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**Gambling Decisions:
An Early Intervention Program for Problem Gamblers**

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An implementation and one-year follow-up of the Gambling Decisions program attempted to answer several important questions. First, is controlled gambling a viable treatment option for some gamblers? Can earlier stage problem gamblers be separated for treatment from those with more severe problems? Finally, would problem gamblers utilize a community health agency for treatment of their excessive gambling? A pre-test/posttest design was chosen where the efficacy of the program was assessed using repeated measures ANOVA analysis. Results showed that an average loss of \$608 over a 4-week period was reduced to \$113 immediately after the 6-week program and to a loss of \$73 at 12 months. The average number of hours spent gambling per 4 weeks was significantly reduced from 23.5 at pretest to 6.5 at the 12 month posttest. Significant decreases were also observed in the number of days per week that clients gambled, and clients reported significant reductions in everyday life problems related to gambling after completing the program.

KEY WORDS: controlled gambling; early intervention.

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INTRODUCTION

Problem gambling is a disorder that is predicted to grow as gambling is legitimized (Rosecrance, 1988) and promoted (Wynne Resources, 1994). Recent Alberta prevalence studies indicate that gambling negatively affects the lives of approximately 5% of the adult population. These studies profile Alberta pathological/problem gamblers as being under 30, non-Caucasian, unmarried, having less than a high school education, earning less than \$25,000/year, and as likely to be male as female (Wynne Resources 1994, 1998). However, using survey data to estimate a stigmatized activity such as problem gambling is likely to underestimate the size of the problem as demonstrated in the recent Australian national inquiry (Productivity Commission, 1999). Drawing from the field of alcohol studies, the most accurate estimates of the problem drinking population include measures of problems created by alcohol in the lives of users as well as overall consumption data. If these factors were also considered in estimates of problem gambling, the proportion of problem gamblers in the community might reach as high as 25% of the adult population (M. B. Walker, personal communication, September 24, 1998). Gambling utilization data in Alberta parallels the rapid expansion of gambling as government revenues in 1996/97 from VLTs alone amounted to an overall average expenditure of \$167 per Albertan ("Take a detailed look," 1998). Alberta had the second highest proportional increase in gambling revenue in Canada (money wagered on government-run lotteries, casinos, and VLTs, minus prizes, winnings, and charity revenue) between 1992 (\$225 million) and 1998 (\$831 million). Alberta also had the highest proportional increase in government profit in this same time frame, from \$125 million to \$751 million (Marshall, 2000).

The prevailing treatment offered problem gamblers has been based on the mental health/medical disorder conceptualization. In 1980 the American Psychiatric Association initially recognized in the DSM-III Manual that gambling was a disorder of impulse control. The self-help Gamblers Anonymous 12-Step program is also based on a medical model, which requires members to admit that they are powerless over gambling and must accept abstinence as their goal. These medical definitions of gambling-related problems and their corresponding treatment approaches have been challenged and have yet to

be supported empirically (Castellani, 2000; Dickerson & Baron, 2000; Rosecrance, 1988). Arguments supporting this mental health/medical conceptualization of gambling derive from the study of severely troubled gamblers in treatment. This is not a sufficient population base from which to form an adequate explanation of problem gambling. In the same vein ethnographic research, which has observed gamblers in natural settings, does not affirm this mental health/medical concept. While treatment based on the single goal of abstinence may result in a remission, return to gambling is common, as abstinence for many gamblers is unrealistic. The National Research Council (1999), in its critical review of pathological gambling, stated that DSM-IV criteria for pathological gambling appear to have worked well for clinicians for the past 5 years; however, not a single study is referenced supporting this claim.

While abstinence has been the primary treatment goal for most problem gambling interventions, two early case studies (Dickerson & Weeks, 1979; Rankin, 1982) demonstrated that regaining control might be possible for some problem gamblers. Other researchers (McGurrian, 1992; Rosecrance, 1988; Walker, 1992) cautiously argue against abstinence as the only treatment goal, as demands for "abstinence alone" often discourage problem gamblers from seeking help. Rosecrance (1989) suggests that controlled gamblers could act as peer counselors, in essence helping problem gamblers to learn optimal playing strategies and manage their money more prudently. Blaszczynski, McConaghy, and Frankova (1991) reviewed studies by McConaghy (1983), Russo (1984), and Taber (1987) which measured improvement or marked reduction in gambling and reduction in life hardships experienced by participants. In comparing abstinent and controlled gamblers on a battery of tests measuring anxiety, depression, sensation seeking and social functioning, Blaszczynski et al. found no differences in these areas of function. Two more recent case studies which used a cognitive-behavioural approach also reported successful treatment outcomes in terms of problem gamblers learning to control their behaviors (Sharpe & Tarrier, 1992; Toneatto & Sobell, 1990).

Dickerson, Hinchy, and England (1990) reported the first pilot study with a 6-months follow-up of a group of pathological gamblers who were offered a choice of abstinence or control as treatment goals. The program ran for 12 weeks and the 65 clients recruited were ran-

domly assigned to manual and interview or manual alone. All but one client met the criteria for pathological gambling as assessed by the DSM-III. Attrition was high, as only 29 subjects completed the initial stage of the program and 21 returned the 3- and 6-month questionnaires. The findings showed a reduction in (a) clients' frequency of gambling sessions, (b) length of gambling sessions, and (c) weekly gambling expenditures. There was no evidence that the interview enhanced program effectiveness and the researchers cautioned that this may have been due to the short follow-up time frame and suggested that this approach needed further exploration.

A review by Lamberton and Oei (1997) discusses four theories that they feel are most useful in understanding the root cause of problem gambling. They are the (a) Affective Theory: problem gamblers gamble more frequently when reality is more painful, (b) Behaviour Theory: problem gambling is a learned behaviour, (c) Arousal Theory: problem gambling is arousing and the gambler is seeking a heightened state of excitement, and (d) Cognitive Theory: problem gambling is supported by a set of false beliefs which sustains the gambling behavior despite losses. As no one theory totally explains the problem, Lamberton and Oei recommend an integrated model of affective, cognitive, behavioural, and physiological factors to explain problem gambling and call for a melding of treatment approaches.

While Lamberton and Oei (1997) caution that the dissimilarities between treatments for alcohol and problem gamblers need to be considered, they recommend that "advantage should be taken of the hard-won lessons from the literature on alcoholism" (p. 94). As no one theory explains the root cause of alcoholism, researchers Miller and Hester (1995) similarly argue for an informed eclecticism of causation and treatment with alcoholics (p. 1). Within alcohol treatment approaches, a sizable body of literature exists validating the utility of offering "control" as a goal for problem drinkers and suggests that "brief interventions" supported by self-help materials work just as well as lengthy individual counseling sessions. Such an approach offered to gamblers could become part of prevention-oriented health services, as are other programs such as improving nutrition, reducing alcohol consumption or stopping smoking.

Public Health authorities have the mandate to monitor the health status of a region and to identify emerging trends and gaps in preven-

tion services. By 1994, problem gambling had become an emerging trend negatively affecting the lives and health of Alberta citizens. In an effort to mitigate this problem, work began on an early intervention program to be delivered to gamblers by public health nurses in community health centres.

METHODS

Participants

The one-year community trial of Gambling Decisions was conducted in the Capital Health region of Alberta, Canada. Recruitment and intake occurred in September 1998, January 1999 and March 1999, one month before offering the program. Advertising flyers and posters alerting gamblers to the availability of this new program were distributed to health and social agencies, and gambling venues. News releases were sent to local media and paid ads were placed in local newspapers under the heading "Are You Wondering about Your Gambling? Call for a free and confidential assessment."

It was decided to estimate the sample size for the one-year trial based on an effect size of .40 of a standard deviation. To achieve this difference with an alpha of .05, a two-tailed test and power of .80, 100 clients were required. A goal of recruiting 150 clients was established which would allow for a loss of 50 clients. In choosing a reasonable sample size, only one previous pilot study of 6 months' duration was found to inform this study (Dickerson et al., 1990). While their attrition rate was 45%, an attrition rate of 33% was estimated for this study.

Intervention

An eclectic approach was taken in developing "Gambling Decisions." The program was designed as a brief cognitive/behavioural treatment program for early stage problem gamblers and offered clients a choice of goals between control and abstinence. The objectives of the program were to:

1. Reduce clients' number of gambling sessions, time spent gambling, and money lost gambling; and

2. Reduce the problems encountered by the target group in their home lives, workplace, and community.

It was clear from our literature review that helping people control or abstain from gambling involves more than just presenting information. The complex issue of helping clients change must also address such phenomena as erroneous thinking pertaining to gambling, identifying triggers to over-gambling, identifying new coping strategies, and increasing self-confidence in controlling gambling behaviour. The program is underpinned by four theories aimed at enhancing behaviour change. These theories include the transtheoretical model of behaviour change (Prochaska & DiClemente, 1986), social learning theory (Bandura, 1977), motivational interviewing (Miller & Rollnick, 1991) and the socio-cognitive theory of gambling (Walker, 1992).

The key components of treatment based on these theories became: (1) discussion of clients' readiness to change; (2) use of the decisional balance approach; (3) identification of high risk situations and coping strategies; (4) recording all gambling; and (5) examination of possible misconceptions regarding gambling. The nurse facilitators were instructed in the practical use of these theories with clients and the theories guided the design of the program materials. The key treatment approaches as described in the Handbook (which all clients received) and the Facilitator's Manual (which guided the implementation) made the program explicit to both clients and nurses.

Gambling Decisions was designed to be completed in 6 weeks. This time frame was chosen based on mounting evidence in the alcohol field that brief interventions with control as the goal work as well as more intensive treatment (Bien, Miller, & Tonigan, 1993; Marlatt, Larimer, Baer, & Quigley, 1993).

Procedure

Clients were given a choice of exposure to the program in one of two formats:

- (a) Self Help Plus (two 1-hour sessions with a nurse facilitator in addition to proceeding through the Client Handbook themselves or

- (b) Group (use of the Client Handbook and attendance at six weekly 90-minute group sessions, led by a nurse facilitator).

At the first meeting, participants were given a copy of the Client Handbook, which built in many key behavioural approaches such as

- assessment of gambling behaviour,
- examples of new coping strategies,
- reinforcement of progress, and
- guidelines for handling relapse.

With the help of the Handbook, clients could identify erroneous thinking patterns, recognize gambling triggers, select from a menu of coping strategies, and practice planning ahead for upcoming gambling sessions. As a way of reinforcing their progress, clients were encouraged to use the reflective checklists and record all gambling in a separate "checkbook." A section on relapse prevention was also included.

Prior to implementing the program, public health nurse facilitators completed a one-week training program, which provided them with the knowledge and skills to lead the program and work with this client group.

The evaluation involved a pretest/posttest design where clients were allowed to select either a self-help plus or group format intervention and a goal of either control or abstinence. The efficacy of the program was assessed using a repeated measures design from pretest to immediate post, 6-month, and 1-year posttests.

Assessment of Eligibility. An assessment tool for phone use was designed to select early stage problem gamblers and exclude those with more serious problems. The screening instrument included assessment of (a) A modification of the 10 DSM-IV items, (b) Questions to identify clients with extreme problems, which included: i) extreme problems related to gambling or alcohol and, ii) extreme problems related to money spent on gambling. Three basic questions on readiness to change were also asked more for practical treatment purposes than to exclude clients.

Modification of the DSM-IV. The dichotomous yes/no answers of the unmodified DSM-IV resulted in the exclusion of almost everyone

who called in the early recruitment phase of the program. After consulting with experienced gambling researchers, a 3-point frequency scale for each DSM-IV question was added consisting of: "occasionally," "often," and "almost all of the time." Only those answering "almost all of the time" were considered a "yes" answer on the modified questionnaire. The original DSM-IV cut-off point of five or more "yes almost all of the time" answers was used to exclude clients from Gambling Decisions. Clients fitting this category were referred to an abstinence program.

Assessment to identify clients with extreme problems was done using questions developed by the researchers. This resulted in clients being excluded and referred if they:

- were currently suicidal,
- had serious mental health problems that made it difficult for the person to function,
- were both awaiting sentencing related to their gambling and planned to use attendance in Gambling Decisions in their defence,
- were spending excessive money on gambling (relative to their income) and therefore had financial problems resulting in things like pawning possessions or having creditors take legal action against them, or
- were identified as untreated alcoholics (consuming 35 or more standard drinks/week).

Readiness to change was assessed using 3 key readiness questions modified to relate to gambling behaviour (Prochaska, Norcross, DiClemente, 1994).

Measures

The eligibility questionnaire was administered via telephone by nurses trained to deliver the program and knowledgeable in research protocols. Once client eligibility was determined, clients seeking to enroll were asked to complete the Pretest during the same call. Posttest data gathering was done immediately after the program, at 6 months, and 1-year intervals over the phone, by baccalaureate nurses trained as data collectors.

The amount of money and time clients spent gambling was mea-

sured using Sobell and Sobell's (1992) Timeline Follow-Back Technique. This approach has been used extensively in the alcohol field to reconstruct drinking patterns and has an established reliability and validity in regard to drinkers. The tool was modified for use with gamblers as it was in an earlier gambling study (Taber, McCormick, Russo, Adkins, & Ramirez, 1987). Clients were asked to reconstruct the time and money they spent gambling over the 4-week period prior to beginning the program (Pretest), after the program (Immediate Posttest), 6 months after, and 1 year after. This assessment was used at pretest in person, after rapport had been established between nurse facilitators and clients. The Dickerson et al. (1990) study suggests that personal contact, at least by way of an initial interview, is essential in establishing valid assessments of pre-treatment levels of gambling. The determination of clients' time and money spent gambling was based on this information. The only instance where the previous month was not used as the time frame was if clients said that it was not typical of their gambling behaviour. In this case, clients were then asked to reconstruct the second month prior to the call.

A common characteristic of eligible clients was that they were beginning to experience "problems" as a result of their gambling but those problems were not severe enough to exclude them from the program. Clients were asked to rate their perceptions of the severity of their problems (no problem, minor, moderate or major problem) in seven life areas (with family, friends, work, finances, health, and the law). Using a four-point scale, with 1 being "no problem" and 4 being "major problems," an average problem score over the seven life areas was calculated for each client.

The Inventory of Drinking Situations Questionnaire (IDS; Annis, 1986) was adapted for the Gambling Decisions Program and used to develop the Triggers to Gambling Questionnaire. Clients were asked to rate whether and how often any of 15 common gambling triggers had led them to gamble to excess. Rating 1 as "never" and 4 as "almost always," an average trigger score was calculated for each client. The questionnaires were used for pre and post measures and also were used to help clients gain more insight into their gambling behaviours. Learning to understand themselves was the first step of the intervention.

Data was entered and analyzed using SPSS 10.0. All measures of time and money spent gambling, in addition to the average problem

and average trigger scores, were analyzed using repeated measures analysis of variance (ANOVA) analysis.

RESULTS

Client Contact

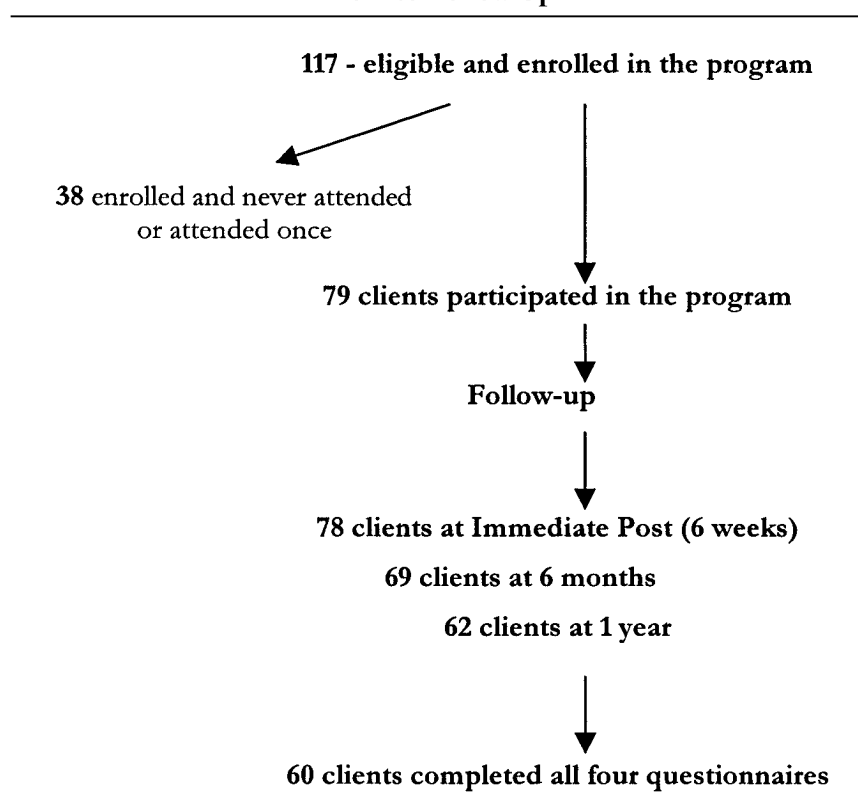
In all, 223 individuals called the Gambling Decisions program line over the 3 months of recruitment. Of the 223 calls, 117 people (52%) were eligible and enrolled in the program. Forty-six people (21%) called for information only. Sixty callers (27%) were not eligible for the program. Those who were ineligible were referred to abstinence based programs (65%), to mental health (28%), and only four callers refused referral. This outreach and the referrals were viewed as an extra benefit of the program. The nurses found that using the Eligibility Screening Questionnaire provided an opportunity to establish a rapport, which enhanced caller receptivity to accepting the suggested referral.

Although 117 enrolled, 38 clients never attended, or attended only once. This may have been due to client ambivalence about changing their behaviour. As well, the nurses noted that some clients who attended just once mentioned knowing after one session that they would have difficulty controlling their gambling and would therefore stick to abstinence as their goal.

Therefore, 79 clients actually took the program (67.5% of those eligible and enrolled). Four questionnaires were administered: immediately prior to the program (Pre), immediately after the program (Post), at 6 months, and at 12 months. Follow-up rates with clients who actually took the program are shown in Figure 1. Evaluation results are based on the 60 individuals who completed all four questionnaires (76% of those who took the program).

Analysis was done to ensure that there were no significant differences between those who withdrew (i.e., those who enrolled and never attended or attended once), those lost to follow-up, and those who completed the program. The three groups were compared on several items measured during the pre-program questionnaire. There were no significant differences among the three groups with regards to gender, age, DSM-IV score, average problems, average triggers, and net gain/

Figure 1
Loss to Follow-Up



loss. The only significant difference noted was that those lost to follow-up had spent more time gambling at pretest (number of hours gambling and number of days with gambling activity).

Response to the DSM-IV

Of the 60 respondents completing all posttest questionnaires, 75% would have been classified as pathological gamblers using the unmodified DSM-IV. When we used the modified DSM-IV we asked clients who said “yes” to describe the frequency of the behaviour on the 3-point scale (occasionally, often, or almost all the time). Although many clients answered “yes” to some DSM-IV questions; none answered

“almost all the time” (which equated to a “yes” answer in the modified DSM-IV) on five or more of these questions as this would have excluded them.

Description of the Sample

Notable demographic characteristics of the client population indicate that two thirds were female; a high proportion were married; they were reasonably well-educated, with 55% having attended or completed college or university; and the majority were employed full-time (Table 1). Table 1 also includes a description of the sociodemographic variables for those who withdrew and those lost to follow-up. No significant differences were found between the groups on these variables. When income profiles for clients who completed the Gambling Decisions program are compared with 1995 Individual Incomes of the Capital Health Region (Federal Census Data, 1996), clients in the program had a higher percentage in the middle and upper income range. This is unlike the problem gamblers identified in the Alberta prevalence studies (Wynne Resources, 1994, 1998).

Clients were asked to reflect on their gambling patterns and behaviour over the previous 3 months and indicate their weekly frequency of gambling activities. While all forms of gambling were recorded, the most common was VLT play, engaged in by 60% of clients at least once a week over the 3-month period.

When the 60 clients in the program were given the option between the two interventions, 36 chose the Group format and 24 chose the Self-Help Plus format. Seventy percent of the clients completed all 6 weeks of the program.

Time and Money Spent Gambling

In analyzing the time and money spent gambling, it was important to include only those with complete data sets across the variables and time periods. Four people were not included in the analysis because of incomplete data. With regard to money won or lost gambling over the 4 weeks, an immediate consideration was how to deal with the outliers who had inordinately high gains or losses. In this sample, individuals were considered outliers if their gains or losses were more than three standard deviations from the mean gain or loss. Seven individ-

Table 1
Sociodemographic Description of Clients by Group

<i>Characteristics</i>	<i>Completed</i> (<i>n</i> = 60) %	<i>Withdrew</i> (<i>n</i> = 29) %	<i>Lost</i> (<i>n</i> = 19) %
Gender			
Female	68.3	58.6	63.2
Male	31.7	41.4	36.8
Marital Status			
Married or common-law	65.0	55.2	47.4
Separated, widowed, or divorced	25.0	34.5	31.6
Never married	10.0	10.3	21.1
Education			
Elementary or some high school	15.0	34.5	15.8
High school	30.0	17.2	21.1
Some college/university	27.0	24.1	26.3
Completed college/university	28.0	24.1	36.8
Employment Status			
Fulltime	60.0	41.4	52.6
Parttime	11.7	10.3	—
Unemployed	11.7	10.3	5.3
Other	16.7	37.9	42.1
Personal Income			
Less than \$25,000	35.6	51.7	57.9
\$25,000–\$49,999	40.7	37.9	21.1
\$50,000–\$74,999	16.9	6.9	10.5
\$75,000+	6.8	3.4	10.5
Age			
Mean	47.4	43.0	45.7
Standard deviation	11.1	13.2	12.8
Range	21–75	19–72	23–65

uals with wins or losses of several thousand dollars (four winners, three losers) were removed from the analysis, as their data would have skewed the mean. Data for all four measurement points (Pretest, Posttest, 6 months, and 12 months) were analysed using repeated measures ANOVA analysis with $p < .05$.

The average number of hours per 4 weeks of gambling was significantly reduced ($F = 26.54$, $df(3, 144)$, $p < .05$) from 23.5 hours at the pretest to 6.5 at the 12 month posttest. The average number of days spent gambling over the 4 weeks was significantly reduced from 9 days before the program started to 3.5 days at the 12 month posttest ($F = 25.52$, $df(3, 144)$, $p < .05$). Therefore, not only did clients reduce the number of days on which they had some gambling activity; they also reduced the number of hours spent gambling. An average loss of \$608 in the 4-week period before the program was significantly reduced to \$113 immediately after the program and to \$73 at 12 months ($F = 15.64$, $df(3, 144)$, $p < .05$). Using analysis of variance with repeated measures for hours, days, and loss/gain, significant decreases were observed between pre-program and all post-program measures. Very importantly these initial decreases were maintained over the 12-month follow-up period (Table 2).

At the 12-month period, 14 of the clients had chosen not to gamble rather than to gamble in a controlled fashion. This raised the question

Table 2
Gambling Over 4 Weeks in Hours, Days, and Money Lost/Gained
(excluding outliers and those with missing data)

<i>Evaluation Period</i> (<i>n</i> = 49)	<i>Hours Mean</i> (<i>SD</i>)	<i>Days Mean</i> (<i>SD</i>)	<i>Money Lost/ Gained Mean</i> (<i>SD</i>)
Pre	23.5 (21.4)	9.04 (5.09)	− \$608 (772)
Post	6.5 (6.5)	4.43 (4.37)	− \$113 (322)
6 months	7.3 (9.5)	4.39 (5.00)	− \$ 85 (366)
12 months	6.5 (9.9)	3.47 (4.04)	− \$ 73 (446)
*Statistics $F_{(df)}$, p	26.536 _(3, 144) p = .000	25.515 _(3, 144) p = .000	15.641 _(3, 144) p = .000

*Post hoc tests using Tukey HSD for all variables showed significant differences between the pretest levels and the measures obtained at all three other points in time.

of whether and to what extent the abstainers improved the averages. To determine this effect, additional analyses of all major measures were conducted with the abstainers excluded. Table 3 shows the comparison of hours and days spent gambling and the money lost/gained over a four-week period. For all variables, significant differences were still found, with abstainers removed, between the pretest measures and on all the follow-up periods including 12 months. Even with abstainers removed and a smaller sample size, the same significant trends remained. Therefore, we believe that the analysis including abstainers can safely be reported.

Clients were asked to rate the severity of problems in seven different life areas (finances, relationships with family and friends, sleep, health, work, and the law) over the four evaluation periods. All reported problems were significantly lower at all posttests. For example, 73% reported moderate or major problems with finances before taking the program compared with 23% after 12 months. Half of the clients reported moderate or major problems in their family relationships before the program compared to 15% after 12 months.

Fifteen personal triggers to over-gambling were assessed and a significant reduction in the average trigger score was found from pre-program to post-program and was sustained across the one-year follow-

Table 3
Gambling Over 4 Weeks in Hours, Days, and Money Lost/Gained
(excluding those who abstained from gambling at 12 months)

<i>Evaluation Period</i> (<i>n</i> = 35)	<i>Hours Mean</i> (<i>SD</i>)	<i>Days Mean</i> (<i>SD</i>)	<i>Money Lost/ Gained Mean</i> (<i>SD</i>)
Pre	24.9 (24.2)	10.00 (5.30)	− \$575 (711)
Post	7.4 (6.8)	5.34 (4.75)	− \$143 (330)
6 months	8.5 (9.8)	5.46 (5.35)	− \$ 82 (411)
12 months	9.1 (10.7)	4.86 (4.01)	− \$102 (527)
*Statistics $F_{(df)}$,	14.308 _(3, 102)	13.967 _(3, 102)	9.626 _(3, 102)
p	p = .000	p = .000	p = .000

*Post hoc tests using Tukey HSD for all variables showed significant differences between the pre-test levels and the measures obtained at all three other points in time.

up period. For example, at the pretest 62% of the clients said they frequently or almost always over-gambled to cope with stress compared to 20% at 12 months. Similarly, 57% said they frequently or almost always over-gambled to win back losses compared with 20% at 12 months.

Clients were positive about their success in controlling gambling in the 12 months following the program, as 77% indicated being "successful" or "very successful" in controlling their gambling. When clients were asked what strategies they used to control or abstain from gambling, the most common responses included "doing other things with my life," "planning ahead for any gambling"; "just staying away"; and "changing my thinking about gambling."

Several post hoc subgroup analyses were performed to determine if the Gambling Decisions program had variable effects on different groups of participants. The following characteristics were examined:

- Gender
- Format of Gambling Decisions program (i.e., Group or Self-Help Plus)
- Whether or not a participant used VLTs or coin slots more than once a week
- Whether or not a participant would have been ruled ineligible using "often" as well as "almost all the time" as a "yes" in the DSM-IV
- Whether or not a participant would have been ruled ineligible using the unmodified DSM-IV
- Whether or not a participant reported being a problem drinker (but not an alcoholic)
- Whether or not a participant reported previous treatment for gambling

A separate analysis was performed for each of these subgroup comparisons using ANOVA repeated measures. For each analysis, participants were compared on hours spent gambling, days with gambling activity, money gained/lost gambling, average problem score, and average trigger score.

No significant differences were noted in any of these outcomes for any of the above comparisons. It should be noted that for the last two sub-groups (problem drinking and previous gambling treatment),

the sample sizes were quite low and therefore the statistical test may not have been powerful enough to detect differences. However, overall, it appears that the Gambling Decisions program was equally effective for all these groups.

DISCUSSION

The implementation and 12 month follow-up evaluation of the Gambling Decisions program tried to answer several important questions pertaining to the treatment of problem gamblers. Results of this one-year trial have demonstrated that offering controlled gambling as a treatment option to early stage problem gamblers can work. Significant reductions were observed in the number of days and hours spent gambling as well as a reduction in the money lost gambling. These decreases were the primary goals of the program, and from this point of view, the program should be viewed as promising. The results support evidence found in a similar intervention by Dickerson, Hinchy, and England (1990), which noted reductions in time spent and monies lost gambling over 6 months of follow-up.

The second goal of the program was to reduce the problems gamblers had in their everyday lives related to their gambling. The results indicate that this goal was also achieved. Problem reductions were recorded in all seven life areas over the follow-up period. After combining these data into one score, significant reductions were observed in the overall problem scores over the follow-up period.

The Eligibility Screening Tool seemed to be effective in terms of selecting the appropriate client for the treatment program. Use of the DSM-IV allowed the research team to use the questions and criteria of this validated tool, but altering it to reflect gambling on a continuum of severity rather than as a dichotomous state. Selection of the cut-off point for a "yes" answer at "almost all the time" appears to have been an appropriate decision. Client eligibility was reassessed counting "yes" answers for those who responded "often" (indicating less frequency of the behaviour being assessed), or "almost all the time." When this calculation was done, there were 12 clients who had five or more "yes" answers and would have been considered ineligible. This group of clients was compared to the rest of the clients and no significant differences in program effects were found between the two groups. Based

on this evidence, it was deemed appropriate to consider those responding with "often" as a "no" response for the DSM-IV criteria and to leave the cut-off point for a "yes" answer at "almost all the time."

Perhaps all levels of problem gambling could benefit from using the revised DSM-IV, although its efficacy should be explored further in future research.

Issue: Many Called, Few Came

Two thirds of the potential clients calling for this program did not participate. Those who called and did not participate were (a) information seekers, (b) ineligible clients, or (c) ambivalent clients who enrolled and then decided controlled gambling was not for them. Given the discussion in the literature indicating that the actual population of problem gamblers is likely greater than what has been estimated in prevalence studies, it seems advantageous to offer a Gambling Decisions type of program. The advertising message encouraged people to call for an assessment of their gambling behaviour and for many of these callers, treatment, either in Gambling Decisions or elsewhere, was appropriate.

Issue: The Money Goal

An issue in the development of the program was to identify an appropriate financial goal for clients. The goal ultimately established was for clients to gamble no more than 5% of their net monthly income. This was seen as a safe spending level based on Statistics Canada data showing that Canadians spend between 4% and 7% on recreation (Statistics Canada, 1994). Gambling was placed in the sphere of "possible social recreation" and those who participated in the study were advised not to make gambling their only recreational pursuit. Clients were also cautioned to discuss this goal with their partners and only adopt it if it was not hurting anyone else. The goal was well accepted and seemed to be an appropriate and safe gambling level. Clients appreciated having a clearly stated monetary goal for gambling. Some difficulty was encountered in using this proportion of money spent as a measure in our data analysis, particularly by clients whose income varied from month to month. Consequently this measurement was not used in analysis. This is a challenge for future research when perhaps

the proportion of people with varied incomes can be identified at intake and assessed separately, thus allowing investigators to measure the proportion of clients who achieve this goal.

Issue: The Time Goal

The goal of no more than 6 hours a week gambling was based on evidence that problem gamblers spend an average of 9 hours gambling per week (Dickerson et al., 1990). The goal of restricting gambling to 3 days a week was arbitrarily selected by the research team.

Our concern was that if program goals were perceived as being restrictive and unreasonable, the acceptance of the program would be reduced. Games that take longer to play such as bingo and poker were considered in the selection of the time goal. It was also thought that the limits on gambling expenditures would influence the amount of time clients spent gambling. To some extent this is what happened. The money goal became the primary guiding program goal, and time spent gambling was reduced accordingly. However, we still believe it is useful to have an appropriate time goal for the program. Therefore, in revisions to the Gambling Decisions program, the time goal will be changed to reflect the time successful controlled gamblers spent gambling. This was to gamble no more than once a week and for a maximum of 3 hours.

Limitations

No control group was used in this study, because to do so would have raised the ethical issue of not offering treatment to problem gamblers requesting it. Controlled drinking studies using control groups have been unsatisfactory as clients just wait for the treatment (Sobell & Sobell, 1993).

No random assignment to treatment format was done. Clients were given a choice of format rather than being assigned for research purposes.

SUMMARY

The results are encouraging for the first one-year controlled trial of an early intervention gambling treatment program offering clients

the choice of control or abstinence. Replication of the Gambling Decisions trial would help to further assess the efficacy of the program. A follow-up period of 24 to 36 months would also strengthen the evaluation findings. However, the results of this study demonstrate that Gambling Decisions is a promising treatment strategy for problem gamblers.

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