

*Rapport  
de recherche*

PROGRAMME ACTIONS CONCERTÉES

# APPENDIX 1

## LITERATURE REVIEW

## **BRIEF SUMMARY OF FINDINGS**

Research published in the past few decades has shown that the majority of university students gamble. Considered an emerging health issue, student gambling could be potentially problematic because of the adverse consequences it could have on a young person's life. The current picture of the phenomenon includes estimates of lifetime prevalence rates ranging from 47% to 97%, with the modal number being around 85% [1-3]. Past year gambling rates range from 42% to 88% [4, 5]. Lifetime rates are usually two to three times higher than past-year ones, which accounts for the discrepancy in prevalence [6]. In any case, however, in the context of student gambling, past year rates are believed to better reflect gambling behaviour because they capture the period while in college, and/or the preceding transition to it [7]. Students engage in a variety of gambling activities, among which the most preferred ones cited include *lottery, slot and poker gaming machines, and playing cards* [1, 2, 9]. The reasons for which students play are most often *to win money, for fun, for social reasons, excitement and to beat boredom* [12].

Even though the percentage of problem gamblers on campuses is small (ranging from 4% to 6.6% [1, 8]), it is a few times higher than that found in the general population. Especially vulnerable in this respect are male students, who not only gamble more frequently than females (52% vs. 33% [4]; 62.4% vs 42.8% [9]), but also report higher rates of problem gambling (9.3% vs. 2.9% [3]). In addition, gambling is more prevalent among athletes compared to non-athletes [9], especially those in gender-specific sports [9], fraternity members [10] and those over 21 years of age [11].

Problem gambling is associated with high-risk behaviours, such as greater alcohol

[3, 4], tobacco and illicit drug use and misuse, as well as with health, social performance problems [2], depression and suicide attempts [10].

## REFERENCE AND BIBLIOGRAPHY

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2. Engwall, D., Robert Hunter, Marvin Steinberg *Gambling and Other Risk Behaviors on University Campuses*. Journal of American College Health 2004. **52**(6): p. 245 - 256
3. Lesieur, H.R., et al., *Gambling and pathological gambling among university students*. Addictive Behaviors, 1991. **16**(6): p. 517-527.
4. LaBrie, R.A., et al., *Correlates of College Student Gambling in the United States*. Journal of American College Health, 2003. **52**(2): p. 53-62.
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6. Volberg, R., et al., *Prevalence studies and the development of services for problems gamblers and their families*. Journal of Gambling Studies, 1996. **12**(2): p. 215-231.
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8. Wickwire, E.M.J., et al., *Environmental Correlates of Gambling Behavior Among College Students: A Partial Application of Problem Behavior Theory to Gambling*. Journal of College Student Development, 2008. **49**(5): p. 459-475.
9. Huang, J.-H., et al., *Gambling and Health Risk Behaviors Among U.S. College Student-Athletes: Findings from a National Study*. Journal of Adolescent Health, 2007. **40**(5): p. 390-397.
10. Stuhldreher, W.L., T.J. Stuhldreher, and K.Y.-Z. Forrest, *Gambling as an Emerging Health Problem on Campus*. Journal of American College Health, 2007. **56**(1): p. 75-88.
11. Platz, L., T.J. Knapp, and E.W. Crossman, *Gambling by Underage College Students: Preferences and Pathology*. College Student Journal, 2005. **39** (1).
12. Neighbors, C., et al., *Exploring College Student Gambling Motivation*. Journal of Gambling Studies, 2002. **18**(4): p. 361-370.

**SUMMARY TABLE OF KEY STUDIES ON GAMBLING AMONG UNIVERSITY STUDENTS**

| Blinn-Pike, L., S.L. Worthy, and J.N. Jonkman, <i>Disordered Gambling among College Students: A Meta-Analytic Synthesis</i> . Journal of Gambling Studies, 2007. <b>23</b> : p. 175-183. |  |   |                    |
|--|--|---|--------------------|
| SAMPLE   | KEY FINDINGS   | LIMITATIONS   | SCREENING MEASURES |
| 15 Studies on college students - US and Canada; Sample size range (N= 60 - 1,771); Age range 18-25   | An estimated 7.89 % of college students are disordered gamblers (SOGS score of 5+)   |   | SOGS               |
| Clarke, D., <i>Gambling and the Trait of Addiction in a Sample of New Zealand University Students</i> . New Zealand Journal of Psychology, 2003. <b>32</b> : p. 39.                      |  |   |                    |
| SAMPLE   | KEY FINDINGS   | LIMITATIONS   | SCREENING MEASURES |
| (N=171) 1st year university students; New Zealand; Mean age - 27.9; Median age - 23  | 1) 16% problem gamblers, 4% pathological gamblers; 2) Pathological gamblers scored higher on Gambling frequency, Number of activities, Depression, and Addiction; 3) Most prevalent activities: Lotto & Instant scratch tickets (73% each), Lotteries/raffles (57%), Gaming machines (50%); 4) 97% had gambled at least once | Sample not representative of New Zealand university students, because it consists of undergraduate psychology students only | SOGS-R             |

Derevensky, J.L. and R. Gupta, *Prevalence Estimates of Adolescent Gambling: A comparison of the SOGS-RA, DSM-IV-J, and the GA 20 Questions*. Journal of Gambling Studies, 2000. **16**(2/3): p. 227-251.

| SAMPLE  | KEY FINDINGS  | LIMITATIONS | SCREENING MEASURES  |
|---|---|-------------|---|
| (N=980); Greater Montreal area, Canada; Mean age 18.5 years | 1) 71.2% of participants gambling in the past year; 2) 56.6% occasional gamblers (less than once a week); 14.6% regular gamblers (once a week or more); 3) 84% males vs. 64% females; 4) Probable pathological gamblers 3.4% (DSM-IV-J), 5.3% (SOGS-RA), 6.0% (GA20); 5) High degree of agreement between all three instruments |             | DSM-IV-J revised; SOGS-RA; Gamblers Anonymous Twenty Questions (GA20) |

Engwall, D., Robert Hunter, Marvin Steinberg *Gambling and Other Risk Behaviors on University Campuses*. Journal of American College Health 2004. **52**(6): p. 245 - 256

| SAMPLE  | KEY FINDINGS  | LIMITATIONS | SCREENING MEASURES |
|---|---|-------------|--------------------|
| (N=1,348) College students; USA; Age 18-20 (50%), 21-25 (35%) | 1) 47% lifetime prevalence; 2) Non-gamblers 30%, Social gamblers 58.6%, Problem gamblers 6.2%, Pathological gamblers 5.2%; 3) Pathological gamblers - male (8.5%), female (1.9%); 4) Most preferred activities - Lottery (43.9%), Casino games (33.4%), Playing cards (33.2%); 5) Problem and pathological gamblers associated with greater tobacco, alcohol, health, social and performance problems; Lower assessment of risk, greater binge eating and efforts at weight control |             | SOGS-CT            |

| Huang, J.H. and R. Boyer, <i>Epidemiology of youth gambling problems in Canada: a national prevalence study</i> . Can J Psychiatry, 2007. <b>52</b> (10): p. 657-65.                                 |  |  |                    |
|--|--|--|--------------------|
| SAMPLE   | KEY FINDINGS   | LIMITATIONS  | SCREENING MEASURES |
| (N=5,666) youth; Nationally representative sample, Canada; Age range 15-24 years   | 1) 61.35% gambled in the past year; 2) 2.22% moderate-risk or problem gamblers (3.30% male and 1.10% female)   | 1) The cross-sectional design of the survey cannot determine causality of the associations observed; 2) A single gambling instrument used; 3) Small sample sizes in disordered gambling categories constrain statistical power | CPGI               |
| Huang, J.-H., et al., <i>Gambling and Health Risk Behaviors Among U.S. College Student-Athletes: Findings from a National Study</i> . Journal of Adolescent Health, 2007. <b>40</b> (5): p. 390-397. |  |  |                    |
| SAMPLE   | KEY FINDINGS   | LIMITATIONS  | SCREENING MEASURES |
| (N=20,739) US university student-athletes  | 1) 62.4% (men) and 42.8% (women) gambled in the past year; 2) 4.3% (men) and 0.4% (women) were pathological gamblers; 3) Most popular activities - playing cards, lotteries and games of skill; 4) Athletes in gender-specific sports gambled more than those in unisex sports | 1) Because of anonymity, no exact response rate can be calculated; 2) Possibility of underreporting, given that athletes scholarships could be at stake  | DSM-IV             |

LaBrie, R.A., et al., *Correlates of College Student Gambling in the United States*. Journal of American College Health, 2003. **52**(2): p. 53-62.

| SAMPLE   | KEY FINDINGS  | LIMITATIONS | SCREENING MEASURES |
|--|---|-------------|--------------------|
| (N=10,765) US college students from 119 colleges | 1)42% gambled in the last year; 2.6% gambled weekly or more frequently; 2) Male students and students of legal age (>=21) more likely to gamble; 3) Availability of gambling venues influenced decisions to gamble; 4) Alcohol related behaviours are the strongest correlate of gambling |             | CAS                |

Ladouceur, R., D. Dube, and A. Bujold, *Prevalence of pathological gambling and related problems among college students in the Quebec metropolitan area*. Can J Psychiatry, 1994. **39**(5): p. 289-93.

| SAMPLE  | KEY FINDINGS   | LIMITATIONS   | SCREENING MEASURES   |
|---|--|---|--|
| (N=1,471) students from three Quebec city metropolitan area, Canada; Age 16-23 (M=18.9) | 1) 89.6% have gambled; 21.7% gamble once a week or more; 2) 2.8% pathological gamblers and 5.8% potential pathological gamblers; 3) Scores on SOGS correlated with tobacco use, alcohol abuse, illegal substance use, criminal offences, excessive eating, bulimic tendencies; pathological gambling linked to suicidal tendencies | Sample may not be representative of all disciplines at the college level and of age group | SOGS; 20 elements of evaluation adapted from Jacob's Health Survey |

| Lesieur, H.R., et al., <i>Gambling and pathological gambling among university students</i> . Addictive Behaviors, 1991. <b>16</b> (6): p. 517-527.  |   |  |                    |
|---|---|--|--------------------|
| SAMPLE  | KEY FINDINGS  | LIMITATIONS  | SCREENING MEASURES |
| (N=1,771) college students from five US states; Mean age 22.3 years   | 1) 85% have gambled in their lifetime; 23% gamble once a week or more; 2) Most popular gambling activities: Slots and poker machines (54%), playing cards for money (51%), and casino games (49%); 3) male gamble more than female - lifetime (90% > 82%), weekly or more (33% > 15%); 4) Problem gamblers (15.5%) (25% males vs. 8% females); pathological gamblers (5.5%) (9.3% males vs. 2.4% females); 5) scores on SOGS positive correlated with tobacco, alcohol, illicit drugs | Sample not representative of US college students   | SOGS               |
| Neighbors, C., et al., <i>Exploring College Student Gambling Motivation</i> . Journal of Gambling Studies, 2002. <b>18</b> (4): p. 361-370.   |   |  |                    |
| SAMPLE  | KEY FINDINGS  | LIMITATIONS  | SCREENING MEASURES |
| 1)(N=184)(123 men and 59 women) college student gamblers, US ; Mean age 19.4; 2) Participants (45.6%) non-problem gamblers (i.e., SOGS 0), (41.6%) minimal gambling problems (i.e.SOGS of 1 or 2), (9.3%) were level II, subclinical gamblers (i.e., SOGS of 3 or 4), and (3.5%)probable pathological gamblers (i.e., SOGS of 5 or greater) | Most college students gamble to 1) win money (42.7%), 2) for fun (23%), 3) for social reasons (11.2%), 4) for excitement (7.3%), or 5) just to have something to do (2.8%).   | 1) Did not account for motives gamblers are unaware of; 2) Low prevalence rates of pathological gambling precluded examination of motivational differences between non-problem and pathological gamblers | SOGS               |



| Oster, S.L. and T.J. Knapp, <i>Underage and pathological gambling by college students: Emerging problem on campus?</i> Psychology and Education: An Interdisciplinary Journal, 2001. <b>38</b> (2): p. 15-19. |  |             |                    |
|---|--|-------------|--------------------|
| SAMPLE  | KEY FINDINGS   | LIMITATIONS | SCREENING MEASURES |
| Two samples (N=544; N=350); US university students  | 1) 7.4% and 5.9% probable pathological gamblers (two studies); 2) 22% and 24% gambled weekly or more frequently; 3) lifetime gambling prevalence – 11% and 8%; 4) Most popular activity – gambling on video-poker machines   |             | SOGS               |
| Platz, L., T.J. Knapp, and E.W. Crossman, <i>Gambling by Underage College Students: Preferences and Pathology.</i> College Student Journal, 2005. <b>39</b> (1).  |  |             |                    |
| SAMPLE  | KEY FINDINGS   | LIMITATIONS | SCREENING MEASURES |
| (N=995) US college students; Mean age 21.05 years (range 17-73)   | 1) Overall: 76.3% gambled in a casino at least once; Breakdown: 92.5% of participants over 21 years of age, 59.8% of the 18 year olds, 72.8% of the 19 year olds, and 86.1% of the 20 year olds; 2) No game preference difference between the two groups except that those under 21 years more than twice as likely to bet on sports than those over 21. 3) Probable pathological gamblers 9.21 % for (< 21 years), and 14.91 % for (> 21 years) |             | SOGS               |

Shaffer, H.J. and M.N. Hall, *Estimating the prevalence of adolescent gambling disorders: A quantitative synthesis and guide toward standard gambling nomenclature*. Journal of Gambling Studies, 1996. **12**(2): p. 193-214.

| SAMPLE                                    | KEY FINDINGS   | LIMITATIONS   | SCREENING MEASURES                               |
|---|--|---|--|
| (N>7,700) adolescents from US and Canada; | 1) Between 9.9% and 14.2% of adolescents are at risk of developing or returning to serious gambling problems;<br>2) Between 4.4% and 7.4% exhibit pathological patterns of gambling activity | Due to small sample sizes and different classificatory systems and measurement instruments, results should be regarded with caution | SOGS-RA, MAGS, DSM-IV, Multifactor method, GA 20 |

Shaffer, H.J., M.N. Hall, and J. Vander Bilt, *Estimating the prevalence of disordered gambling behavior in the United States and Canada: a research synthesis*. Am J Public Health, 1999. **89**(9): p. 1369-1376.

| SAMPLE   | KEY FINDINGS  | LIMITATIONS  | SCREENING MEASURES  |
|--|---|--|---------------------|
| (N=122,286); 134 prevalence studies - (n = 99) in US and (n = 35) in Canada; general adult population (n = 50), adolescents(n = 22), college students (n = 16), and adults in prison or in treatment for psychiatric or substance abuse disorders (n = 18) | 1) Pathological lifetime Adults 1.60 %; Adolescents 3.88%; College students 4.67%; Prison/Treatment 14.23; 2) At-risk lifetime, problem Adults 3.85%; Adolescents 9.45%; College students 9.28%; Treatment/prison 15.01; 3) Non-problem lifetime Adults 94.67%; Adolescents 89.56%; College students 86.66%; Treatment/Prison 71.54%<br>4) Pathological past year Adults 1.14%; Adolescents 5.77%; 5) At-risk past year, problem Adults 2.80%; Adolescents 14.82%; 6) Non-problem past year Adults 96.04%; Adolescents 82.31% | 1) Study should be regarded as "first approximation; 2) Inadvertent sampling bias; 3) Limitation related to breadth and depth of study because different (both large and small) samples included | Various instruments |

Stuhldreher, W.L., T.J. Stuhldreher, and K.Y.-Z. Forrest, *Gambling as an Emerging Health Problem on Campus*. Journal of American College Health, 2007. **56**(1): p. 75-88.

| SAMPLE   | KEY FINDINGS   | LIMITATIONS | SCREENING MEASURES  |
|--|--|-------------|---|
| (N=1,079) US college students; Mean age 19.9 years | 1) Gambling and problems with gambling more frequent among men than women. 2) Athletes more likely to bet on sports and play games of chance, have gambling debt, and seek help for gambling than nonathletes. 3) Fraternity members (more than 50% of them) gambled more and had gambling debts more often than other men; 4) Some gambling types correlated with risky behaviours; 5) Gambling correlated with depression and suicide attempts |             | Health-habits questionnaire (gambling questions included) |

Weinstock J, Whelan JP, and M. A., *College students' gambling behavior: when does it become harmful?* Journal of American College Health, 2008. **56**(5): p. 513-21.

| SAMPLE   | KEY FINDINGS   | LIMITATIONS   | SCREENING MEASURES   |
|--|--|---|--|
| (N=159) US college students; Mean age 22.3 years | 1) Pathological gambling patterns included gambling more than 1.2 times per month, gambling more than 2.1 hours per month, intending to wager more than 6.1% of monthly income, and wagering more than 10.5% of monthly income | 1) The associative nature of the study; 2) Lack of concordance in assessment periods for pathological gambling; 3) Retrospective self-report data collection method used; 4) At time of study gambling illegal in the state | The Gambling Timeline Followback (G-TLFB); The Diagnostic Interview for Gambling Severity (DIGS); The Hopkins Symptom Checklist (HSCL); SOGS |

Wickwire, E., et al., *Perceived Availability, Risks, and Benefits of Gambling among College Students*. *Journal of Gambling Studies*, 2007. **23**(4): p. 395-408.

| SAMPLE  | KEY FINDINGS   | LIMITATIONS  | SCREENING MEASURES |
|---|--|--|--------------------|
| (N=302) US undergraduate students; Mean age 20.53 years | 1) Gambling rated by participants as more available than alcohol and marijuana, and less risky than alcohol and cigarettes; 2) Most common perceived benefits of gambling - social enhancement, financial gain, and positive changes in affect; 3) Perceived benefits are a significant predictor of gambling problems; 4) Perceived availability, perceived risk, and perceived benefits found to be significant predictors of regular gambling | 1) Sample might not be basis for generalizations because recruited from only one institution; 2) Perceptions of risk might not be related to gambling; 3) Combining gambling activities (as opposed to examining them in singularity) in perceived availability might affect results | SOGS               |

Wickwire, E.M.J., et al., *Environmental Correlates of Gambling Behavior Among College Students: A Partial Application of Problem Behavior Theory to Gambling*. Journal of College Student Development, 2008. **49**(5): p. 459-475.

| SAMPLE   | KEY FINDINGS   | LIMITATIONS   | SCREENING MEASURES   |
|--|--|---|--|
| <p>(N=233) US Undergraduate university students; Mean age 20.5 years</p> | <p>1) 86% gambled in their lifetime; 93.2% of men and 79.2% of women gambled in their lifetime; 2) 70% gambled in the past year; 81.6% of men and 58.4% of women gambled in the past year; 3) 19% gambled regularly (weekly or daily); 24.2% of men and 14.4% of women; 4) Gamblers: no problem (86%), problem (7.5%), and probable pathological (6.6%); No problem women vs. men (91.2% vs. 79.2%)<br/>Problem women vs. men (4.0% vs. 11.7%); Probable pathological - no significant gender difference; 5)The perceived environment accounted for significant variance in gambling problems and gambling frequency. Proximal components (e.g. Parents' or friends' disapproval of gambling, Parents' gambling, etc.) displayed stronger relations than distal components (e.g. Family/Peer Controls, Family/Peer Support, etc.) to the dependent variables</p> | <p>1) Non random sampling; 2) Cross-sectional design limits ability to foresee gambling behaviour into adulthood; 3) Internet gambling not assessed</p> | <p>Adolescent Health and Development Survey (AHDS); SOGS</p> |

Winters, K.C., et al., *Prevalence and risk factors of problem gambling among college students*. *Psychology of Addictive Behaviors*, 1998. **12**(2): p. 127-135.

| SAMPLE   | KEY FINDINGS   | LIMITATIONS   | SCREENING MEASURES |
|--|--|---|--------------------|
| <p>(N=1,361) US undergraduate students; Age - 18 and under (8.7%), 19-22 years (75.1%), 23 and older (16.2%)</p> | <p>1) 88% gambled in the past year (91.7% of the men and 84.9% of the women); 2) 12% gambled weekly or daily (19% of the men and 5% of the women); 3) 2.9% probable pathological gamblers (80% of them men) and 4.4% potential pathological gamblers (78% of them men); 4) Few students identified financial, social, or personal consequences as a result of gambling; 5) Men were much more likely to be identified as a probable pathological, as well as students with a positive parental history for gambling problems, regular (weekly plus) users of illicit drugs, and those with poor grades</p> | <p>1) Self-report data; 2) Unable to assess association between excessive gambling and gambling problems; 3) Focus on students with easy access to casino - results not generalizable to all students or young adults; 4) Use of past year SOGS scores, not lifetime SOGS scores (which are higher for probable pathological gamblers).</p> | <p>SOGS</p>        |