumption that “Students who have positive and healthy interpersonal relationships, and who understand how their society works, are less likely to engage in problem behaviors such as drug use.” (2005 FYSAS Report, p. 31)

Consequently, the survey presents four “scenarios” that assumedly measure one’s understanding of society’s acceptable and unacceptable behavioral responses to ordinary situations. For example, one scenario on the survey is: “You are visiting another part of town, and you don’t know any of the people your age there. You are walking down the street, and some teenager you don’t know is walking toward you. He is about your size, and as he is about to pass you, he deliberately bumps into you and you almost lose your balance. What would you say or do?” (2005 FYSAS Report, p. 31)

In order to understand the context of the student's responses to the items of the Social Skills Factor, the full wording of the question and the response with the greatest discrimination differential will be presented.

*Scenario One:*

You're looking at CDs in a music store with a friend. You look up and see her slip a CD under her coat. She smiles and says, "Which one do you want? Go ahead, take it while nobody's around." There is nobody in sight, no employees and no other customers. What would you do now?

- \* High Risk Gamblers were over six times as likely as Non-gamblers to respond by selecting "Grab a CD and leave the store" (31.5 % vs. 5.1%).

*Scenario Two:*

It's 8:00 on a weeknight and you are about to go over to a friend's home when your mother asks you where you are going. You say, "Oh, just going to go hang out with some friends." She says, "No, you'll just get into trouble if you go out. Stay home tonight." What would you do now?

- \* High Risk Gamblers were over three times as likely as Non-gamblers to respond by selecting "Leave the house anyway" (17.7% vs. 4.9%).

*Scenario Three:*

You are visiting another part of town, and you don't know any of the people your age there. You are walking down the street, and some teenager you don't know is walking toward you. He is about your size, and as he is about to pass you, he deliberately bumps into you and you almost lose your balance. What would you say or do?

- \* High Risk Gamblers were almost five times as likely as Non-gamblers to respond by selecting "Push the person back" (39.1% vs. 8.2%).

*Scenario Four:*

You are at a party at someone's house, and one of your friends offers you a drink containing alcohol. What would you say or do?

\* High Risk Gamblers were over twice as likely as Non-gamblers to respond by selecting "Drink it" (54.7% vs. 22.8%).

***Belief in the Moral Order***

The second of the Protective Factors that correlate strongly with the Gambling Risk Index has been discussed earlier (see P. 23). It cannot be emphasized strongly enough that a "belief in the moral order" cannot be assumed to be a function of religious training as it is currently taught in religious institutions or of religious training that transpires in the average home. This view has been researched and developed by Dr. Ruth Westheimer and Dr. Louis Lieberman, and presented in their book: *Sex and Morality*. In it, they present evidence from church leaders of many faiths, as well as lay respondents, that morality is taught neither in religious institutions or the home. In addition, they show that moral values was a subject rarely taught in the public school system since many people believed that teaching moral values is the same as advocating a specific morality and should therefore be a function of the home and church. However, what the researchers found was that what passed for moral training in "Sunday School" classes or at home was essentially proscriptive proclamations of "Don't do it" or "Just say no" rather than an educated understanding of the consequences of one's actions and the knowledge of a mechanism for moral decision making. We believe that data from the DCF study suggests that a proper education in moral decision-making may have great implications for preventive education programs in gambling rather than a singular approach that may be seen by youth as little more than one of moral proscriptions.

- \* High Risk Gamblers were over five times as likely as Non-gamblers to cite “YES!” to the question “I think it is okay to take something without asking, if you can get away with it” (11.8% vs. 2.3%).
- \* High Risk Gamblers were almost five times as likely as Non-gamblers to cite “YES!” to the question “I think sometimes it’s okay to cheat at school” (26.9% vs. 5.5%).
- \* High Risk Gamblers were over three times as likely as Non-gamblers to cite “YES!” to the question “It is all right to beat up people if they start the fight” (63.2% vs. 18.9%).
- \* High Risk Gamblers were over four times as likely as Non-gamblers to cite “NO!” to the question “It is important to be honest with your parents, even if they become upset or you get punished” (10.8% vs. 2.5%).

### ***Rebelliousness***

Risk taking and rule breaking are often considered as mutual indicators of each other. The DCF Report indicates that rebelliousness also may be viewed as an indicator of youthful alienation: “young people who feel they are not part of society” as well as rule breakers and youths “who don’t believe in trying to be success or responsible.” (2005 FYSAS Report, p. 37)

- \* High Risk Gamblers were over five times as likely as Non-gamblers to cite as “Very True” the statement that “I do the opposite of what people tell me, just to get them mad” (10.6% vs. 2.0%).
- \* High Risk Gamblers were more than five times as likely as Non-gamblers to cite as “Very True” the statement that “I ignore rules that get in my way” (13.3% vs. 2.4%).
- \* High Risk Gamblers were more than five times as likely as Non-gamblers to cite as “Very True” the statement that “I like to see how much I can get away with” (21.4% vs. 4.0%).

### ***Friends' Delinquent Behavior***

Sutherland and Cressey (1978) attributed delinquent behavior to "...an excess of definitions that are favorable to the violation of the law over those that are unfavorable to the violation of law. This is the principle of differential association" (pp. 80-82). These definitions are provided from many sources by those who are in intimate contact with the youngster, particularly their best friends. Best friends are one of the intimate groups that provide definitions of situations; whether they are seen as right or wrong, whether they are immoral or immoral, whether they are worthwhile or not, and so forth, through their attitudes and, perhaps more importantly, their behaviors that serve as examples of attitudinal and behavioral options. As stated in the DCF report "young people who associate with peers who engage in delinquent behavior are much more likely to engage in delinquent behavior themselves. This is one of the most consistent predictors identified by research." (2005 *FYSAS, Report p. 37*) The questions that are used to measure this Factor ask the student to "Think of your four best friends (the friends you feel closest to). In the past year (12 months), how many of your best friends have..."

- \* High Risk Gamblers were over five times as likely as Non-gamblers to cite all 4 friends as "...been suspended from school" (27.4% vs. 5.2%).
- \* High Risk Gamblers were almost twelve (12) times as likely as Non-gamblers to cite all 4 friends as "...carried a handgun" (5.9% vs. 0.5%).
- \* High Risk Gamblers were over ten times as likely as Non-gamblers to cite all 4 friends as "...sold illegal drugs" (11.1% vs. 1.1%).
- \* High Risk Gamblers were nearly ten times as likely as Non-gamblers to cite all 4 friends as "...stolen or tried to steal a motor vehicle such as a car or motorcycle" (5.8% vs. 0.6%).
- \* High Risk Gamblers were seven times as likely as Non-gamblers to cite all 4 friends as "...been arrested" (8.4 vs. 1.2%).
- \* High Risk Gamblers were over four times as likely as Non-gamblers to cite all 4 friends as "...dropped out of school" (3.6% vs. 0.8%).

### ***Friends' Use of Drugs***

The same argument presented above in Delinquent Behavior is only somewhat applicable to the use of drugs. Illegal drug use is one of the variants of the legal definition of delinquency: acts that would be a crime if committed by an adult. However since alcohol and cigarette smoking is not a crime by adults, they are more correctly, in the case of juveniles, illicit behavior rather than delinquent use of a substance. Just as with the Friends Delinquent Behavior Factor, this factor asks the student to “Think of your four best friends (the friends you feel closest to). In the past year (12 months), how many of your best friends have...”

- \* High Risk Gamblers were almost three times as likely as Non-gamblers to cite all 4 as “...smoked cigarettes” (17.6% vs. 6.5%).
- \* High Risk Gamblers were almost three times as likely as Non-gamblers to cite all 4 as “...tried beer, wine or hard liquor (for example, vodka, whiskey or gin) when their parents didn’t know about it”) (43.0% vs. 15.3%).
- \* High Risk Gamblers were over three times as likely as Non-gamblers to cite all 4 as “...used marijuana” (23.7% vs. 7.2%).
- \* High Risk Gamblers were over seven times as likely as Non-gamblers to cite all 4 as “...used LSD, cocaine, amphetamines, or other illegal drugs” (7.1% vs. 1.0%).

### ***Favorable Attitudes toward Antisocial Behavior***

Attitudes are often viewed by social scientists, as predispositions to act. Similarly, attitudes may also signal the precursors of a “tolerance for deviance” (See Brill and Lieberman, *Authority and Addiction*). The DCF survey measured attitudes toward antisocial behavior by a series of questions asking “How wrong do you think it is for someone your age to...”

- \* High Risk Gamblers were sixteen (16) times as likely as Non-gamblers to say that it is “Not Wrong at All” to “...take a handgun to school” (4.8% vs. 0.3%).

- \* High Risk Gamblers were almost nine times as likely as Non-gamblers to say that it is “Not Wrong at All” to “...steal anything worth more than \$5” (11.5% vs. 1.3%).
- \* High Risk Gamblers were almost seven times as likely as Non-gamblers to say that it is “Not Wrong at All” to “...pick a fight with someone” (25.4% vs. 3.7%).
- \* High Risk Gamblers were over seven times as likely as Non-gamblers to say that it is “Not Wrong at All” to “...attack someone with the idea of seriously hurting him or her” (14.3% vs. 2.0%).
- \* High Risk Gamblers were almost six times as likely as Non-gamblers to say that it is “Not Wrong at All” to “...stay away from school all day when their parents think they are at school” (18.6% vs. 3.2%).

### ***Favorable Attitudes toward ATOD Use***

This Factor of attitudes toward alcohol, tobacco, and other drug use is measured in a similar manner to the preceding factor by a series of questions asking “How wrong do you think it is for someone your age to...”

- \* High Risk Gamblers were almost four times as likely as Non-gamblers to say that it is “Not Wrong at All” to “...drink beer, wine or hard liquor (for example, vodka, whiskey or gin) regularly” (28.4% vs. 7.2%).
- \* High Risk Gamblers were over three times as likely as Non-gamblers to say that it is “Not Wrong at All” to “...smoke cigarettes” (17.8% vs. 5.4%).
- \* High Risk Gamblers were over four times as likely as Non-gamblers to say that it is “Not Wrong at All” to “...smoke marijuana” (21.1% vs. 5.0%).
- \* High Risk Gamblers were over seven times as likely as Non-gamblers to say that it is “Not Wrong at All” to “...use LSD, cocaine, amphetamines or another illegal drug” (7.2% vs. 1.0%).

### ***Sensation Seeking***

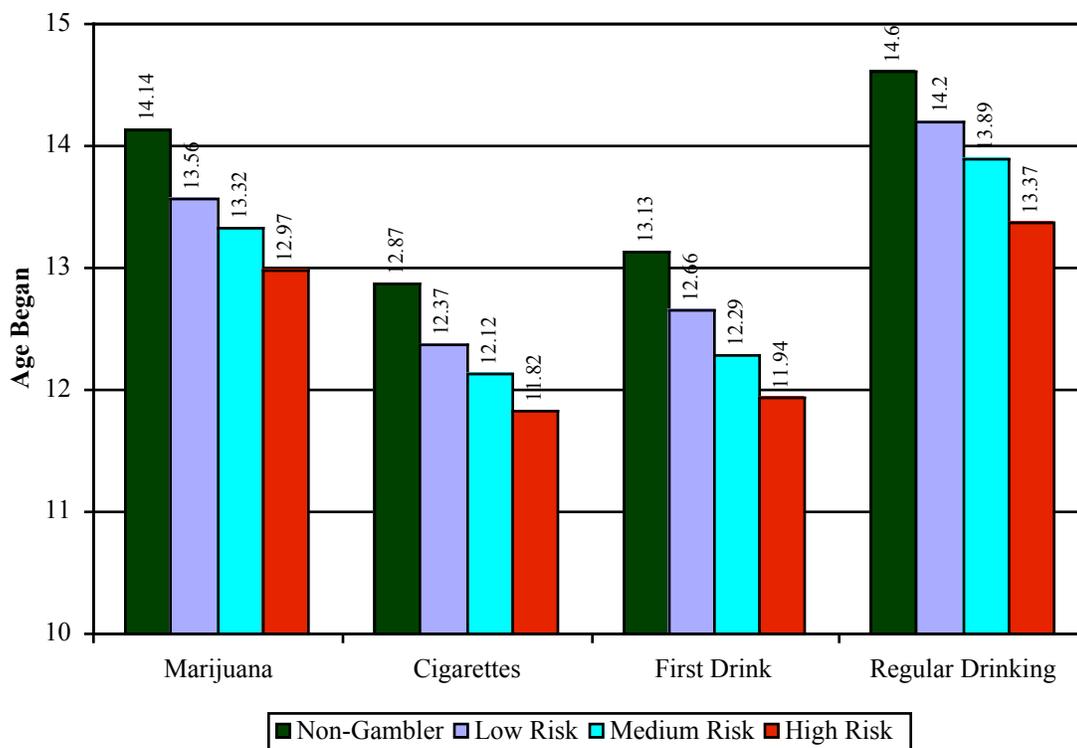
Sensation seeking and risk taking usually share a similar emotion, the rush and excitement felt in anticipation, during and at the climax of an event or action. This is the feeling often sought and claimed by those who gamble. Perhaps this factor also measures the anticipatory socialization for later emergence of more risky acts. The DCF study measures this by three questions asking “How many times have you done the following things?...”

- \* High Risk Gamblers were almost three times as likely as Non-gamblers to cite “Once a Week or More” to “Done what feels good no matter what” (36.0% vs. 12.9%).
- \* High Risk Gamblers were almost fourteen (14) times as likely as Non-gamblers to cite “Once a Week or More” to “Done something dangerous because someone dared you to do it” (13.7% vs. 1.0%).
- \* High Risk Gamblers were more than six times as likely as Non-gamblers to cite “Once a Week or More” to “Done crazy things even if they are a little dangerous” (26.9% vs. 4.1%).

### ***Early Initiation of Drug Use***

This is the last Factor in the Peer and Individual Domain. As stated in the DCF Report: “The earlier that experimentation with drugs begins, the more likely it is that experimentation will become consistent, regular use. Early initiation may lead to the use of a greater range of drugs, as well as other problem behaviors.” (2005 FYSAS, Report p. 39)

**Graph 5**  
**Average Initiation Age of Substance Use by Gambling Risk Index**



In interpreting Graph 5, a number of interesting findings emerge.

- \* For the sample as a whole, cigarettes were the substances used at the earliest age, followed by their “first drink,” then marijuana and lastly, regular drinking.
- \* For all substances shown, the more likely one is to be a High Risk Gambler, the more likely to have used that substance at an earlier age.
- \* The earliest substance use of High Risk Gamblers for those substances listed was 11.82 years of age compared with 12.87 years of age for Non-gamblers.
- \* The earliest marijuana users were the High Risk Gamblers (12.97 YOA) compared to the Non-gamblers (14.14 YOA).

## CONCLUSIONS

We have found in this analysis that gambling is a widespread fact of life among Middle and High School students in Florida. More than half of the students surveyed reported gambling during the last 12 months. While we may assume that recreational gambling is harmless, the data do show that even those students who may gamble very little are still more likely than non-gamblers to use each of the drugs; to engage in each of the antisocial behaviors; and to have trouble in school. In addition, the greater the gambling involvement as indicated by the Gambling Risk Index, we again find that the greater the likelihood to use each of the drugs; the greater the likelihood of using drugs more extensively; the greater the likelihood of engaging in more antisocial behaviors; and the greater the likelihood of having trouble in school.

When we examined the Risk and Protective factors that reached an acceptable level of correlation, we find the same patterns: **Gamblers were more likely to score higher on Risk Factors than Non-gamblers and were more likely to score lower on Protective Factors. Similarly, the finding that there is a straight-line correlation ranging from Non-gamblers to High Risk Gamblers was consistent for all components of the Factors as well as the Factors themselves.**

Clearly, the findings show that there is a large population of students who may benefit from preventive education programs on gambling. Indeed, there appears to be a considerable group of students who may already be in need of treatment or intensive intervention. The size of this population can best be determined by a diagnostic prevalence study.

In conducting this secondary analysis of the data collected by the Florida Department of Children & Families, we have been impressed by the consistency of findings (the straight line correlations in all items) in this study population when we focus on the gambling dimension and its relationship to other variables. Considered as a whole, this consistency appears to us to indicate that there is considerably homogeneity among gambling youth distinct from non-gamblers. Whether it is that they are more likely to be braggarts, self-

deluders in this particular area, deliberate liars, shockers, or contrarians to expected responses, all beg the question of why they appear so distinct a group that “just happens to manifest” various degrees of gambling behavior. The consistency of our findings, particularly in the Peer and Individual Domain Factors suggest a strong psychosocial pattern developing, which is in some manner related to gambling. Whether or not this is indicative of the common belief held by those working in the Gambling Help field that “gambling is a progressive disease” can only be speculative concerning gambling youth because of the original design focus of this study that doesn’t permit this type of hypothesis testing. However, the data appear to us to point in this direction and should be further explored in subsequent research. An alternative hypothesis, however, may be that there is a recognizable groups of students who are risk takers, anti-social in many areas, get into trouble with school, etc., and sink deeper into a pattern of deviant behaviors, Problem gambling may be just another activity of this group, and not the paramount or defining element. This too would prove a very valuable contribution of research to the area of juvenile delinquency in general.

# Appendix A

## Discriminant Function Analysis

In Part II of the report we examined the relationship between the student's score on the Gambling Risk Index and the Factor Domain Indices in order to identify which Indices resulted in Pearson correlations of .20 or higher. From these Indices, we identified the 70 questions they contained. Without exception, there was a straight-line correlation between each of the items and the Gambling Risk Index. However, each correlation of items was arrived at independently. The question arises of whether all the questions are of equal importance when attempting to describe the likelihood of being a "High Risk Gambler." In order to better understand the relationship between these 70 questions, in particular, which among them are the most important, a statistical test was employed: Discriminant Function Analysis. This test will, in part, determine the relative contribution of each item separately and in combination to the outcome variable of the Gambling Risk Index. In performing this test, the program calculated that of the 70 questions, only 23 were found to be most important (that is, meeting a minimum statistical cut-off point) in differentiating High Risk Gamblers from all others. The results are presented in rank order of importance:

Question	Standardized Discriminant Coefficients
Do dangerous things on a dare.	0.361
Teen bumps you what do you do. (Say excuse me and walk on)	-0.319
How wrong neighborhood adults think it is for kids to use cigarettes.	-0.248
How many of 4 best friends sold illegal drugs.	0.218
How many of 4 best friends used hard drugs.	-0.185
How wrong neighborhood adults think it is for kids to use alcohol.	0.183
How wrong to drink alcohol regularly.	0.178

Parents know who I am with when not at home.	-0.177
Ignore rules that get in my way.	0.166
Age first drank alcohol (early initiation).	-0.158
How wrong to take gun to school.	0.157
How often: do best work at school.	-0.147
Have siblings ever been suspended from school.	0.140
How wrong to use illegal drugs.	-0.139
How wrong to attack to hurt.	0.137
How wrong to stay away from school all day.	-0.133
Rules in my family are clear.	0.127
How many adults does youth know who do illegal activities.	0.118
How many of 4 best friends suspended from school.	0.107

It is possible, using Discriminant Function Analysis to develop an instrument that would predict, with a high degree of accuracy, whether a student is likely to become a high risk gambler, based on the answers to these questions alone. However, the number of items that the youth would have to answer “correctly” is too large and thus unwieldy for practical purposes. To narrow the number of questions, we re-entered the top four questions (demarcated by the coefficient of .20 or higher) that differentiate a High Risk Gambler from all others into a Discriminant Function. These four questions separately reflect: a) risk taking, b) how adept the youngster is to react in a manner that is socially acceptable (social conformity), c) how aware the youngster appears to be of the community disapproval of behavior such as smoking at their age (community norms perception), and d) delinquent friends (deviant reference group). In other words, in these four different conceptual areas, the more of a risk taker the youngster is, and the more socially inept, and the more the youth sees the adult community as not disapproving of cigarette smoking, and the more the youth has drug dealing friends, the more likely the youth is to score High on the Gambling Risk Index. If a youth answered “correctly” (the higher risk answer) on all four, can this accurately predict whether a student would score High on the Gambling Risk Index?

In order to test this, we entered these four items alone into the Discriminate Function Analysis. The resultant function indicated that item “c” did not meet the minimum criterion for inclusion and was thus dropped from the calculation. The resulting Standardized Discriminant Coefficients were:

Risk taking (Do on a dare)	.599
Social conformity (Teen bumps you)	-.473
Deviant reference group (Best friends sold drugs)	.358

#### Classification Results

Actual Group	No. of Cases	Predicted Group 1	Predicted Group 2
Group 1*	6744	5277 (78.2%)	1467 (21.8%)
Group 2**	387	149 (38.6%)	238 (61.4%)
Percent of cases correctly classified: 77.3%			

\*Did not score High on Gambling Risk Index

\*\*Scored High on Gambling Risk Index

As seen in the Classification Results, the three items remaining in the Discriminant Function Analysis were able to correctly predict 61.4% of the students classified as High in the Gambling Risk Index and 78.2% of those who did not score High. Thus, using only these three questions embedded as part of a larger screening instrument one should be able to predict correctly (with a level of accuracy of 77.3% of the time) those students as being either a High Risk Gambler or not. Since these three items reflect risk taking, social conformity and deviant reference groups, research in these areas may go far to increase knowledge of the etiology of teenage compulsive gambling.

# Appendix B

## References

- Bracht, N., & Kingsbury, L. (1990). Community organization principles in health promotion: A five-state model. In N. Bracht (Ed.), *Health promotion at the community level* (pp. 66-88). Beverly Hills, CA: Sage.
- Brill, L. & Lieberman, L. (1969), *Authority and Addiction*, Little, Brown & Co., Boston.
- Cuadrado, M. & Lieberman, L. (2002). *Traditional Family Values and Substance Abuse: The Hispanic Contribution to an Alternative Prevention and Treatment Approach*, Kluwer Academic/Plenum Publishers, New York.
- Bry, B. H., McKeon, P., & Pandina, R. J. (1982). Extent of drug use as a function of number of risk factors. *Journal of Abnormal Psychology*, *91*, 273-279.
- Florida Department of Children & Families. (2006). "2005 Florida Youth Substance Abuse Survey: State Report." Tallahassee, FL.
- Hawkins, J. D., Catalano, R. F., & Associates. (1992). *Communities that care: Action for drug abuse prevention* (1<sup>st</sup> ed.). San Francisco: Jossey-Bass.
- Hawkins, J. D., Catalano, R. F., & Miller, J. Y. (1992). Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: Implications for substance abuse prevention. *Psychological Bulletin*, *112*, 64-105.
- Newcomb, M. D., Maddahian, E., & Skager, R. (1987). Substance abuse and psychosocial risk factors among teenagers: Associations with sex, age, ethnicity, and type of school. *American Journal of Drug and Alcohol Abuse*, *13*, 413-433.
- Newcomb, M. D. & Felix-Ortiz, M. (1992). Multiple protective and risk factors for drug use and abuse: Cross-sectional and prospective findings. *Journal of Personality and Social Psychology*, *51*, 564-577.
- Newcomb, M. D. (1995). Identifying high-risk youth: Prevalence and patterns of adolescent drug abuse. In E. Rahdert & D. Czechowicz (Eds.), *Adolescent drug abuse: Clinical*

*assessment and therapeutic interventions* (NIDA Research Monograph, 156).  
Washington, DC: U.S. Department of Health and Human Services.

Pollard, J. A., Hawkins, J. D., & Arthur, M. W. (1999). Risk and protection: Are both necessary to understand diverse behavioral outcomes in adolescence? *Social Work Research, 23*, 145-158.

Sutherland, E. H., & Cressey, D. R. *Criminology*, 10<sup>th</sup> ed., Lippincott, Philadelphia, 1978.

Westheimer, R. & Lieberman, L. (1988). *Sex and Morality*, Harcourt Brace Jovanovich, Publishers, Boston.

