Brief communication

Prevalence of pathological gambling in Switzerland after the opening of casinos and the introduction of new preventive legislation


Objective: This survey aimed to evaluate the prevalence of pathological gambling (PG) in the Swiss population in 2005 and the link between PG and alcohol abuse. This replication study made it possible to compare the prevalence rates of PG measured before and after the introduction of casinos and new preventive legislation.

Method: A total of 2803 telephone interviews were completed using standardized assessment instruments for identifying gamblers (South Oaks Gambling Screen) and alcohol abuse (CAGE).

Results: The past-year prevalence rates were 0.8% for problem and 0.5% for PG. No relationship was found between alcohol abuse and gambling behaviour. The past-year prevalence of disordered gambling did not change between 1998 and 2005.

Conclusion: Despite widespread openings of casinos in Switzerland since 2002, the prevalence estimates of past-year disordered gambling have remained stable. The discussion focuses on different factors (social measures, legal obligations and social adaptational capacities) that may account for the stabilization of prevalence estimates.

Significant outcomes

• The opening of casinos, the withdrawal of slot machines from public places as well as the introduction of a new legislation did not influence the prevalence rates of problem and PG in Switzerland.
• In 2005, the prevalence estimates of past-year problem gambling were 0.8% and 0.5% for PG. The lifetime prevalence is, respectively, 2.2% and 1.1%.
• No relationship was found between alcohol abuse and gambling behaviours.

Limitations

• The use of a cross-sectional design rather than a longitudinal methodology does not enable the following of a specific sample of disordered gamblers.
• Predictors of disordered gambling could not be identified on the basis of available data.
• The response rate in this telephone survey is rather low though this is usually the case in most telephone surveys conducted on different topics in Switzerland.

Introduction

Gambling behaviours lie on a continuum from occasional gambling to regular gambling (once or twice a week) and through to problem and pathological gambling (PG). PG is included as an impulse-control disorder in the revised fourth edition of the Diagnostic and Statistical Manual
of Mental Disorders (DSM-IV) (1). Problem gamblers are considered to be at risk as these cases may be ‘in transition’ either towards or away from pathological states (2).

A recent meta-analysis found lifetime rates of pathological gambling of between 1% and 2% in adults aged 18 and over in the USA and Canada and an additional 2–4% of adults were classed as problem gamblers (3). Prevalence rates in Australia, New Zealand and several European countries are similar (4–7). Because of liberal attitudes towards the legalization of gambling, the availability of lotteries, casinos and gaming machines has expanded dramatically worldwide. Research attempting to examine changes in prevalence rates as a response to the introduction of casinos or lotteries into a community has produced mixed findings (8). The exposure theory argues that when gaming settings become more easily accessible, the number of regular gamblers, as well as problem and pathological gamblers, will increase as a result (9, 10). However, data from other empirical studies do not corroborate this link as some surveys show no increase (3, 11) and one study recorded a decrease in gambling prevalence (12).

In Switzerland, because of legislative changes enacted in 2002, 19 casinos were opened for a population of 7.4 million. More than 12 000 slot machines were simultaneously withdrawn from public places (cafés, etc.). As a result, the number of gaming tables and slot machines in the casinos per million inhabitants (respectively, 33 and 438) has become very high. The number of casinos and slot machines per 100 000 sq. km (respectively, 46 and 7847) has followed the same trend (13).

The new legislation made preventive programmes mandatory, including measures requiring the training of casino staff in the early detection of problem gamblers, the availability of information about assistance for problem gamblers (self-evaluation questionnaires, addresses of clinics and support groups) within the casino, identity checks at casino entrances (verification by a computer network linking all Swiss casinos as well as a system of voluntary or imposed exclusion).

Before the establishment of these new gambling activities in Switzerland, a prevalence study was conducted in 1998 to estimate the lifetime prevalence rates (5, 14). Results showed a lifetime ‘probable gamblers’ prevalence of 0.8% and a lifetime ‘potential gamblers’ prevalence of 2.2%. The past-year ‘probable gamblers’ prevalence rate was 1.0% and 0.2% for ‘pathological gamblers’ (14).

### Aims of the study

This study aimed to evaluate the prevalence of pathological gambling in 2005 and to consider the correlation between alcohol abuse and disordered gambling. Additionally, this paper presented the results of a replication study carried out 7 years after the baseline study using the same screening instruments [South Oaks Gambling Screen (SOGS) and CAGE] for comparative purposes. Thus, this survey makes it possible to evaluate the impact of the significant increase in gaming facilities on gambling habits among the Swiss population and the possible preventive role of the social measures imposed by the new legislation.

### Material and methods

#### Sample

A polling institute (Link Institut) conducted the survey, contacting by telephone 6017 individuals randomly selected through computer-generated telephone numbers (up to 30 attempts were made to contact each number). A random-quota method according to sex, age and occupational status was used to proportionally represent the population (over 18 years of age). The person who answered the phone call was included as long as he/she belonged to the correct quota. The results were then weighted to represent the Swiss population proportionally. Over all, 2803 interviews (subjects aged between 18 and 98) were completed (response rate: 47%).

#### Measures

The SOGS (15), a 20-item instrument, was used to screen possible gambling problems. According to Shaffer and Hall’s level rating system, respondents scoring 5 or more were categorized as ‘pathological gamblers’ (level 3), those scoring 3 and 4 were classified as ‘problem gamblers’ (level 2) and those scoring 1 or 2 as ‘non-gamblers and non-problem gamblers’ (level 1) (16). This classification has been used in most of the problem-gambling surveys conducted internationally (12).

The 4-item CAGE questionnaire was used as an index of possible alcoholism (17). The 4 CAGE questions focus on cutting down, annoyance by criticism, guilty feeling and eye-openers. The acronym “CAGE” helps the physician to recall the questions. Respondents giving two or more positive answers were thought to have a probable alcohol problem. Socio-demographic data and information about gambling habits and wagering activities were also collected.
The method used to conduct the survey in the present study was identical to that used for the 1998 study (5).

**Results**

The lifetime and past year ‘pathological gamblers’ and ‘problem gamblers’ prevalences for 2005 are presented in Table 1.

Several socio-demographic characteristics of the (past-year) ‘pathological gamblers’ and ‘problem gamblers’ population (levels 2 and 3 together) were compared with those of the ‘non-gamblers and non-problem gamblers’ (level 1). No significant difference were found for any of the variables examined: the proportion of males ($\chi^2 = 1.91; P = 0.17$), married people ($\chi^2 = 0.41; P = 0.52$), people with a high school diploma or higher level of education ($\chi^2 = 1.74; P = 0.19$), people with an income higher than 6000 CHF ($\chi^2 = 0.32; P = 0.86$) and people working full time ($\chi^2 = 0.55; P = 0.46$).

According to the CAGE questionnaire, 13.5% of the ‘problem gamblers’ and the ‘pathological gamblers’ population (levels 2 + 3) probably had an alcohol problem in 2005. No statistically significant difference was found between this population (levels 2 + 3) and ‘non-gamblers and non-problem gamblers’ (level 1: 8.9%) [$\chi^2 = 0.5; P = 0.48$] for this variable. In 1998, there were more probable alcohol abusers among the ‘problem gamblers’ and the ‘pathological gamblers’ (levels 2 + 3: 37.5%) than among the ‘non-gamblers and non-problem gamblers’ (level 1: 8.2%) [$\chi^2 = 30.6; P < 0.001$]. When comparing the percentage of ‘problem gamblers’ and ‘pathological gamblers’ (levels 2 + 3) who probably have an alcohol problem found in 1998 with that found in 2005, results show a statistically significant difference [$\chi^2 = 4.1; P < 0.05$]. There were more problem and pathological gamblers with a probably alcohol problem in 1998 (37.5%) than in 2005.

In 1998, the lifetime ‘problem gamblers’ (level 2) prevalence was 2.2% and the ‘pathological gamblers’ (level 3) prevalence was 0.8%; the past-year ‘problem gamblers’ prevalence was 1.0% and the ‘pathological gamblers’ prevalence was 0.2%. No difference were found between the 1998 and 2005 studies in the prevalence rates of problem and pathological gambling, for either lifetime or past-year prevalence rates and for either ‘problem gamblers’ or for ‘pathological gamblers’ (all $\chi^2 < 1.34$; all $P > 0.25$). There is also no significant difference in the prevalence rates of the past-year and lifetime ‘pathological gamblers’ and ‘problem gamblers’ population (levels 2 + 3 together) between 1998 and 2005 (all $\chi^2 < 0.39$; all $P > 0.53$). In 1998 and in 2005, the ‘pathological gamblers’ and ‘problem gamblers’ population (levels 2 + 3) contained a similar proportion of males ($\chi^2 = 0.24; P = 0.88$), married people ($\chi^2 = 0.40; P = 0.84$), people with a high school diploma or higher level of education ($\chi^2 = 0.16; P = 0.89$), people with an income higher than 6000 CHF ($\chi^2 = 0.04; P = 0.94$) and people working full time ($\chi^2 = 0.04; P = 0.94$).

**Discussion**

To our knowledge, this is the first replication study to evaluate the impact of a substantial change in the quantity and quality of access to gambling activities on a national level (before-after study). The replication studies published up to now were primarily carried out on a regional level in various states in the USA (for a review see 12). Attention has been called to the fact that very few changes in prevalence rates can be demonstrated when these investigations are carried out after only 1 or 2 years and that a waiting period of 4–8 years is preferable (12). Our study meets this requirement.

Unquestionably, the most relevant result of this study is that the current prevalence of problem and pathological gambling (levels 2 + 3) did not change between 1998 and 2005 despite the massive opening of casinos in Switzerland since 2002.

A new public health model called the ‘regional exposure model’ (18) may shed some light on the stable prevalence rates of problem and pathological gambling since casinos opened. The underlying principle of this model is that individuals (here the gamblers) are capable of social adaption. When they are exposed to a product (the casinos), they dynamically change their behaviour in function of this exposure. Jacques and Ladouceur (11) recently provided evidence that after the early increases in new patterns of gambling seen in individuals who come in contact with new types of gaming activities, an adaptive process occurs that leads to decreased involvement or abstinence. This adaptive process takes place whether the early increase brought about harmful effects or not.

Moreover, although Switzerland has become a European country with a high density of casinos

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**Table 1. Lifetime and past-year prevalence for problem gamblers and pathological gamblers in 2005**

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<tr>
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<th>Lifetime prevalence (%)</th>
<th>Past year prevalence (%)</th>
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<tbody>
<tr>
<td></td>
<td>95% CI</td>
<td>95% CI</td>
</tr>
<tr>
<td>Problem gamblers</td>
<td>2.2</td>
<td>1.6–2.7</td>
</tr>
<tr>
<td>Pathological gamblers</td>
<td>1.1</td>
<td>0.7–1.6</td>
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Pathological gambling in Switzerland

for its population since 2002, the total number of slot machines available has actually diminished over time. In fact, there were more than 12 000 slot machines in unregulated public places (bars, cafés, etc.) at the time of our first survey in 1998, while there have only been 3309, and these exclusively situated inside casinos, since April 2005 when their operation in public places was forbidden.

The efficacy of the social measures and legal obligations that were enacted at the same time that the casinos were awarded concession (especially the centralized exclusion system) may also represent another crucial factor contributing to the stable prevalence of excessive gambling. It could be inferred that the strict preventive measures monitored by the government that accompanied the proliferation of casinos helped to curb the increase in the number of excessive gamblers.

Another interesting difference is that a clear relationship between alcohol abuse and gambling behaviours was found in 1998, but not in 2005 even if alcohol consumption and alcohol problems in the Swiss adult population remained stable over the observation period (19). Moreover, more probable alcohol problems were found in the problem and pathological gamblers population of 1998 than in that of 2005. This important change may be related to the fact that slot machines were then present in public bars where alcohol was more readily available, without the controls of the preventive measures implemented in all Swiss casinos after 2002.

The main limitation of this study is that it is not a prospective longitudinal survey, as baseline and follow-up respondents were drawn from different probability samples. As a consequence, when interpreting the results, it is not possible to observe and describe the evolution of a specific sample of problem or pathological gamblers.

In conclusion, this replication survey indicates that, despite the significant increase in gambling facilities in Switzerland, the lifetime and past-year prevalence estimates of disordered gambling remained stable.

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References