International student gambling: The role of acculturation, gambling cognitions and social circumstances

SUMMARY REPORT

June 2011

A mixed-methods investigation of international student gambling

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Gambling Research Australia (GRA) is a partnership between the Commonwealth, State and Territory Governments to initiate and manage a national gambling research program structured around the following five research priority areas:

- helping individuals set their limits including access to cash and pre-commitment;
- responsible gambling environments;
- gaming machine standards-developing better consumer protection;
- a preventative and early intervention strategy targeted at those at risk of problem gambling;
- development of harm minimisation measures for interactive gambling.

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Gambling Research Australia commissioned researchers from Swinburne University of Technology (Victoria), Bond University (Queensland) and Deakin University (Victoria) to undertake a study into gambling among international students.

This project has been funded as part of the Research Program of the Ministerial Council on Gambling and was commissioned under research priority six of the National Gambling Research Program. This priority involves:

“Conducting research into patterns of gambling and consider strategies for harm reduction in specific communities and populations, such as Indigenous, rural, remote or culturally and linguistically diverse communities, young people or older people”.

Acknowledgement of jurisdictional funding to the Research Program:

Australian Capital Territory: ACT Government through the ACT Gambling and Racing Commission
Australian Government: The Australian Government Department of Families, Housing, Community Services and Indigenous Affairs
New South Wales: NSW Government through the Responsible Gambling Fund
Northern Territory: Northern Territory Government through the Community Benefit Fund
Queensland: Queensland Treasury
South Australia: Government of South Australia
Tasmania: Tasmanian Government through the Community Support Levy
Victoria: Victorian Government through the Community Support Fund
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Also published on www.gamblingresearch.org.au

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Printing authorised by: Gambling Research Australia

Title: International student gambling: The role of acculturation, gambling cognitions and social circumstances - summary report: A mixed-methods investigation of international student gambling.
ACKNOWLEDGEMENTS

We would like to sincerely thank all those who participated in the study; those who completed the online survey and those who took the time to participate in a focus group.

We would also like to thank the International Student Divisions at Swinburne University of Technology and Deakin University who were very supportive of the project both in terms of assisting with recruitment of international students, and in meeting with project staff to explain strategies currently used to support international students within each university as well as to discuss additional ways the university could support students who may be experiencing gambling problems. Special thanks are also due to Bond University Office of Research for their excellent coordination and paperwork (particularly Naomi Tracey, Liz Gordon, and Tracey Richards). Thanks also to the human research ethics committees at Deakin, Swinburne and Bond Universities.

Thanks to our research assistants who worked with us on recruitment, conducting focus groups, data cleaning, database management and setting up the online data collection webpage: Natasha O’Neil, Tiffany Angliss, Jessica Falkiner and James Baker.

Mary Gavranic and Tatiana Walker of Victorian Multicultural Gambler’s Help and Di Jenkins of Gambler’s Help Eastern who gave their time and expertise to discuss the issue of international students and gambling problems, thank you.

We would lastly like to thank Andrew Robinson for his ongoing assistance with the design and maintenance of our website.
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EXECUTIVE SUMMARY

Project Background

International students are an important element of the Australian university population, with almost 500,000 enrolled in courses in 2009. Students most commonly come from China (24.1%) and India (18.2%); no other nationality contributes more than 10% but a wide range of cultures are represented. About one third of Australia’s higher educational international students (around 64,000) are studying in Victoria with a further 31,000 studying in Queensland (Australian Government, 2010).

For many of these students, it is the first time they have left their family for an extended period of time. Leaving family and friends can be a major adjustment; students may experience relationship and financial stresses associated with their transition to a new country and to independent living. Additionally, difficulties managing the process of fitting in to a different culture can lead to acculturative stress, particularly if the host culture differs markedly in social mores from that of the home country. Related to and potentially compounding acculturation stresses are problems with language understanding and/or fluency, and academic stresses associated with new ways of teaching, different expectations regarding student behaviour, and high expectations to succeed.

Severity of problem gambling is known to have a positive association with situational and emotional stressors. Young adulthood is also a time of newfound independence and experimentation with new and potentially risky behaviours such as drinking or gambling (problem gambling rates for youth have been reported as much higher than those of the general adult population). Gambling opportunities in Australia are also much more available than in many of the countries which are home to international students. There is also evidence that some cultural groups are more influenced by beliefs about luck, chance and personal control over winning than others. Such gambling cognitions increase vulnerability to problem gambling.
International students in Australia, particularly some cultural groups, may therefore have a potentially explosive combination of youth; new-found independence in a foreign country; an increased number of stressors associated with emotions, relationships, culture and academic studies; unhelpful cognitions about their chances of winning at gambling games; and increased opportunities to gamble. *There is little hard data about gambling behaviours and its correlates among international students.* Much of the evidence to date is anecdotal, arises incidentally from studies with a different focus or has yet to be published in a peer-reviewed journal. This research effort, funded by the Gambling Research Australia (GRA) tender number 042/08 GRA Grants – gambling and CALD populations, endeavours to rectify this shortcoming.

**Research Objectives**

- Examine the gambling behaviours of international students including their preferred games, gambling frequency, amount spent and rates of at-risk and problem gambling rates, and compare these with rates for domestic (local) students.
- Examine a range of modifiable psychosocial risk factors for gambling problems, including stressors, negative affect, gambling cognitions and alcohol use among both international and local students, and assess the relationships between these potential risk factors and gambling behaviours within these student samples.
- Compare major cultural groups of international students with respect to both gambling behaviours and risk-factors.
- Examine help-seeking options of international students, particularly for gambling problems, and access their views regarding preferred modes of support/education.

**Methodology**

1600 students (836 domestic students and 764 international students) completed an anonymous 12-page internet distributed questionnaire. In addition, 40 international students participated in focus groups. These students were enrolled in three universities,
two in Victoria (Deakin University and Swinburne University) and one in Queensland (Bond University). All three universities provided ethics approval.

**Results**

- International students’ preferred gambling games are cards, lotteries and casino based games. Most do not gamble very often, but there is a small core of frequent gamblers for most of the gambling activities.

- Domestic students on average gamble more frequently than international students, however international students are significantly more likely than their domestic counterparts to gamble on the internet.

- Males are more frequent gamblers than females and more likely to be problem gamblers in both domestic and international student populations.

- There is a trend for international students to change their gambling habits to more frequent gambling when they come to Australia.

- On the whole, most domestic and international students do not spend large amounts of money on gambling, but around 6% have spent more than $500 in a week.

- International students are significantly more likely to be problem gamblers (6.7%) than domestic students (4.2%) and these rates are high in comparison with the Australian population in general.

- Many international students experience academic, financial, acculturation, and to a lesser extent relationship stresses. Gambling problems are associated with these stresses, but the correlations are relatively weak.

- International students show depression, anxiety and stress levels much higher than population norms. Gambling problems are weakly correlated with negative affect.
• Around 10% of international student gamblers express irrational cognitions about luck and chances of winning at gambling. Irrational gambling cognitions are moderately correlated with gambling problems among international students.

• International students use alcohol at lower rates than local students but rates of use are nevertheless high. Alcohol use and problem gambling are weakly correlated.

• Chinese and other Asian international students, particularly the males, show stronger levels of many of the risk factors for problem gambling. They also show high rates of problem gambling.

• However, male international students from English speaking western countries had the highest rate of problem gambling in our international student sample, despite relatively low rates of all psychosocial risk factors except alcohol consumption.

• International students experiencing problems in general are more likely to turn to family and friends than to formal support networks.

• Most international students we identified as at moderate or high risk of gambling had sought informal or formal help for problems in general in the past 12 months (not necessarily gambling-related help).

• Reasons international students gave for not accessing professional support for a troubling issue included a belief that they did not need it, not knowing what services were available or that they were free or low cost, or concerns that they would not be understood.

• Students expressed interest in learning more about responsible gambling practices, gambling risk and sources of support.
Conclusions

It would appear that although international students gamble less frequently than domestic students, they are at greater risk of gambling problems and these rates appear high, compared to both the general and youth gambling prevalence rates.

There is also a trend for international students to increase their gambling in Australia, possibly due to the greater exposure to gambling opportunities here than at home (i.e., increased accessibility), and their curiosity about gambling in general and the casinos in particular.

Among the potentially modifiable risk factors we examined, erroneous gambling cognitions would appear most strongly related to gambling frequency and problems among international students. Stressors, negative emotions and alcohol consumption appear to be important issues for this group but not strongly related to gambling behaviour.

International student gambling is a particular cause for concern among vulnerable groups, those being males, students living alone, and students from Chinese/Asian or English-speaking western backgrounds.

Students experiencing gambling-related problems may seek help in a broader context; however it is likely to be of an informal nature and may not be directly related to gambling issues. It is possible specific questioning by allied health staff within universities could uncover hidden gambling problems.

International students appear to get little information about responsible gambling or gambling risk when they arrive in Australia and said they would like further education.

The findings are broadly consistent with the limited research which is presently available on youth gambling, gambling among different CALD groups and international/overseas student gambling. The findings of the present study greatly extend understanding, particularly in relation to the type, commonality and intensity of gambling among international students, gambling uptake in Australia, the relative strength of different risk factors, the differential risk among sub-groups of international students and support needs of international students.
SECTION 1: INTRODUCTION

An extensive study of the gambling behaviour of international students was undertaken in fulfilment of a grant provided Gambling Research Australia. Gambling Research Australia is a partnership between the Commonwealth and State and Territory Governments and is responsible for managing and implementing a national research agenda.

The main objectives of the current research were to examine:

A. the gambling frequency, gambling preferences, amount spent and extent of problem gambling among international students in three Australian universities (two in Victoria, one in Queensland).

B. associations between gambling among students and demographic characteristics including gender, age, living arrangements and number of years in Australia.

C. similarities and differences between international and domestic university students on gambling frequency, gambling preferences, amount spent, problem gambling and psychological risk factors for gambling problems.

D. among international students, the associations of problem gambling and gambling frequency with several psychosocial risk factors for gambling problems, including stressors (academic, relationship, financial, acculturation), negative affect (depression, anxiety, stress), alcohol use and gambling cognitions (expectations about gambling, irrational beliefs and urges to gamble).

E. rates of gambling, problem gambling and psychological risk factors for gambling problems among different CALD groups.

F. help seeking for gambling problems, barriers to help seeking and support preferences among international students.
The methodology of the project involved a large survey of international students and a comparison group of local (domestic) students, across three universities, Swinburne, Deakin and Bond. Several focus groups conducted with international students from Victoria and Queensland were used as a secondary source of data to inform on specific research questions.

We are confident that the data from this study will be of value to both higher education institutions and treatment services. Findings should assist in terms of the potential for education, targeted early interventions and treatment programs (and overcoming barriers to these) for international students at risk of developing gambling problems.
SECTION 2: FINDINGS FROM THE LITERATURE REVIEW

A review of the relevant literature was undertaken including consideration of the stressors to which international students are exposed, the accessibility of gambling in home and host countries and the research that has been conducted into gambling in international student populations in Australia. This is a synopsis of the key findings from the review. The full review is available in *International student gambling: The role of acculturation, gambling cognitions and social circumstances: Full Technical Report*, under separate cover.

**International students in Australia**

- International students have become an important sector of the Australian University population, numbering about half a million in 2009.

- The majority of students (88%) are under 30 and the largest market is in higher education (Australian Government, 2010).

- The largest proportion of students come to Australia from China and India, with substantial numbers from other Asian countries (Australian Government, 2010).

- About one third of international students in Australia study in Victoria, a further sixth in Queensland (Australian Government, 2010).

**International Students as a Vulnerable Group**

In many respects, international students are a highly vulnerable population in terms of a range of stressors.

- Students usually leave family and friends to come to Australia. This can be a major adjustment resulting in limited social support networks which may lead to loneliness, feelings of social isolation (Khawaja & Dempsey, 2008; Leung, 2001).
• Financial stressors can be an issue for international students and their families with the cost of sending a child overseas a major drain on family resources (Khawaja & Dempsey, 2008; Mori, 2000).

• A substantial family investment can lead to high achievement expectancies from the family (Mori, 2000; Opropeza, Fitzgibbon, & Baron, 1991) which can be an additional pressure on students.

• The shock of living in a new culture can lead to acculturative stress impacting on the physiological, psychological and social health of individuals (Poyrazli, Kavanaugh, Baker, & Al-Timimi, 2004).

• Language and acculturation difficulties can impact the students’ ability to form friendships with local people, communicate effectively in the classroom or understand new educational/learning systems (Mori, 2000; Rosenthal, Russell, & Thomson, 2007; Spencer-Oatey & Xiong, 2006).

• These issues are likely to be exacerbated when cultural and language differences between the country of origin and the host country are large (Dao, Lee, & Chang, 2007; Leung, 2001; Poyrazli, et al., 2004; Spencer-Oatey & Xiong, 2006; Yeh & Inose, 2003).

• It is possible that international students may be particularly vulnerable to risky gambling behaviour as the literature has shown that gambling problems are positively associated with situational and emotional stressors (e.g., Bergevin, Gupta, Derevensky, & Kaufman, 2006; Thomas & Moore, 2003; Turner, Zangeneh, & Littman-Sharp, 2006) as well as with loneliness and low social support (Hardoon, Gupta, & Derevensky, 2004; Treverrow & Moore, 1998).

**Young Adulthood and Experimentation**

Young adulthood is a time of newfound independence and experimentation with new and potentially risky behaviours including drinking or gambling (e.g., DiClemente, 2009; Moore & Ohtsuka, 2001; Snow, Wallace, Staiger, & Stolz-Grobusch, 2002). International students are an interesting group in this respect as they must necessarily become very independent living
away from family supports and restrictions. These tendencies toward adolescent/young adulthood experimentation with risky behaviours in general has been well documented. In the specific case of gambling, we know that:

- Young people generally like to gamble on cards, lotto, sporting games and slot/poker machines (Clarke, 2003; Moore & Ohtsuka, 1997; Wickwire et al., 2007).

- They are vulnerable to excessive gambling, having around two to three times the rates of problem gambling seen in adult samples (Delfabbro, Lahn, & Grabosky, 2005; Derevensky, Gupta, & Winters, 2003; Shaffer, Hall, & Vander Bilt, 1999).

- They report a range of motivations for gambling including excitement/risk taking; enjoyment; to win money; for social reasons; and to relieve boredom or pass the time (Gausset & Jansbøl, 2009; Gupta & Derevensky, 1998; Neighbours, Lostutter, Cronce, & Larimer, 2002; Shields, 2009; Wickwire, et al., 2007).

- They experiment with alcohol, a risk factor for problem gambling (Kypri et al., 2009; Potenza, Maciejewski, & Mazure, 2005; Vivancos, Abubaker, & Hunter, 2009; Welte, Wieczorek, Barnes, & Tidwell, 2006).

**Gambling Accessibility**

- International students therefore can be said to have a potentially detrimental combination of youth, new-found independence in a foreign country and an increased number of stressors associated with emotions, relationships, culture and academic studies.

- In addition, they are likely to have a sudden increase in gambling opportunities when they reach Australia.

- Countries such as India and China have very limited legal gambling opportunities, while predominantly Muslim countries such as Indonesia and Pakistan have no legalised gambling. In contrast, Australia has very high accessibility to many forms of wagering.
• Accessibility has been linked to increased uptake, frequency and problems with gambling (e.g., Moore, Thomas, Kyrios, Bates, & Meredyth, online first; Storer, Abbott, & Stubbs, 2009; Thomas, Allen, & Phillips, 2009).

• High rates of participation (Productivity Commission, 2010) demonstrate the public acceptance of gambling as a legitimate form of entertainment in Australia. Students may be more willing to experiment with gambling in Australia if their peers present it as an acceptable form of entertainment (Dowling, Clarke, Memery, & Corney, 2005; Shields, 2009). Venues assist in this, working hard to provide a warm and welcoming atmosphere and a variety of fun, social activities (Moore, et al., online first).

• International students who have access to large sums of money meant to cover living and studying expenses for a semester or longer may be tempted to use some of the money to fund entertainment including gambling.

Knowledge of Gambling Risk

A lack of prior exposure may mean international students are less aware of potential risks associated with gambling.

• Some games popular with young people (e.g., card games, gaming machines and off-course betting) are known to have a greater association with gambling problems (e.g., Dickerson, 2002; Petry, 2003) but international students may not be as aware of the potential risks.

• International students brought up in a culture with little or no gambling are unlikely to have been taught self-regulation strategies to minimise gambling risk such as taking limited amounts of money to venues (Thomas et al., 2010).

• A lack of prior exposure and knowledge may also make this group more vulnerable to erroneous gambling beliefs such as believing you have more control over the outcome of a game than is actually the case or believing a win is close simply because it has not occurred for some time (Aasved, 2002; Delfabbro, 2004;
Delfabbro & Winefield, 1999; Dickerson, 1996; Joukhador, Blaszczynski, & MacCallum, 2004; Ladouceur, 2004; Wood & Griffiths, 2002).

- A major gambling motivation is to make money (Lee, Chae, Lee, & Kim, 2007), and problem gamblers are more likely to report having had an early win (Turner, et al., 2006) which led them to think they could make money gambling. International students on a tight budget may similarly see gambling as a way of earn easy money.

Cultural Expectations, Attitudes and Norms

Cultural influences and attitudes towards gambling from their home country are likely to have a major influence on international students’ gambling choices.

- The Chinese, for example, have history of accepting gambling as social activity, but other countries strongly discourage gambling, for instance when it is against religious beliefs (GAMECS Project, 1999; Raylu & Oei, 2004b; Tan, Yen, & Nayga, 2010).

- Cultural groups migrating to Australia have been found to differ on game preference and gambling rates (GAMECS Project, 1999; VCGA, 2000).

- Studies with Australian migrants also suggest those from a Chinese background may be at elevated risk of erroneous beliefs about gambling (Oei, Lin, & Raylu, 2008; Oei & Raylu, 2010; Tang & Wu, 2010) which may lead to more frequent gambling.

So what do we know?

Review of the Literature on International Students and Gambling

The above findings provide a broad perspective; however there has been very little research specifically investigating the gambling behaviour of international students in Australia. Much of the evidence to date is anecdotal, arises incidentally from studies with a different focus or has yet to be published in a peer-reviewed journal. This very limited body of research suggests the following trends:
• Gambling is fairly infrequent among international students overall (e.g., less than 20% participation rate, Rosenthal, Russell, & Thomson, 2008).

• A proportion of international students who did not gamble in their home country take it up when they arrive in Australia (Rosenthal, et al., 2008; Thomas & Thomas, 2002), suggesting exposure and access to gambling in this country is influential.

• A significant proportion of international students who do gamble may be at-risk of gambling problems (Rosenthal, et al., 2008).

• Irrational cognitions about luck and chances of winning appear to be common in international students, and may be related to gambling problems (Brown & Dowling, 2008; Thomas & Thomas, 2002).

• It is possible gambling issues are related to life and acculturative stressors and negative affect (Li, 2007; Spence-Thomas, Thomas, & Smith, 2000).

Help seeking among International Students

• Studies with international students therefore suggest that although most do not gamble, a proportion do gamble and it is possible that a significant number experience some problems controlling their gambling.

• The extent of gambling problems in international students is likely to be a hidden issue within universities. Although universities provide extensive support systems for international students, they are not necessarily accessing these services.

• International students are often unaware of services available to them or that they are either free or low cost to students (Russell, Thomson, & Rosenthal, 2008).

• Cultural differences can also mean students do not understand what the services offer, are hesitant to seek out services, do not trust the confidentiality of the services, or do not feel the services are appropriate or relevant to them (Mori, 2000;
Raylu & Oei, 2004b; Russell, et al., 2008; Spencer-Oatey & Xiong, 2006; Victorian Multicultural Gambler’s Help Program, 2006).

Conclusion

This literature review has demonstrated that international students form a substantive and important section of the Australian university population. They are, however, susceptible to a range of emotional, financial, academic and acculturative stressors. This combined with the experimentation common to young people and a new-found independence in a foreign country may be an explosive combination. Gambling is likely to be more accessible and acceptable for international students in Australia compared to their home countries. However gambling among young people is associated with higher levels of problems and international students may have little knowledge of risks associated with gambling. The evidence to date is sparse but suggests that international students who gamble may be at risk of gambling problems. It is possible gambling problems may be related to irrational cognitions about chance and winning or because students are gambling to avoid stress or negative emotions. Further, while those at-risk may turn to family or friends for assistance if these supports are available, they are fairly unlikely to utilise the professional help services available to them.

Next Steps

The next section presents our findings from the GRA commissioned study of international student gambling. The findings are arranged in four major sections, designed to move from more general to specific findings and to answer the original research objectives, as listed on page 11. Where appropriate, results from a sample of local/domestic students have been included to facilitate comparisons and enable readers to see whether and how international students differ from local students. The sections are as follows:

A. Gambling Behaviour: International and domestic students were compared on their gambling behaviour (popularity and frequency of different activities, expenditure,
risky and problem gambling) and the relationships between gambling behaviour and several demographic variables were assessed.

B. **Psychosocial Risk Factors:** International students were examined in terms of various potentially modifiable psychosocial risk factors (academic, relational, financial, and socio-cultural adaptation stressors; negative affect; gambling cognitions; and alcohol use). Domestic students were compared to international students on these psychosocial risk factors and the relationships between psychosocial risk factors and gambling behaviour was examined for both international and domestic students.

C. **Cultural group comparisons:** Major cultural groupings of international students were compared in terms of gambling behaviour, gambling risk and psychosocial risk factors.

D. **Help seeking and gambling supports for international students:** An examination was conducted into help seeking options favoured by international students and a summary of student preferences around gambling supports is provided.
SECTION 3: A MIXED METHODS INVESTIGATION OF INTERNATIONAL STUDENT GAMBLING

Study framework

This study was primarily quantitative in approach, using a self-report survey completed online. Focus groups conducted with international students were used as a secondary source of data to inform on specific research questions. Throughout this report the quantitative and qualitative data are integrated in response to the study objectives.

Sites and participants

International and domestic students were sampled from three universities, two in Victoria and one in Queensland. In all 764 international students and 836 domestic students took part in the survey across all three sites, resulting in a total sample of 1600.

In addition, 11 focus groups/interviews were conducted across the three universities, involving a sample of 40 international students. Recruitment sought variability along country of birth and cultural background as well as in terms of gambling participation.

Measures

The survey measured a number of variables, including:

- **Stressors** (Academic/study, Financial and Emotional/Relational)
- **Socio-Cultural Adaptation** (Ward & Kennedy, 1999; Yeh & Inose, 2003)
- **Negative Mood** - Stress, Anxiety and Depression (Lovibond & Lovibond, 1995)
- **Alcohol consumption/abuse** (Bush, Kivlahan, McDonell, Malone, & Fihn, 1998; Rosenthal, et al., 2008)

- **Gambling Behaviours, Cognitions** Gambling participation, frequency, expenditure and Severity of Problems (PGSI), Gambling Cognitions (Ferris & Wynne, 2001; Moore & Ohtsuka, 1997; Raylu & Oei, 2004a; Rosenthal, et al., 2008)

- **Difficulties and Help seeking**

- **Demographics**

Focus groups were semi-structured in nature but participants were asked about the following issues/topics:

- Why they liked to gamble and the types of games they played
- Whether and how gambling had changed since arrival in Australia
- Beliefs about luck and winning in relation to gambling
- How gambling is viewed within their home country/culture
- Experiences of gambling problems in the international student community
- Help seeking preferences (for gambling and general problems)
- What (if any) gambling-related information they had received
- What (if any) gambling-related information they thought would be useful for new international students to receive

Background demographic and gambling-related information was also recorded for focus group participants.

Detailed description of measures used and procedures can be found in the Full Technical Report of this study, under separate cover.
Study Findings

Gambling Behaviour

Popularity and frequency of gambling activities

- Relatively few students (less than 3%) gambled more than once a month
- Cards, lottery tickets, EGMs or table games at the casino and sports betting were the most popular forms of gambling for both international and domestic students
- International students were significantly more likely than domestic students to play bingo or EGM-type games on the internet
- Domestic students were significantly more likely than international students to bet on horses and dogs, buy lottery or scratch-it tickets, bet on gaming tables at the casino and bet on EGMs both at the casino and outside the casino
- Overall, domestic students gambled significantly more than international students although the difference was small.

Changes in gambling since arrival in Australia

- There was a trend for international students who did not gamble at home to take up gambling in Australia.
- The extent to which international students take up gambling in Australia is somewhat unclear due to inconsistent responses by some students. However, is likely that between 17% and 45% of previously non-gambling international students gamble once they arrive in Australia.

Gambling expenditure

- On the whole students were not gambling large amounts of money, with most students saying the largest amount they gambled in a week was under $100.
- Nevertheless nearly 20% had gambled $100 or more over a week in the last year and more than 6% had gambled $500 or more in the same time period.
• Domestic students spent significantly more on gambling than internationals but differences were small.

**Risky and Problem Gambling**

• Rates of student problem gambling (5.4%) were higher than general population estimates for Australian adults, but consistent with youth gambling rates noted by other researchers (Delfabbro, et al., 2005; Derevensky, et al., 2003; Shaffer, et al., 1999).

• As well as high risk problem gamblers, a significant number of students (8.3%) fell in the moderate risk category

• International students showed higher rates of problem gambling than domestic students (6.7% vs 4.2%)

• Among international students who had ever gambled, 9.4% were classified as problem gamblers and a further 12.5% as moderate risk gamblers, accounting for more than 100 students

• Problem gambling was strongly associated with being male (67% of problem gamblers were male)

• Problem gambling rates were somewhat greater among those living alone

• In this sample, problem gambling was not associated with age, marital status, number of years in Australia, religion, university or undergraduate/post-graduate status

• Problem gambling was associated with frequency of gambling and amount spent.

• Students in focus groups reported that excessive gambling was a significant, but often hidden, issue in the international student community
Psychosocial risk factors

Stressors, gambling cognitions, negative affect and alcohol consumption among international students

- Common stressors for international students related to pressure from self and family to do well academically, not progressing well enough in studies, and not having enough money to meet expenses or to pay regular bills. In addition, some experienced peer pressure, bullying and racism. International students showed significantly higher levels of academic and relationship stresses than domestic students, although the differences were small.

- About one-fifth to one quarter of international students experienced acculturation/adaptation stresses such as worries about going to social events, coping with academic work or expressing ideas in class, and dealing with unpleasant or aggressive people. Domestic students also acknowledged stresses in adapting to university studies and life changes in general, but these stresses were overall significantly higher for the international students than the locals.

- Levels of depression and anxiety (and to some extent stress) among international students were much higher than population norms, and significantly higher than for domestic students. Some international students were experiencing negative affect, particularly anxiety, at ‘extremely severe’ levels (14% for anxiety, 7% for depression).

- A small but significant core of international student gamblers experienced intense urges to gamble and difficulties in stopping (e.g., 3% agreed that their “desire to gamble is overpowering”, and 5% agreed with the statement “I’m not strong enough to stop gambling”).

- Around 10% of international student gamblers expressed irrational cognitions about luck and chances of winning at gambling.

- Small proportions of international students also reported gambling made “things seem better” (5%) and that it contributed to their happiness (14%). This is of note among a population expressing high levels of negative affect.
• International students scored higher than domestic students on a range of gambling cognitions including irrational beliefs about luck and chance, higher expectations about gambling outcomes, and stronger urges to gamble.

• International students showed relatively low levels of alcohol consumption compared to domestic students although there were a few frequent, heavy drinkers in the international student sample (about 9%).

• Focus group data showed that the international students had irrational cognitions around gambling, including attributing too much power to personal skill or knowledge, thinking they could predict the outcome of a chance game based on prior non-related games, and gambling in relation to superstitious beliefs.

• Some focus groups participants also related gambling to boredom or academic stress but this was less common than talk related to erroneous beliefs about gambling.

• This qualitative data supported the survey findings, showing the presence of irrational cognitions about gambling among international students and (less strongly) the tendency to use gambling as stress relief.

**Relationships between gambling and psychosocial risk factors**

• Life stressors were positively but weakly associated with gambling problems and gambling frequency for both international and domestic students.

• Depression, anxiety and stress were also weakly related to higher levels of gambling problems and a greater frequency of gambling for both groups of students, somewhat more so for internationals.

• Alcohol use was positively (but weakly) related to both frequency of gambling and gambling problems, with relationships slightly stronger among domestic students.

• International students who gambled more frequently and those who had more gambling problems tended to have high positive expectations about their gambling.
think they had more control over the game than was the case, think they could predict the outcome of the game and felt they were unable to stop gambling. Domestic students showed similar relationships between gambling cognitions and gambling behaviour.

Cultural group comparisons of gambling behaviours

- Problem gamblers came from a wide range of countries.
- We clustered international students into groups which were culturally similar and which contained large enough numbers for meaningful comparisons (China, other Asian countries, India, Western Europe, English-speaking countries). These groups were compared on gambling behaviour and susceptibility to various psychosocial risk factors.
- Problem gambling rates were highest among international students from China and English-speaking western nations.
- Problem gambling rates were low among those from western Europe.
- Consideration of gender differences across country groups showed that it was male international students from English-speaking western countries who were the most frequent and at-risk gamblers in our sample, with males from China and other Asian countries also more likely to be at-risk gamblers.

Comparing cultural groups on psychosocial risk factors

- International students from Asian countries, including China and India, reported significantly higher levels of stressors than international students from western countries.
- International students from Asian countries including China and India were significantly higher in measures of negative affect (anxiety, depression, stress) than students from western countries.
• International students from Asian countries including China and India were significantly higher in erroneous gambling cognitions - gambling expectations, illusion of control, predictive control beliefs, inability to stop gambling and interpretive control bias - than those from western countries. Males reported these cognitions more frequently than females.

• International students from western cultural backgrounds (English speaking and Western European) were significantly higher on alcohol consumption than students from other regions.

Help seeking and gambling supports for international students

Help seeking among international students

• International students most commonly reported academic, emotional or relational concerns.

• Females were more likely to report emotional issues than males.

• Few international students identified either drug/alcohol or gambling problems.

• Males were more likely to report both drug or alcohol and gambling problems compared to females.

• Family and friends were the most popular and useful help choices, with family being slightly more popular for females compared to males. Focus groups suggested friends or family would be chosen over professional help services because these people knew you well.

• At-risk gamblers were very likely to have sought some type of help in the last year but this may not have been directly related to gambling. Focus groups suggested problem gamblers would most likely seek financial help from friends.

• University-based services were also popular but some international students had confidentiality and cultural concerns with counselling.
• People who needed help for problems but who did not access professional help services were likely to say this was because they had received all the help they needed, did not know free services were available, or thought services would not understand them. Some students said they would access professional help for serious issues as these were the ‘experts’

Gambling supports for international students

• International students only rarely receive information about the risks associated with gambling or where to go for support.

• International students were supportive of gambling-related information/education being provided by universities to new international students.

• Information/education should cover responsible gambling practices, risks associated with gambling, specific risks facing international students, information on how to assist friends and help options.

• Information/education should be fun, youth-oriented, incorporate multi-media and be interactive.

• Information could be provided through informal means (student mentors) or formal means (seminars, orientation programs, flyers, websites, letters to parents).

• The timing of delivery and delivery of messages was important:
  
  o Compulsory early orientation sessions would provide the largest student capture but the message may be ignored due to information overload, language difficulties, irrelevance of information.
  
  o Later voluntary seminars minimises issues associated with informational overload, language barriers or relevance but may lose key attendees due to students being unaware of seminar or unwilling to attend (due to stigma, shame, or simply because it is non-compulsory).
SECTION 4: DISCUSSION OF FINDINGS

Gambling Behaviour: Is international student gambling a cause for concern?

- The answer to this is yes and no. Although international students had tried a variety of games only small percentages (2-2.5%) gambled more than once a month and international students gambled less frequently and spent less money than local students, consistent with other research (Brown & Dowling, 2008; Spence-Thomas, et al., 2000).

- However, there was a notable trend for international students who had not gambled at home to take up gambling in Australia and/or to gamble more frequently here, again consistent with recent Australian studies (Rosenthal, 2008; Thomas & Thomas, 2002).

- Gambling uptake may be related to the high gambling accessibility in Australia as international students were often drawn to games with high geographic and/or time based accessibility such as sports betting, internet card games and casino games.

- Gambling uptake in Australia may also be related to available funds. Students often have access to lump sums to pay for fees and living expenses (Spence-Thomas, et al., 2000) and a small proportion of international students (6%) reported gambling over $500 in a week. Focus groups also suggested some international students were gambling large sums including money provided by parents for living and study expenses.

- International students had significantly higher rates of gambling problems than domestic students (6.7% versus 4.2%), supporting earlier research (Brown & Dowling, 2008; Spence-Thomas et al., 2000). These figures are high but fit within recent prevalence study findings for youth gambling (3.4%-6.7% Delfabbro, et al., 2005; Derevensky, et al., 2003; Shaffer, et al., 1999).
• Two key demographic markers for gambling risk were male gender and living alone, with almost 10% of international male students being identified as problem gamblers.

• Thus, although gambling is not a cause for concern for most international students a significant number are problem gamblers and findings showed a further 9% could be categorised as at-risk of gambling problems or experiencing some degree of difficulty controlling their gambling.

Modifiable Psychosocial Risk Factors and Problem Gambling

So why do some international students have problems controlling their gambling? We considered a number of potential risk factors which have been identified in general gambling literature and which are potentially modifiable through education or treatment.

Stressors and Negative Affect

• Academic studies, particularly the pressure to succeed academically created the most stress. Financial stresses were also prominent, while acculturative stresses most commonly related to managing inter-personal issues or coping with studies. International students reported more academic, relational and adaptation stressors than domestic students.

• International students have extensive university fees which can lead to high personal and family achievement expectations (Mori, 2000; Opropeza, et al., 1991) and adapting to a new culture and language can create additional challenges which can impact on academic success (Mori, 2000; Rosenthal, et al., 2008; Spencer-Oatey & Xiong, 2006).

• International students were quite likely to be moderately, severely and extremely anxious, depressed and stressed, often at 2-3 times the rate of population norms. They were significantly more depressed and anxious than local students, with more
than 14% of international students experiencing ‘extreme-severe’ anxiety and 7% experiencing ‘extreme-severe’ depression.

- Situational stressors, negative emotions, loneliness and a lack of social support are all positively related to gambling problems (e.g., Bergevin, et al., 2006; Hardoon, et al., 2004; Thomas & Moore, 2003; Treverrow & Moore, 1998; Turner, et al., 2006).

- Studies with international students have similarly found personal, academic and acculturative stressors as well as negative affect were related to gambling problems (Li, 2007; Spence-Thomas, et al., 2000).

- We found both international and domestic students experiencing negative affect, relational, financial or adaptation stresses had a slight tendency to gamble more frequently and experience more gambling problems, however the relationships were weak. Emotional factors were most strongly related to gambling problems for international students.

- Thus, while these psychosocial risk factors are important stressors in the lives of international students they do not appear to be important in explaining excessive or problematic gambling among international students as a whole.

**Alcohol consumption**

- Domestic students consumed significantly more alcohol than international students but significant proportions of both student groups were found to be risky drinkers according to a measure of alcohol consumption and the most recent NHMRC guidelines.

- Further analysis showed international students from western cultural backgrounds (e.g., United Kingdom, USA) were much heavier drinkers than international students from China, other Asian countries and India consistent with research showing students from Asian backgrounds drink more moderately than Caucasians (Stanley, Zane, & Ito, 1979).
• For both student groups, those who drank more heavily had a tendency to gamble more frequently and a slight tendency to experience more severe gambling issues consistent with prior research showing alcohol use/abuse and gambling use/problems often co-occur (e.g., Hardoon, et al., 2004; Shead, Hodgins, & Schaf, 2008; Stevens & Young, 2009; Welte, et al., 2006).

Gambling Cognitions

• Male international students were more likely to endorse irrational gambling-related cognitions than females and international students were more likely to endorse gambling-related cognitions than domestic students, although overall endorsement of these cognitions was relatively low.

• Common erroneous beliefs related to gambling when you “feel lucky”, thinking that losses will educate you about how to win in the future, thinking your actions led to a win or gambling after recalling previous wins.

• Relationships between gambling cognitions and gambling behaviour were very similar for domestic and international students and showed that students who strongly endorsed irrational cognitions about gambling, had positive expectancies about gambling or who felt unable to stop gambling tended to gamble more frequently and experience more severe gambling problems.

• This is consistent with general gambling literature (Blaszczynski & Nower, 2002; Ladouceur, 2004; Raylu & Oei, 2004a) and with international student research (Brown & Dowling, 2008; Thomas & Thomas, 2002). Relationships were not consistent with one study of Chinese international students (Zheng, Walker, & Blaszczynski, 2008), which found no significant relationship between irrational cognitions and gambling problems. However this may be due to restricted range in gambling behaviour in that study.
• The findings from this study further suggest that gambling cognitions are more important in explaining persistent and problematic gambling in international students than are negative affect, life stressors or alcohol consumption.

Cultural group differences on Gambling and Risk Factors: Are all international students equally at risk?

• The answer is no. Risk-related games (cards, casino table games) and problem gambling rates were higher among students from China, other Asian countries and English speaking western nations than students from India or Western Europe.

• Specifically, males from English speaking western nations, China and other Asian countries were most at-risk in terms of gambling frequency and problems.

• Further, students from Asian countries including China were most at risk of academic, relational, financial and adaptation stressors, had significantly lower English fluency and were more anxious, depressed and stressed, while students from Western Europe and English-speaking western countries appeared to be the least affected by these risk factors. Indian students tended to be in the middle.

• International students can be at higher risk of negative outcomes when cultural and language differences between country of origin and host country are large (Dao, et al., 2007; Leung, 2001; Poyrazli, et al., 2004; Spencer-Oatey & Xiong, 2006; Yeh & Inose, 2003) and the findings from this study support this showing that, despite the relative geographical distances, students from English-speaking countries and Western Europe experienced less cultural or language stress than those from Asian countries which may lead to better long term outcomes.

• Students from China, India and other Asian countries also had higher scores on gambling-related cognitions, while those from Western Europe were less affected consistent with other research showing Chinese-Australians were higher on illusions of control and more likely to incorrectly report winning than Caucasian-Australians (Oei, et al., 2008; Oei & Raylu, 2010). Gambling is tightly restricted in countries such
as China, India and Indonesia so these students may lack in knowledge about gambling odds and the chance of winning.

- In contrast, students coming from Western cultural backgrounds drank more heavily than other groups consistent with drinking patterns of Australian and New Zealand university students (Kypri, et al., 2009; Snow, et al., 2002). It is possible students coming from other western cultures view Australia as having a strong youth drinking culture and adapt their own drinking patterns accordingly (Pederson, Larimer, & Lee, 2009).

- Thus, international students should not be considered a homogenous group. Students from Asian countries including China are more susceptible to life stressors, negative affect and erroneous gambling-related cognitions than other student groups, while students from Western cultural backgrounds are more at risk of alcohol-related problems. Gambling problems are more prevalent in international students who are male and those from Asian or English-speaking western countries.

Help Seeking and Gambling Supports for International Students

Help Seeking among International Students

International students can be reluctant to use counselling services due to cultural differences (Loo, Raylu, & Oei, 2008; Scull & Woolcock, 2005) or because of a lack of awareness about available services (Russell, et al., 2008). In our study we found:

- International students were likely to identify having had academic, emotional and relational concerns over the past 12 months, but were unlikely to have drug, alcohol or gambling problems and help seeking was most likely to be informal (e.g., asking family or friends for assistance).

- The vast majority of international students found to be at-risk of gambling problems had sought informal, or a mix of informal/formal, help at some point in the past 12 months. Focus group participants said they would rather seek help from family or
friends because counselling would not be a comfortable option for them or because counselling was only appropriate for someone with a major mental illness.

- Counselling can be viewed as shameful and embarrassing within some Asian cultures (Carr, Koyama & Thiagarajan, 2003; Volberg, Nysse-Carris & Gerstein, 2006) and privacy concerns can also be a barrier to professional help seeking (Carr, Koyama & Thiagarajan, 2003). Students in focus groups confirmed these concerns.

- Substantial proportions (20-30%) of international students who had chosen not to access professional help said this was because either they did not know about the services (or did not know where it was, or that it was free) or there was some discomfort in seeking professional assistance.

- This lack of awareness about free and low cost services suggests that better promotion and education about specific services is needed for the international student community as this may increase uptake within this vulnerable group.

- Further, students will sometimes present to medical services with physical rather than psychological symptoms such as stomach aches, headaches and sleeping problems (Carr et al., 2003; Mori, 2000; Russell et al., 2008) and the current study suggests that students commonly (around 40%) accessed some university services (including health, financial or academic services) despite a lack of comfort with certain professional services.

- Thus, educating allied health staff within universities about student gambling, and/or screening for gambling may facilitate early identification of gambling problems, providing the opportunity to advise, educate and assist students.
Gambling Supports for International Students

- Despite the very limited amount of research available on overseas student gambling, some gambling safety information is available for international students (e.g., fact sheets, seminars).

- However, it is debateable whether this information is reaching international students as students in the focus groups were unable to recall being told about gambling or gambling-related risks through official channels.

- Students suggested that universities could use a multi-pronged approach to provide information about responsible gambling, risks associated with gambling, and how to get help through stimulating presentations to student groups, student mentor programs, pamphlets/flyers, letters, message boards, and web-pages.

Study Limitations

As with any study there were some limitations to the findings. These are detailed in full in *International student gambling: The role of acculturation, gambling cognitions and social circumstances: Full Technical Report*, under separate cover. The limitations relevant to this study related to:

- Sample bias (sampling was restricted to the Eastern sea-board of Australia, was a convenience sample and had limited numbers of some CALD groups).

- Response bias (some group differences may reflect culturally-based response interpretations).

- Measurement error (there were some minor discrepancies in student responses to specific questions and the academic stressors scale had low internal consistency).
SECTION 5: CONCLUSIONS

It would appear that although international students gamble less frequently than domestic students, they are at greater risk of gambling problems. The results of this study extend understanding and suggest:

- Many international students are exposed to a much greater variety of gambling opportunities than they had at home (i.e., increased accessibility).

- They are curious about gambling in general and the casinos in particular and many of their peers are gambling.

- They are attracted to games which are higher risk and high in terms of time-based and geographic accessibility (e.g., card games, casino games).

- They appear to be less knowledgeable about self-regulation of gambling strategies that assist in maintaining control of gambling as evidenced by their rates of erroneous gambling cognitions and their expressed desire (from focus group discussions) to learn more about control strategies.

- They have higher rates than local students of irrational and expectancy gambling cognitions and gambling urges. These cognitions are associated with gambling frequency and problems.

- They tend to score higher in stresses and negative affect than local students. The experience of stress and negative emotions is associated with gambling frequency and problems. Although the association is not strong, it points to at least some students taking up or persisting with gambling as a way of dealing with stress.

- Alcohol use is high among international students from western cultural backgrounds, and associated, albeit weakly, with gambling frequency and problems.

- Problem gamblers came from both genders and a variety of countries, but certain groups of international students appear to be particularly vulnerable to gambling problems. In our study, male gender, living alone, Chinese/Asian or English-speaking
western backgrounds were the key risk demographics. Therefore, educational information specifically targeting these groups may be worthwhile.

- International students are more likely to seek informal help for problems including gambling issues, but will regularly access other university-based services so educating staff around student gambling may facilitate early identification of gambling problems.

- International students’ reluctance to access professional help services is often related to a lack of awareness of available/free services and a lack of comfort seeking assistance, so increased information and explanations about free/low cost counselling and international student services may increase student uptake.

- International students appear receive little information about gambling and related risks when they arrive in Australia, so increased and targeted community education within the university system around responsible gambling, risks and ways to access help may be beneficial to new students.
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