Evaluation of the Clinical Need for Residential Treatment Services for Problem Gambling in Michigan

Draft Final Report Submitted to the Michigan Department of Community Health Office of Recovery Oriented Systems of Care

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Study Rationale

Michigan currently offers outpatient treatment for gambling disorder (GD) through the Michigan Department of Community Health (MDCH) Office of Recovery Oriented Systems of Care and managed by Health Management Systems of America. Within this program, the State provides funding for the Michigan Problem Gambling Help-line and outpatient treatment services, as well as for educational and research pursuits. The State of Michigan does not currently offer higher levels of care, such as residential and broad access to intensive outpatient treatment (IOP) for GD, although some limited IOP care is available under certain circumstance[1]. As of 2010, nine states offer residential treatment for GD and 11 states offer IOP treatment (Marotta et al., 2010). In this report, we describe a study designed to assess need for residential treatment services in the State of Michigan based on criteria set forth by the American Society of Addiction Medicine (ASAM; Mee-Lee & Shulman, 2009). Although secondary to the present report, we also asked about IOP services.

ASAM criteria for patient placement were originally developed as a way to establish appropriate level of care for individuals with drug and/or alcohol problems. Assessment dimensions included: 1) acute intoxication and/or withdrawal potential; 2) biomedical conditions and complications; 3) emotional, behavioral or cognitive conditions and complications; 4) readiness to change; 5) relapse, continued use, or continued problem; and 6) recovery environment (Mee-Lee, & Shulman, 2009). Higher levels of severity on any of these dimensions are generally suggestive of need for higher levels of care (i.e., IOP and residential treatment) than simple outpatient care.

Figure 1. ASAM model for problem gambling treatment (Rugle, 2000).
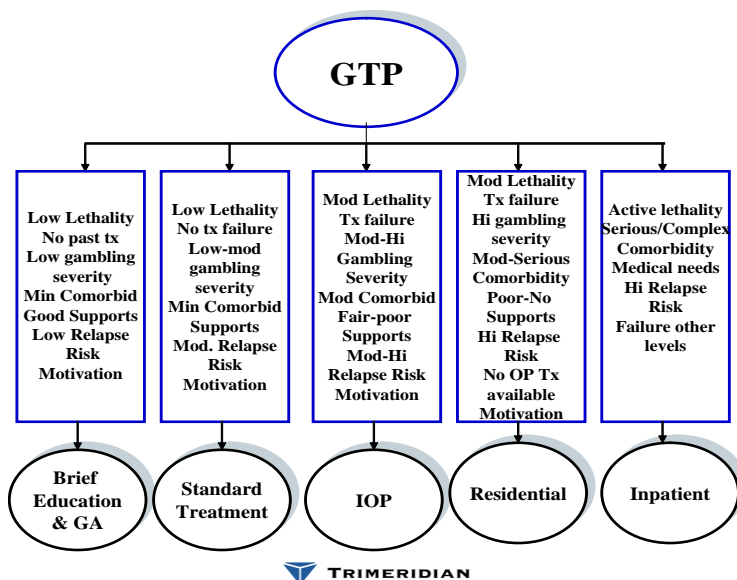
Relatively few groups have applied the ASAM criteria directly to GD, but several criteria appear to be highly relevant to the treatment of this disorder. For example, co-occurring mental health conditions that potentially interfere with a gambler's recovery are very common among problem gamblers (e.g., Petry, Stinson & Grant, 2005). Suicide risk is a potential co-occurring condition that is significantly higher among problem gamblers than among the general population (Ledgerwood & Petry, 2004; Newman & Thompson, 2003), and frequently requires structured treatment found in higher levels of care. Among respondents in

[1] Intensive outpatient treatment (per D. Hollis, MDCH) involves increased (i.e., more than weekly) frequency of outpatient treatment. However, such an approach has only been requested rarely (about 2 patients receiving >weekly treatment in the past year, per Lori Mello, Manager, HMSA).

a recent Michigan-based survey who endorsed SOGS scores of 5 or greater, 12.5% reported gambling-related suicidal thoughts, 22.2% had a drug or alcohol problem and 25.0% reported a concurrent mental health problem (Hartmann et al., 2006).

Relapse is another potential problem for many problem gamblers in treatment and may be precipitated by either client factors (e.g., impulsivity, risk-taking, lack of motivation for change) or environmental factors (e.g., lack of support system, vocational problems, housing problems, proximity to strong gambling cues/stimuli). Thus, some problem gamblers may be ill equipped to develop coping strategies in less structured outpatient care where gambling has not been removed as a behavioral option. These people may need clinically-managed low- and medium-level residential programs designed to provide 24 hour structure, including stabilization of co-occurring psychiatric conditions, and an emphasis on skills to reenter the community (Mee-Lee & Shulman, 2009). Alternatively, IOP may also provide enough structure and intensive treatment to assist some gamblers to develop coping skills before returning to their home environments.

Rugle (2000) has proposed a model for assigning problem gamblers to level of care based on ASAM criteria (Figure 1). In her model, residential treatment is indicated when there is: moderately lethal suicide risk; high gambling severity; moderate-serious comorbidity; poor or no supports; high relapse risk; no outpatient options available; or low motivation to change gambling behavior. Stinchfield et al. (2008) found in Minnesota that patients admitted to residential treatment resembled these criteria; specifically, they had significantly greater baseline psychiatric symptom severity, greater problem gambling severity (measured with SOGS and DSM-IV), more Gamblers Anonymous session attended prior to treatment, and more hours of past treatment services. Residentially treated patients also evidenced greater treatment completion than outpatients (91% vs. 54%). Thus, residential services appear to be indicated for those patients with higher severity of gambling problems and co-occurring difficulties, and it appears that those who enter residential treatment are more likely to complete treatment.

North American jurisdictions with residential treatment programs report that they are able to keep their treatment slots occupied, and in some cases have wait-lists for treatment. Dr. Ledgerwood has worked closely with two of these agencies, Windsor Regional Hospital in Windsor, Ontario, and the State of California/UCLA. Windsor Regional Hospital, the residential program that is geographically the closest to Michigan, supports 7 residential beds along with 2 slots for IOP treatment. The treatment program is 3-weeks in duration with patients starting and ending treatment as a cohort. All beds are generally full in this program and there is usually a wait list ranging from 6 to 9 weeks (personal communication, Charlie Moscatello, residential program clinician). Windsor Regional Hospital is one of two residential treatment programs for GD in the province (a specialized program for women also exists in Toronto). The Residential program in California is run through Beit T'Shuva in Los Angeles. According to data provided by UCLA, there are currently 15 beds, expanded from an original 7 beds due to high demand. Average length of treatment is 3 month

residential and 1 month aftercare. The program is nearly always fully booked with a wait-list usually ranging from 72 hours to 1 week.

As residential treatment is associated with improved outcomes for patients requiring higher level of care and there is no residential treatment for GD in Michigan, the goal of this project was to assess the need for residential and IOP treatment in Michigan.

Primary Aims:

Based on the above background, the primary aims of the present study were:

1) Assess the number of individuals currently receiving outpatient treatment for GD through the State of Michigan Problem Gambling program who meet criteria for a higher level of care. Our primary focus was on residential treatment but we also assessed for IOP. We used measures that address suitable ASAM criteria to establish appropriate level of care. Further, appropriateness for residential and IOP treatment was assessed by both client self-report and through assessment by the client's current clinician.

2) Assess client willingness to accept a referral for residential care.

Methods

Participants

The present study was designed to include two groups of participants: 1) clients currently receiving outpatient services for problem gambling in the state of Michigan (N = 93); and 2) their clinicians (N = 24 reporting on N = 143 clients). According to Neighborhood Service Organization, approximately 335 cases were opened during the 2011-2012 year as of May 1 2012, and approximately 2/3 of those cases remained open at the start of this study (personal communication with Lori Mello).

Inclusion criteria for <u>Clients</u> included: 1) ability to speak English; 2) current enrollment in outpatient treatment for problem gambling in Michigan. Exclusion criteria were: 1) inability to provide informed consent to participate.

Inclusion criteria for <u>Therapists</u> included: 1) being a credentialed provider of problem gambling services by NSO in the MDCH. There were no exclusion criteria for therapists.

Procedures

Research staff members initially contacted therapists on the publically available State of Michigan problem gambling provider list by sending a letter or email inviting them to participate in the study. This initial correspondence was followed up by a telephone call asking the therapist to participate. In both the letter and the follow-up telephone call, therapists were told the nature of the study, procedures that they would be involved in, voluntary nature of the study, and confidentiality around study data. Therapists who declined participation were thanked for their time. Therapists who agreed to participate were asked to provide the number of clients on their caseloads. Following the call, the therapist was mailed a package including a consent form, and several questionnaire packets. Each packet contained pre-coded questionnaires that linked a therapist questionnaire to a corresponding client questionnaire. The therapist was asked to provide a questionnaire, information sheet and addressed/stamped envelope to each client and ask him/her to complete the questionnaire and mail it to our research center. Clients also could provide their own mailing information on a coupon that they included with the contents of the envelope, and for which they received a gift card for $10 for completing the questionnaire. Clients were informed that instead of completing the questionnaire they may also contact our toll free 1-800 number and complete the questionnaire as an interview. Further, they were informed that regardless of how they completed the study, they may call our toll free number to receive their gift card if they were uncomfortable including their information in the envelope with the questionnaire. Any payment coupons submitted to our office were immediately removed from the package containing the participant questionnaire and were stored separately from all study data with no study codes attached. Thus, participants' responses are anonymous.

Therapists were asked to complete their portion of the questionnaire for each client on their caseload, place them in a postage paid envelope and mail all envelops to

the Wayne State offices. All participants were provided with a toll free telephone number where they may receive updated information on the study.

These procedures received approval from the Wayne State University and State of Michigan Institutional Review Boards.

Measures

For each client enrolled in outpatient care, therapists were asked to have that client complete a questionnaire and mail it back to our offices, and also to complete a brief measure that they mailed separately from the client's questionnaire (Measures available from PI).

Patient measures

Demographic and Problem Gambling Questionnaire. We obtained information about participant demographics, gambling characteristics, financial, family/social, employment, substance use, and legal difficulties related to gambling using survey items adopted from prior published studies (e.g., Ledgerwood, Steinberg, Wu, & Potenza, 2005), and from the National Gambling Impact Study (Gerstein et al., 1999). Of particular importance, we asked clients to rate on a 1 to 7 scale how likely they would be to attend residential and IOP treatments. Specifically the residential item was,

"If you were offered RESIDENTIAL TREATMENT – a live-in treatment where you would stay for up to a month and receive intensive treatment for your gambling – What is the likelihood that you would attend this treatment type?"

The corresponding item for IOP was,

"If you were offered INTENSIVE OUTPATIENT TREATMENT – an outpatient treatment where you would attend for several hours (e.g., six hours) daily for a period of a few weeks – What is the likelihood that you would attend this treatment type?"

Each item was rated on a 7 point scale ranging from "I definitely would not attend" to "I definitely would attend". Participants were subsequently grouped on the basis of their responses with those scoring from 1 to 5 ("definitely would not attend" to "I might attend) categorized as being less likely to attend and those scoring from 6 to 7 ("I probably would attend" and "I definitely would attend") categorized as being more likely to attend the residential or IOP treatment, respectively. This questionnaire is reproduced in Appendix A.

National Opinion Research Center DSM Screen for Gambling Problems (NODS). The NODS is based on DSM-IV criteria for GD, and is a valid and reliable diagnostic measure of current GD (Gerstein et al., 1999; Hodgins, 2004). The NODS was administered to determine severity of gambling problems.

Behavior and Symptom Identification Scale (BASIS 32). The BASIS 32 measures self-reported symptom and problem difficulty over the course of treatment (Eisen et al., 1999). It identifies a wide range of symptoms and problems that occur across

diagnoses. The BASIS 32 includes several items that can assess elements of the ASAM criteria including: ability to manage day-to-day life; social isolation/lack of support; adjustment difficulties; co-occurring psychiatric symptoms; risk taking behavior; and suicidality. For the present study, we examined several BASIS measures including: Total BASIS 32 score which represents overall difficulty in all domains; Relationship to self and others; depression and anxiety; daily-living role-function; impulsive-addictive behavior; and psychosis.

Therapist measures

Therapists were asked to complete a brief survey on each of their clients. The survey is based on the criteria for level of care placement utilized by the UCLA/State of California Problem Gambling Services criteria for patient placement. Therapists assessed each of their patients on the following: 1) history of treatment failure; 2) co-occurring disorders; 3) impulsivity; 4) social support; 5) suicidal risk; 6) acutely self-destructive if not stopped or protected; 7) mental/physical exhaustion; 8) strong urges or cravings. This questionnaire is available from the authors by request.

Data Analysis

Data analysis was primarily descriptive but also examined some differences between participants suggested for residential and IOP treatment, and those who were recommended to remain in outpatient treatment. Based on therapist and client responses, we determined what proportion of the participants in our study would be appropriate for residential and IOP services. We also examined the proportion of patients who would be willing (indicating that they would probably or very likely attend) to attend residential and IOP treatment if offered. We predict that those who are recommended by their therapist for residential treatment, and those clients who report a high probability that they would attend residential, would have higher problem gambling severity, be more impulsive, have more psychopathology (including suicidal ideation), have poor social support and would engage in more risk-taking behaviors. Because the question of referral for IOP treatment is secondary, these results are usually included in Appendix 3, except in cases where outpatient, IOP and residential treatment modalities are directly compared or contrasted.

Results

Therapist and Client Characteristics

Demographic and clinical characteristics of clients who completed and returned a study questionnaire (N = 93) are presented in Appendix B Tables AP1 to AP6. This sample included 52% men and 48% women. In total 69% identified as European American, 21% as African American, and about 10% identified as other groups. In total, 35% were married. About 69% reported being employed. NODS score averaged 8.1 (SD=2.2) representing an overall moderate to high level of gambling disorder. The participants also reported relatively high levels of co-occurring mental health problems (i.e., depression, anxiety) and suicidality (see AP3), history of substance abuse (see AP3), significant family and financial difficulties (see AP4), and engagement in illegal behaviors and legal problems (see AP5). Returned client questionnaires identified client responses from 24 distinct problem gambling therapists, indicating that therapists actively recruited their clients to complete the survey.

In total, 49 therapists were contacted and asked to participate in the study. Thirty-six agreed, 11 stated that they had no current gambling clients and two therapists refused. Completed questionnaires were returned by 24 of the 36 therapists who agreed to participate. Study therapists (N = 24) completed questionnaires on 143 problem gambling clients, including 66 women, 74 men and 3 clients whose gender was not identified. The therapists included 13 women and 11 men.

Therapist Ratings of Appropriate Treatment Level

Therapists rated a total of 143 clients on a checklist approximating ASAM criteria. Percent of clients rated as low, medium and high severity on eight ASAM-related factors is presented in Figure 2. Overall, more clients were rated as "low" severity than "moderate" or "high" in five out of the eight categories. More clients received "moderate" than "low" severity ratings for impulsivity, social support difficulties and strong urges/cravings to gamble. It is notable that 22% of clients were rated in the "high" category for treatment failure. Similarly, 20% were rated high for co-occurring disorders, 20% for impulsivity, 21% for social support difficulties, 3% for suicide risk, 7% for self-destructive behaviors, 11% for physical and/or mental exhaustion, and 17% for overwhelming urges and cravings to gamble.

Importantly, therapists recommended residential treatment in just over 15% of cases and IOP in just over 17% of cases (Figure 3). Thus, therapists would recommend higher level treatment in about a third of their cases.

Figure 2. Therapist ratings of client severity on eight ASAM criteria.
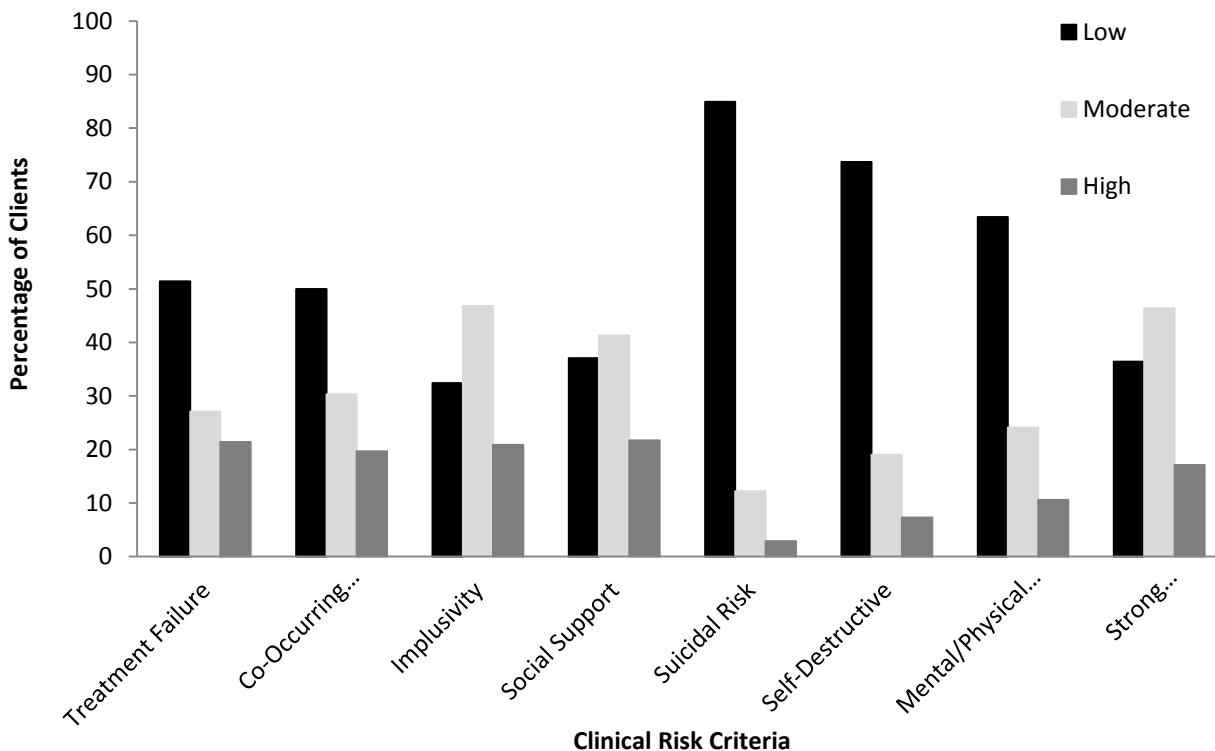
Figure 3. Percentage of clients recommended by their therapists for outpatient, intensive outpatient (IOP) and residential treatments.
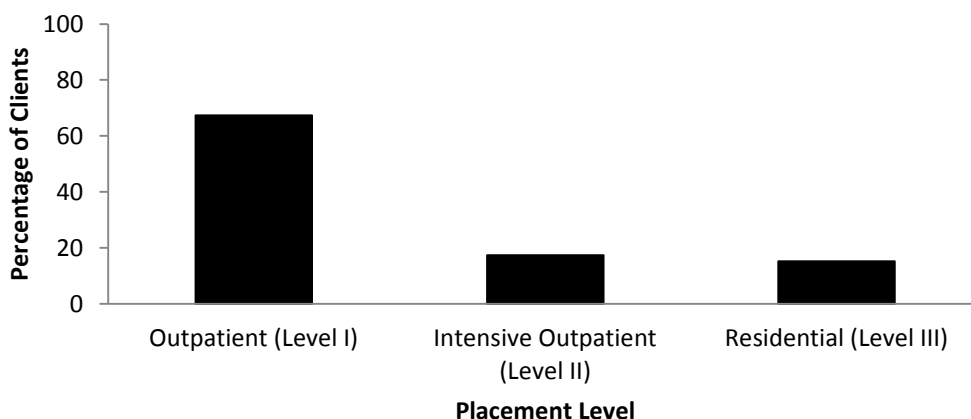
Table 1 shows the percentage of clients rated (by their therapists) as low, moderate and high on each ASAM criteria by therapist preferred treatment placement (outpatient, IOP or residential). In most cases, therapists rated those clients they selected as appropriate for IOP or residential higher on the ASAM variables. This was true for all but one case (lack of social support) in comparison of those recommended for outpatient versus those recommended for residential, and only two cases (impulsivity and social support difficulties) in comparison of those recommended for outpatient versus those

recommended for IOP. Severity ratings between those recommended for IOP versus residential were statistically similar for all but three ASAM measures (residential clients were more likely to be rated as having more co-occurring psychopathology, high levels of urges/cravings and high levels of impulsivity). Thus, these findings indicate that therapist ratings of ASAM severity are generally consistent with their recommendations for treatment placement.

Table 1. Therapist ratings on ASAM criteria for clients recommended for outpatient, intensive outpatient (IOP) and residential treatments.

Variable	Outpatient N(%)	IOP N(%)	Residential N(%)	Outpatient Vs. Residential	Outpatient Vs. IOP	IOP Vs. Residential
Treatment Failure				$\chi2\ (2) = 19.4, p<.001$	$\chi2\ (2) = 11.2, p<.01$	$\chi2\ (2) = 1.2, p=.55$
Low	57(62.6)	8(34.8)	4(20.0)			
Moderate	24(26.4)	6(26.1)	6(30.0)			
High	10(11.0)	9(39.1)	10(50.0)			
Co-Occurring				$\chi2\ (2) = 35.0, p<.001$	$\chi2\ (2) = 9.7, p<.01$	$\chi2\ (2) = 6.7,\ p<.05$
Low	58(63.0)	8(33.3)	1(5.0)			
Moderate	26(28.3)	9(37.5)	7(35.0)			
High	8(8.7)	7(29.2)	12(60.0)			
Impulsivity				$\chi2\ (2) = 21.2, p<.001$	$\chi2\ (2) = 5.5, p=.06$	$\chi2\ (2) = 13.7, p<.001$
Low	37(41.6)	5(20.8)	1(5.0)			
Moderate	39(43.8)	17(70.8)	7(35.0)			
High	13(14.6)	2(8.3)	12(60.0)			
Social Support				$\chi2\ (2) = 3.3, p=.20$	$\chi2\ (2) = 2.1, p=.36$	$\chi2\ (2) = .1,\ p=.93$
Low	37(40.2)	8(33.3)	6(28.6)			
Moderate	40(43.5)	9(37.5)	8(38.1)			
High	15(16.3)	7(29.2)	7(33.3)			

Variable	Outpatient N(%)	IOP N(%)	Residential N(%)	Outpatient Vs. Residential	Outpatient Vs. IOP	IOP Vs. Residential
Suicidality				$\chi2$ (2) = 6.56,p<.05	$\chi2$ (2) = 10.7,p<.01	$\chi2$ (2) = 1.6,p=.45
Low	82(92.1)	16(66.7)	15(75.0)			
Moderate	6(6.7)	7(29.2)	3(15.0)			
High	1(1.1)	1(4.2)	2(10.0)			
Self-Destructive				$\chi2$ (2) = 19.1,p<.001	$\chi2$ (2) = 22.3,p<.001	$\chi2$ (2) = .6,p=.74
Low	77(88.5)	10(43.5)	10(47.6)			
Moderate	8(9.2)	10(43.5)	7(33.3)			
High	2(2.3)	3(13.0)	4(19.0)			
Exhaustion				$\chi2$ (2) = 21.6,p<.001	$\chi2$ (2) = 14.7,p<.001	$\chi2$ (2) = 4.4, p=.11
Low	71(78.9)	10(41.7)	6(28.6)			
Moderate	13(14.4)	12(50.0)	8(38.1)			
High	6(6.7)	2.(8.3)	7(33.3)			
Urges/Cravings				$\chi2$ (2) = 49.6,p<.001	$\chi2$ (2) = 16.4,p<.001	$\chi2$ (2) = 9.7,p<.05
Low	44(49.4)	2(8.3)	1(4.8)			
Moderate	41(46.1)	17(70.8)	6(28.6)			
High	4(4.5)	5(20.8)	14(66.7)			

Note: N(%) = Number (Percent)

Client Willingness to Attend a Higher Level of Care

Overall, clients reported that they would be willing to attend residential and/or IOP treatment programs (see Figure 4). Specifically, about 42% of participants said they would "probably" or "definitely" be willing to attend residential treatment. Over half of the sample said they would "probably" or "definitely" be willing to attend IOP treatment.

Figure 4. Client ratings of their likelihood of attending residential or intensive outpatient (IOP) treatment.
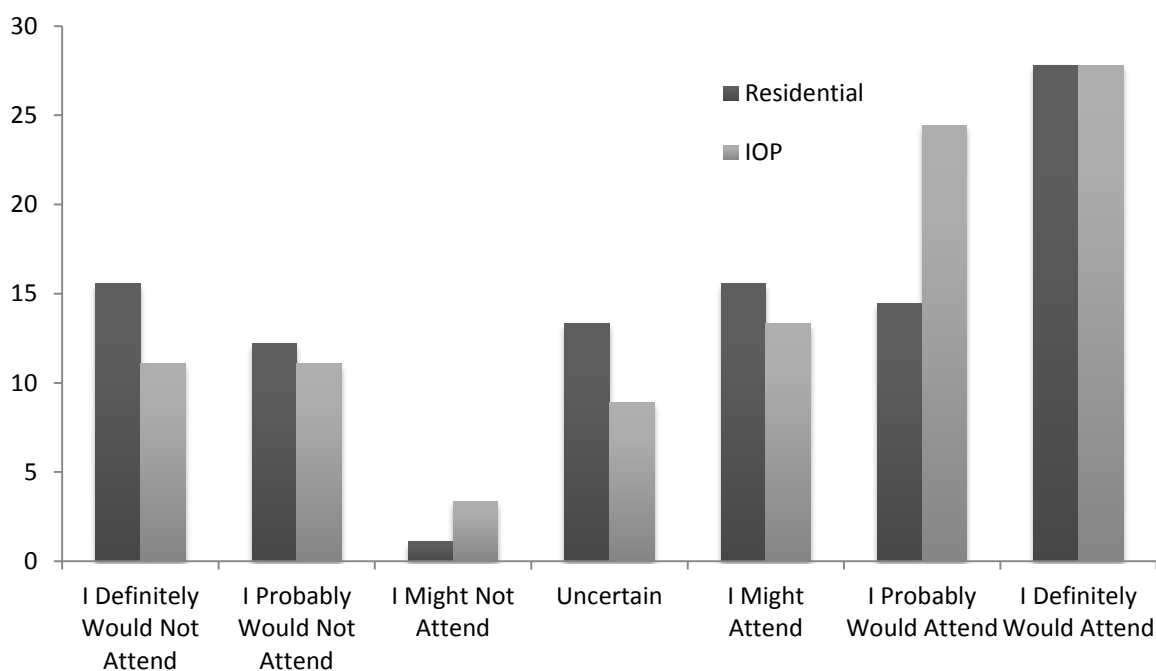
Demographic and clinical characteristics that distinguished those who reported high and low likelihood of attending residential treatment are presented in Table 2. Relatively few variables directly distinguished these two groups. However, importantly those who reported high likelihood of attending residential treatment were more likely to indicate that they experience suicidal ideation in the past year and committing fraud in the past year.

Table 2. Demographic and clinical scores for clients who reported high ("probably" or "definitely" would go) and low ("definitely wouldn't" to "maybe" would go) intention to attend residential problem gambling treatment.

Variable	Low Probability (*n* = 53)	High Probability (*n* = 38)	$\chi 2$ or t-test	p <
Age – M(SD)	51.8(13.5)	50.7(11.1)	t(82) = .39	.70
Gender N(%)			$\chi 2(1)$ = .34	.34
Women	26(52.0)	15(41.7)		
Men	24(48.0)	21(58.3)		
Married N(%)	19(35.8)	13(34.2)	$\chi 2(1)$ = .03	.87
Education – M(SD)	12.8(3.9)	12.0(4.0)	t(89) = .92	.36
Employed N(%)	39(73.6)	24(63.2)	$\chi 2(1)$ = 1.13	.29
Race – N(%)			$\chi 2(2)$ = 0.30	.86
European American	36(67.9)	27(71.1)		
African American	11(20.8)	8(21.1)		
Other	6(11.3)	3(7.9)		
Overall Physical Health – M(SD) – rated 0 – 4	2.3(.73)	2.4(.72)	t(89) = -.82	.41
Overall Mental Health – M(SD) – rated 0 – 4	2.3(.81)	2.6(.76)	t(88) = -1.46	.15

Variable	Low Probability (*n* = 53)	High Probability (*n* = 38)	$\chi 2$ or t-test	*p* <
Depression– N(%)			$\chi 2$ (2) = 3.94	.14
Now	25(48.1)	25(65.8)		
Lifetime	21(40.4)	12(31.6)		
Never	6(11.5)	1(2.6)		
Anxiety– N(%)			$\chi 2$ (2) = 1.72	.42
Now	27(51.9)	24(63.2)		
Lifetime	21(40.4)	13(34.2)		
Never	4(7.7)	1(2.6)		
Suicide Ideation – N(%)			$\chi 2$ (2) = 8.78	.05
Now	5(9.6)	13(35.1)		
Lifetime	19(36.5)	9(24.3)		
Never	28(53.8)	15(40.5)		
Suicide Attempt – N(%)			$\chi 2$ (2) = 3.97	.14
Now	1(1.9)	2(5.6)		
Lifetime	2(3.8)	5(13.9)		
Never	49(94.2)	29(80.6)		
NODS score – M(SD)	7.8(2.3)	8.7(2.0)	t(89) = -1.91	.06
Days Gambled (past 30) – M(SD)	5.5(7.9)	7.4(8.8)	t(89) = -1.09	.28
Dollars Gambled (past 30) – M(SD)	627.90 (1088)	687.16 (1659)	t(89) = -.21	.84

Variable	Low Probability (*n* = 53)	High Probability (*n* = 38)	$\chi 2$ or t-test	*p* <
Age First Gambling – M(SD)	26.0(16.2)	22.9(12.4)	t(88) = 1.00	.32
Times in Gambling Treatment – M(SD)	2.2(4.2)	6.9(33.5)	t(89) = -1.01	.32
Family Conflict – N(%)			$\chi 2$ (2) = 2.38	.31
Past Year	22(42.3)	17(44.7)		
Lifetime	15(28.8)	15(39.5)		
Never	15(28.8)	6(15.8)		
Family Violence – N(%)			$\chi 2$ (2) = 4.34	.11
Past Year	5(9.6)	2(5.4)		
Lifetime	2(3.8)	6(16.2)		
Never	45(86.5)	29(78.4)		
Family Neglect – N(%)			$\chi 2$ (2) = 2.10	.35
Past Year	17(32.7)	11(30.6)		
Lifetime	8(15.4)	10(27.8)		
Never	27(51.9)	15(41.7)		
Bankruptcy – (N%)			$\chi 2$ (2) = .93	.63
Past Year	2(3.8)	3(8.3)		
Lifetime	9(17.3)	7(19.4)		
Never	41(78.8)	26(72.2)		

Variable	Low Probability (*n* = 53)	High Probability (*n* = 38)	$\chi2$ or t-test	*p* <
Borrow-Credit Cards – (N%)			$\chi2$ (2) = 1.98	.37
Past Year	26(50.0)	14(38.9)		
Lifetime	13(25.0)	14(38.9)		
Never	13(25.0)	8(22.2)		
Borrowing-Other sources – N(%)			$\chi2$ (2) = 5.10	.08
Past Year	24(45.3)	22(57.9)		
Lifetime	11(20.8)	11(28.9)		
Never	18(34.0)	5(13.2)		
Difficulty Paying Bills – N(%)			$\chi2$ (2) = 1.16	.56
Past Year	26(49.1)	21(56.8)		
Lifetime	17(32.1)	12(32.4)		
Never	10(18.9)	4(10.8)		
Use Equity/Savings – N(%)			$\chi2$ (2) = .30	.86
Past Year	24(46.2)	18(51.4)		
Lifetime	17(32.7)	11(31.4)		
Never	11(21.2)	6(17.1)		
Alcohol problem – N(%)			$\chi2$ (2) = 2.67	.26
Now	3(5.8)	6(15.8)		
Lifetime	13(25.0)	7(18.4)		
Never	36(69.2)	25(65.8)		

Variable	Low Probability (n = 53)	High Probability (n = 38)	χ2 or t-test	p <
Drug problem – N(%)			χ2 (2) = 1.50	.47
Now	2(3.8)	0(0.0)		
Lifetime	9(17.3)	6(16.2)		
Never	41(78.8)	31(83.8)		
Arrested – N(%)			χ2 (2) = 1.32	.52
Past Year	7(13.5)	7(18.4)		
Lifetime	4(7.7)	5(13.2)		
Never	41(78.8)	26(68.4)		
Probation/Parole – N(%)			χ2 (2) = .70	.70
Past Year	3(5.8)	4(10.5)		
Lifetime	4(7.7)	3(7.9)		
Never	45(86.5)	31(81.6)		
Theft – N(%)			χ2 (2) = 4.18	.12
Past Year	4(7.5)	7(19.4)		
Lifetime	8(15.1)	8(22.2)		
Never	41(74.4)	21(58.3)		
Forgery – N(%)			χ2 (2) = 5.15	.08
Past Year	2(3.8)	5(1305)		
Lifetime	5(9.4)	7(18.9)		
Never	46(86.8)	25(67.6)		
Fraud – N(%)			χ2 (2) = 6.58	.05
Past Year	5(9.4)	11(30.6)		

Variable	Low Probability	High Probability	$\chi2$ or t-test	$p <$
	(*n* = 53)	(*n* = 38)		
Lifetime	10(18.9)	6(16.7)		
Never	38(71.7)	19(52.8)		

Note. N(%) = number and percent; M(SD) = Mean (Standard Deviation)

Comparison of BASIS-32 subscale scores for clients who reported high and low likelihood of attending residential is presented in Figure 5. All BASIS-32 scale scores significantly distinguished these two groups, with high likelihood participants endorsing higher scores than low likelihood participants. Specifically, high likelihood participants scored higher on overall difficulty in functioning (BASIS total score; t(84) = -3.75, p<.001), and endorsed greater difficulty in relating to self and others (t(84) = -3.52, p<.001), greater anxiety and depression (t(84) = -3.52, p <.001), had more difficulties in daily living (t(84) = -3.66, p<.001), endorsed greater impulsivity and addiction (t(83) = -2.32, p<.05), and had higher psychosis scores (t(83) = -2.32, p<.05).

Figure 5. BASIS 32 scale scores for clients who reported high ("probably" or "definitely" would go) and low ("definitely wouldn't" to "maybe" would go) intention to attend residential problem gambling treatment. (Note: * represents that clients reporting high intention to attend treatment had significantly higher scores than those with low intention at p < .05). IOP data are presented in Appendix 3.
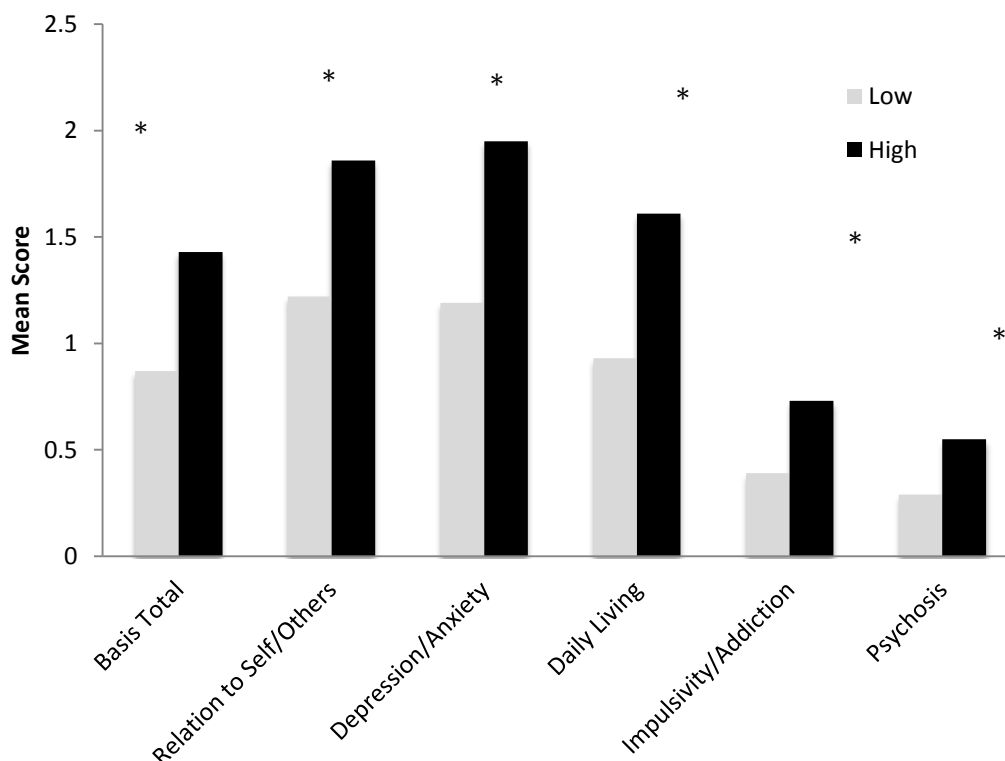
Because the use of multiple bivariate analyses increases the chances of obtaining significant results, we conducted a multivariate logistic regression analysis using those independent variables that significantly predicted high vs. low likelihood of attending residential treatment. Two variables, suicidal ideation and fraud, predicted this difference in bivariate analyses, as did each of the BASIS-32 scales. However, there were very high correlations between each of the BASIS-32 scales indicating that only one should be included. Two additional variables, NODS score and borrowing from other sources, met marginal significance and were also included. Therefore, we conducted a logistic regression analysis with likelihood of attending residential as the dependent variable and suicidal ideation history, fraud history, NODS score, borrowing from other sources and BASIS-32 Total score as the independent variables. Our first run, including ideation and borrowing as categorical variables resulted in a significant Hosmer and Lemeshow test, indicating that our model was a poor fit for the data. We then transformed the two categorical variables to be dichotomous (representing any history and no history), which improved the model fit. Overall the model was significant ($\chi 2(6) = 15.6$, p < .05). Higher scores on the BASIS-32 Total distinguished high from low likelihood responders (OR = 2.72, CI(95%)=(1.22-6.48)), but suicidal ideation,

borrowing from other sources, forgery, fraud and NODS score did not significantly contribute to the model (p > .05).

Agreement between Therapist and Client Ratings

There was a high correspondence between therapist treatment preference and client-reported likelihood of attending residential treatment ($\chi2(2,N = 87) = 8.8, p = .012$). As shown in Figure 6, those reporting high likelihood of attending residential treatment were more highly represented among those therapist felt should attend residential treatment. By contrast, those with low likelihood of attending were more highly represented among those who were recommended for outpatient treatment. High and low likelihood clients were equally represented among those recommended for IOP.

Figure 6. Therapist treatment placement preference for problem gambling clients who reported high ("probably" or "definitely" would go) and low ("definitely wouldn't" to "maybe" would go) intention to attend residential problem gambling treatment.
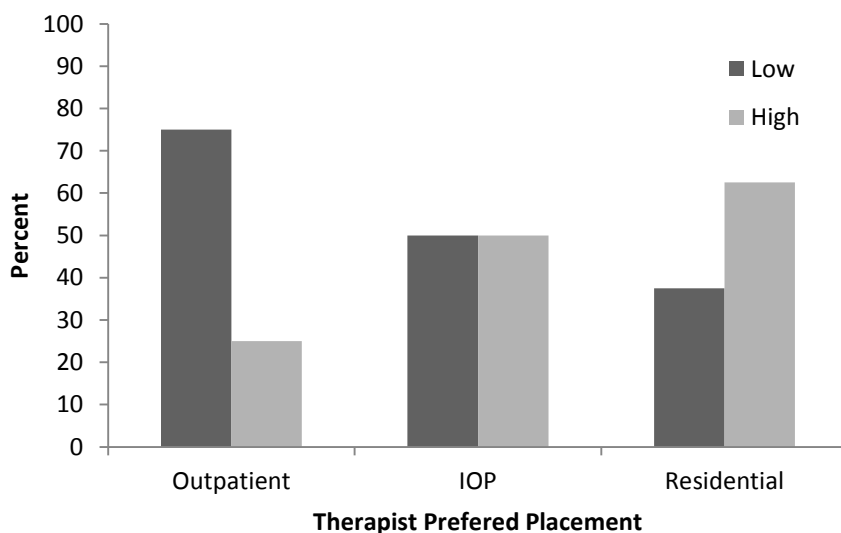
Figure 7 shows therapist severity ratings on each of the eight ASAM criteria for gambling clients with high and low intention to attend residential treatment. Higher client-reported likelihood of attending residential treatment was associated with greater therapist-reported severity on ASAM items reflecting past treatment failure ($\chi2(2,N = 85) = 9.6, p < .01$), co-occurring disorders ($\chi2(2,N = 86) = 13.2, p < .001$), impulsivity ($\chi2(2,N = 83) = 11.2, p < .01$), mental/physical exhaustion ($\chi2(2,N = 86) = 7.2, p < .05$) and gambling urges and cravings ($\chi2(2,N = 86) = 7.0, p < .05$). IOP data are presented in Appendix C.

Figure 7. Therapist ASAM ratings for problem gambling clients who reported high ("probably" or "definitely" would go) and low ("definitely wouldn't" to "maybe" would go) intention to attend residential problem gambling treatment.

A. Treatment Failure

B. Co-Occurring Disorders

C. Implusivity/Addiction

D. Social Support

E. Suicide Risk

F. Self-Destructive Behavior

G. Mental/Physical Exhaustion

H. Urges/Craving
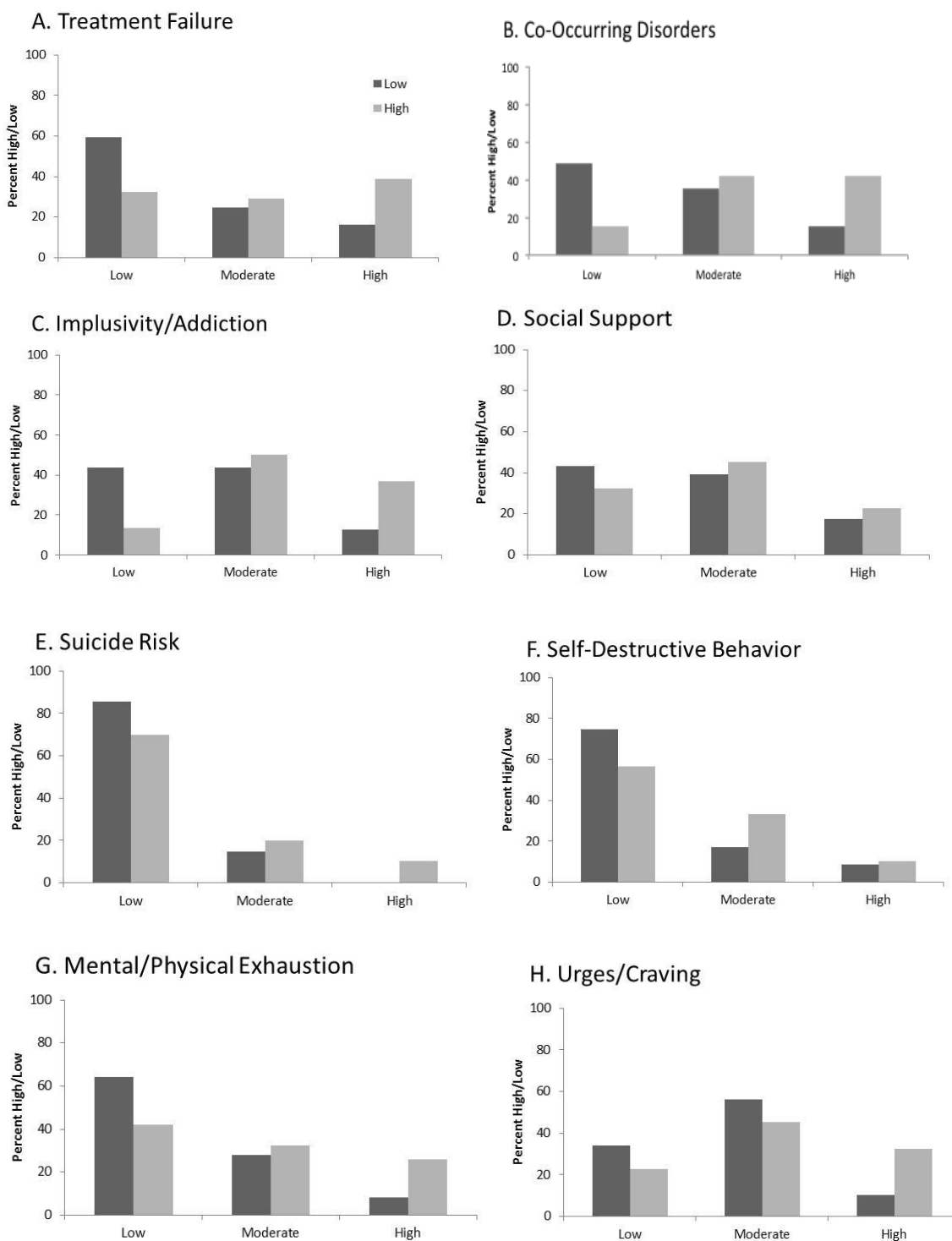
Differential scores on client-rated BASIS-32 scales by therapist preferred treatment level are presented in Figure 8. Significant differences between treatment preference groups were found for the BASIS-32 Total ($F_{(2,81)} = 3.39$, $p < .05$), daily living role ($F_{(2,81)} = 4.37$, $p < .05$), and psychosis ($F_{(2,80)} = 3.50$, $p < .05$) scores. Scheffe post-hoc comparisons were conducted for each significant main effect. Those recommended for residential treatment endorsed greater overall pathology (BASIS-32 Total score) than those recommended for outpatient treatment ($p < .05$). Similarly, those recommended for residential also endorsed more functional daily living difficulties ($p < .05$). No differences were found between clients recommended for IOP and those recommended for outpatient or residential treatment (all $p > .05$).

Figure 8. BASIS-32 Total scores for problem gamblers rated by their therapists as appropriate for outpatient, intensive outpatient and residential treatment.

28
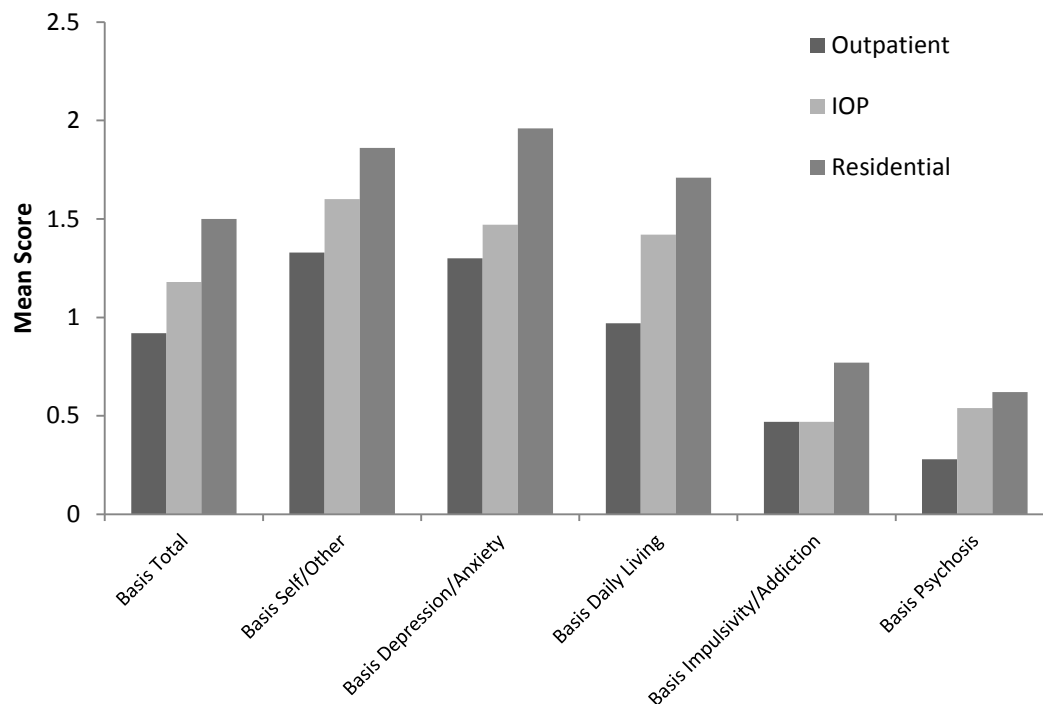
Discussion

Summary

This study is among the first to examine the need for residential treatment (and secondarily for IOP treatment) for problem gamblers receiving outpatient treatment service. Our current analyses support important conclusions about the need for higher levels of care for GD in Michigan.

Therapists identified approximately 15% of their clients as being appropriate for residential treatment and an additional 17% as possibly appropriate for IOP. Therapists rated several of their clients as "high" severity on a number of ASAM treatment placement factors ranging from nearly 22% for treatment failure to 3% for suicide risk. Therapist recommendations that a client receive residential (or IOP) treatment was nearly always associated with higher severity on ASAM criteria (Table 3). Thus, it appears that therapists would consider recommending approximately 33% of their caseloads to a higher level of care if it were offered in Michigan.

Over 42% of our client participants reported that they would "probably" or "definitely" accept a referral for residential treatment and about half scored in the same range for IOP. Those reporting high intention to attend residential treatment also were more likely to report suicidal ideation, were more likely to report being involved in fraud to support gambling and scored higher on all BASIS-32 scales. Those who reported high intention to attend IOP similarly scored higher on subscales of the BASIS-32, and had greater problem gambling symptom severity, suggesting they have greater difficulty in several functional domains relative to those less intent on attending. Thus, it appears that a relatively large number of individuals surveyed would accept a referral to residential and IOP. Further, greater intention to attend appears to be associated with greater functional impairment.

Challenges, Limitations and Future Directions

We experienced some challenges during the course of the study. For example, among the 36 therapists who agreed to participate and who received questionnaire packets, we received questionnaires back from only 24 (which is consistent with our lower target estimate for therapist recruitment). Further, among those who did participate, we received 143 therapist questionnaires thus far (95% of our target of 150), but have only received 93 client questionnaires (62% of our target of 150).

There are several possible reasons for difficulties obtaining client responses. It is possible that some clients initially rated by therapists decided not to complete the questionnaire because of concern over privacy or other reasons. It is also possible that some clients were rated by therapists, but they did not attend a session during which the therapist could introduce the study. Finally, it is possible that some clients may have forgotten to complete or return the questionnaire after leaving the clinician's office.

We engaged in several activities to attempt to increase our recruitment numbers. These included: 1) research staff contacted therapists several times by telephone to

ensure that their questions are answered and they have the resources and information to complete the study; 2) research staff frequently sent out materials to therapists including additional envelopes and postage to ensure study materials were returned to our office; 3) frequent reminder emails were sent by Dr. Ledgerwood, NSO and MDCH to ensure therapists were reminded of the importance of the study; and 4) Dr. Ledgerwood reminded study therapists of the importance of the study and provided additional information at meetings such as NSO provider meetings, the Michigan Problem Gambling Symposium, and NSO-sponsored problem gambling training meetings. These efforts resulted in increased completion of the study questionnaires.

Recommendations

Our data reveal that there is a need for higher levels of problem gambling treatment in the State of Michigan. Residential treatment was the primary focus of this study, and our data reveal that therapists have current clients who might be more appropriate for residential treatment, and many of those participants would be willing to attend. Although it was a secondary question in the present report, IOP treatment also appears to be an option that would be acceptable to therapists and the clients. In the present analysis, IOP was defined as care where clients would attend for several hours (e.g., six hours) daily for a period of a few weeks. Although the State of Michigan does allow for more intensive outpatient treatments in individual cases, the state does not currently offer this level of IOP care. Indeed, in this study, it appears that more clients were recommended for IOP by their therapists than for residential care. Thus, it is recommended that the State of Michigan develop a residential treatment program that also incorporates some IOP treatment slots. Such a combination of services may allow for a greater pool of potential clients who would be eligible for higher levels of problem gambling treatment and will provide the MDCH with greater flexibility for offering appropriate treatment services to these clients.

Based on our data, approximately 33% of current problem gambling clients might be recommended for higher levels of treatment (inclusive of residential and IOP) at any given time by their therapists. Furthermore, therapists recommendations corresponded well with client reported intention to attend residential and/or IOP treatment. Thus, there is evidence that the State of Michigan could support a treatment program that includes residential treatment and perhaps some IOP. Estimating the size of such a program based on these data, however, is difficult. Success of any new program will depend on several factors such as location, outreach efforts, funding level, program costs, and others. These factors are not in the scope of the present investigation. It is therefore recommended that MDCH introduce a pilot program of limited duration (e.g., 2-3 years) to further establish the appropriate program size and relative number of residential and/or IOP treatment slots.

In terms of determining appropriate level of care for clients potentially referred to residential or IOP treatments, it is recommended that MDCH adopt an ASAM-based set of criteria. A combination of client- and therapist-based assessments such as those

used in the present investigation could easily be administered via the electronic medical record program at appropriate time-points in the outpatient treatment cycle (e.g., when treatment plan is completed), to determine appropriateness for higher level of care once the problem gambling clinician has a better sense of client clinical needs. Such a system would allow: 1) clients to be engaged by a therapist before being asked sensitive questions that may otherwise be under-reported; and 2) establish an initial therapeutic relationship between the client and his/her therapist to whom he/she would optimally be referred for outpatient aftercare.

On the second point above, it is essential that any higher level treatment be followed by outpatient aftercare to ensure transition to the client's home environment. Residential treatments take problem gamblers out of their natural environment that typically includes many high-risk situations that stoke urges to gamble and place the individual at high risk of relapse. When the clients returns to the natural environment, they need to be able to cope with high-risk situations. Without outpatient aftercare, more restrictive higher levels of treatment are likely to be unsuccessful.

In summary, there are several recommendations based on the current investigation:

- It is recommended that MDCH Office of Recovery Oriented Systems of Care develop a residential treatment program for GD that may also incorporate some limited spots for clients requiring IOP.
- It is also recommended that MDCH Office of Recovery Oriented Systems of Care utilize ASAM criteria with input from both clients and their outpatient therapists to establish both need and willingness to attend higher level of care. Such an assessment may be completed on the Michigan Problem Gambling Help-line. However, it may be advantageous to complete such an assessment after the client and therapist has had an opportunity to establish a therapeutic relationship.
- Further evidence is needed to justify a specific number of residential (or IOP) treatment spots. However, the present investigation supports the need for higher level care, and further supports the need for a time-limited pilot program to explore the feasibility of supporting a residential program that includes perhaps 6-8 treatment slots (inclusive of IOP and residential beds).
- From a strictly clinical standpoint, the inclusion of higher level of care in Michigan will require some restructuring of how outpatient services are provided. It is recommended, for example, that clients return to their assigned outpatient clinician following higher level treatment to help them transition to their home environments.

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APPENDIX A: Client Questionnaire

GENERAL INFORMATION - CLIENT

Please circle the best answer or place your answer in the space provided

1. Marital Status?
    - 1=Never married   4=Separated   7=Cohabitating
    - 2=Remarried   5=Divorced
    - 3=Widowed   6=Married

2. Education completed?   ____ years
    (12=GED or high school graduate, 16=Bachelor's degree or equivalent)

3. Usual employment pattern, past 3 years: _____
    1. Full time *(40 hrs/wk)*   4. Student   7. Unemployed
    2. Part-time *(Reg. hours)*   5. Service   8. In controlled environment
    3. Part-time *(Irregular)*   6. Retired/Disability

4. In what county do you live?   _____

5. How would you rate your physical health?

    a. Excellent
    b. Good
    c. Fair
    d. Poor

6. How would you rate your mental health?

    a. Excellent
    b. Good
    c. Fair
    d. Poor

7. How many days in the past 30 have you gambled, that is made any bets at all,
    if even just buying a lottery ticket?   ____ days

8. How much did you spend during the past 30 days on gambling?
    (Include all the money spent on all forms of gambling) $ _____

9. At what age did you first gamble? _____ Years

10. At what age did you first develop a gambling problem? _____ Years

11. How many times have you been in treatment for gambling problems? _____ time(s)

12. During the current course of treatment, how many <u>one-on-one therapy sessions</u> have you attended with this therapist? _____

13. During this course of treatment, how many <u>group therapy sessions</u> have you attended with this therapist? _____

14. During this course of treatment, how many <u>Gambler's Anonymous group sessions</u> have you attended? _____

15. During this course of treatment, how <u>many weeks</u> have you been either enrolled in treatment with this counselor? _____

16. If you were offered RESIDENTIAL TREATMENT – a live-in treatment where you <u>would stay for up to a month and receive intensive treatment for your gambling</u> – What is the likelihood that you would attend this treatment type? (Circle your response)

|------------------|------------------|--------------|----------------|----------------|-----------------|

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

I definitely would not attend   *I probably would not attend*   *I might not attend*   *Uncertain*   *I might attend*   *I probably would attend*   *I definitely would attend*

17. If you were offered INTENSIVE OUTPATIENT TREATMENT – an <u>outpatient treatment where you would attend for several hours (e.g., six hours) daily for a period of a few weeks</u> – What is the likelihood that you would attend this treatment type? (Circle your response)

|------------------|------------------|--------------|----------------|----------------|-----------------|

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

I definitely would not attend   *I probably would not attend*   *I might not attend*   *Uncertain*   *I might attend*   *I probably would attend*   *I definitely would attend*

18. What is your current gambling debt? Include money owed to bookies, casinos, banks, friends, relatives and credit card companies that is directly related to gambling.

$_____

19. What is/are your main forms of problematic gambling (e.g., black jack, slots)?

1. _____; 2. _____; 3. _____

20. Have you gone through bankruptcy <u>due to gambling?</u> Check one.

☐ Never

☐ Once

☐ Twice or more

☐

For the questions below, please place a check-mark in the appropriate column

21. Do/did you experience any of the following problems as a result of your gambling?:

	Yes life-time	Yes Now	No
a) Anxiety over my gambling or consequences of gambling			
b)Feelings of depression related to my gambling or consequences of my gambling			
c)Suicidal thoughts related to my gambling or consequences of my gambling			
d)Suicide attempt related to my gambling or consequences of my gambling			

22. Family Issues caused by gambling:

	Yes life-time	Yes past year	No
a) Family or spouse conflict			
b) Family Violence			
c) Family neglect			

For the questions below, please place a check-mark in the appropriate column

23. Financial Issues caused by gambling:

	Yes lifetime	Yes past year	No
a)Borrowing from credit cards			
b)Borrowing from friends or family			
c)Borrowing from other sources			
d)Difficulty paying household bills			
e)Using equity or savings			

24. Have you ever had a problem with the following substances? (Check appropriate box)

	Yes, Lifetime	Yes, Now	No
Alcohol			
Any Drug (prescription or non-prescription)			
If the answer to the previous question is YES, please indicate:			
Cocaine/Crack			

Heroin/Opiates (e.g., Tylenol 3, Oxycontin)			
Marijuana			
Sedatives (e.g., Xanax, Valium)			
Stimulants (e.g., Methamphetamine)			
Other: _____			

For the questions below, please place a check-mark in the appropriate column

25. Have you ever engaged in any of the following behaviors to support your gambling, as a result of your gambling, or to pay off gambling debts?

	Yes, lifetime	Yes, past year	No
a. Embezzlement (e.g., taking money from a company, from work)	☐	☐	☐
b. Shoplifting	☐	☐	☐
c. Theft	☐	☐	☐
d. Forgery	☐	☐	☐
e. Parole/Probation violation	☐	☐	☐
f. Drug charges	☐	☐	☐
g. Weapons offence	☐	☐	☐
h. Contempt of court	☐	☐	☐
i. Fraud (e.g., bad checks, using someone else's credit card)	☐	☐	☐
j. Burglary/Break & enter	☐	☐	☐
k. Robery	☐	☐	☐
l. Assault	☐	☐	☐
m. Arson	☐	☐	☐
n. Prostitution	☐	☐	☐
o. Homicide/Manslaughter	☐	☐	☐

26. Have you ever been arrested because of gambling-related illegal behaviors?

☐ Yes lifetime

☐ Yes past year

☐ No

☐ Don't know

☐ Refused

27. Have you ever gone to <u>jail or prison</u> because of gambling-related illegal behaviors?

☐ Yes lifetime

☐ Yes past year

☐ No

☐ Don't know

☐ Refused

28. How long were you incarcerated because of gambling-related legal problems?_____

29. Have you ever been on <u>probation or parole</u> because of gambling-related illegal behaviors?

☐ Yes lifetime

☐ Yes past year

☐ No

☐ Don't know

☐ Refused

30. How determined are you to give up gambling at this time?
   a. Not really
   b. Somewhat determined
   c. Very determined
   d. Extremely determined

31. Are you planning to quit gambling in the next 30 days?
    a. No
    b. Yes
    c. Already quit

32. If no, are you thinking about quitting gambling in the next six months?
    a. No
    b. Yes

33. Have you made any serious attempts to stop, reduce or control your gambling in the past?
    a. No
    b. Yes
    If 'Yes', how many times? _____

*Please note, NODS, BASIS-32 and Therapist questionnaire are available upon request.

APPENDIX B: Client participant demographic and clinical characteristics

Table AP1. Demographic characteristics of problem gambling respondents.

Variable	Descriptive Statistic
Age – M(SD)	51.2(12.8)
Gender - N(%)	
Female	41(47.7)
Male	45(52.3)
Race – N(%)	
European American	63(69.2)
African American	19(20.9)
Other	9(9.9)
Married – N(%)	32(35.2)
Employed – N(%)	63(69.2)
Education – M(SD)	12.4(3.9)

Table AP2. Gambling characteristics of problem gambling respondents

Variable	Descriptive Statistic
NODS score – M(SD)	8.1(2.2)
Days Gambled/past 30 – M(SD)	6.3(8.2)
Dollars Gambled/past 30 – M(SD)	$644.46($1,334.78)
Age First Gambling – M(SD)	25.1(15.2)
Age First Gambling Problem – M(SD)	37.6(15.0)
Times in Treatment – M(SD)	4.1(21.6)
One-on-one sessions current treatment – M(SD)	13.5(35.0)
Group sessions current treatment – M(SD)	5.5(26.5)
GA meetings current treatment – M(SD)	6.7(16.7)
Weeks enrolled current treatment – M(SD)	17.0(27.3)
Serious Attempts to quit – N(%)	
Yes	84(89.4)
No	9(9.6)
Gambling Debt – M(SD)	$20,880($68,464)

Table AP3. Psychiatric/Substance Abuse characteristics of problem gambling respondents. (Note: percent for individual drugs calculated on the basis of total number of individuals endorsing a drug use problem).

Variable	Descriptive Statistic
Anxiety – N(%)	
Yes – Now	51(56.7)
Yes – Lifetime	34(37.8)
No	5(5.6)
Depression – N(%)	
Yes – Now	50(55.6)
Yes – Lifetime	33(36.7)
No	7(7.8)
Suicidal Thoughts – N(%)	
Yes – Now	18(20.2)
Yes – Lifetime	28(31.5)
No	43(48.3)
Suicidal Attempts – N(%)	
Yes – Now	3(3.4)
Yes – Lifetime	7(8.0)
No	78(88.6)
Alcohol problem – N(%)	
Yes – Now	9(10.0)
Yes – Lifetime	20(22.2)
No	61(67.8)
Drug use problem – N(%)	
Yes – Now	2(2.2)

Variable	Descriptive Statistic
Yes – Lifetime	15(16.9)
No	72(80.9)
Cocaine/Crack problem – N(%)	
Yes – Now	0(0.0)
Yes – Lifetime	13(20.3)
No	51(79.7)
Heroin/Opioid problem – N(%)	
Yes – Now	1(1.6)
Yes – Lifetime	8(12.7)
No	54(85.7)
Marijuana problem – N(%)	
Yes – Now	4(6.3)
Yes – Lifetime	13(20.3)
No	47(73.4)
Sedative problem – N(%)	
Yes – Now	2(3.1)
Yes – Lifetime	5(7.8)
No	57(89.1)
Stimulant problem – N(%)	
Yes – Now	1(1.6)
Yes – Lifetime	4(6.3)
No	58(92.1)

Table AP4. Family and Financial characteristics of problem gambling respondents.

Variable	Descriptive Statistic
Family Confict – N(%)	
Yes – Past Year	39(43.3)
Yes – Lifetime	30(33.3)
No	21(23.3)
Family Violence – N(%)	
Yes – Past Year	7(7.9)
Yes – Lifetime	8(9.0)
No	74(83.1)
Family Neglect – N(%)	
Yes – Past Year	28(31.8)
Yes – Lifetime	18(20.5)
No	42(47.7)
Borrow from Credit Cards – N(%)	
Yes – Past Year	40(45.5)
Yes – Lifetime	27(30.7)
No	21(23.9)
Borrow from Family/Friends – N(%)	
Yes – Past Year	45(50.0)
Yes – Lifetime	29(32.2)
No	16(17.8)
Borrow from Others – N(%)	
Yes – Past Year	46(50.5)
Yes – Lifetime	22(24.2)
No	22(24.2)

Variable	Descriptive Statistic
Difficulty Paying Bills – N(%)	
Yes – Past Year	47(52.2)
Yes – Lifetime	29(32.2)
No	14(15.6)
Use Equity or Savings – N(%)	
Yes – Past Year	42(48.3)
Yes – Lifetime	28(32.2)
No	17(19.5)

Table AP5. Legal characteristics of problem gambling respondents.

Variable	Descriptive Statistic
Embezzlement – N(%)	
Yes – Past Year	6(6.7)
Yes – Lifetime	14(15.6)
No	70(77.8)
Shoplifting – N(%)	
Yes – Past Year	3(3.3)
Yes – Lifetime	5(5.5)
No	83(91.2)
Theft – N(%)	
Yes – Past Year	11(12.4)
Yes – Lifetime	16(18.0)
No	62(69.7)
Forgery – N(%)	
Yes – Past Year	7(7.8)
Yes – Lifetime	12(13.3)
No	71(78.9)
Probation/Parole violation – N(%)	
Yes – Past Year	2(2.2)
Yes – Lifetime	8(8.9)
No	80(88.9)
Drug charges – N(%)	
Yes – Past Year	1(1.1)
Yes – Lifetime	2(2.2)
No	87(96.7)
Weapons offences – N(%)	
Yes – Past Year	0(0.0)
Yes – Lifetime	3(3.3)
No	87(96.7)

Variable	Descriptive Statistic
Contempt of court – N(%)	
Yes – Past Year	0(0.0)
Yes – Lifetime	2(2.2)
No	88(97.8)
Fraud – N(%)	
Yes – Past Year	16(18.0)
Yes – Lifetime	16(18.0)
No	57(64.0)
Burglary – N(%)	
Yes – Past Year	1(1.1)
Yes – Lifetime	4(4.4)
No	85(94.4)
Robbery – N(%)	
Yes – Past Year	1(1.1)
Yes – Lifetime	2(2.2)
No	86(96.6)
Assault – N (%)	
Yes – Past Year	1(1.1)
Yes – Lifetime	3(3.3)
No	86(96.6)
Arson – N(%)	
Yes – Past Year	0(0.0)
Yes – Lifetime	1(1.1)
No	89(98.9)
Prostitution – N(%)	
Yes – Past Year	1(1.1)
Yes – Lifetime	1(1.1)
No	88(97.8)

Variable	Descriptive Statistic
Homicide – N(%)	
Yes – Past Year	0(0.0)
Yes – Lifetime	0(0.0)
No	90(100.0)
Arrested – N(%)	
Yes – Past Year	15(16.0)
Yes – Lifetime	9(9.6)
No	68(72.3)
Jail/Prison – N(%)	
Yes – Past Year	5(5.3)
Yes – Lifetime	8(8.5)
No	79(84.0)
Probation or Parole – N(%)	
Yes – Past Year	7(7.4)
Yes – Lifetime	8(8.5)
No	77(81.9)

Table AP6. BASIS-32 scores of problem gambling respondents.

Variable	Descriptive Statistic
Basis 32 Total – M(SD)	1.08(.78)
Basis Relation to Self and Others – M(SD)	1.49(.93)
Basis Depression and Anxiety – M(SD)	1.46(1.06)
Basis Daily Living Role – M(SD)	1.20(.98)
Basis Impulsive Addiction – M(SD)	.53(.66)
Basis Psychosis – M(SD)	.40(.53)

APPENDIX C: Analysis of Intensive Outpatient Data

Analysis of IOP data

Demographic and clinical characteristics that distinguish clients with high and low intention to attend IOP are presented in AP7. Low probability participants were more likely to be employed, reported poorer overall physical and mental health, had lower NODS scores, were more likely to have a lifetime alcohol problem, and were less likely to report engaging in theft, forgery and fraud to support gambling. No other variables significantly distinguished these two groups.

AP7. Demographic and clinical scores for clients who reported high ("probably" or "definitely" would go) and low ("definitely wouldn't" to "maybe" would go) intention to attend Intensive outpatient (IOP) problem gambling treatment.

Variable	Low Probability	High Probability	$\chi 2$ or t-test	p <
	(*n* = 44)	(*n* = 47)		
Age – M(SD)	52.8(13.1)	49.7(11.8)	t(82) = 1.14	.26
Gender N(%)			$\chi 2$ (1) = .00	.99
Women	23(52.3)	22(52.4)		
Men	21(47.7)	20(47.6)		
Education – M(SD)	12.7(4.2)	12.2(3.7)	t(89) = .59	.56
Employed N(%)	36(81.8)	27(57.4)	$\chi 2$ (1) = 6.34	.05
Race – N(%)			$\chi 2$ (2) = 3.55	.17
European American	34(77.3)	29(61.7)		
African American	8(18.2)	11(23.4)		
Other	2(4.5)	7(14.9)		
Married – N(%)	14(31.8)	18(38.3)	$\chi 2$ (1) = .42	.52

Variable	Low Probability (n = 44)	High Probability (n = 47)	$\chi 2$ or t-test	p <
Overall Physical Health – M(SD)	2.2(.62)	2.6(.78)	t(89) = -2.51	.05
Overall Mental Health – M(SD)	2.1(.68)	2.7(.78)	t(84) = -4.07	.001
Depression– N(%)			$\chi 2$ (2) = 1.70	.43
Now	23(53.5)	27(57.4)		
Lifetime	16(37.2)	18(38.3)		
Never	5(11.6)	2(4.3)		
Anxiety– N(%)			$\chi 2$ (2) = .32	.85
Now	24(55.8)	27(57.4)		
Lifetime	16(37.2)	18(38.3)		
Never	3(7.0)	2(4.3)		
Suicide Ideation – N(%)			$\chi 2$ (2) = 3.81	.15
Now	5(11.6)	13(28.3)		
Lifetime	15(34.9)	13(28.3)		
Never	23(53.5)	20(43.5)		
Suicide Attempt – N(%)			$\chi 2$ (2) = 1.63	.44
Now	2(4.7)	2(4.4)		
Lifetime	1(2.3)	5(11.1)		
Never	40(93.0)	38(84.4)		

Variable	Low Probability	High Probability	$\chi 2$ or t-test	p <
	(n = 44)	(n = 47)		
NODS Score – M(SD)	7.6(2.2)	8.8(2.0)	t(85) = -2.75	.01
Days Gambled (past 30) – M(SD)	6.7(8.9)	5.9(7.7)	t(89) = .44	.66
Dollars Gambled (past 30) – M(SD)	809.98 (1710)	505.45 (881)	t(89) = 1.08	.28
Age First Gambling – M(SD)	27.7(17.1)	21.8(11.6)	t(88) = 1.92	.06
Times in Gambling Treatment – M(SD)	1.6(1.6)	6.6(30.3)	t(89) = -1.08	.28
Family Conflict – N(%)			$\chi 2$ (2) = 2.45	.29
Past Year	18(41.9)	21(44.7)		
Lifetime	12(27.9)	18(38.3)		
Never	13(30.2)	8(17.0)		
Family Violence – N(%)			$\chi 2$ (2) = 4.60	.10
Past Year	4(9.3)	3(6.5)		
Lifetime	1(2.3)	7(15.2)		
Never	38(88.4)	36(78.3)		
Family Neglect – N(%)			$\chi 2$ (2) = 1.37	.50
Past Year	13(30.2)	15(33.3)		
Lifetime	7(16.3)	11(24.4)		
Never	23(53.5)	19(42.2)		

Variable	Low Probability (*n* = 44)	High Probability (*n* = 47)	χ^2 or t-test	*p* <
Bankruptcy – (N%)			χ^2 (2) = 2.76	.25
Past Year	1(2.4)	4(8.7)		
Lifetime	6(14.3)	10(21.7)		
Never	35(83.3)	32(69.6)		
Borrow-Credit Cards – N(%)			χ^2 (2) = 1.78	.41
Past Year	21(50.0)	19(41.3)		
Lifetime	10(24.4)	17(37.0)		
Never	11(26.2)	10(21.7)		
Borrow-Other Sources – N(%)			χ^2 (2) = .48	.79
Past Year	21(47.7)	25(53.2)		
Lifetime	12(27.3)	10(21.3)		
Never	11(25.5)	12(25.5)		
Difficulty Paying Bills – N(%)			χ^2 (2) = .47	.79
Past Year	22(50.0)	25(54.3)		
Lifetime	14(31.8)	15(32.6)		
Never	8(18.2)	6(13.0)		
Use Equity/Savings – N(%)			χ^2 (2) = .19	.91
Past Year	20(47.6)	22(48.9)		
Lifetime	13(31.0)	15(33.3)		
Never	9(21.4)	8(17.8)		

Variable	Low Probability (n = 44)	High Probability (n = 47)	$\chi2$ or t-test	p <
Alcohol problem – N(%)			$\chi2$ (2) = 6.10	.05
Now	1(2.3)	8(17.0)		
Lifetime	12(27.9)	8(17.0)		
Never	30(69.8)	31(66.0)		
Drug problem – N(%)			$\chi2$ (2) = 2.11	.35
Now	0(0.0)	2(4.4)		
Lifetime	7(15.9)	8(17.8)		
Never	37(84.1)	35(77.8)		
Arrested – N(%)			$\chi2$ (2) = 1.43	.49
Past Year	5(11.9)	7(15.9)		
Lifetime	3(7.1)	6(13.6)		
Never	34(81.0)	31(70.5)		
Probation/Parole – N(%)			$\chi2$ (2) = 1.95	.38
Past Year	1(2.4)	4(9.1)		
Lifetime	3(7.1)	4(9.1)		
Never	38(90.5)	36(81.8)		
Theft – N(%)			$\chi2$ (2) = 7.06	.05
Past Year	2(4.5)	9(20.0)		

Variable	Low Probability (n = 44)	High Probability (n = 47)	χ2 or t-test	p <
Lifetime	6(13.6)	10(22.2)		
Never	36(81.8)	26(57.8)		
Forgery – N(%)			χ2 (2) = 7.31	.05
Past Year	0(0.0)	7(15.2)		
Lifetime	6(13.6)	6(13.0)		
Never	38(86.4)	33(71.7)		
Fraud – N(%)			χ2 (2) = 7.02	.05
Past Year	3(7.0)	13(28.3)		
Lifetime	8(18.6)	8(17.4)		
Never	32(74.4)	25(54.3)		

Note. N(%) = number and percent; M(SD) = Mean(Standard Deviation).

Participants reporting high intention to attend IOP scored higher on all six scales of the BASIS-32 (ApFig1). Specifically, they scored higher on: BASIS-32 Total score ($t(84) = -4.25$, p<001); difficulty related to self and others ($t(84) = -4.02$, p<.001); depression and anxiety ($t(84) = -3.35$, p<001); difficulty in daily living ($t(84) = -3.55$, p<.001); impulsivity/addiction ($t(83) = -3.31$, p<.001); and psychosis ($t(83) = -3.93$, p<.001).

*ApFig1. BASIS-32 scale scores for clients who reported high ("probably" or "definitely" would go) and low ("definitely wouldn't" to "maybe" would go) intention to attend intensive outpatient problem gambling treatment. (Note: * represents that clients reporting high intention to attend treatment had significantly higher scores than those with low intention at p < .05).*
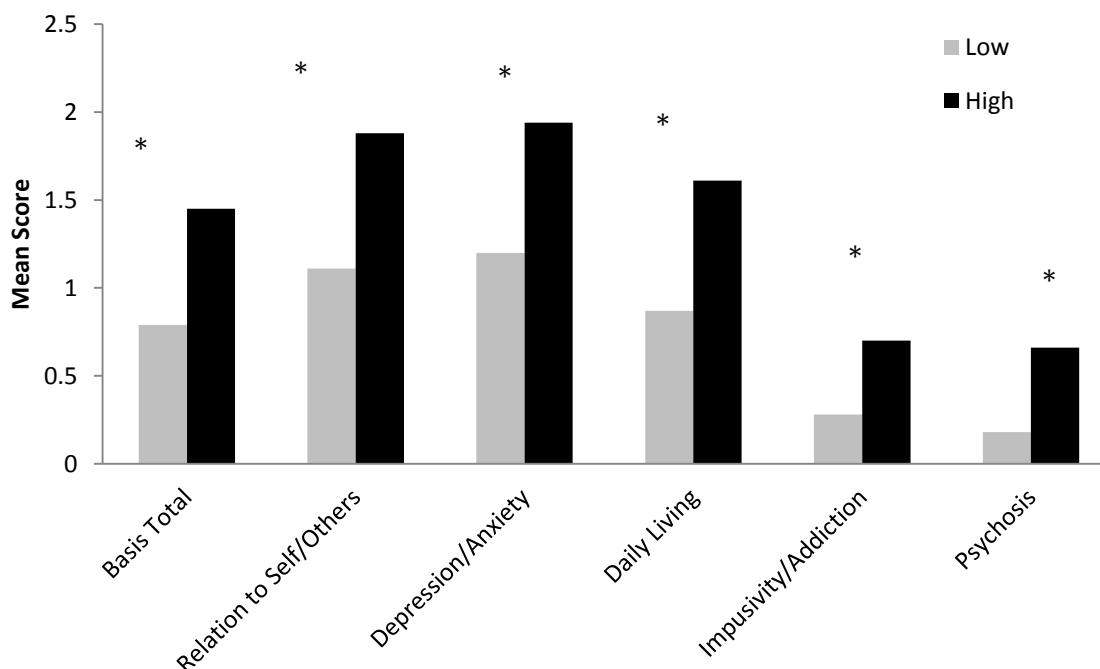

Because the use of multiple bivariate analyses may inflate type II error rate, resulting in a greater chance of obtaining significant results at random, we conducted a multivariate logistic regression analysis using those independent variables that significantly predicted high vs. low likelihood of attending IOP treatment. Physical and mental health ratings, NODS score, being employed, and history of alcohol problems, fraud, theft, and forgery were associated with likelihood of attending IOP as did each of the BASIS-32 scales. However, there were very high correlations between each of the BASIS-32 which would mean that only one should be included. Further, BASIS-32 Total score was highly correlated with and conceptually similar to the mental health item, and the theft, fraud and forgery items were also highly correlated and conceptually similar. Thus, we decided to drop the mental health, forgery and theft items from analysis. Age of first gambling was marginally significantly different between groups. Therefore, we conducted a logistic regression analysis with likelihood of attending IOP as the dependent variable and physical health rating, employment, age of first gambling, and history of alcohol problems, fraud, and BASIS-32 Total score as the independent variables. Overall the model was significant ($\chi 2$ (9) = 36.4, p < .001). Participants where more likely to say they would attend IOP if they had higher BASIS-32 Total scores (OR = 4.11, CI(95%) = (1.25-13.55), younger age of first gambling (OR = .95, CI(95%) = (.91-.99)), were unemployed (OR = 1.44, CI(95%) = (1.08-1.92), or had a history of alcohol problems (OR = 45.99, CI(95%)=(2.69-785.28). History of fraud, NODS score

and physical health ratings no longer predicted likelihood of attending IOP (all p values > .05).

There was significant correspondence between therapist treatment preference and client-reported likelihood of attending IOP treatment ($\chi2(2, N = 87) = 6.9$, $p < .05$; ApFig2).

ApFig2. Therapist treatment placement preference for problem gambling clients who reported high ("probably" or "definitely" would go) and low ("definitely wouldn't" to "maybe" would go) intention to attend intensive outpatient problem gambling treatment.
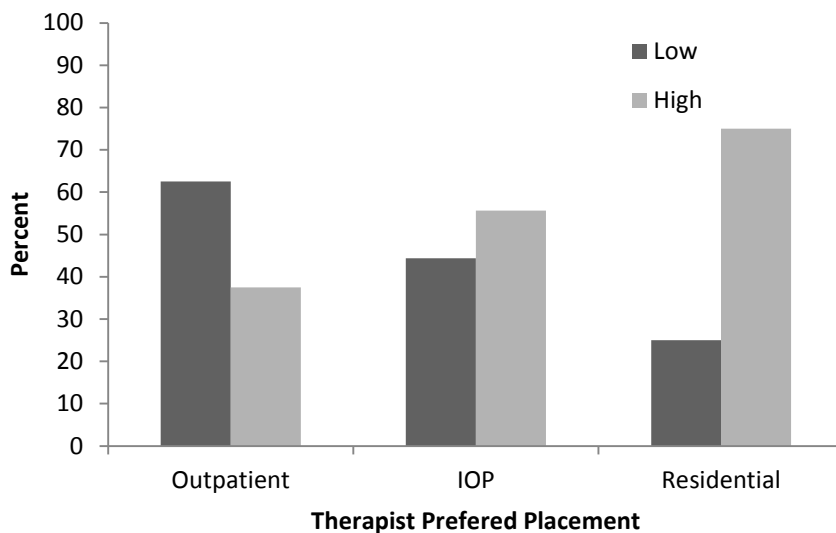
ApFig3 shows therapist severity ratings on each of the eight ASAM criteria for gambling clients with high and low intention to attend IOP treatment. Higher client-reported likelihood of attending IOP treatment was associated with greater therapist-reported severity on the ASAM items reflecting co-occurring disorders ($\chi2(2, N = 86) = 8.8$, $p < .05$), impulsivity ($\chi2(2, N = 83) = 7.8$, $p < .05$), and suicide risk (($\chi2(2, N = 83) = 6.0$, $p = .05$).

ApFig3. Therapist ASAM ratings for problem gambling clients who reported high ("probably" or "definitely" would go) and low ("definitely wouldn't" to "maybe" would go) intention to attend intensive outpatient (IOP) problem gambling treatment.

A. Treatment Failure

B. Co-Occurring Disorders

C. Implusivity/Addiction

D. Social Support

E. Suicide Risk

F. Self-Destructive Behavior

G. Mental/Physical Exhaustion

H. Urges/Cravings