

A case of mistaken identity? A comparison of professional and amateur problem gamblers

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Abstract

Professional gamblers are more likely than amateur gamblers to meet criteria for problem gambling but minimal research has examined their gambling behavior and its consequences. This study compared gambling behavior, problem gambling symptoms, related harms, recognition, and help-seeking among problem semi/professional gamblers (PPGs/PSPGs) and problem amateur gamblers (PAGs). Surveys completed by 57 self-identified professional gamblers, 311 semi-professional gamblers and 4,226 amateur gamblers were analysed. PPGs/PSPGs were significantly more likely than PAGs to be male, younger, never married, speak a language other than English at home, and have higher psychological distress, compared to PAGs. PPGs/PSPGs were more likely to gamble more frequently on many skills-based forms, but most also participated in several chance-based forms. PPGs/PSPGs' most common problematic gambling form was electronic gaming machines and they were more likely to have problems with sports betting than PAGs. Most PPGs/PSPGs reported coming out behind on all gambling forms over the previous year. PPGs/PSPGs were more likely than PAGs to report chasing losses and numerous detrimental financial gambling consequences. This group's self-identification as semi/professional gamblers is clearly inaccurate and perhaps a means to avoid stigma, elevate status and support problem denial. PPGs/PSPGs may represent an extreme example of gamblers with erroneous cognitions and beliefs who lack the required discipline and skill to be successful professional gamblers. The findings identify a group of problem gamblers who may benefit from interventions to dispel their mistaken self-identity, and emphasize the need for more rigorous confirmation of professional gambler status in future research.

Introduction

Minimal research exists describing the nature and consequences of problem gambling amongst professional gamblers. Previous studies have found that professional and semi-professional gamblers can experience gambling-related problems (Bjerg 2010) and are significantly more likely than amateur gamblers to be classified as problem gamblers (Hing, Russell, Blaszczynski and Gainsbury 2014). This heightened risk makes professional and semi-professional gamblers worthy of further research attention, especially given that several scholars have commented on anecdotal reports of growing numbers of people identifying as professional gamblers and increased interest amongst youth in pursuing a professional gambling career (Istrate 2011; Monaghan, Derevensky and Sklar 2008; McCormack and Griffiths 2011; Shead, Hodgins and Scharf 2008; Weinstock, Massura and Petry 2012). Understanding the nature and consequences of problem gambling amongst professional and semi-professional gamblers can inform prevention, harm minimisation, diagnosis and treatment strategies for this subgroup by determining their unique characteristics and putative trajectory of problem gambling.

Despite their elevated risk of problem gambling, no studies have examined problem recognition and help-seeking by professional and semi-professional gamblers with gambling problems. Clinical and other studies indicate that pathological gamblers sometimes rationalize their ongoing involvement in gambling by claiming to be professional gamblers (Ciarrocchi 2001; Frances and First 2000; Taber, Russo, Adkins and McCormick 1986). However, involvement in gambling activities that include an element of skill (which are often preferred by ‘professional gamblers’ is associated with greater illusions of control (Letarte, Ladouceur, and Mayrand, 1986; MacKay, Bard, Bowling, and Hodgins, 2014; Toneatto, 1999) and problem gamblers have an exaggerated perception of their own skill level (Toneatto, Blitz-Miller, Calderwood, Dragonetti, and Tsanos, 1997). However, it is not

known if identifying as a professional gambler is a barrier or facilitator to seeking help. It is conceivable that ability to earn an income from gambling masks the otherwise damaging effects of preoccupation and excessive involvement with gambling, thereby preventing an individual from recognizing the need to moderate their gambling behavior.

Early evidence that problem gambling appears to emerge differently when related to skills-based games suggests that problem gambling may also manifest differently amongst professional and semi-professional gamblers who rely on skills-based gambling (Bjerg 2010; Griffiths, Parke, Wood and Rigbye 2010; McCormack and Griffiths 2011; Radburn and Horsley 2011). Findings from Bjerg's (2010) study of 10 professional, 14 problem and five recreational poker players challenged traditional assumptions that losing money, irrational perceptions and loss of control are central to the experience of problem gambling. Instead, problem poker playing was found to be less causally related to financial loss, with some problem players compelled to keep gambling through a desire to chase more wins rather than losses. Further, problem poker players did not necessarily exhibit irrational perceptions of the role of chance and skill in the game, nor necessarily lose behavioral control within games. However, they struggled to balance their poker playing in relation to life outside the game, leading to emotional and social problems. Based on these findings, Bjerg (2010) questioned whether current diagnostic tools adequately capture problem poker players and whether treatment approaches that aim to correct erroneous beliefs and loss of control are appropriate for this cohort.

Similarly, Griffiths et al. (2010) found in a convenience sample of 422 student online poker players that about half exhibited some gambling problems, but most did not win or lose much money. Instead, problem players were more likely to play more frequently for longer periods, compared to non-problem players. Consistent with Bjerg's (2010) results, Griffiths and his colleagues concluded that a 'new breed' of problem gamblers may be emerging who

are characterized by losing time but winning money on skills-based games (Griffiths et al. 2010, p. 87). This contention is further supported by findings that problem gambling amongst 179 student online poker players was partially predicted by time spent playing but not by wins/losses (Hopley and Nicki 2010).

The current study utilized an opportunity to conduct secondary analysis of a reasonably large dataset of problem professional gamblers (PPGs), problem semi-professional gamblers (PSPGs) and problem amateur gamblers (PAGs). Specifically, it aimed to compare gambling behavior, problem gambling symptoms, gambling-related harms, problem gambling recognition, and help-seeking of PPGs/PSPGs and PAGs. Only two quantitative studies involving PPGs/PSPGs have previously been conducted. Weinstock et al. (2012) surveyed 22 professional and 13 pathological gamblers on a range of psychosocial measures but did not report results for any PPGs/PSPGs in their sample. Hing et al. (2014) compared some characteristics and behaviors of semi/professional gamblers with and without gambling problems, but did not compare PPGs/PSPGs to PAGs. One qualitative study has explored how problem gambling arises in poker players including amongst professional players (Bjerg 2010). Thus, the current study is the first to conduct a large-scale quantitative analysis that compares PPGs/PSPGs and PAGs.

The present study

The current study conducts a new analysis of a dataset that was the basis of previous work by the authors (reference withheld for anonymity). Based on data from a broader study of 4,594 Australian gamblers, one question on professional gambler/semi-professional gambler/amateur gambler status allowed examination of the largest known sample of self-reported professional and semi-professional gamblers surveyed to date. The authors' previous related analysis established that the self-reported semi/professional gamblers had distinctive

characteristics and behaviors compared to amateur gamblers which supported the overall accuracy of their self-classification. However, their analysis did not extend to comparing PPGs/PSPGs to PAGs. Thus, any differences in problem gambling symptoms, consequences and help-seeking between these groups are yet to be reported.

Recruitment and sampling

The overall sample consisted of 4,594 Australian adults (aged 18 years or over) who had gambled at least once in the previous 12 months. They were recruited in 2012 through advertisements placed on Internet wagering and lotteries sites (53.9%), Facebook (17.6%), Google (6.3%), government websites (5.2%), online gambling forums (3.4%) and gambling help websites (3.0%).

Measures

Professional/semi-professional/amateur gambler status. Respondents were asked whether they considered themselves to be a ‘professional gambler (gambling is your main occupation/source of income)’, ‘semi-professional gambler (gambling forms part of your main occupation/source of income)’, or ‘amateur/recreational gambler (gambling is an entertainment activity/pastime)’. Amongst the 4,594 respondents, 57 (1.2%) identified as professional gamblers, 311 (6.8%) as semi-professional gamblers and 4,226 (92.0%) as amateur gamblers.

Gambling behavior. Gambling frequency was asked in relation to the previous 12 months for 10 gambling forms – instant scratch tickets; lottery, lotto or pools tickets; sports betting; betting on horse or dog races; bingo; keno; poker; casino table games not including poker; other games of skill; and electronic gaming machines (EGMs). Responses were gathered on a seven-point scale from ‘4 or more times per week’ to ‘not at all in the past 12

months', allowing gambling participation to also be derived. Due to well recognized inaccuracies in self-reports (Wood and Williams 2007), gambling expenditure was assessed by asking whether respondents had come out ahead, behind or even on each gambling form over the last 12 months. Respondents were also asked whether they did all, most, about half, less than half, or none of their gambling online during the last 12 months.

Problem Gambling Severity Index (PGSI; Ferris and Wynne 2001). This nine-item scale used the validated scoring system of 'Never' = 0, 'Sometimes' = 1, 'Most of the time' = 2, and 'Almost always' = 3, with scores totalling 0 = non-problem gambler, 1-2 = low risk gambler, 3-7 = moderate risk gambler, and 8-27 = problem gambler. As reported in XX (authors withheld for anonymity), respondents meeting criteria for problem gambling comprised 15 (26.3%) professional gamblers, 82 (26.4%) semi-professional gamblers and 546 (12.9%) amateur gamblers.

Most problematic type of gambling. Respondents scoring 3 or more on the PGSI were asked 'Which type of gambling has contributed MOST to any problems you may have experienced from your gambling?', with 11 types of gambling listed, including 'other – please specify'.

Problem gambling recognition. A further response option to the question assessing most problematic type of gambling was 'I have not experienced problems from my gambling', allowing the proportion of problem gamblers endorsing this response to be derived.

Gambling-related harms. Adapted from the (Australian) Productivity Commission's Survey of Clients of Counselling Services (1999), 26 questions were asked in relation to specific personal, interpersonal, vocational, financial and legal consequences from gambling. All questions were framed 'During the last 12 months'. While response options for some of these items were on a five-point 'Never' to 'Always' scale (e.g., 'gambling has caused

arguments with my family', 'lost time from work or study due to gambling), other items required a 'Yes' or 'No' response (e.g., 'sacked from a job', 'sale, repossession or eviction from your house'). All responses were converted into Yes/No responses for further analysis.

Help-seeking. Respondents scoring 3 or more on the PGSI were asked if they had ever sought help from 11 different sources encompassing the most common forms of formal help, informal help and self-help. A response option of 'I have never sought help' allowed the proportion of PPGs/PSPGs and PAGs who had ever sought help for their gambling to be derived.

Demographics. Information on sex, age, household type, highest educational qualification, work status, income, debt, and cultural background was obtained from participants.

Analyses

Due to small numbers of PPGs, they were combined with PSPGs for analyses. Thus, the analyses are based on 97 PPGs/PSPGs and 546 PAGs. Analyses were chosen that do not require equal sample sizes given the unequal n in each group. Chi-square tests of independence with post-hoc Z -tests were conducted to test the difference between the groups for categorical dependent variables, while non-parametric Mann-Whitney U -tests were used where the dependent variable was continuous.

Results

Demographics

PPGs/PSPGs were significantly more likely to be male (88.7% compared to 78.9% for PAGs, $\chi^2(1, N = 643) = 4.94, p = 0.026, \Phi = 0.09$) and to speak a language other than English at home (32.0% vs 17.0% for PAGs, $\chi^2(1, N = 643) = 11.79, p = 0.001, \Phi = 0.14$), compared to

PAGs. PPGs/PSPGs were also significantly younger ($M = 32.7$, $SD = 11.5$, median = 30) compared to PAGs ($M = 38.5$, $SD = 13.1$, median = 36), $U = 19,303.5$, $Z = -4.26$, $p < 0.001$. Differences in marital status were also observed, with a significantly higher proportion of never married PPGs/PSPGs (55.7% vs 41.9% for PAGs) and a significantly lower proportion of married PPGs/PSPGs (15.5% vs 27.1% for PAGs), with no observed differences for other marital statuses, $\chi^2(3, N = 643) = 4.94$, $p = 0.026$, $\Phi = 0.09$. It should be noted that these demographic differences are based on small numbers, particularly of PPGs/PSPGs, and should be interpreted with caution. No significant differences between the groups were found for the number of adults or children in the household, household type, highest level of education, Aboriginal or Torres Strait Islander status, country of birth or household income.

Gambling behavior

PPGs/PSPGs were significantly less likely than PAGs to engage in lottery/lotto/pools ticket buying, but significantly more likely to engage in the following forms of gambling: sports betting, bingo, poker, casino table games and betting on games of skill (Table I). No significant differences were found between the groups for the number of gambling forms engaged in.

Insert Table I about here

In terms of frequency of play, Mann-Whitney U -tests revealed that PPGs/PSPGs reported gambling on the following forms significantly more often than PAGs: sports betting ($U = 10,874.5$, $Z = -4.43$, $p < 0.001$), keno ($U = 4,610.0$, $Z = -2.46$, $p = 0.014$), poker ($U = 2,954.5$, $Z = -1.98$, $p = 0.047$), casino table games ($U = 5,432.5$, $Z = -2.52$, $p = 0.012$) and betting on games of skill ($U = 345.5$, $Z = -3.81$, $p < 0.001$), with no significant differences found for other forms.

In terms of expenditure, most respondents (>50%) in both groups reported coming out behind for all gambling forms. However, a significantly higher proportion of PPGs/PSPGs reported coming out ahead or breaking even on instant scratch tickets, sports betting, horse and dog race betting, keno and EGMs, compared to PAGs.

A significantly higher proportion of PPGs/PSPGs (47.4%) reported doing most or all of their gambling via the Internet compared to 35.2% of PAGs, while the remaining respondents in each group reported doing at least half or more of their gambling in land-based venues ($\chi^2 (1, N = 643) = 5.31, p = 0.021, \Phi = 0.09$).

Most problematic gambling form and problem gambling recognition

Nine PAGs (1.6%) reported that they had not experienced problems from their gambling, while three PPGs/PSPGs (3.1%) reported the same. This difference was not statistically significant ($p = 0.333$). When the remaining respondents were asked which was their most problematic form of gambling, PAGs were significantly more likely to report EGMs compared to PPGs/PSPGs, whereas PPGs/PSPGs were significantly more likely to report sports betting compared to PAGs, 4, $N = 631) = 12.47, p = 0.014, \Phi = 0.14$. No significant differences were observed between the groups for other forms of gambling. The most common problematic gambling forms reported were EGMs (PPGs/PSPGs 36.2%; PAGs 49.5%), race wagering (PPGs/PSPGs 26.6%; PAGs 22.5%), and sports betting (PPGs/PSPGs 24.5%; PAGs 12.8%).

Problem gambling symptoms and help-seeking

Comparisons were drawn between groups in their reported frequency of experiencing each PGSI item in the previous 12 months. The PPGs/PSPGs reported experiencing three items significantly more often than the PAGs: 'how often have you gone back another day to try to

win back the money you lost' ($U = 22,368.5$, $Z = 2.61$, $p = 0.009$), 'how often have you borrowed money or sold anything to get money to gamble' ($U = 22,779.0$, $Z = -2.39$, $p = 0.017$), and 'how often have people criticised your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true' ($U = 19,697.0$, $Z = -4.37$, $p < 0.001$). PPGs/PSPGs had significantly higher overall scores on the PGSI ($M = 14.5$, $SD = 5.6$, median = 13) compared to PAGs ($M = 13.1$, $SD = 4.9$, median = 12), $U = 22,931.0$, $Z = -2.12$, $p = 0.034$.

There were no significant differences between the PPGs/PSPGs (59.8%) and PAGs (54.0%) in terms of whether they had ever sought help for their gambling $\chi^2 (1, N = 643) = 1.11$, $p = 0.293$.

Gambling-related harms

A significantly higher proportion of PPGs/PSPGs (46.4%) were classified as experiencing high psychological distress compared to 30.6% of PAGs ($\chi^2 (1, N = 643) = 9.31$, $p = 0.002$, $\Phi = 0.12$). No significant differences were observed between the groups in terms of personal consequences experienced due to gambling. PPGs/PSPGs were significantly more likely to report the interpersonal, work and study, financial, legal problems shown in Table II, compared to PAGs.

Insert Table II about here

Discussion

This study has been the first known attempt to compare self-identified semi/professional and amateur problem gamblers on selected characteristics and gambling-related behaviors. Reflecting previous conjecture that young males are particularly attracted to pursuing a professional gambling career (Hardy 2006; Monaghan et al. 2008; McMullan 2011),

PPGs/PSPGs were significantly more likely than PAGs to be male, younger, and never married. PPGs/PSPGs were also more likely to speak a language other than English at home and to have higher psychological distress compared to PAGs. This finding may reflect heightened anxiety and stress faced by new immigrants and use of gambling as a coping or acculturation mechanism (Raylu and Oei 2004). Heavy gambling is also a way of demonstrating conspicuous consumption in some cultures (Tanasornnarong, Jackson and Thomas 2004), and adopting a professional gambler identity may be particularly tempting in cultures where heavy gambling is acceptable but loss of control over gambling is not (Raylu and Oei 2004). These speculations require confirmation through further research, which would also benefit from larger samples to confirm the demographic differences reported here.

Compared to PAGs, PPGs/PSPGs were more likely to participate and engage more frequently in certain skills-based gambling forms including sports betting, poker, casino table games and games of skill. No differences were observed between PPGs/PSPGs and PAGs for participation in and frequency of race wagering. Nevertheless, these results generally align with the greater preference of professional gamblers for skills-based gambling forms, compared to amateur gamblers (Bjerg 2010; Griffiths et al. 2010; McCormack and Griffiths 2011; Radburn and Horsley 2011). Most PPGs/PSPGs also participated in the chance-based forms of EGMs, instant scratch tickets and lottery-type games, and nearly half participated in keno and did so more frequently than PAGs. This unexpectedly high participation in chance-based gambling forms was reflected in the most problematic gambling forms reported by PPGs/PSPGs. While proportionately more PPGs/PSPGs than PAGs reported sports betting as their most problematic gambling form, higher proportions reported EGMs as causing them most difficulties. Thus, although the PPGs/PSPGs engaged in skills-based gambling, they also experienced problems with chance-based activities, indicating that their gambling was not as controlled as might be expected amongst professional or semi-professional gamblers.

These results are consistent with findings from a recent British prevalence study in which problem gambling prevalence rates were highest among poker players (a skill game) and almost half of poker players engaged in seven or more other gambling activities, including chance games (Wardle, Moody, Griffiths, Orford, and Volberg, 2011). This result highlights the importance of considering overall use and heavy involvement across all gambling forms when assessing activities contributing most to an individual's gambling problems.

In terms of past year gambling expenditure, PPGs/PSPGs were more likely than PAGs to report coming out ahead or breaking even on certain skills-based gambling forms, including sports and race wagering. Consistent with this result, higher proportions of PPGs/PSPGs conducted most or all of their gambling via the Internet, reflecting access afforded by this medium to tools and information that can facilitate the ability to win at gambling (Gainsbury, Russell, Blaszczynski and Hing 2015). However, PPGs/PSPGs were also more likely than PAGs to report coming out ahead on the purely chance-based activities of instant scratch tickets, keno and EGMs, which is highly unlikely given the probabilities of losing over time on these activities. This is consistent with higher levels of illusions of control among problem gamblers (Letarte et al., 1986; Toneatto, 1999). Further, for all gambling forms more than half of PPGs/PSPGs reported coming out behind over the previous year. These findings raise serious doubts over the accuracy of this group's self-reports that gambling was the main or a partial source of their income, unless the previous 12 months was not reflective of financial outcomes over their gambling career. This is consistent with findings from an objective test of poker skill in which poker players who gambled online and had greater irrational cognitions overestimated their perceived skill (MacKay et al., 2014).

These doubts are further elevated when problem gambling symptomatology and gambling-related harms were examined. Contrary to expectations that semi/professional gamblers would report fewer financial harms (Bjerg 2010; Griffiths et al. 2010),

PPGs/PSPGs reported chasing losses and borrowing or selling items to finance their gambling significantly more often than their amateur counterparts. They were also more likely to report more detrimental financial consequences from their gambling, compared to PAGs. These findings are in stark contrast to previous findings that professional gamblers take a disciplined, logical, controlled approach to their gambling, have good money management skills, are able to adhere to their budget and are less likely to chase losses, when compared to amateur gamblers (Griffiths et al. 2020; McCormack and Griffiths 2011; Rosecrance 1988). This less controlled approach to their gambling is also demonstrated by the PPGs/PSPGs' engagement in purely chance-based gambling forms. PPGs/PSPGs were also more likely than PAGs to experience some interpersonal and vocational harms from their gambling. Although this result appears in closer alignment with previous suggestions that time rather than money spent gambling may cause more harm amongst professional gamblers (Bjerg 2010, Griffiths et al. 2010), some of these additional negative consequences are likely to be related to the negative financial impacts of their gambling.

The most logical conclusion from these results is that this group's self-identification as semi/professional gamblers is inaccurate and perhaps a means to avoid the stigma of problem gambling, to elevate their status, and support a denial of their gambling problem. There is little doubt that problem gamblers attract stigma and are stereotyped as being irresponsible, greedy, stupid, selfish, irrational and lacking self-control (Carroll, Rodgers, Davidson and Sims 2013; Hing, Tiyce, Holdsworth and Nuske 2014; Horch and Hodgins 2008). PPGs/PSPGs may therefore seek to manage their identity and to attempt, through their 'vocabularies of justification' (Majamäki and Poysti 2012, p. 509), to distance themselves from other (non-professional) heavy gamblers (Radburn and Horsley 2011) and to legitimize their gambling as professional and respectable work from which they can demonstrate consistent income (Istrate 2011). Additionally, appropriation of this identity may be driven

by desire for ego enhancement, given the glamorised image of professional gamblers and their association with superior gambling skills, status and prestige (Hing et al. 2014; McMullan 2011). Further, problem gamblers typically overestimate their skill at gambling and misunderstand the role of chance and skill in gambling activities (Delfabbro 2004; Toneatto 1999). PPGs/PSPGs may therefore represent an extreme example of gamblers with erroneous cognitions and beliefs who lack the required discipline and skill to be successful professional gamblers.

Implications and conclusions

An important consideration is whether inaccurate self-appropriation of a semi/professional gambling identity is harmful, especially in light of current findings that PPGs/PSPGs were as likely as PAGs to acknowledge a gambling problem and to seek related help. Previous research has found that attaching strong self-identity to gambling may increase illusion of control and the likelihood of losing control over gambling (Jang, Lee, Park and Stokowski 2000), and that self-identity through gambling tends to strengthen as problem gambling severity increases (Lee, Lee, Bernhard and Lee 2009). Thus, mistakenly self-identifying as a professional gambler may facilitate harmful gambling activity with a range of negative financial and other consequences. Research is needed to untangle causal pathways between inaccurately self-identifying as a professional gambler and the development and maintenance of problem gambling.

The inaccurate self-reports found in the current study limit its insights into any differences between PPGs/PSPGs and PAGs. However, the findings have value in identifying a group of problem gamblers who may benefit from appropriate interventions aimed at dispelling their mistaken self-identity. Several studies have commented on anecdotal increases in numbers of young people aspiring to be professional gamblers, which has

occurred in tandem with increased celebrity status of professional gamblers, advertising that promotes gambling as easy money and a likely pathway to wealth, and increased access to Internet gambling (Derevensky, Sklar, Gupta and Messerlian 2010; Gainsbury 2012; Monaghan et al. 2008; McMullan 2011). Education may be needed to counter these influences, particularly amongst young male Internet sports bettors, including those from non-English-speaking backgrounds. This is particularly pertinent, given that sports betting is a popular activity amongst Internet gamblers with gambling problems, particularly males, and that 16% of problem and moderate risk Internet gamblers in a weighted sample of 4,688 adult Australian gamblers nominated sports betting as their most problematic gambling form (Gainsbury, Russell, Hing, Wood, Lubman and Blaszczynski 2014; Hing, Gainsbury, Blaszczynski, Wood, Lubman, and Russell 2014). The findings also illuminate the potential dangers, especially for young men, of media messages that promote professional gambling as a viable career.

The findings also have value in emphasising the need for more rigorous confirmation of professional gambler status in future research, given that previous studies have typically relied on self-reports of earning an income from gambling (Bjerg 2010; McCormack and Griffiths 2011; Radburn and Horsley 2011; Weinstock et al. 2011). It may be that these previous self-reports and associated research findings prove to be accurate. However, independent replications of the current study using a validated measure and detailed confirmation of professional gambler status are needed to move beyond the tentative nature and limitations of the current findings. While a major limitation was this study's reliance on self-reported semi/professional gambler status, other limitations relate to the non-representative sample of PPGs/PSPGs and its limited size that prevented further analysis of any differences between PPGs/PSPGs reporting profits and PPGs/PSPGs reporting losses

from gambling. The small sample size of PPGs/PSPGs also means that differences found in this study with PAGs require further confirmation in larger samples.

Future studies into problem professional and semi-professional gamblers would benefit from obtaining data on income generated from gambling, both overall and for each gambling form, as well as the percentage of overall income derived from gambling. These data would enable more rigorous assessment of professional/semi-professional gambler status. Gathering expenditure data for each gambling form would also enable the proportion of gambling budget devoted to skills-based vs non-skills-based gambling to be assessed, to better indicate the relative intensity of participation in each game type. The current study's results also highlight a need to identify causal links to problem gambling behavior amongst professional/semi-professional gamblers, especially given that the most problematic gambling form reported by this cohort was EGMs. It may be that chance-based gambling is undertaken to chase losses from skills-based gambling or that they find EGMs more addictive than other gambling forms. A better understanding of forms of gambling and gambling behaviors contributing to gambling problems amongst this cohort can inform appropriate educational and treatment strategies. It is hoped that this first foray into comparing problem semi/professional gamblers to problem amateur gamblers will encourage further research to clarify whether the former are characterised by different gambling behaviors, problem gambling symptomatology, gambling-related harms and help-seeking than found amongst their amateur counterparts.

Ethical approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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