GAMBLER ADDICTION INDEX

The Gambler Addiction Index (GAI) is a 166 item self-report test that is designed for evaluating problem and pathological gamblers.

SEVEN GAI SCALES

1. **Truthfulness Scale**
2. **Gambler Severity Scale**
3. **DSM-IV Gambling Scale**
4. **Suicide Scale**
5. **Alcohol Scale**
6. **Drugs Scale**
7. **Stress Coping Abilities**

This article introduces the Gambler Addiction Index (GAI), presents some research and provides an example GAI report.

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GAMBLER ADDICTION INDEX (GAI): A Gambler Assessment Test

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ABSTRACT

The Gambler Addiction Index (GAI) is a 116 item self-report test that is designed for assessing gamblers. The GAI takes approximately 35 minutes to complete and 2½ minutes to score and print reports on-site. The GAI has 7 scales (measures): 1. Truthfulness Scale, 2. Gambler Severity Scale, 3. DSM-IV Gambling Scale, 4. Suicide Scale, 5. Alcohol Scale, 6. Drugs Scale and 7. Stress Coping Abilities Scale. This article introduces the GAI, presents some research and provides an example report. The GAI's Truthfulness Scale determines if the gambler was truthful while completing the GAI. In addition, the GAI is offered free - for use in doctorate level research.

The absence of Gambler Anonymous (GA) discussion was not an oversight as GA's role in "gambler recovery" is unrivaled. Indeed, the GAI Gambler Severity Scale (p. 12) recommends GA attendance when warranted. Yet, this article focuses on the Gambler Addiction Index (GAI) and gambler assessment.

THE PROBLEM

The Diagnostic and Statistical Manual of Mental Disorders (3rd ed., American Psychiatric Association, 1980) recognized pathological gambling as a separate condition labeling it a "mental disorder" (Levy & Feinberg, 1991). The revised *DSM-II-R* (3rd ed., revised, American Psychiatric Association, 1987) categorized pathological gambling as one of several Impulse Control Disorders, which are vaguely defined as mental disorders characterized by an irresistible impulse to perform harmful acts (McElroy, Hudson, Pope, & Keck, 1992). In the *DSM-IV* (1994) the client must agree to five or more of ten criteria to be classified a pathological gambler. When gambling was recognized by the American Psychiatric Association in 1980 it began to acquire a new image. The gambling -- sorry, "gaming" industry has hired politically connected lobbyists and public relations specialists to give "gambling" (now euphemistically called "gaming") a new and more acceptable public image.

With this new image gaming now occurs in many forms: pari-mutuel (horse and dog tracks) betting, casinos (slot machines and table games), bookmaking (sports betting), internet (cyber) gambling, stock market "investing," etc. Many individual states advertise their lotteries in radio and television ads. Poker is increasingly viewed as a spectator sport (World Series of Poker). Billboards on major highways now attest to the gaming industries popularity.

While this increase in gambling is good for the "gaming" industry, many courts, health care professionals, probation and correctional departments, social agencies and members of the gambling community itself are concerned about personal and family suffering. Current estimates suggest anywhere from 1-percent to 2-percent of the adult United States population will experience serious gambling-related problems that will result in significant debt, family disruption, job loss, criminal behavior and even suicide.

Increased public awareness of gambler addiction and pathology has helped draw attention to the need for accurate identification and treatment of this disorder. Indeed, social awareness, rising costs and escalating need has resulted in increased professional responsibilities for people working with problem and pathological gamblers. Evaluators (assessors and screeners) and treatment staff must now document and substantiate their assessment process, referral options, intervention alternatives and treatment decisions. This provider accountability is here to stay.

Attention is now focusing upon gambler identification or tests that can accurately identify problem gamblers and pathological (severe problem) gamblers. These tests should provide meaningful gambler profiles upon which intervention and treatment decisions can be based. An example of such a test is the Gambler Addiction Index or GAI.

THE SOLUTION

The **Gambler Addiction Index** or **GAI** is a test that is specifically designed for gambler assessment. The GAI is an automated (computer scored on-site) test that is brief (166 items) yet comprehensive (7 scales) and easily administered. Within 2½ minutes of test data input the GAI is scored and a 3-page report is printed. At one sitting of approximately 30 minutes duration, evaluators (assessors) acquire important gambler related information upon which they can base their referral and treatment recommendations.

The GAI has been normed and standardized on adult gamblers. The GAI assesses attitudes and behaviors important for understanding gamblers. GAI scales measure gambler truthfulness, gambling involvement, substance (alcohol and other drugs) abuse, *DSM-IV* (4th ed., American Psychiatric Association, 1994) criteria, gambler severity, suicide potential and stress handling abilities. More specifically, the seven GAI scales include: **1.** Truthfulness Scale, **2.** *DSM-IV* Gambling Scale, **3.** Gambler Severity Scale, **4.** Alcohol Scale, **5.** Drugs Scale, **6.** Suicide Scale and **7.** Stress Coping Abilities Scale.

GAI Scale Interpretation

An example Gambler Addiction Index (GAI) 3-page report is provided near the end of this article. It can serve as a ready reference to augment this discussion. GAI report interpretation can involve different levels of interpretation, ranging from viewing the GAI as a self-report and interpreting each scale individually, to interpreting scale elevations and interrelationships. The following table is a starting point for GAI scale interpretation.

GAI Risk Ranges		
Risk Category	**Risk Range Percentile**	**Total Percentile**
Low Risk	0 - 39%	39%
Medium Risk	40 - 69%	30%
Problem Risk	**70 - 89%**	**20%**
Severe Problem	**90 -100%**	**11%**

Referring to the above table, a problem is not identified until a scale score is at the 70th percentile or higher. Percentages are based upon the GAI's normative gambler population and updation via database analysis. The GAI database incorporates thousands of GAI tests data and grows with each GAI that is administered. The **Problem** risk range is from the 70th percentile to the 89th percentile. The **Severe Problem** risk range is from the 90th percentile to the 100th percentile. **Elevated scores** are at or above the 70th percentile. More in depth GAI information is available on Behavior Data Systems, Ltd. website **www.bdsltd.com**. Another interesting website is **www.gambler-assessments.com**.

SEVEN GAI SCALES EXPLAINED

Seven GAI Scales (Measures)

1. Truthfulness Scale: measures the truthfulness of the gambler while completing the GAI. This scale identifies self-protective, defensive and guarded gamblers that attempt to minimize their problems or "fake good." Ulenhuth, Lipman, Chassan, Hines, and McNair (1970) noted, "It is the patient's (gambler's) opinion with all its biases that is most relevant to the initiation and maintenance of treatment." Although in many ways a truism, a caveat should be affixed to this axiom, "When the assessor (evaluator) knows the gambler is truthful." Gamblers are notorious liars.

Many experienced evaluators only use tests with a reliable, valid and accurate Truthfulness Scale. Knowing the gambler was truthful while completing the test goes a long way in building accurate and meaningful profiles. It also aids in establishing positive assessor - client relationships, which many believe is a powerful factor in treatment outcome (Hubble, Duncan, & Miller, 1999; Sprenkle, Blow, & Dickey, 1999).

One of the first things to check when reviewing a GAI report is the client's Truthfulness Scale score. **Truthfulness Scale scores at or below the 89th percentile mean that all other GAI scale scores are accurate.**

When the Truthfulness Scale score is in the 70 to 89th percentile range other GAI scale scores are accurate because they have been Truth-Corrected. Yet, the gambler's Truthfulness Scale score, in the 70 to 89th percentile range, shows the gambler was attempting to "look good" and minimized problems. Truth-Corrected scores have proven to be important for assessment accuracy. This proprietary truth-correction process is comparable to the Minnesota Multiphasic Personality Inventory (MMPI) K-scale correction. The Truthfulness Scale consists of a number of items that the overwhelming majority of people agree or disagree with. The Truthfulness Scale has been correlated with all other GAI scales. The truth-corrected equation then converts raw scores to Truth-Corrected scores. Truth-Corrected scores are more accurate than raw scores. Raw scores reflect what the gambler wants you to know. Truth-corrected scores reveal what the gambler is trying to hide.

2. DSM-IV Gambling Scale: The American Psychiatric Association has had a very influential role in defining pathological gambling in the United States. The original pathological gambler diagnosis appeared in the Diagnostic and Statistical Manual of Mental Disorders (*DSM-III*) which was published in 1980. In *DSM-III* a person had to agree to at least four of seven criteria to be diagnosed a pathological gambler. The Anti-Social Personality Disorder was excluded from this classification. The revised *DSM-III-R* criteria for pathological gamblers was published in 1987. In *DSM-III-R* the criteria for a pathological gambler was changed in that a person had to agree to four or more of nine criteria to be diagnosed a pathological gambler. The exclusion of the Anti-Social Personality Disorder was also discontinued. In *DSM-IV* (1994) a person must agree to five or more of ten criteria (excluding a Manic Episode) to be diagnosed. The evolution (*DSM-III, DSM-III-R, DSM-IV*) of the *DSM-IV* pathological gambler criteria can not be ignored. Changes were made to the pathological gambler criteria from 1990 through 1994. Moreover, since its release in 1994 the *DSM-IV* criteria for pathological gamblers has dominated gambler diagnoses in the gambling and mental health fields. *DSM-IV* criteria is the most widely-used procedure for identifying pathological gamblers in the United States.

The *DSM-IV* criteria consists of a ten-item scale that is "based on the most recent criteria for pathological gambling" (American Psychiatric Association, 1994). The diagnostic criteria for 312.31 Pathological Gambling (*DSM-IV*, p. 618) are summarized by Volberg (2003) as follows:

SUMMARY OF 10 DSM-IV CRITERIA

1. Preoccupation	**6.** Chasing
2. Tolerance	**7.** Lying
3. Withdrawal	**8.** Illegal Acts
4. Loss of Control	**9.** Risked Relationships
5. Escape	**10.** Bailout

The *DSM-IV* screen is a classification scale that identifies pathological gamblers. This screen has been used to compare demographic characteristics of problem and severe problem gamblers.

Many terms have been used to describe people with gambling problems (Cunningham-Williams, Cottler, Compton, Spitznagel, & Ben-Abdallah, 2000). In this article people with emerging gambling problems are synonymous with the Gambler Addiction Index (GAI) "problem gambler." The term pathological gambler (*DSM-IV*) corresponds to the "severe problem" (GAI) classification.

Since the *DSM-IV* screen or criteria represent the "gold standard" for identifying pathological gamblers it was adapted for use in the Gambler Addiction Index (GAI). In developing the *DSM-IV* Pathological Gambling Scale, some adjustments were made to the *DSM-IV* criteria wording and format. The number of response categories was also changed from "yes/no" to "true/false." Fisher (1996) made similar (but different) adaptations for use in her survey of British casino patrons (Fisher, 1996). Fisher identified people that admitted to 3 or 4 criteria items as "problem gamblers," while individuals admitting to 5 or more items are classified as "serious problem" gamblers. This terminology is consistent with the Gambler Addiction Index (GAI) nomenclature.

The inclusion of the DSM-IV Gambling Scale in the GAI adds another dimension to its gambler assessments. The DSM-IV based scale is essentially a classification scale, whereas the GAI Gambling Severity Scale is a problem "severity" measurement scale. The GAI now spells out the gambler's classification (social gambler, problem gambler, pathological gambler) and concurrently calculates the severity of a persons gambling with its Gambling Severity Scale. The incorporation of these two measurement approaches in the same instrument has several advantages. For example, in one test we can now classify gambling incidence and concurrently measure the severity of gambler's problems.

Some practitioners question the DSM-IV's diagnostic approach (Widiger & Clark, 2000). A growing debate appears to be focusing on the measurement models used. On one side gambling disorders are diagnosed and classified in terms of DSM-IV criteria. On the other side is a continuum measurement model that allows severity of gambler problem measurement. As stated by Toce-Gerstein, Gerstein, and Volberg (2003) "these different measurement models may serve different purposes and are conceptually compatible with each other." This important measurement model discussion continues.

With the inclusion of the GAI *DSM-IV* Gambling Scale, the GAI is one of the few gambler tests that contains both measurement models. The "DSM-IV Gambling Scale" incorporates the *DSM-IV* pathological gambler criteria and the "Gambling Severity Scale" provides problem "severity" measures. This approach is consistent with "two measurement model theory" that suggests the two models are compatible although employed for different purposes (Kessler, 2002). Categorical classification seems more appropriate for incidence statistics and demographics. Yet, many practitioners also use DSM-IV criteria for identifying pathological gamblers.

Another advantage of the Gambling Severity Scales measurement of the severity of gambling problems may be inferred from the American Society of Addiction Medicine (ASAM) treatment recommendations (American Society of Addiction Medicine, 1996). **As noted by ASAM, there are exceptions to *DSM-IV* classification, and these exceptions are made according to problems severity.** In other words, the severity of a persons gambling problem should determine their recommended level of intervention and treatment.

It was known in 1990 (Andrews, Bonta, & Hoge, 1990) that problem severity should be matched with commensurate treatment intensity. In other words treatment effectiveness is enhanced when problem severity is identified and subsequent treatment is at an intensity level equivalent to problem severity. GAI measurement scales like the Gambling Severity Scale,

Alcohol Scale, Drugs Scale, Suicide Scale and Stress Coping Abilities Scale measure their respective problems severity.

3. Gambler Severity Scale: measures client gambling involvement on a continuum from none or some gambling (low risk, zero to 39th percentile), through social gambling (medium risk, 40 to 69th percentile), to problem gambling (at risk or problem risk, 70 to 89th percentile) and severe problem, compulsive or pathological (90 to 100th percentile) gambling. **The Gambler Severity Scale assesses the severity of gambling problems**.

Problem gamblers (70 to 89th percentile) manifest emerging gambler problems. These individuals are losing control over their gambling. Problem gamblers are experiencing gambling problems (not just losing money) and their consequences, which go beyond DSM-IV pathological gambling criteria.

Severe problem or pathological gamblers are characterized by their loss of gambling control. In GAI methodology a Gambler Severity Scale score in the 90 to 100th percentile range is representative of the upper eleven percent of gamblers in the GAI gambler database.

How Does the Gambler Severity Scale Differ From the DSM-IV Gambling Scale?

The DSM-IV Gambling Scale is a reworded and reformatted version of DSM-IV 10 pathological gambler criteria. The DSM-IV criteria (American Psychiatric Association, 1994) only specifies a person admitting to 5 or more of these 10 items as meeting the criteria of "pathological gambler."

In the GAI methodology an individual admitting to 1 or 2 of these DSM-IV criteria is classified as a "social gambler." This extends Fisher's (1996) logic to include 1 and 2 DSM-IV criteria admissions. A person having 3 or 4 admissions classifies that person as a "problem gambler," Fisher (1996) first made this innovation. And admission to 5 or more of these 10 items meets the DSM-IV criteria of "pathological gambler." The DSM-IV criteria is a classification system.

In contrast, the Gambler Severity Scale consists of 53 items and incorporates gambling-related attitudes, feelings/emotions, behavior and consequences. This is a much broader or inclusive approach to measuring the severity of gambling involvement. Indeed, the Gambler Severity Scale adds another dimension to gambler assessment, which is a gambler's "problem severity" measurement. The GAI is unique in that it "classifies gamblers" (DSM-IV) and concurrently measures the "severity" of their problems.

4. Alcohol Scale: according to Welte, Barnes, Wieczorek, Tidwell, and Parker (2001) pathological gamblers are more likely to be problem drinkers than the average person. Pathological gambling and alcohol dependency were found to be correlated (Welte et al., 2001). The odds for having a gambling problem are reportedly 23 times higher for people with alcohol problems than for people without gambling problems. Paraphrasing Welte et al., "treatment providers working with gamblers should also screen clients for alcohol abuse/dependency." Although methodology and definitions vary, other studies have also found correlations (comorbidity) between pathological gambling and alcohol dependence (Kidman, 2002).

Regardless of the specific causal association linking gambling and drinking, the fact that they frequently co-occur raises important assessment questions. Treatment of either gambling or drinking could be compromised by the presence of the "other" not being treated (Bukstein, Brent, & Kaminer, 1989; Kranzler and Liebowitz, 1988).

The GAI Alcohol Scale measures alcohol use and the severity of abuse. Alcohol refers to beer, wine and other liquors. An elevated (70th percentile and higher) Alcohol Scale score identifies emerging drinking problems. A Problem (70 to 89th percentile) Alcohol Scale

score identifies the presence of alcohol-related problems. An Alcohol Scale score in the severe problem (90 to 100th percentile) range identifies established and very serious drinking problems.

A history of alcohol problems (alcohol-related arrests, DUI/DWI offenses or alcohol treatment) could result in an abstainer (current non-drinker) attaining a low to medium risk score. Consequently, safeguards have been built into the GAI software to identify "recovering alcoholics." For example, on the third page of the GAI report "structured interview" items are presented. Items #45, #72, #86 and #115 refer to present tense alcohol admissions. The GAI's "recovering alcoholic" question (#165) is always printed on the 3rd page of the GAI report. In addition, elevated Alcohol Scale paragraphs caution staff to determine if the gambler is recovering and if recovering - how long?

When both the Alcohol Scale and the Drugs Scale scores are elevated explore polysubstance abuse. The higher score is usually the substance of choice. Any combination of severe problem Alcohol Scale scores, Drugs Scale scores and Suicide Scale scores is a malignant sign. An elevated Alcohol Scale score can exacerbate other scales psychopathology. The Alcohol Scale is usually interpreted in combination with other elevated scales, but it can also be interpreted independently.

5. Drugs Scale: many researchers have explored the relationship between pathological gambling and substance (alcohol and other drugs) abuse (Cunningham-Williams et al., 2000; Feigelman, Wallisch, & Lesieur, 1998; Welte et al., 2001). Comorbid pathological gambling and substance use disorders are common (Westphal, Rush, Stevens, & Johnson, 1998). Research has consistently demonstrated that problem gamblers have elevated alcohol and drug use measures when compared to non-problem gamblers (Smart & Ferris, 1996). Both gambling and substance (alcohol and other drugs) abuse can devastate people and their families. An estimated 50% of pathological gamblers have a history of substance abuse (Lesieur, Blume, & Zoppa, 1986). Welte et al. (2001) emphasizes the importance of gamblers being screened for substance (alcohol and other drugs) abuse. Pathological gambling may be a comorbid condition with alcohol and/or illicit drug abuse (Grant, Kushner, & Kim, 2002).

The GAI Drugs Scale measures drug (marijuana, ice, ecstasy, crack, cocaine, amphetamines, barbiturates, heroin, etc.) use and the severity of abuse. An elevated (70th percentile and higher) Drugs Scale score indicates the presence of emerging drug-related problems. A Drugs Scale score in the problem (70 to 89th percentile)range identifies drug problems. A Drugs Scale score in the severe problem (90 to 100th percentile) range identifies established and very severe drug problems.

Safeguards are also built into the Drugs Scale to identify "recovering" drug abusers. The gamblers answer to the "recovering" drug abuser question (#165) is always printed on the third page of the GAI report. Other "present tense" drug abuse admissions include #21, #74, #81, #107, #117 and #122. Admissions to these items are printed as "significant items" in the GAI report.

When Drugs Scale and Alcohol Scale scores are both elevated polysubstance abuse is indicated and the highest score reflects the gamblers substance of choice. Any elevated GAI scale scores with an elevated Drugs Scale score is a malignant sign. The higher the score's the more serious the problem. The Drugs Scale score is usually interpreted in combination with other GAI scale scores. Yet the Drugs Scale score can also be interpreted independently.

6. Suicide Scale: "there is strong prima fascia evidence suggesting a causal relationship between excessive gambling and suicide. However, there is insufficient and inconsistent epidemiological and empirical data upon which to state that gambling is causally related to suicide" (Blaszczynski & Marfels, 2002). Yet Blaszczynski and Farrell (1998) reported "there

are sufficient indicators to provide strong support for the argument that gambling can act as a catalyst or play a relevant role in suicide." Lesieur (1998) noted that gamblers have very high rates of suicide ideation. And as Bailey (2003) noted "finding that one in five problem gamblers considered suicidal in 2002 is startling and worrisome." Phillips and Smith (1997) stated "Suicide attempts by pathological gamblers are higher than for any other addiction group."

The GAI Suicide Scale assesses verbal clues and behavioral symptoms along with emotional indicators. **There is consensus that in almost every suicidal act, there are hints of suicidal thinking before the suicide occurs.** Currently one of the major obstacles in suicide prevention is identification. Yet, suicidal individuals give many hints of their intentions. In most cases there are precursors to suicidal acts.

In the GAI Suicide Scale an elevated score (70th percentile and above) indicates the presence of suicidal ideation. Problem (70 to 89th percentile) scorers typically show problematic suicidal ruminations. They manifest emerging suicidal tendencies. Severe problem (90 to 100th percentile) scorers are a definite suicide risk. They are desperate and contemplating suicide. Their suicidal ideation should not be ignored.

To accurately identify potentially suicidal individuals, we must often combine different GAI scales, when no one scale by itself would be a definitive predictor. However, any time you have an elevated Suicide Scale score it should not be disregarded. Suicide Scale scores in the severe problem range must be taken seriously. A particularly dangerous profile involves elevated Suicide, Alcohol and/or Drugs Scale scores. With this GAI profile the assessor must consider suicide a possibility and take appropriate steps. The higher the score's the more serious the situation. Appropriate "steps" might include alerting other professional staff, request a comprehensive evaluation, obtain another mental health care professionals opinion, not allowing the client to be alone, etc. The evaluator's experience and judgment will influence decisions regarding the gambler's family and support group. Prompt intervention is warranted. The Suicide Scale can be interpreted individually. However, in most cases the Suicide Scale's interpretation will involve its relationship with other GAI scales.

7. Stress Coping Abilities: many believe stress is an unavoidable outcome of problem gambling. Marshall and Wynne (2003) observed that 29% of problem gamblers were considered "highly stressed," compared with just 9% of non-problem gamblers. Most gambler evaluators (assessors and screeners) would agree that problem and pathological gamblers typically manifest high levels of stress.

The Stress Coping Abilities Scale measures the gambler's ability to handle stress, tension and pressure. Most people that lose money experience stress - which is not unusual. Yet, people differ in terms of how well they handle or manage the stress they experience. In the same stressful situation one person can be overwhelmed, whereas another person handles it well. The Stress Coping Abilities Scale does exactly that -- it reflects the gamblers "coping skills." Consequently a gambler's Stress Coping Abilities Scale score reveals how well that person handles or copes with stress.

Scores in the problem (70 to 89th percentile) range reflect impaired stress coping abilities. These problems are emerging and likely not yet established. In these instances consideration might be given to "stress management counseling, lifestyle adjustment groups, etc." Scores in the severe problem (90 to 100th percentile) range identify seriously impaired stress handling abilities. Severe problem scorers are all to easily overwhelmed by stress and pressure. These severe problem scorers would benefit from counseling (individual or group).

We now know that stress can exacerbate emotional and mental health problems. Consequently, the Stress Coping Abilities Scale is a non-introversive way to screen for the presence of these problems. When a person attains a severe problem (90 to 100th percentile)

Stress Coping Abilities Scale score it is highly likely that such a person has established emotional and/or mental health problems. In such cases the gambler might be referred to a mental health professional for a comprehensive psychological evaluation and treatment plan.

GAMBLER ADDICTION INDEX (GAI) RESEARCH

GAI Research

Much of the Gambler Addiction Index (GAI) normative and standardization research is summarized in "GAI: An Inventory of Scientific Findings" which can be provided upon request. The GAI is also discussed in depth on Behavior Data Systems, Ltd. website **www.bdsltd.com**. Another interesting website is **www.gambler-assessments.com**. The following research study is reported in the "GAI: an Inventory of Scientific Findings."

This research study (Allen, 2004) investigated GAI reliability, validity and accuracy. This study involved 269 adult gamblers in court referral settings. There were 202 males (75.1%) and 67 females (24.9%). Table 1 presents each GAI scales reliability alpha coefficient.

Table 1. GAI Reliability (N=269, 2004)

GAI Scales	Coefficient Alpha	Significance Level
Truthfulness	**.90**	p< .001
Gambling Severity	**.95**	p< .001
Suicide	**.91**	p< .001
Alcohol	**.95**	p< .001
Drugs	**.94**	p< .001
DSM-IV Scale	**.88**	p< .001
Stress Coping	**.96**	p< .001

All GAI reliability coefficients exceed the professionally accepted standard of .80. GAI scales demonstrate impressive reliability.

Table 2 summarizes GAI Alcohol Scale and Drugs Scale discriminant validity. Two groups were compared: 1. First Offenders having 1 or 0 alcohol and drug arrests. 2. Multiple Offenders having 2 or more alcohol or drug arrests. The Alcohol Scale was administered to 170 first offenders and 99 multiple offenders. The Drugs Scale was administered to 218 first offenders and 51 multiple offenders.

Table 2. First Offender Versus Multiple Offenders Comparisons (N=269, 2004)

GAI Scale	First Offender Mean	Multiple Offender Mean	F-Value	Level of Significance
Alcohol Scale	8.24	22.71	F=131.77	p< .001
Drugs Scale	10.54	22.51	F=90.06	p< .001

Table 2 shows mean (average) scale scores for First Offenders were significantly lower than mean scale scores for Multiple Offenders on the GAI's Alcohol Scale and Drugs Scale. As predicted, multiple offender's scored significantly higher than First Offenders. GAI substance abuse severity measures clearly differentiated between First and Multiple Offenders. These results support the validity of the GAI Alcohol and Drugs Scale.

Table 3 summarizes correlation analyses between the Alcohol Scale and Drugs Scale to assess convergent validity. Statistically significant correlation coefficients were obtained when

comparing Alcohol Scale scores and number of alcohol arrests. Similarly, statistically significant correlation coefficients were demonstrated between the Drugs Scale scores and number of drug arrests. These results further support these substance (alcohol and other drugs) abuse scales convergent validity.

Table 3. Relationships: Criminal History & Substance Abuse Scale (N=269, 2004)		
GAI Scales	**Alcohol Scale**	**Drugs Scale**
Alcohol Scale	.64**	.11
Drugs Scale	.08	.56**
Note: Significance Level ** refers to p< .001. Highly Significant		

Table 4 summarizes GAI Scale accuracy. There are four risk ranges: Low Risk (zero to 39th percentile), Medium Risk (40 to 69th percentile), Problem Risk (70 to 89th percentile) and Severe Problem (90 to 100th percentile) Risk. Risk range percentiles represent degree of severity. The higher the percentile score is -- the higher problem severity is.

Table 4 compares each scales "attained percentile" and its "predicted percentile" score. The predicted percentile score for each of the four GAI risk ranges are given in parentheses under the risk range category (in bold). Then under each of the 4 risk range categories are two columns. The column on the left is that scales attained percentile score and the column on the right (bold and in parentheses) is the percentage difference between the predicted and attained scale scores. For example, going from left to right across Table 4 for the Truthfulness Scale we have for the Low Risk category 42.0 (attained percentage), **(3.0)** percentage difference between attained (42.0) and predicted (39%) percentage. Other risk range percentile scores are presented in a similar manner.

Table 4. Comparison of Predicted and Attained Percentages (N=269, 2004)								
GAI Scales	**Low Risk (39%)**		**Medium Risk (30%)**		**Problem Risk (20%)**		**Severe Problem (11%)**	
Truthfulness	42.0	**(3.0)**	29.7	**(0.3)**	21.2	**(1.2)**	7.1	**(3.9)**
Gambling Severity	40.9	**(1.9)**	33.4	**(3.4)**	19.8	**(0.2)**	5.9	**(5.1)**
Suicide	38.3	**(0.7)**	30.1	**(0.1)**	19.7	**(0.3)**	11.9	**(0.9)**
Attitude	41.3	**(2.3)**	28.6	**(1.4)**	20.1	**(0.1)**	10.0	**(1.0)**
Alcohol	42.8	**(3.8)**	30.8	**(0.8)**	19.3	**(0.7)**	7.1	**(3.9)**
Drugs	38.7	**(0.3)**	30.4	**(0.4)**	20.1	**(0.1)**	10.8	**(0.2)**
Stress Coping	39.0	**(0.0)**	29.8	**(0.2)**	20.0	**(0.0)**	11.2	**(0.2)**

In summary, of the 28 possible "obtained versus predicted" percentage comparisons, 21 are within 2.0 percentage points. Only 1 comparison was more than 3.2 percentage points from the predicted. This is accurate assessment. And this database analysis demonstrates the value of the GAI's built-in database in continually improving its statistical qualities -- in this case assessment accuracy. Based on this research the Gambling Severity Scales scoring distributions will be reassessed and adjusted where appropriate to provide even more accurate assessment in the future.

SUMMARY

This article introduces the Gambler Addiction Index (GAI), a test specifically designed for gambler (male and female) assessment. The GAI is an automated (computer scored on-site) assessment instrument or test that takes approximately 30 minutes to complete. It is computer scored with reports printed on-site within 2½ minutes of data entry. The seven GAI scales (measures) include: **1.** Truthfulness Scale, **2.** DSM-IV Gambling Scale, **3.** Gambler Severity Scale, **4.** Alcohol Scale, **5.** Drugs Scale, **6.** Suicide Scale and **7.** Stress Coping Abilities Scale. Each of these scales was defined and explained.

More in-depth discussion is presented on **www.bdsltd.com**. When you visit this site important navigational links are in the left margin of each webpage. Click on the "Tests Alphabetically Listed" link, scroll down to "Gambler Addiction Index" and when you click on the tests name you will go directly to its webpage. The GAI is described, its unique features are explained and an example report is provided. In addition, some GAI research studies are presented along with example "Annual Summary Reports."

A recent GAI research study (Allen, 2004) involving 269 gamblers was discussed. This research investigates GAI validity, reliability and accuracy. Interested readers are referred to "GAI: An Inventory of Scientific Findings" which can be provided upon request (Behavior Data Systems, Ltd.).

The GAI incorporates both the "DSM-IV Gambling Scale" and the "Gambler Severity Scale" which represents two measurement models. The DSM-IV Gambling Scale is a classification model, whereas the Gambler Severity Scale permits problem severity measures.

Several interviews, screens or tests for "gambler assessment" have been introduced in the last two decades. Each of these test's have strengths and weaknesses. The Gambler Addiction Index (GAI) has its own unique features that set it apart from the assessment procedures that preceded it.

The GAI does more than just identify problem and pathological gamblers. The DSM-IV Gambling Scale has been extended to identify "social gamblers," problem gamblers and "pathological gamblers." In addition, the Gambler Severity Scale measures the **severity** of gambler problems. The GAI also measures other relevant gambler attitudes and behaviors like the truthfulness of the gambler while being tested, substance (alcohol and other drugs) abuse involvement, suicidal ideation and stress coping abilities. At one session of approximately 30 minutes duration evaluators (screeners, assessors) acquire a great deal of important gambler information in a valid, reliable and accurate manner. The GAI is based upon recent diagnostic criteria and research. It provides helpful assessment, intervention and treatment information. The GAI is used in a variety of milieus including courts, probation, intervention, counseling and treatment settings.

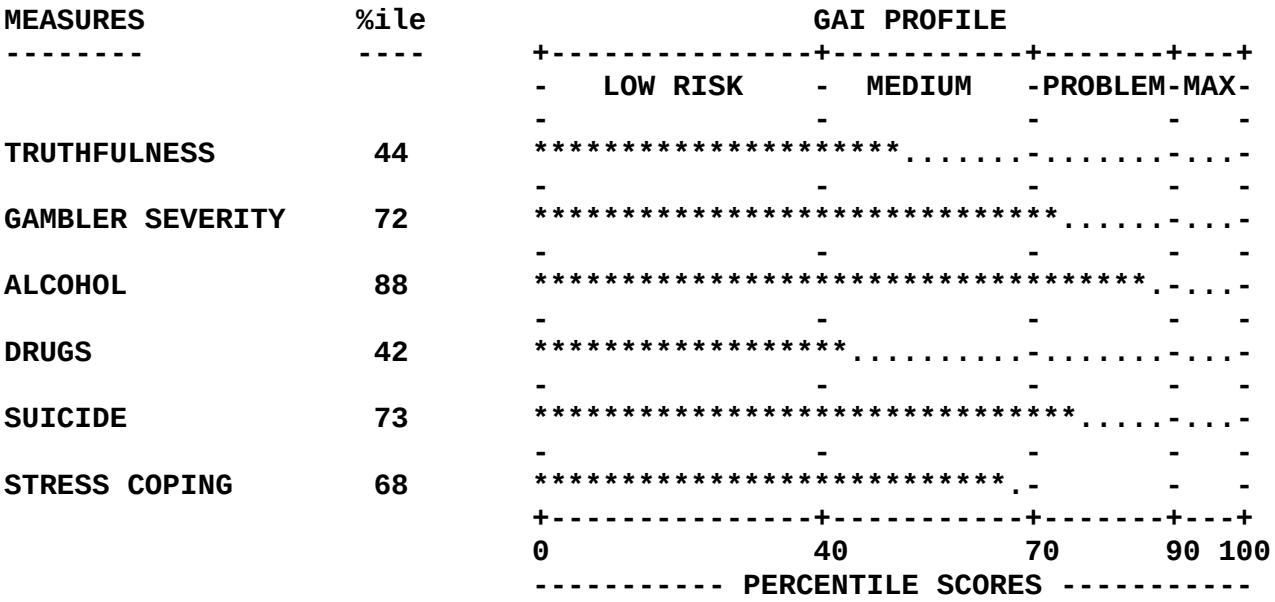
The GAI is available -- free -- for use in Ph.D. dissertations and other doctorate level research studies. Behavior Data Systems, Ltd. wants to encourage and support GAI research in the gambling field. Interested parties should contact Behavior Data Systems, Ltd. Its e-mail address is **bds@bdsltd.com**.

AN EXAMPLE GAI REPORT FOLLOWS

Gambler Addiction Index

NAME OR ID# : Example Report **CONFIDENTIAL REPORT**
AGE: 33 SEX : Male
ETHNICITY/RACE : Caucasian
EDUCATION/GRADE : High school graduate
MARITAL STATUS : Married
DATE GAI SCORED : 12/11/2006

GAI results are confidential and should be considered working hypotheses. No diagnosis or decision should be based solely upon GAI results. The GAI is to be used in conjunction with experienced staff judgment.



DSM-IV GAMBLING SCALE CLASSIFICATION: Social Gambler

ADDITIONAL INFORMATION PROVIDED BY CLIENT

Total number of arrests.....	2	Alcohol-related arrests.....	2
Times on probation.....	1	Drug-related arrests.....	0
Probation revocations.....	0	# of months employed past year..	12
Jail sentences.....	0	Average times gambling per month..	1

GAI RESPONSES (GAI TEST # 1)

1- 50	FTTTFTFTTT	TFFTTFFFTF	FTFTTTFTTF	FFFTFFFTFT	TFTTFFTFTF
51-100	TFFFTFFFFF	TFFFFFFTFF	TFFFTFTFFF	FFTFTFFFFT	FTTFFFFFFF
101-150	FTFFFFFFTF	FTTFTFFFTF	FFFTTTF321	2122212312	1222221212
151-166	2222222232	322442			

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*** * SUMMARY PARAGRAPHS EXPLAINING CLIENT'S ATTAINED SCALE SCORES * ***

TRUTHFULNESS SCALE: MEDIUM RISK RANGE **RISK PERCENTILE:44**

This client's score on the Truthfulness Scale is in the Medium Risk (40 to 69th percentile) range. This is an accurate GAI profile. However, there is a tendency for this person to deny common problems and to portray self in an overly favorable light. Specific questions will usually be answered more accurately than open ended or general type questions. This client has adequate reading skills. This is an accurate profile and other GAI scale scores are accurate.

DSM-IV GAMBLING SCALE **SOCIAL GAMBLER**

This client admitted to one or two of the 10 DSM-IV pathological gambling criteria. The GAI initiated a one or two criteria admissions "social gambler" classification. The terms "problem gambler" (3 or 4 criteria) and "pathological gambler" (5 or more criteria) do not apply in this 10 criteria DSM-IV categorization. The gambler admitted to 1 or 2 of the DSM-IV's criteria. Problem "severity" takes precedence over classification so review the GAI Gambler Severity Scale. This client manifests "social gambler" features.

GAMBLER SEVERITY SCALE: PROBLEM RISK RANGE **RISK PERCENTILE:72**

This gambler scored in the Problem Risk (70 to 89th percentile) range. Problem Risk scorers are often in the early stages of problematic gambling. Carefully review any other elevated (70th percentile or higher) GAI scale scores. Pay particular attention to the Alcohol Scale, Drugs Scale and Suicide Scale. This individual manifests gambling-related problems. A definite pattern of gambler-related admissions is needed to attain this score. Gambler's Anonymous (GA) or counseling (individual or group) should be considered.

ALCOHOL SCALE: PROBLEM RISK RANGE **RISK PERCENTILE:88**

This person's Alcohol Scale score is in the Problem Risk (70 to 89th percentile) range. Alcohol (beer, wine or liquor) problems are indicated. Either this client has a drinking problem or is a recovering (alcohol problem, but has stopped drinking) alcoholic. A pattern of alcohol abuse is evident. Relapse is possible. Alcohol-related counseling (or treatment) and/or Alcoholics Anonymous (AA) participation are recommended. This is a problem risk Alcohol Scale score.

DRUGS SCALE: MEDIUM RISK RANGE **RISK PERCENTILE:42**

This client's score on the Drugs Scale is in the Medium Risk (40 to 69th percentile) range. Some indicators of drug use are present, however, an established pattern of drug abuse is not evident. Drug-related problems are not likely and not focal issues. Participation in an educational (alcohol and other drug abuse) program might be considered. Interview to establish this client's history and pattern of drug involvement. This is a medium risk Drugs Scale score.

SUICIDE SCALE: PROBLEM RISK RANGE **RISK PERCENTILE:73**

This client scored in the Problem Risk (70 to 89th percentile) range. Any suicidal threats or suicidal ruminations or suicidal ideation should be taken seriously. In interview explore any sense of deprivation of affection and love, feelings of rejection or hopelessness,

desperation, serious financial losses or chronic pain. Substance (alcohol or drugs) abuse or impaired stress coping abilities can exacerbate suicidal ideation. Consider referring this person for counseling(individual or group). This is a problem risk score.

STRESS COPING SCALE: MEDIUM RISK RANGE **RISK PERCENTILE:73**

Stress coping abilities are not well established. Stress is likely a focal area of concern. This person is not coping effectively with stress, tension, anxiety or pressure. Symptoms of stress include irritability, depression, marital/family problems, impaired concentration and in some cases even substance abuse. Stress is contributing to emotional and adjustment problems. This is a problem risk Stress Coping Abilities Scale score.

SIGNIFICANT ITEMS: Answers are either client self-admissions or unusual responses that should be explored within the context of the client's lifestyle.

ALCOHOL	DRUGS
3. Is concerned about drinking	No significant items were
15. Drinking caused social problms	reported for this scale.
57. Missed work due to drinking	

GAMBLER SEVERITY	SUICIDE
71. Told gambling ruining life	48. States “Nobody cares about me”
112. Can't stop gambling	111. Loneliness becoming unbearable

STRUCTURED INTERVIEW: Client's answers with all their biases (items 159 through 166) reflect the respondent's attitude and outlook.

159. Gambling: a slight problem
160. Drinking: moderate problem
161. Drug use: a slight problem
162. May need gambling treatment
163. May need alcohol treatment
164. No need for drug treatment
165. Not a recovering person
166. Rates gambling under control

OBSERVATIONS AND RECOMMENDATIONS:_____

_____

_____

_____ _____

STAFF MEMBER SIGNATURE **DATE**

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