

Psychosocial and treatment characteristics of gambling help-line callers.

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INTRODUCTION

The Role of the State Problem Gambling Help-line

The Michigan Department of Community Health Problem Gambling Help-line is administered by the State Bureau of Substance Abuse and Addiction Services (BSAAS) and managed through a contractual agreement with Neighborhood Service Organization (NSO). The Help-line is a 24-hour service where individuals may receive immediate confidential help for their gambling problems in the form of screening, brief counseling and referral for formal treatment. All problem gamblers receiving assistance from the Help-line receive a referral for formal treatment and are encouraged to see one of many registered therapists throughout the state. In fiscal year 2008-9, 847 callers were referred to formal treatment, and 1097 were referred to peer assistance through Gambler's Anonymous or Gamanon (for concerned family members of problem gamblers) (Personal Communication with NSO).

In the present study, we re-contacted Help-line callers to ask them additional questions about their gambling, gambling-related difficulties and treatment experience to: 1) understand the specific characteristics and difficulties faced by callers to the Michigan Help-line; and 2) use these data to understand specific barriers to treatment faced by Help-line callers with the intention of making recommendations about how to improve Help-line services.

Clinical Characteristics of Problem Gamblers

Problem and pathological gambling have the potential to cause enormous problems for the individual gambler and his or her family, including family and social distress, and financial indebtedness (Crockford & el-Guebally, 1998; Petry & Armantano, 1999). In particular, pathological gamblers experience elevated rates of psychiatric and substance disorders (Petry, Stinson & Grant, 2005), as well as suicidal ideation (Ledgerwood & Petry, 2004). While several studies have begun to reveal the extent of many of these problems, few, if any have investigated these issues in Michigan problem gamblers, despite the fact that 1% of Michigan residents, and about 3.5% of Detroit residents can be considered pathological gamblers (Hartmann, 2006).

In this study, we collected data on the impact of gambling on family/social, financial, psychiatric and substance abuse problems. We also examined whether gambling-related difficulties impacted men and women differently and if they seek help at different stages in their gambling history. These data are used to characterize problem gamblers seeking help from the Michigan Help-line, and to help predict which Help-line callers will be more likely to seek out additional treatment services.

Gambling Related Illegal Behaviors

Gambling-related illegal behaviors, in particular, are indicative of fairly severe gambling problems and are associated with impulsivity and other factors often linked to pathological gambling. Toce-Gerstein and colleagues (2003), for example, found that

gambling-related illegal behaviors are quite rare among individuals meeting only 5-7 DSM-IV disorder criteria for pathological gambling, but very common (over 60%) among those meeting more than 8 symptoms. Thus, illegal activity may be particularly indicative of severe pathological gambling.

Other studies have found relatively high rates of illegal behaviors among problem gamblers. We found 28% of treatment seeking pathological gamblers in Connecticut had committed at least one gambling-related illegal act in the year prior to treatment entry (Ledgerwood, Weinstock, Morasco & Petry, 2007). These illegal behaviors included fraudulent financial dealings, such as writing bad checks (19.0%, $n = 44$), stealing (5.2%, $n = 12$), unauthorized use of a credit card (4.8%, $n = 11$), forgery (2.6%, $n = 6$), and embezzlement (2.2%, $n = 5$). Many individuals in correctional settings are problem or pathological gamblers (Williams, Royston & Hagen, 2005). The prevalence of pathological gambling in U.S. prisons varies based on assessment modality and the specific measure used, but ranges from 5 to 38 percent (Anderson, 1999; Walters, 1997; Walters & Contri, 1998). About 50 percent of incarcerated men and women with pathological gambling in two New Zealand studies reported committing crimes to support their gambling (Abbott & McKenna, 2005; Abbott, McKenna, & Giles, 2005). Most of these were nonviolent crimes including theft, fraud, burglary, shoplifting, and drug offenses.

To date, no studies have examined the rates of gambling-related illegal behaviors among Michigan problem gamblers, and only one study has looked at gambling-related illegal behaviors among gambling Help-line callers (Potenza, et al., 2000). Potenza and colleagues (2000) found that more than 11 percent of callers to a Connecticut gambling Help-line reported at least one prior gambling-related arrest. They concluded that pathological gamblers with a legal history have much worse gambling problems and consequences, and may require different treatment approaches than gamblers without legal problems. In the present study, we collected data on gambling-related illegal behaviors from callers to the Michigan Problem Gambling Help-line, and examined several gambling-related and psychosocial correlates of these behaviors.

Treatment Adherence

Access and barriers to treatment are also important issues that have not been adequately studied in problem and pathological gamblers. Although as many as 1-2% of the U.S. population meets criteria for a diagnosis of pathological gambling (Shaffer, Hall, & Vander Bilt, 1999), very few ever seek treatment. One epidemiological study, for example, found that only between 7% and 12% of pathological gamblers seek treatment for their disorder (Slutske, 2006). Unfortunately, one problem faced by the Michigan Help-line is that many problem gamblers who call the Help-line do not follow through with treatment referrals. Typically, a problem gambler who calls the Help-line is given a referral to a treatment provider in their local community. In 2007, 1171 callers were referred for formal gambling treatment and 894 were referred to peer assistance through Gambler's Anonymous or Gamanon (direct communication with D. Hollis). However, many individuals who initially call the Help-line to address gambling concerns do not utilize the referral they receive (direct communication with D. Hollis).

Understanding common reasons for not seeking treatment, including barriers to treatment, is an important step toward developing outreach programs that will encourage more problem gamblers to undergo effective treatments. One recent review covering 19 studies that examined barriers to problem gambling treatment found the most commonly reported barriers were wishing to handle the problem by oneself, shame/embarrassment/stigma, unwillingness to admit having a problem and issues specific to treatment (Suurvali, Cordingley, Hodgins, & Cunningham, 2009). Such factors may be addressed by Help-line counselors.

In the present study, we re-contacted Help-line callers at least 2 months following their initial call to the Michigan Help-line to determine whether they followed through with treatment referrals received from the gambling Help-line. We also assessed the specific barriers to treatment faced by these individuals as well as specific factors that increased the callers' chances of seeking treatment. Our sample was somewhat unique among studies examining barriers to treatment because the individuals are calling a Help-line seeking some kind of assistance. Nevertheless, many of these individuals clearly do not follow through on their treatment referrals. In the present investigation we examined potential differences between those who did versus those who did not follow through on their treatment referral.

Study Aims

In this study, we sought to understand the characteristics of problem gamblers calling the Michigan Problem Gambling Help-line. Our study aims were:

- 1) Determine the socio-economic and legal (i.e., criminal) consequences of problem gambling among callers to the Michigan Problem Gambling Help-line;
- 2) Document the proportion of people seeking help from the gambling Help-line who did not enter formal treatment and the perceived and actual barriers they encountered.

STUDY METHODS

Participants and Study Recruitment

Participants in this study were adults (N = 202) who called the Michigan Problem Gambling Help-line, administered by Neighborhood Services Organization (NSO), in Detroit, Michigan. When an individual calls the gambling Help-line, he/she receives brief telephone counseling and an assessment of his/her gambling problems. Callers who meet criteria for pathological gambling (as assessed by the NODS) are provided a referral for formal treatment with a community provider who is part of the network of providers who contract with NSO. Any adult callers (age 18 or older) provided with a treatment referral were also read a brief (30 second) script, during which they were told briefly about the present survey, and asked if their name and telephone number could be passed on to Wayne State University study staff. Callers who declined were thanked for considering the request. The NSO Help-line staff member recorded a name and phone number of any individual who was willing to be contacted by WSU staff, and provided our research assistant with a copy of that information.

Inclusion Exclusion

Participants who were referred to gambling treatment by NSO Help-line staff, were at least 18 years old, and were English speaking were eligible for this study. We had no other inclusion or exclusion criteria to maintain broad generalizability to problem gamblers who call gambling help-lines.

Procedure and Assessments

Participants who were willing to participate in this study were contacted by telephone on two occasions. The first was within approximately two weeks of their initial call to the gambling Help-line. The second call was at least 2 months after the first call by research staff. Each telephone survey took approximately 15 to 20 minutes, and was conducted by trained research assistants working in the Department of Psychiatry and Behavioral Neurosciences at Wayne State University. Participants received a \$10 gift card to a local business (e.g., Target, BP gas) for each telephone survey they completed (maximum of \$20, total) to partially compensate them for their time. Specific details about the assessments are listed below.

Survey 1 (within approximately 2 weeks of initial call to the Help-line)

The purpose of the first interview was to conduct a Gambling Telephone Survey in which we obtained information concerning participant demographics, gambling characteristics, financial, family/social, employment, substance use, and legal difficulties related to gambling. The items in this survey were similar to those used in several prior published studies (e.g., Ledgerwood, Steinberg, Wu & Potenza, 2005), and from the National Gambling Impact Study (1999).

From these data, we calculated the impact of gambling-related illegal behaviors, including:

- 1) rates of gambling-related illegal behaviors among Help-line callers
- 2) extent of gambling-related arrests
- 3) convictions related to gambling
- 4) impact of problem gambling on family interactions
- 5) financial and employment consequences of problem gambling
- 6) concurrent mental health and addiction problems that accompany problem gambling

Additionally, we included:

- *University of Rhode Island Change Assessment for Gambling (URICA-G)* is a measure that assesses participants' motivation for changing their gambling behavior. The URICA-G is based on the Stages of Change Model that originated in the substance abuse literature, and has been validated in pathological gamblers (Petry 2005). We assessed motivation for change at our first call to the participant to assess whether motivation was related to treatment attendance.
- *NORC DSM Screen for Gambling Problems (NODS)*. The NODS is based on DSM-IV criteria for pathological gambling, and is a valid and reliable diagnostic measure of lifetime and current pathological gambling (American Psychiatric Association, 2000; Gerstein et al., 1999; Hodgins, 2004).

Survey 2 (at least 2 months after initial call)

We conducted a second interview at least 2 months after the first interview with the same callers contacted during the first survey to determine rates of treatment admission and types of treatment barriers encountered. Similar to the first survey, these calls took approximately 15 to 20 minutes, and participants were provided with a \$10 gift card for participating. Specific measures included:

- *Open questions about treatment experience and barriers*. Specifically, we asked callers if they received a referral for treatment from the Help-line, where they were referred, whether they followed-through on their treatment referrals, what might have prevented them from following-through with referrals and whether treatment was helpful (if they went to treatment). We also included open-ended questions asking participants to list specific barriers to treatment they experienced, and factors that made it more likely they would go into treatment.
- *Barriers to Treatment for Problem Gambling (BTPG)* questionnaire is a validated measure used to assess possible barriers to obtaining gambling treatment, and covers treatment availability, stigma, cost, uncertainty about treatment and avoidance of gambling problems (Rockloff & Schofield, 2004).
- *Barriers to Treatment Inventory (BTI)* is a valid and reliable measure examining specific barriers to gambling treatment (Rapp, Xu, Carr, Lane, Wang, & Carlson, 2006). BTI items were re-worded slightly to reflect problem gambling rather than substance use. Specific factors include absence of a problem, negative social support, fear of treatment, privacy concerns, time conflict, poor treatment availability and admission difficulty.

Study Recruitment

Table 1 outlines our participant flow from NSO and our interview completion up to July 15, 2010. We recruited 202 participants into the study. We also re-contacted 143 participants for follow-up telephone interviews. This re-contact rate represents 71% of our initial sample.

Table 1. Michigan Gambling Help-line study recruitment numbers.

	Number
NSO referrals forwarded – Total	571
<u>'Yes' responses</u> (Completers only)	202
<u>'No' responses</u> (includes 'No' to NSO staff, 'No' to WSU staff, unresponsiveness to multiple contact attempts and providing inaccurate phone numbers)	369
Completed Telephone Interviews (Time 1)	202
Currently attempting contact	N/A
Completed Telephone Interviews (Time 2)	143

Our initial plan was to recruit between 200 and 300 participants into the study for a first interview. Due to several recruitment challenges, we were only able to meet our lower-end goals. Specifically, we expected that we would be able to reach a greater percentage of those who initially contacted the Help-line. Our rate of initial contact was 35.4% (202/571). This rate reflects both the number of individuals who refused to have their name forwarded to Wayne State (i.e., refusal to NSO staff), who refused to be interviewed (i.e., refusal to Wayne State staff), and who were unable to be contacted (due to frequent non-answer, unreturned phone messages and disconnected telephone numbers). We expect that our low rate was due to many factors: 1) some participants may not have wished to answer personal questions about gambling; 2) although we made calls at several different times of day and on weekends, some individuals were difficult to reach; 3) anecdotally, many telephones were disconnected once we tried to call them, potentially related to the severe financial difficulties faced by many problem gamblers. Once we initially reached a problem gambler, however, our chances of reaching them again for follow-up phone calls improved. As noted above, we were able to re-connect with 71% of those we initially made contact with. Thus, we were able to collect a representative and large follow-up sample that was sufficient for addressing all of our initial research questions.

RESULTS

First interview (n=202)

Demographics

We conducted analysis on all participants who received at least one phone interview. Their average age is 48.6 (Standard Deviation (SD) = 12.0) years old, 58.4% are women, 41.6% identified as African American, 51.5% identified as European American (remainder include “more than one race” and Native American). In total, 6.5% of callers were between 20 and 29, 17.1% were between 30 and 39, 27.2% were between 40 and 49, 31.6% were between 50 and 59, 12.6% were between 60 and 69, and 5.0% were 70 or older. Nearly 62% had some college education, 30% completed high school, and the remainder had less than high school education.

Demographic, problem gambling, and psychosocial characteristics of our study sample are presented in Table 2. Because past research has also found that men and women may have significant differences in gambling-related characteristics, we also compared characteristics by gender. Table 2 shows that men and women did not differ on any demographic variable. However, women reported more pathological gambling symptoms suggesting either women seek treatment later in the course of their gambling history or that men deny problems.

Table 2. Baseline demographic and gambling variables and analysis for men and women who called the Michigan Problem Gambling Help-line.

Variable	Total (N = 202)	Women (N = 118)	Men (N = 84)	t, χ^2 or U	p value
Age M(SD)	48.6(12.0)	49.0(11.3)	48.1(12.9)	t(197) = .55	.58
Race N(%)				$\chi^2(2, N=200) = 2.68$	.26
European American	104(52.0)	59(50.0)	45(54.9)		
African American	84(42.0)	54(45.8)	30(36.6)		
Other	12(6.0)	5(4.2)	7(8.5)		
Employed N(%)	93(46.0)	53(44.9)	40(47.6)	$\chi^2(1, N=202) = .14$	.70
Married N(%)	83(41.1)	53(44.9)	30(35.7)	$\chi^2(1, N=202) = 1.72$	.19
Education N(%)				$\chi^2(2, N=202) = 4.26$	.12
Less than High School	17(8.4)	8(6.8)	9(10.7)		
High School	60(29.7)	30(25.4)	30(35.7)		
College or higher	125(61.9)	80(67.8)	45(53.6)		
NODS – Lifetime M(SD)	7.0(2.4)	7.4(2.3)	6.3(2.4)	t(200) = 3.41	.001
NODS – Past Year M(SD)	6.9(2.4)	7.3(2.3)	6.2(2.5)	t(200) = 3.22	.01
Dollars Gambled (past 30 days) Median/Interquartile range	\$1500(2500)	\$1900(2425)	\$1000(2500)	U = 3,771.0	.30
Days Gambled (past 30 days) Median/Interquartile range	8.0(11.8)	7.0(11.3)	8.5(12.4)	U = 4,430.5	.91

Table 3 shows specific differences between men and women on symptom endorsement on the past year version of the NODS. Women are more likely than men to report irritability when cutting down their gambling (similar to withdrawal effects in substance abuse), are more likely to use gambling as a way to escape distressing affect, and are more likely to acknowledge engaging in gambling-related illegal behaviors to support gambling.

Table 3. Gender differences among callers to the Michigan Problem Gambling Help-line on individual items on the NODS, past year.

NODS Item	Total N = 202	Women	Men	χ^2 (1,N=202)	p value
1. Preoccupation	166 (82.2)	99 (83.9)	67 (79.8)	0.57	.45
2. Tolerance	131 (64.9)	83 (70.3)	48 (57.1)	3.75	.053
3. Irritability when cutting down	140 (69.3)	91 (77.1)	49 (58.3)	8.14	.01
4. Unsuccessful quit/control attempts	135 (66.8)	81 (68.6)	54 (64.3)	0.42	.52
5. Escape	146 (72.3)	97 (82.2)	49 (58.3)	13.95	.001
6. Chasing	174 (86.1)	103 (87.3)	71 (84.5)	0.31	.58
7. Lying	143 (70.8)	87 (73.7)	56 (66.7)	1.18	.28
8. Illegal behaviors	75 (37.1)	56 (47.5)	19 (22.6)	12.97	.001
9. Relationship/job problems	135 (66.8)	78 (66.1)	57 (67.9)	0.07	.79
10. Financial bailout	140 (69.3)	88 (74.6)	52 (61.9)	3.70	.054

Types of Gambling

Table 4 shows specific types of gambling reported by Help-line callers. Overall, slot machine play was reported as the most frequent form of problematic gambling, followed by various forms of lottery and blackjack. Men were more likely than women to report blackjack, craps, non-casino card games and sports betting as being problematic, while women were more likely to report having difficulty with slots and bingo as being problematic.

Table 4. Specific types of problematic gambling and gender differences among Michigan Problem Gambling Help-line callers.

	Total N(%)	Women N(%)	Men N(%)	$\chi^2(1, N=202)$	P value
MEN HIGHER RATES					
Blackjack	52(25.7)	20(16.9)	32(38.1)	11.48	.001
Craps	21(10.4)	6(5.1)	15(17.9)	8.59	.01
Cards (non-casino)	12(5.9)	3(2.5)	9(10.7)	5.86	.02
Sports Betting	6(3.0)	0(0)	6(7.1)	8.69	.01
WOMEN HIGHER RATES					
Slots	142(70.3)	98(83.1)	44(52.4)	22.11	.001
Bingo	15(7.4)	13(11.0)	2(2.4)	5.32	.02
NO SIGNIFICANT DIFFERENCES					
Lottery	59(29.2)	30(25.4)	29(34.5)	1.97	.16
Scratch off	52(25.7)	32(27.1)	20(23.8)	0.28	.60
Poker	21(10.4)	11(9.3)	10(11.9)	0.35	.55
Roulette	17(8.5)	10(8.5)	7(8.4)	0.00	.98
Video poker	17(8.4)	9(7.6)	8(9.5)	0.23	.63
Video Poker	11(5.4)	7(5.9)	4(4.8)	0.13	.72
Keno	11(5.4)	8(6.8)	3(3.6)	0.98	.32
Internet	10(5.0)	6(5.1)	4(4.8)	0.01	.92
Other non-casino	7(3.5)	3(2.5)	4(4.8)	0.72	.40
Horse racing	5(2.5)	1(0.8)	4(4.8)	3.12	.08
Total number of problematic forms of gambling M(SD)		2.2(1.9)	2.5(2.4)		

Gambling-related problems

Average NORC DSM screen for gambling problem (NODS) scores for lifetime and the past year were 7.0 (SD = 2.4) and 6.9 (SD = 2.4), respectively. Callers began gambling at 30.1 (SD = 18.2) years old, on average, and reported a mean onset of problem gambling at age 44.0 (SD = 14.8). Most reported gambling-related debt, and the median current gambling debt was \$2,000. On average, callers had wagered \$2,854 in the month prior to calling the Help-line, and had gambled on an average of 11.1 days. As demonstrated in Table 2, women reported more symptoms on the NODS than did men, with one explanation being that women may experience overall greater gambling disorder severity. Women did not, however, report greater days or dollars gambled in the past month.

Nearly all problem gamblers (86.6%) reported serious financial consequences of their gambling (Table 5). The most frequently reported financial problems were being in debt, using money to gamble that was supposed to be used for paying bills, borrowing from family or credit cards, and using savings for gambling. Women tended to report

more financial difficulties than men, and were significantly more likely than men to report gambling-related bankruptcy, borrowing from credit cards, borrowing from family, using money for paying bills to gamble and being in gambling debt.

A full 92% of callers acknowledged some psychiatric difficulties as a result of their gambling (Table 5), with well over 80% each reporting gambling –related anxiety and/or depression. Nearly a third of callers reported lifetime gambling-related suicidal ideation, and over 8% reported a gambling-related suicide attempt. Women were more likely than men to report anxiety, depression and suicidal ideation.

Nearly two thirds of participants smoke cigarettes daily (Table 5). A quarter of the callers reported a lifetime alcohol problem, and 14.4% reported a lifetime problem with illicit substances. Men and women differed on only one substance use variable; men were more likely than women to report a history of drug use problems.

No gender differences were found for family or social variables (Table 5). Over two thirds of callers reported that their problem gambling resulted in significant family conflict. About one quarter acknowledged that their problem gambling resulted in family neglect, with 4% acknowledging some level of family violence as a consequence of problem gambling.

About 27.7% of callers acknowledged that they had engaged in some form of illegal behavior during their lifetime to support their gambling, but the rates of gambling-related arrest and being on probation or parole as a result of gambling were comparatively low. There were no gender differences on gambling-related legal variables. We address gambling-related illegal activity in more detail below.

Almost two thirds of our callers reported some history of addictive behaviors (alcoholism, drug abuse or problem gambling) in their family of origin (Table 5). Women were more likely than men to report that a family member suffered from alcoholism in their home while growing up. Otherwise, women were also statistically marginally more likely to report abuse and drug problems in the home when they were growing up. Over one third of callers, regardless of gender, reported that a family member had a problem with gambling.

Fully 73% of callers reported receiving some form of formal treatment for gambling, drug/alcohol, or mental health problems in the past. Nearly half had received gambling-specific treatment previously. Overall, women were more likely to have received any formal treatment in the past. Women were specifically significantly more likely than men to seek treatment for gambling problems or mental health problems in the past. Men were more than two-fold more likely to have a history of drug abuse treatment than were women, but this difference only met marginally statistical significance levels.

Table 5. Bivariate logistic regression of gender differences on gambling-related psychosocial difficulties among callers to the Michigan Problem Gambling Help-line.

Variable	Total (N = 202) N(%)	Women (n = 118) N(%)	Men (n = 84) N(%)	Odds Ratio	95% Confidence Interval	p value
Financial consequences						
Bankruptcy	35(17.3)	26(22.0)	9(10.7)	2.36	1.04-5.33	.04
Credit borrowing	89(44.5)	60(51.3)	29(34.9)	1.96	1.10-3.50	.02
Family borrowing	107(53.8)	71(61.2)	36(43.4)	2.06	1.16-3.65	.01
Other borrowing	52(26.1)	34(29.3)	18(21.7)	1.50	.78-2.89	.23
Paying bills	130(65.0)	86(73.5)	44(53.0)	2.46	1.36-4.46	.01
Using savings	84(42.2)	55(47.4)	29(34.9)	1.68	.94-3.00	.08
Debt	137(67.8)	87(73.7)	50(59.5)	1.91	1.05-3.47	.03
Any Financial	175(86.6)	108(91.5)	67(79.8)	2.74	1.19-6.34	.02
Psychiatric						
Anxiety	171(85.1)	106(89.8)	65(78.3)	2.45	1.11-5.41	.03
Depression	166(82.2)	107(90.7)	59(70.2)	4.12	1.90-8.97	.001
Suicide ideation	63(31.2)	44(37.3)	19(22.6)	2.03	1.08-3.83	.03
Suicide attempt	17(8.4)	10(8.5)	7(8.3)	1.02	.37-2.79	.97
Any Psychiatric	185(92.0)	114(96.6)	71(85.5)	4.82	1.50-15.52	.01
Substance abuse						
Tobacco use	133(65.8)	77(65.3)	56(66.7)	.94	.52-1.70	.84
Alcohol problems	51(25.2)	27(22.9)	24(28.6)	.74	.39-1.41	.36
Drug problems	29(14.4)	12(10.2)	17(20.2)	.45	.20-.99	.05
Any Substance	144(71.3)	83(70.3)	61(72.6)	.89	.48-1.66	.72
Problem						
Family/Social						
Family violence	8(4.0)	7(5.9)	1(1.2)	5.23	.63-43.37	.13
Family neglect	53(26.2)	29(24.6)	24(28.6)	.82	.43-1.53	.53
Spousal conflict	139(68.8)	85(72.0)	54(64.3)	1.43	.80-2.61	.24
Any	144(71.3)	86(72.9)	58(69.0)	1.21	.65-2.23	.55
Family/Social						
Legal consequences						
Probation/parole	10(5.0)	5(4.3)	5(6.0)	.71	.20-2.52	.59
Arrest	12(6.0)	6(5.1)	6(7.1)	.70	.22-2.26	.55
Illegal behaviors	56(27.7)	38(32.2)	18(21.4)	1.74	.91-3.33	.09
Any Legal	58(28.7)	39(33.1)	19(22.6)	1.70	.89-3.20	.11
Family of Origin						
Abuse	77(38.1)	51(43.2)	26(31.0)	1.70	.94-3.06	.08
Alcohol problems	95(47.0)	68(57.6)	27(32.1)	2.93	1.63-5.27	.001

Variable	Total (N = 202) N(%)	Women (n = 118) N(%)	Men (n = 84) N(%)	Odds Ratio	95% Confidence Interval	p value
Drug problems	41(20.3)	29(24.6)	12(14.3)	1.96	.93-4.10	.08
Gambling problems	74(36.6)	52(44.1)	22(26.2)	.97	.91-1.04	.44
Any Family History	133(65.8)	90(76.3)	43(51.2)	3.07	1.68-5.60	.001
Treatment History						
Gambling	95(47.0)	63(53.4)	32(38.1)	1.86	1.05-3.29	.03
GA 12-step	53(26.2)	36(30.5)	17(20.2)	1.73	.89-3.35	.10
Substance abuse	20(10.0)	8(6.8)	12(14.5)	.43	.17-1.11	.08
AA/NA/12-step	20(9.9)	9(7.6)	11(13.1)	.55	.22-1.39	.21
Mental health	73(36.1)	52(44.1)	21(25.0)	2.36	1.28-4.36	.01
Self-help	12(6.0)	8(6.8)	4(4.8)	1.45	.42-4.98	.56
Any Treatment History	148(73.3)	93(78.8)	55(65.5)	1.96	1.04-3.68	.04

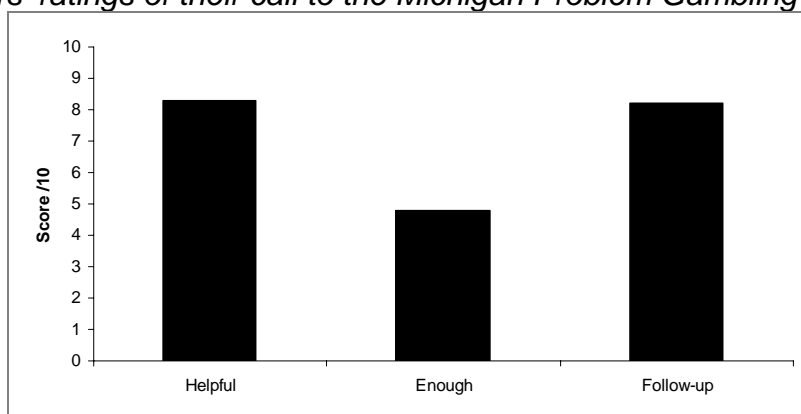
*Higher odds ratios are consistent with higher risk for women relative to men

Help-line Services

Caller ratings of the helpfulness of their call to the State Help-line are presented in Figure 1. When asked to rate how helpful they found the counseling provided by NSO on a scale of 1 (Not helpful at all) to 10 (Extremely Helpful), callers on average rated it 8.3 (SD = 2.5), suggesting that most callers felt they benefited from their calls to the NSO Help-line. When asked to rate whether the counseling provided by the Help-line was enough (i.e., that they did not need additional counseling for gambling problems) on a scale of 1 to 10 (from not at all enough to definitely enough), the average response choice was 4.8 (SD = 3.2), suggesting that most callers believed they needed additional help for their gambling after calling the Help-line.

Finally, when asked to rate (on a scale of 1 to 10 reflecting response choices “I definitely won’t follow up” and “I definitely will follow up”, respectively) how likely it was that the caller would follow up on their referral for treatment, callers provided an average rating of 8.2 (SD = 3.0), suggesting that callers intended, for the most part, to follow up on their treatment referrals.

Figure 1. Callers' ratings of their call to the Michigan Problem Gambling Help-line.



* Summary of specific Items: 1) How helpful was the Help-line call; 2) Was the counseling enough?; Will you follow up on your referral?

Gambling Related Illegal Behaviors

With regard to gambling-related illegal behaviors, 19.8% reported engaging in illegal behaviors in the past year to support their gambling. An additional 7.9% who denied past year illegal activities reported some gambling-related illegal behaviors in their lifetime for a total of 27.7% or over 1 out of every 4 gamblers. The most frequently reported gambling-related illegal behaviors were fraud (e.g., passing bad checks or using another person's credit card), theft and embezzlement. Further, 5% were on probation or parole for their gambling, 6% had been arrested, and 5% had been incarcerated for gambling-related illegal behaviors.

Demographic and gambling-related differences between Help-line callers with and without a history of gambling-related illegal behaviors are presented in Table 6. There were no significant differences between Help-line callers with and without gambling-related illegal behaviors on any demographic variable. Nor did these two groups differ on their initiation of treatment or on the number of treatment sessions they attended. Help-line callers with and without gambling-related illegal behaviors did, however, differ on gambling severity, with gamblers having a history of illegal behaviors reporting significantly greater problem gambling disorder severity than those without such a history.

Table 6. Baseline demographic and gambling variables and analysis for problem gamblers with and without a history of engaging in gambling-related illegal behaviors who called the Michigan Problem Gambling Help-line.

Variable	Without Illegal Behavior (N = 146)	With Illegal Behavior (N = 56)	t or χ^2	p value
Age M(SD)	49.5(12.4)	46.5(10.6)	t(197) = 1.56	.12
Race N(%)			$\chi^2(2, N=202) = .86$	.65
European American	74(50.7)	30(55.6)		
African American	62(42.5)	22(40.7)		
Other	10(6.8)	2(3.7)		
Employed N(%)	69(47.3)	24(42.9)	$\chi^2(1, N=202) = .32$	.57
Married N(%)	56(38.4)	27(48.2)	$\chi^2(1, N=202) = 1.63$	.20
Education N(%)			$\chi^2(2, N=202) = .72$	.70
Less than High School	13(8.9)	4(7.1)		
High School	41(28.1)	19(33.9)		
College or higher	92(63.0)	33(58.9)		
NODS – Lifetime M(SD)	6.4(2.4)	8.5(1.6)	t(200) = -6.14	.001
NODS – Past Year M(SD)	6.3(2.4)	8.4(1.7)	t(200) = -7.25	.001
Attended Treatment N(%)	56(60.2)	26(66.7)	$\chi^2(1, N=132) = .49$	.49
Number of Sessions M(SD)	6.7(4.2)	7.9(5.2)	t(76) = -1.10	.27

Examination of individual item scores on the past year version of the NODS reveals that callers with a history of gambling-related illegal behaviors reported significantly greater preoccupation with gambling, more chasing of losses, more lying about gambling, placing relationships and jobs at risk due to gambling and more need to ask others for a financial bailout because of gambling (Table 7). Thus, these findings suggest that gamblers may progress to illegal behaviors as their gambling problems worsen.

Table 7. Differences between callers to the Michigan Problem Gambling Help-line who did and did not report a history of engaging in gambling-related illegal behaviors on individuals items on the NODS, past year.

NODS Item	Total N = 202	Without Illegal Behavior N = 146	With Illegal Behavior N = 56	χ^2 (1,N=202)	p value
1. Preoccupation	166(82.2)	113(77.4)	53(94.6)	8.22	.01
2. Tolerance	131(64.9)	92(63.0)	39(69.6)	0.78	.38
3. Irritability when cutting down	140(69.3)	98(67.1)	42(75.0)	1.18	.28
4. Unsuccessful quit/control attempts	135(66.8)	95(65.1)	40(71.4)	0.74	.39
5. Escape	146(72.3)	103(70.5)	43(76.8)	0.79	.38
6. Chasing	174(86.1)	120(82.2)	54(96.4)	6.87	.01
7. Lying	143(70.8)	91(62.3)	52(92.9)	18.24	.001
8. Illegal behaviors	75(37.1)	25(17.1)	50(89.3)	90.29	.001
9. Relationship/job problems	135(66.8)	87(59.6)	48(85.7)	12.46	.001
10. Financial bailout	140(69.3)	89(61.0)	51(91.1)	17.25	.001

Figure 2 shows gambling-related illegal behaviors acknowledged by Help-line callers. Several types of illegal behaviors specifically inquired about were not endorsed by any caller, including weapons offences, contempt of court, burglary, assault, arson, and manslaughter/homicide. By far, fraud was the most frequently reported gambling-related illegal behavior. Embezzlement, theft and forgery were also endorsed fairly frequently.

Figure 2. Specific gambling-related illegal behaviors reported by Michigan Problem Gambling Help-line Callers.

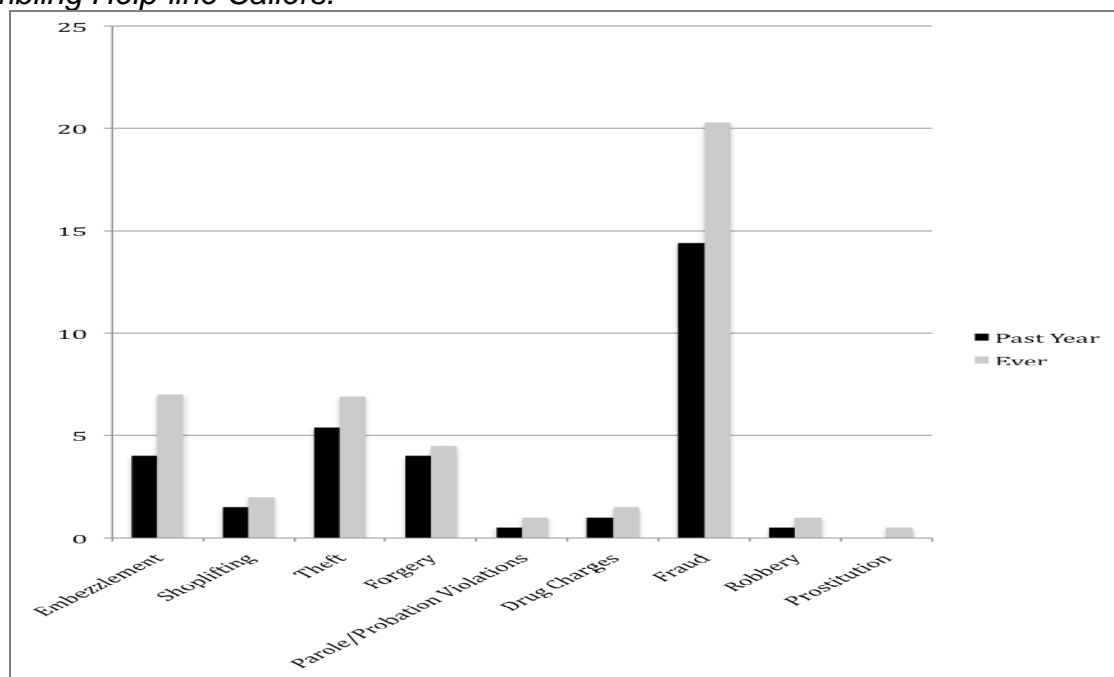


Table 8 shows results of bivariate logistic regression analyses comparing Help-line callers with and without gambling-related illegal behaviors. Although nearly all callers reported financial difficulties related to gambling, those with a history of illegal behavior were more likely to report financial difficulties overall. Callers with a history of gambling-related illegal behaviors were also more likely to report specific forms of financial difficulties including bankruptcy, borrowing from family, borrowing from other sources, using money designated for household bills to gamble, and having gambling-related debt.

Callers with gambling-related illegal behaviors were significantly more likely to report all forms of psychopathology assessed in this study as well as family neglect. They were more likely as well to report family neglect, but not to report substance use or other family/social difficulties, or to report addiction or abuse in their family of origin. Finally, gamblers with a history of gambling-related illegal behaviors were more likely to report past use of gambling treatment and use of Gambler's Anonymous.

Table 8. Bivariate logistic regression comparing Michigan Problem Gambling Help-line callers with and without gambling-related illegal behaviors on gambling-related psychosocial difficulties.

Variable	Total (N = 202) N(%)	Without Illegal Behaviors (N = 146) N(%)	With Illegal Behaviors (N = 56) N(%)	Odds Ratio	95% Confidence Interval	p value
Financial consequences						
Bankruptcy	35(17.3)	18(12.3)	17(30.4)	3.10	1.46-6.59	.01
Credit borrowing	89(44.5)	59(40.7)	30(54.5)	1.75	.94-3.27	.08
Family borrowing	107(53.8)	67(46.5)	40(72.7)	3.07	1.56-6.04	.001
Other borrowing	52(26.1)	30(20.8)	22(40.0)	2.53	1.29-4.97	.01
Paying bills	130(65.0)	84(58.3)	46(82.1)	3.29	1.54-7.03	.01
Using savings	84(42.2)	59(41.0)	25(45.5)	1.20	.64-2.25	.57
Debt	137(67.8)	88(60.3)	49(87.5)	4.61	1.96-10.89	.001
Any Financial	175(86.6)	122(83.6)	53(94.6)	3.48	1.00-12.04	.05
Psychiatric						
Anxiety	171(85.1)	117(80.7)	54(96.4)	6.46	1.49-28.11	.02
Depression	166(82.2)	115(78.8)	51(91.1)	2.75	1.01-7.48	.05
Suicide ideation	63(31.2)	35(24.0)	28(50.0)	3.17	1.66-6.06	.001
Suicide attempt	17(8.3)	6(4.1)	11(19.6)	5.70	2.00-16.30	.001
Any Psychiatric	185(92.0)	129(89.0)	56(100.0)	--	--	--
Substance abuse						
Tobacco use	133(65.8)	95(65.1)	38(67.9)	1.13	.59-2.18	.71
Alcohol problems	51(25.2)	33(22.6)	18(32.1)	1.62	.82-3.21	.16
Drug problems	29(14.4)	17(11.6)	12(21.4)	2.07	.92-4.67	.08
Any Substance	144(71.3)	102(69.9)	42(75.0)	1.29	.64-2.61	.47
Problem						
Family/Social						
Family violence	8(4.0)	4(2.7)	4(7.1)	2.73	.66-11.32	.17
Family neglect	53(26.2)	28(19.2)	25(44.6)	3.40	1.74-6.63	.001
Spousal conflict	139(68.8)	97(66.4)	42(75.0)	1.52	.76-3.04	.24
Any Family/Social	144(71.3)	100(68.5)	44(78.6)	1.69	.82-3.49	.16
Legal consequences						
Probation/parole	10(5.0)	1(.7)	9(16.4)	28.37	3.50-229.93	.001
Arrest	12(6.0)	1(.7)	11(20.0)	36.25	4.55-288.64	.001
Illegal behaviors	56(27.7)	--	--	--	--	--
Any Legal	58(28.7)	2(1.4)	56(100.0)	--	--	--
Family of Origin						

Variable	Total (N = 202) N(%)	Without Illegal Behaviors (N = 146) N(%)	With Illegal Behaviors (N = 56) N(%)	Odds Ratio	95% Confidence Interval	p value
Abuse	77(38.1)	51(34.9)	26(46.4)	1.61	.86-3.02	.13
Alcohol problems	95(47.0)	71(48.6)	24(42.9)	.78	.42-1.46	.44
Drug problems	41(20.3)	25(17.1)	16(28.6)	1.94	.94-3.99	.07
Gambling problems	74(36.6)	44(30.1)	30(53.6)	.99	.92-1.06	.71
Any Family History	133(65.8)	91(62.3)	42(75.0)	1.81	.91-3.62	.09
Treatment History						
Gambling	95(47.0)	59(40.4)	36(64.3)	2.65	1.40-5.03	.01
GA 12-step	53(26.2)	30(20.5)	23(41.1)	2.70	1.38-5.25	.01
Substance abuse	20(10.0)	12(8.2)	8(14.5)	1.90	.73-4.94	.19
AA/NA/12-step	20(9.9)	11(7.5)	9(16.1)	2.35	.92-6.03	.08
Mental health	73(36.1)	47(32.2)	26(46.4)	1.83	.97-3.43	.06
Self-help	12(6.0)	9(6.2)	3(5.6)	.90	.23-3.44	.87
Any Treatment History	148(73.3)	98(67.1)	50(89.3)	4.08	1.64-10.19	.01

*Higher odds ratios are consistent with higher risk for those with illegal behaviors in the past year

Second Interview: Approximately 2 months after the first (n=143)

Treatment Attendance

Among the participants we have contacted to date a second time, 92 of 143 (64%) adhered to their treatment recommendations from the Help-line but 51 of 143 (36%) failed to initiate treatment or attend a single session. Among those who attended at least one session, the average number of sessions was 7.1 (SD = 4.4). Four (3%) individuals attended only a single session, and 30 (21%) attended fewer than 5 sessions. Table 9 presents differences between those who did and did not attend treatment on demographic and gambling severity variables. No demographic variable distinguished those who attended from those who did not. Attendees, however, reported significantly greater gambling disorder severity than non-attendees.

Table 9. Baseline demographic and gambling variables and analysis for problem gamblers who did and did not attend treatment following their call to the Michigan Problem Gambling Help-line.

Variable	Attendees (N = 92)	Non-Attendees (N = 51)	t, or χ^2	p value
Age M(SD)	49.8(11.3)	48.9(14.3)	t(139) = -.42	.68
Race N(%)			$\chi^2(2, N=141) = .38$	.83
European American	53(57.6)	26(53.1)		
African American	35(38.0)	20(40.8)		
Other	4(4.3)	3(6.1)		
Employed N(%)	48(52.2)	22(43.1)	$\chi^2(1, N=143) = 1.07$	.30
Married N(%)	44(47.8)	20(39.2)	$\chi^2(1, N=143) = .98$	.32
Education N(%)			$\chi^2(2, N=143) = 4.65$	.10
Less than High School	5(5.4)	8(15.7)		
High School	27(29.3)	16(31.4)		
College or higher	60(65.2)	27(52.9)		
NODS – Lifetime M(SD)	7.3(2.3)	6.1(2.5)	t(141) = -2.83	.01
NODS – Past Year M(SD)	7.1(2.4)	5.9(2.4)	t(141) = -2.88	.01

Differences between those who did and did not seek treatment on psychosocial consequences of problem gambling are presented in Table 10. Overall, those who attended treatment were more likely to endorse at least one specific financial difficulty caused by gambling. However, only two specific types of financial difficulties, borrowing from family members and using monies earmarked for paying bills to support gambling, were endorsed more frequently by treatment attendees than non-attendees, which suggests that part of the overall greater endorsement of financial problems by attendees may be partly due to family influences on treatment seeking. This hypothesis is supported by greater endorsement of spousal conflict among Help-line callers who eventually attended treatment.

Not surprisingly, Help-line callers who had attended treatment for problem gambling in the past were more likely to attend treatment following the Help-line call referenced in the present interview. This was true both for structured problem gambling treatment and utilization of Gambler’s Anonymous. However, past use of treatments or self-help programs for substance use or mental health problems did not distinguish attendees from non-attendees.

Very few other variables distinguished treatment attendees from non-attendees. Non-attendees were more likely to report alcoholism in their family of origin. Otherwise, psychiatric, substance use, family/social (other than spousal conflict), legal and family of origin variables did not differ between the two groups.

Table 10. Bivariate logistic regression comparing Michigan Problem Gambling Help-line callers who did and did not attend treatment following their Help-line call on gambling-related psychosocial difficulties.

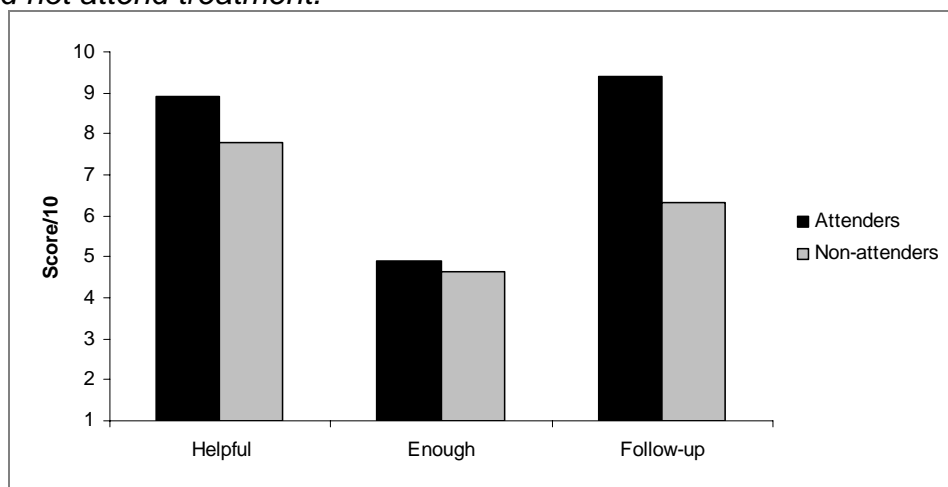
Variable	Total (N = 143) N(%)	Treatment Attendees (N = 92) N(%)	Treatment Non- attendees (N = 51) N(%)	Odds Ratio	95% Confidence Interval	p value
Financial consequences						
Bankruptcy	28(19.6)	22(23.9)	6(11.8)	2.36	.89-6.26	.09
Credit borrowing	67(47.5)	46(50.5)	21(41.2)	1.46	.73-2.92	.28
Family borrowing	76(53.9)	56(62.2)	20(39.2)	2.55	1.26-5.17	.01
Other borrowing	38(27.0)	27(30.0)	11(21.6)	1.56	.70-3.49	.28
Paying bills	89(63.1)	63(70.0)	26(51.0)	2.24	1.10-4.57	.05
Using savings	60(42.6)	43(47.8)	17(33.3)	1.83	.90-3.74	.10
Debt	96(67.1)	65(70.7)	31(60.8)	1.55	.76-3.19	.23
Any Financial	123(86.0)	84(91.3)	39(76.5)	3.23	1.22-8.54	.05
Psychiatric						
Anxiety	119(83.8)	79(86.8)	40(78.4)	1.81	.73-4.46	.20
Depression	118(82.5)	76(82.6)	42(82.4)	1.02	.41-2.50	.97
Suicide ideation	44(30.8)	29(31.5)	15(29.4)	1.11	.52-2.33	.79
Suicide attempt	11(7.7)	7(7.6)	4(7.8)	.97	.27-3.48	.96
Any Psychiatric	130(91.5)	85(93.4)	45(88.2)	1.89	.58-6.20	.29
Substance abuse						
Tobacco use	94(65.7)	59(64.1)	35(68.6)	.82	.39-1.69	.59
Alcohol problems	31(21.7)	18(19.6)	13(25.5)	.71	.32-1.60	.41
Drug problems	15(10.5)	12(13.0)	3(5.9)	2.40	.64-8.94	.19
Any Substance Problem	98(68.5)	62(67.4)	36(70.6)	.86	.41-1.81	.69
Family/Social						
Family violence	4(2.8)	3(3.3)	1(2.0)	1.69	.17-16	.66
Family neglect	31(21.7)	20(21.7)	11(21.6)	1.01	.44-2.32	.98
Spousal conflict	93(65.0)	66(71.7)	27(52.9)	2.26	1.11-4.60	.05
Any Family/Social	97(67.8)	67(72.8)	30(58.8)	1.88	.91-3.86	.09

Variable	Total (N = 143) N(%)	Treatment Attendees (N = 92) N(%)	Treatment Non- attendees (N = 51) N(%)	Odds Ratio	95% Confidence Interval	p value
Legal consequences						
Probation/parole	7(4.9)	6(6.5)	1(2.0)	3.42	.40-29.23	.26
Arrest	9(6.3)	7(7.6)	2(4.0)	1.98	.40-9.90	.41
Illegal behaviors	41(28.7)	28(30.4)	13(25.5)	1.28	.59-2.76	.53
Any Legal	43(30.1)	29(31.5)	14(27.5)	1.22	.57-2.59	.61
Family of Origin						
Abuse	54(37.8)	32(34.8)	22(43.1)	.70	.35-1.42	.32
Alcohol problems	70(49.0)	39(42.4)	31(60.8)	.48	.24-.95	.05
Drug problems	26(18.2)	14(15.2)	12(23.5)	.58	.25-1.38	.22
Gambling problems	50(35.0)	34(37.0)	16(31.4)	1.28	.62-2.65	.20
Any Family History	95(68.5)	58(63.0)	37(72.5)	.65	.31-1.36	.25
Treatment History						
Gambling	67(46.9)	60(65.2)	7(13.7)	11.79	4.77-29.15	.001
GA 12-step	37(25.9)	31(33.7)	6(11.8)	3.81	1.47-9.91	.01
Substance abuse	15(10.6)	11(12.0)	4(8.0)	1.56	.47-5.19	.47
AA/NA/12-step	16(11.2)	8(8.7)	8(15.7)	.51	.18-1.46	.21
Mental health	53(37.1)	34(37.0)	19(37.3)	.99	.49-2.00	.97
Self-help	9(6.3)	6(6.5)	3(6.0)	1.09	.26-4.57	.90
Any Treatment History	107(74.8)	75(81.5)	32(62.7)	2.62	1.21-5.68	.05

Help-line Factors as a Predictor of Treatment Attendance

At the first phone interview, we asked all callers to rate the helpfulness of the Help-line call, rate the extent to which the call was sufficient for dealing with the individual's gambling problem, and the individual's intention of following up on their treatment referral (see Figure 1 above). Using follow up data, we then compared Help-line callers who eventually did vs. did not attend treatment, to determine whether their experience with the Help-line predicted subsequent treatment seeking. These data are presented in Figure 3. Help-line callers who did and did not attend treatment did not differ on the extent to which they thought the counseling was enough (i.e., that they did not need any additional counseling ($t(141) = -.42, p < .68$). However, callers who did not attend treatment rated the Help-line call as less helpful ($t(141) = -2.86, p < .01$) and reported less intention to attend treatment ($t(141) = -6.72, p < .001$) than individuals who eventually went to treatment. These findings suggest callers who do not attend may be less satisfied with their Help-line experience than callers who do attend, but also that these individuals may already experience reluctance to attend treatment when they first call the Help-line.

Figure 3. Caller Help-line ratings of Michigan Problem Gambling Help-line callers who did and did not attend treatment.

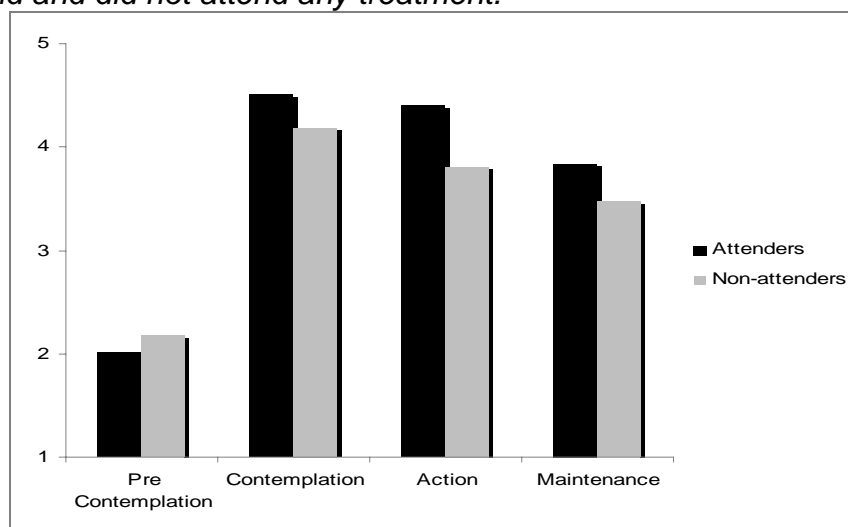


* Summary of specific Items: 1) How helpful was the Help-line call; 2) Was the counseling enough?; Will you follow up on your referral?

Motivation as Predictor of Treatment Adherence

Independent samples t-tests were performed to examine whether baseline scores on the URICA measure of motivation for changing gambling behaviors predicted eventual treatment attendance. As shown in Figure 4, Help-line callers who did not attend treatment scored significantly higher on the precontemplation scale ($t(141) = 2.11, p < .05$), and significantly lower on the contemplation ($t(141) = -2.80, p < .01$), action ($t(141) = -6.03, p < .001$) and motivation ($t(141) = -3.15, p < .01$) subscales than those who attended treatment. Those who did not attend also scored lower on the overall scale of readiness for change ($t(141) = -4.75, p < .001$). Thus, motivation for changing gambling behaviors is a significant factor contributing to initial treatment attendance.

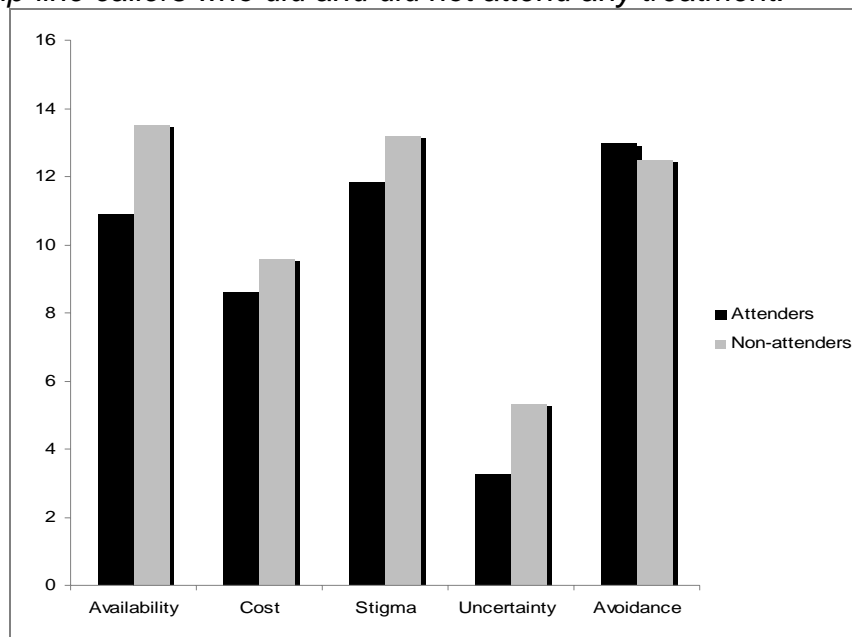
Figure 4. URICA scale average item scores for Michigan Problem Gambling Help-line callers who did and did not attend any treatment.



Barriers to Treatment

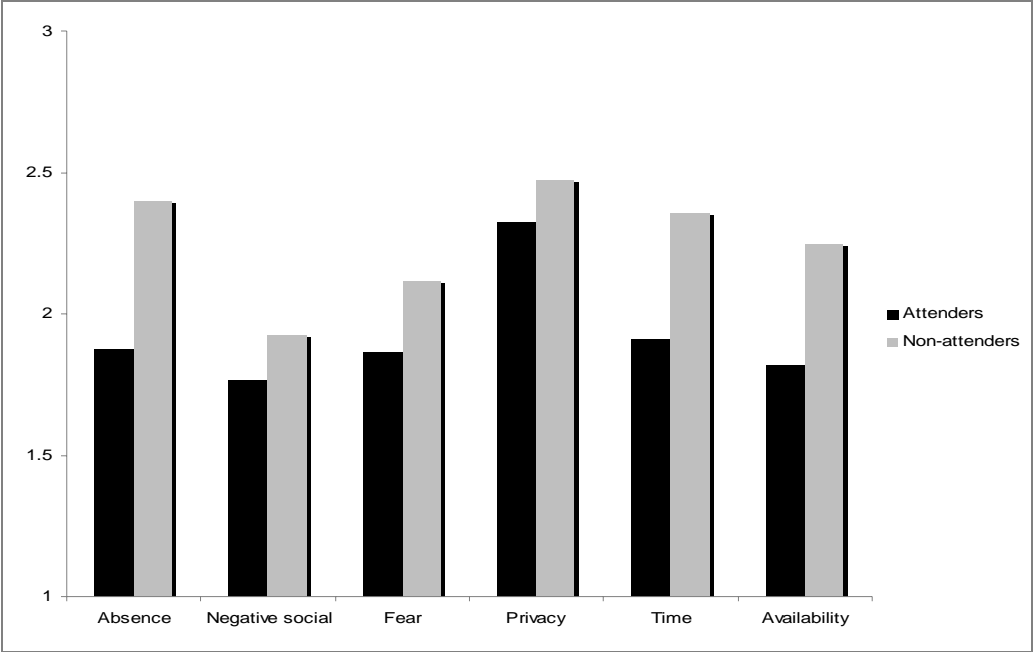
We compared callers who did and did not attend treatment on the four scales of the BTPG measure of treatment barriers (see Figure 5 below). Help-line callers who did not attend treatment were significantly more likely than those who did attend to report that treatment was less available ($t(140) = 5.24, p < .001$), treatment was too costly ($t(140) = 3.12, p < .01$), treatment would result in stigma ($t(140) = 3.15, p < .01$), and that they were uncertain about what would happen in treatment ($t(140) = 7.23, p < .001$).

Figure 5. Treatment barriers scale average item scores reported by Michigan Problem Gambling Help-line callers who did and did not attend any treatment.



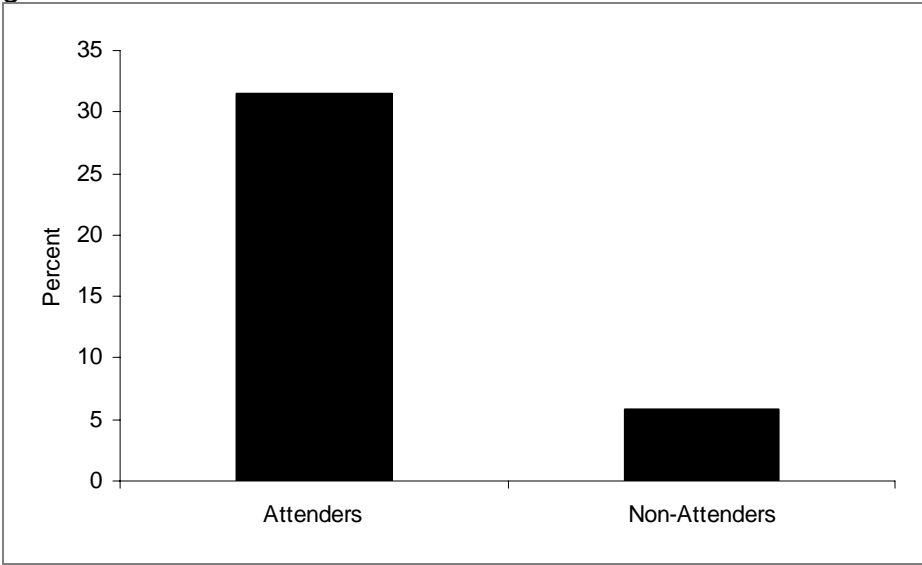
Data from the Barriers to Treatment Inventory (BTI) are presented in Figure 6. As indicated in that figure, Help-line callers who did not attend treatment were more likely to report that their gambling is not a significant problem ($t(140) = 4.96, p < .001$), fear about treatment ($t(140) = 2.52, p < .05$), that treatment would be a time burden ($t(140) = 3.59, p < .001$), and that treatment options are not available to them ($t(140) = 4.49, p < .001$). They were no more likely than callers who did attend treatment to report that significant others discourage treatment ($t(140) = 1.87, p = .06$), or that they fear a breach of their privacy ($t(140) = .90, p = .37$).

Figure 6. Barriers to Treatment Inventory average item scores for Michigan Problem Gambling Help-line callers who did and did not attend treatment.



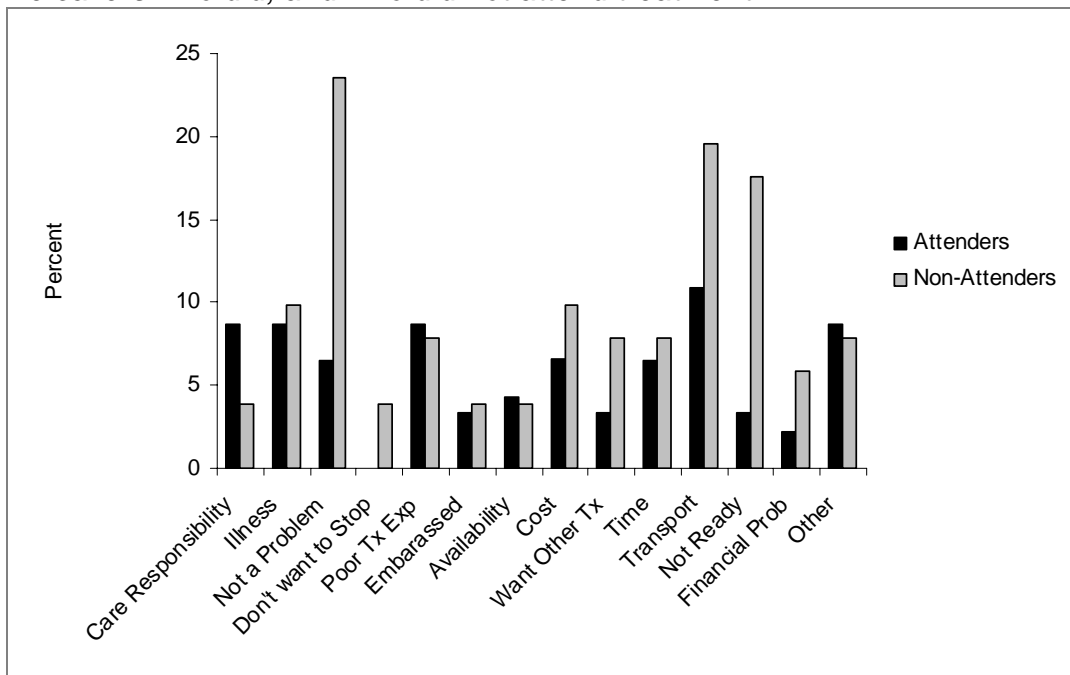
We also asked participants to provide us with specific barriers they experienced in seeking treatment, as well as specific reasons for going to treatment using open-ended questions. Our first question was, “Whether or not you followed up on your treatment referral, what factors made it less likely that you would seek treatment for your gambling problems? (e.g., factors that made it difficult or that turned you off of treatment)”. Reporting barriers was common. Figure 7 shows that 31.5% of those who attended treatment could not identify a single barrier to treatment, compared with only 5.9% of those who did not attend $\chi^2(1,N=143) = 12.42, p < .001$.

Figure 7. Percent of Michigan Problem Gambling Help-line callers who reported experiencing no barriers to treatment.



Specific barriers to treatment are presented in Figure 8. Two barriers, the belief that gambling is not a problem ($\chi^2(1,N=143) = 8.63, p < .01$) and not being ready for treatment ($\chi^2(1,N=143) = 8.83, p < .01$), differed significantly between treatment attendees and non-attendees. These beliefs can be targeted for interventions. Although not significantly different between groups, several other treatment barriers were frequently reported including responsibility for the care of a child or sick relative, illness, poor treatment experience in the past, embarrassment, poor treatment availability, treatment cost, desire for different treatment options, time constraints, transportation difficulties, and financial problems.

Figure 8. Frequently reported barriers to treatment among Michigan Problem Gambling Help-line callers who did, and who did not attend treatment.



We asked a second question, “What factors made it more likely that you would seek treatment for your gambling problems? (e.g., factors that made seeking treatment easier or that made treatment more appealing)” to identify factors that increased the likelihood a Help-line caller would go to treatment. As indicated in Figure 9, there was nearly a 7-fold difference between those who sought treatment and those who did not: 29.4% of Help-line caller non-attendees could not provide a single reason why they would attend compared with 4.3% of individuals who attended at least 1 session ($\chi^2(1,N=143) = 17.89, p < .001$).

Figure 9. Percentage of Michigan Problem Gambling Help-line callers reporting no factors that make attending treatment more likely.

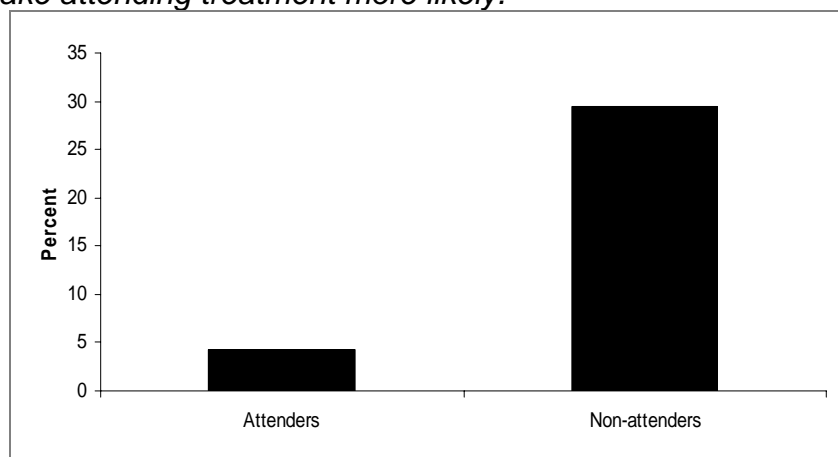
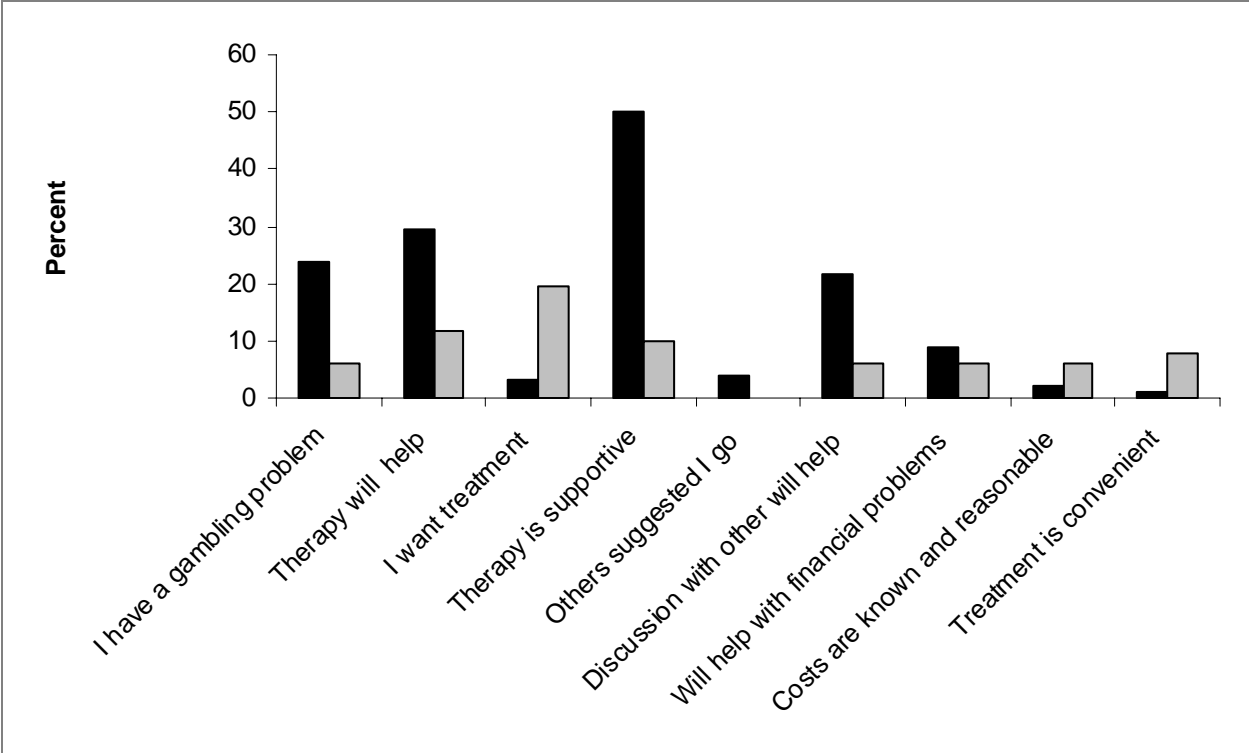


Figure 10 shows that Help-line callers who attended treatment were significantly more likely than those who did not attend to report that they felt they had a gambling problem ($\chi^2(1,N=143) = 7.39, p < .01$), that they believed treatment would be supportive ($\chi^2(1,N=143) = 23.11, p < .001$), treatment would be helpful ($\chi^2(1,N=143) = 5.72, p < .05$) and that it would be beneficial to discuss gambling problems with others ($\chi^2(1,N=143) = 6.11, p < .05$). Attendees were no more likely than non-attendees to report being sent to treatment by a significant other or other outside influence, that treatment would help with financial problems, or that knowing the costs of treatment would increase the likelihood of going to treatment (all p values $> .05$). Non-attendees were more likely than attendees to report still wanting to go to treatment ($\chi^2(1,N=143) = 10.61, p < .001$). In most cases, these individuals reported to our interviewer that they had not attended treatment, but still wanted to go. In those cases, the individual was referred back to the Help-line or to their assigned clinician. Non-attendees were also significantly more likely than attendees to indicate convenience of treatment as a factor that would encourage attendance ($\chi^2(1,N=143) = 4.44, p < .05$). However, convenience was indicated by a relatively small proportion of the sample overall. Thus, these findings are consistent with our other findings that suggest callers who believe they have a gambling problem, and who believe treatment will be both helpful and supportive are more likely to go to treatment. However, some of the non-attendees also indicated a continuing desire to go to treatment despite not going initially, suggesting some of these callers may be open to additional outreach.

Figure 10. Frequently reported reasons for attending treatment by Michigan Problem Gambling Help-line callers who did and who did not attend any treatment sessions.



SUMMARY, RECOMMENDATIONS AND CONCLUSIONS

Our analyses provide valuable information about callers to the Michigan Problem Gambling Help-line. Several factors, for example, distinguish men and women who call the Help-line, and most of our data suggest women may experience significantly greater psychosocial difficulty as a result of their gambling problems. Specifically, women report more financial problems, psychiatric problems, and addiction issues in their families of origin than do men. Women also report greater problem gambling disorder symptom severity than men. These gender analyses suggest: 1) women may experience more severe consequences of their problem gambling; or 2) women and men may perceive or report their psychosocial difficulties differently (e.g., women may be more likely to acknowledge other psychiatric problems than men). However, clinicians should be aware of significant psychiatric, substance abuse and psychosocial consequences of gambling across genders, and treat these co-occurring issues appropriately.

With regard to the Help-line, callers generally felt that the counselors were helpful and intended to follow-up with their treatment referrals. Help-line callers did not, generally, believe that the counseling received from the Help-line was sufficient for dealing with their gambling problems. But, most Help-line callers also reported that they intended to follow through on their Help-line call and make an appointment for treatment. Subsequent analysis comparing those who did vs. did not attend any treatment, however, revealed that non-attendees reported being significantly less likely to attend than attendees. Thus, many non-attendees may have had little or no intention to attend treatment even when they made the initial call to the Help-line.

Individuals who reported a history of gambling-related illegal behaviors were very similar to problem gamblers without illegal behaviors on demographic variables and with regard to treatment attendance. These two groups differ, however, on problem gambling disorder severity with those who engage in gambling-related illegal behaviors experiencing significantly greater financial and psychiatric problems. These individuals also are more likely to have gone to treatment in the past, and were more likely to attend treatment following the current call. These findings are consistent with the frequent finding that problem gamblers with more severe consequences of their gambling problems are more likely to attend treatment.

Finally, several factors were associated with treatment attendance. Using structured questionnaires of barriers to treatment, we found that those who did not attend were more likely to identify availability, cost, stigma and uncertainty/fear of treatment as reasons for not attending treatment. These questionnaires also revealed that those who did not attend any session did not believe their problems were serious enough to warrant treatment. Further, when we asked participants to provide us with barriers to treatment, those who did not attend treatment were more likely to cite motivational issues (not being ready for treatment, not believing that they had a problem). Those who went to treatment were significantly more likely to endorse specific reasons for attending treatment that reflected treatment as a helpful, supportive environment. Finally, readiness for change as measured by the URICA predicted whether or not an individual would attend treatment. **Thus, our findings**

overwhelmingly support the idea that individuals who attended treatment were more motivated to change their gambling behaviors at the time of initial contact with the Help-line. These beliefs can be targeted for interventions as we describe below.

Together, these findings suggest that there may be strategies that Help-line counselors and problem gambling therapists throughout Michigan may use to improve treatment adherence, and perhaps result in improved treatment outcomes. Based on these findings, we make the following recommendations:

- Overall, the Help-line callers in our survey experienced substantial psychosocial difficulty. It is notable, for example that nearly one third of callers had experienced significant suicidal ideation as a direct result of their gambling problems and over 8% had attempted suicide. Assessment and treatment of Help-line callers should treat co-occurring psychiatric and psychosocial issues.
- Counselors should also be aware of different potential needs of men and women, especially with regard to financial difficulties and psychiatric co-morbidity. They should also be aware that men may be more reluctant to attend treatment in some cases, and use techniques to improve the motivation for treatment of individuals who might be less likely to attend treatment.
- Clearly, individuals with greater problem gambling severity and more psychosocial problems (e.g., legal or psychiatric problems) are more likely to attend treatment. Therefore, while it is important to assist these individuals to receive all of the appropriate care they need, it is also important that Help-line counselors spend time with individuals who have fewer additional problems, explaining the potential benefits of treatment and providing callers a picture of what to expect in treatment. In this way, they can help the caller recognize the problem and build motivation to attend treatment.
- Help-line staff members would benefit from training on how to improve motivation for changing gambling behaviors, and addressing ambivalence about and barriers to treatment. An emerging literature, for example, has revealed that very brief counseling grounded in motivational interviewing or other evidence based approaches can be used successfully improve treatment motivation and reduce problem gambling symptoms (e.g., Hodgins, Currie, & el-Guebaly, 2001; Petry, Weinstock, Morasco, & Ledgerwood, 2009). Such techniques can be used by Help-line personnel to improve rates of treatment adherence.

In summary, we recommend providing Help-line clinical staff members with training to: 1) know the factors that are associated with treatment adherence; 2) understand the processes that affect treatment motivation; 3) work with Help-line callers to overcome perceived and real barriers to treatment; and 4) use motivational interviewing or other specific evidence based techniques to improve a caller's chances of attending his/her first therapy appointment. If these factors are put into place, they have the potential to

improve treatment adherence of individuals who receive a referral from the Michigan Help-line.

PRESENTATIONS AND PUBLICATIONS BASED ON STUDY DATA

Presentations

Ledgerwood, D.M. (March 2010). *Clinical characteristics and treatment barriers that predict treatment attendance among callers to the State of Michigan Problem Gambling Help-line. Invited workshop for the Second Michigan Symposium on Problem Gambling, Dearborn, MI.*

Manuscripts in Preparation for Publication (titles are tentative)

Ledgerwood, D.M., et al. (2010, in preparation). *Treatment compliance and barriers among problem gamblers calling the Michigan Gambling Help-line.*

Ledgerwood, D.M., et al. (2010, in preparation). *Clinical differences between gambling Help-line callers with and without a recent history of gambling related illegal behaviors.*

Ledgerwood, D.M., et al. (2010, in preparation). *Characteristics of male and female problem gamblers calling the State of Michigan Gambling Help-line.*

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