

Motives for playing social casino games and the transition from gaming to gambling (or vice versa): social casino game play as harm reduction?

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Abstract

Social casino games (i.e., online, free to play casino-like games) share many similar visual, auditory and structural game mechanics as gambling games. Given the similarities between the two activities, it is not uncommon for people to migrate from social casino gaming to gambling or vice versa. In the current work, we investigated whether motives for playing social casino games may play a role in the transition from gaming to gambling. We also assessed whether motives for playing social casino games as a way to reduce gambling cravings was predictive of self-reported changes in gambling behaviour 30 days later and whether this relationship was dependent on the activity first played. In a community sample of people who gamble and play social casino games ($N=228$), those who played social casino games before beginning to gamble were more likely to report playing social casino games for social motives, or as a way to reduce gambling-related cravings, than people who gambled before playing social casino games. Additionally, we found that using social casino games as a tool to moderate gambling cravings was associated with self-reported decreases in gambling behaviour one-month later, but only among those who played social casino games before beginning to gamble. Results suggest that what game was played first (social casino games or gambling games) matters, especially for the clinical utility of social casino games as a harm reduction strategy.

Keywords: social casino gaming, motives, transition from gaming to gambling, harm reduction

Résumé

Les jeux de casino sociaux (qui sont offerts gratuitement en ligne) partagent avec les jeux de hasard un grand nombre de caractéristiques visuelles, auditives et structurelles définissant la mécanique de jeu. Vu les ressemblances entre ces deux types de jeux, il n'est pas inhabituel pour les joueurs de passer de l'un à l'autre et inversement. Nous avons cherché à savoir trois choses : premièrement, si les raisons qui motivent la pratique des jeux de casino sociaux influent sur la transition vers les jeux de hasard; deuxièmement, si ces motivations peuvent, en tant que moyen de réduire l'envie de jouer, être un prédicteur de changements de comportement au bout de 30 jours; et troisièmement, si ce lien dépend de l'activité adoptée en premier. Notre échantillon recruté dans la collectivité comptait des adeptes des deux types de jeux ($N=228$). Ceux qui s'adonnaient aux jeux de casino avant d'adopter les jeux de hasard ont été plus nombreux que ceux qui avaient fait l'inverse à évoquer des motivations sociales ou la recherche d'un moyen de tempérer leur envie de jouer. Le recours aux jeux de casino dans un but de modération est associé à une diminution de la fréquence de jeu un mois plus tard, mais seulement chez les personnes qui s'adonnaient aux jeux de casino avant de passer aux jeux de hasard. Selon nos résultats, l'activité pratiquée en premier joue bel et bien un rôle, en particulier en ce qui touche l'utilité des jeux de casino sociaux en tant que stratégie de réduction des risques.

Introduction

Social casino games are free-to-play games that are played online, on your phone, through a tablet, or on Facebook. They are styled to look and play like casino games (e.g., slots, video poker, roulette, keno, bingo and blackjack). Unlike traditional gambling games, however, social casino games do not involve wagering with money. Instead, social casino games involve the wagering of 'credits' or virtual coins that have no objective value. Put differently, a win or loss experienced when playing social casino games only influences the number of virtual credits with which the player has to continue playing. However, other than the difference in monetary wagering, social casino games and gambling games share the same visual and auditory stimuli as well as utilize many of the same gaming mechanics (Bramley & Gainsbury, 2015; King et al., 2015).

In light of the similarity between the two types of games, it is common for individuals who play social casino games to report participating in traditional gambling activities as well (Gainsbury et al., 2014b, 2016; Hollingshead et al., 2016; Kim et al., 2016). For instance, approximately half of social casino gamers in the United States report visiting a land-based casino on a regular basis (SuperData, 2015). Likewise, Kim and colleagues (2017) reported that over 50% of their participants who were recruited because they played social casino games noted that they gambled. Given

this overlap, gambling operators (via partnerships, mergers or acquisitions, or both) are now heavily invested in the social casino market (Gainsbury et al., 2016). Moreover, many land-based gambling venues offer social casino games for the purpose of marketing and customer engagement (Abarbanel & Rahman, 2015, Gainsbury et al., 2014a). The convergence between social casino gaming and gambling has raised a concern about whether social casino gaming is a risk factor for engagement in gambling, and the progression toward problem gambling more specifically (Derevensky & Gainsbury, 2016; King et al., 2010; Parke et al., 2013).

Because gambling is associated with a host of physical and emotional health issues, including depression, anxiety, suicidal ideation, substance use, and addiction (Browne et al., 2016; Hodgins et al., 2011; Petry, 2005), researchers in the field of gambling studies have focused increasing attention on migration from social casino gaming to gambling (Dussault et al., 2017; Kim et al., 2015, 2016). In a longitudinal assessment of social casino gamers who had not previously gambled, Kim and colleagues (2015) found that a quarter of participants migrated to gambling during the six months of the study. Similarly, Dussault and colleagues (2017) tracked a large sample of young social casino gamers (14 to 18 years old) for one year and found that approximately 30% had migrated to gambling. Additionally, one fifth of a sample of social casino gamers recruited in Australia reported that they had gambled for real money as a result of their social casino game play (Gainsbury et al., 2016).

Migration can be bi-directional—although certain social casino gamers may eventually start gambling, it is also the case that certain gamblers may discover social casino gaming and begin playing the free-to-play version of their favourite game (Gainsbury et al., 2015). However, little is known regarding why players might migrate from gambling to social casino gaming. It is possible that because social casino games replicate the basic structural design of gambling activities, the motives to start playing social casino games are similar to the motives to start gambling. People may also choose to play social casino games as a less harmful substitute to gambling (Rockloff et al., 2018). However, to date, there is a paucity of research that has examined whether characteristic differences exist among players who migrated from social casino gaming to gambling or vice versa. One factor that may differ between these two groups of players are their *motives* for playing social casino games.

Motives for Social Casino Gaming and its influence on gambling behaviour: Harmful or harm reduction?

Although several theoretical models have been developed to understand the reasons why people choose to gamble (Binde, 2013; Milosevic & Ledgerwood, 2010), a prominent model in the field of gambling studies was proposed by Stewart and Zack (2008). According to their model, akin to the motives for drinking alcohol, there are three unique motives for gambling: *coping motives* (i.e., gambling as a means to downregulate negative emotions), *enhancement motives* (i.e., gambling as a means to upregulate positive emotions), and *social motives* (i.e., gambling as a means to enhance affiliation with other persons). A large body of research has provided

empirical support for this understanding (Dechant & Ellery, 2011; MacLaren et al., 2012; Stewart & Zack, 2008; Sztainert et al., 2014). More recently, financial motives have been added to the Stewart and Zack array of gambling motives because many persons gamble to acquire money through wins (Dechant, 2014). The ability to win (or lose) money or items of monetary value is, of course, the major difference between social casino gaming and gambling, with the former only allowing for the player to win virtual currency.

We contend that, akin to the motives for gambling, some persons play social casino games to connect with others (i.e., social motives), to alleviate stress (i.e., coping motives) and for the fun and excitement they obtain from playing (i.e., enhancement motives; Kim et al., 2015; Hollingshead et al., 2016). However, there are nevertheless motives that are unique to playing social casino games. For instance, people may play social casino games because they believe that social casino games provide a free means to practice or build skills that can be applied to the equivalent gambling game (Dussault et al., 2017; Gainsbury et al., 2015; Kim et al., 2015). That is, certain persons may view social casinos as a “practice facility.” Some social casino games, or more technically practice games, closely resemble specific commercial EGMs. Advertising such games as “practice” may encourage players to view them as useful training (Free Slots Online, 2020). Conversely, certain persons use social casino games as a means to downregulate their gambling-related cravings (Hollingshead et al., 2016). In other words, some social casino gamers express that they play social casino games to help moderate their cravings for gambling (i.e., social casino games as a harm reduction tool; Hollingshead et al., 2016). Thus, although similarities do exist between why people play social casino games and why people gamble, there are also important differences as well.

Understanding why people play social casino games is important because a player’s motives for doing so can influence that person’s gambling behaviour. Gainsbury and colleagues (2016), for example, found that gamblers who admitted that social casino games had influenced their gambling behaviour were more likely to endorse the importance of all motives for playing social casino games (i.e., social, coping, skill-building, enhancement) relative to those gamblers who did not. Thus, people who are more motivated to play social casino games may be more susceptible to having their gambling influenced by their social casino game play.

Importantly, motives for social casino games can provide insight into whether playing social casino games can lead to an increase or decrease in gambling. Hollingshead and colleagues (2016), for instance, found that among social casino gamers who also gambled, playing social casino games for social motives or as a way to build gambling-related skills was associated with a self-reported increase in gambling participation. In contrast, playing social casino games to reduce gambling-related cravings was associated with decreased self-reported gambling (Hollingshead et al., 2016). That is, certain persons enjoy playing gambling games, but are reluctant to continue gambling because of the monetary costs and the potential for harm.

As such, they modulate their gambling via using social casino games as a substitute. Therefore, playing social casino games is not always a risk factor for gambling. Instead, these games may help at least some gamblers to moderate their expenditures. This study, however, was limited in scope, and did not take into consideration which games the players started playing first. In fact, to our knowledge, no empirical research has thus far been conducted on possible similarities and differences in the motives for playing social casino games between people who first played social casino games (before starting to gamble) and those persons who instead first played gambling games (before starting to play social casino games). Moreover, Hollingshead and colleagues (2016) employed a cross-sectional design, and, therefore, they were not able to assess whether motives for playing social casino games influence self-reported changes in gambling behaviour over time.

In the current research, we wanted to address two important gaps in the literature. First, we wanted to understand whether there were motivational differences (and similarities) for playing social casino games among persons who first played social casino games before gambling (or vice versa) and second, whether such differences may shed light on for whom social casino games are a conduit for gambling and for whom social casino games may instead have a gambling-related harm reduction utility. To this end, a longitudinal design was used to examine (1) possible differences in motives for social casino gameplay between those gamblers who played social casino games first and those persons who instead gambled first, and (2) whether differences in motives influenced the amount of money participants spent gambling over a one-month span.

Proof of concept

Given the exploratory nature of the current work, we first conducted a secondary data analysis of Kim and colleagues (2019). The dataset included an item that assessed whether participants (who played both social casino games and gambled) played social casino games before they started gambling or vice versa. Motives for playing social casino games were also assessed. Specifically, this measure assessed the motives to play social casino games to cope, for self-enhancement, for social connection, and to skill-build for gambling (see Measures section in the main study for greater detail). Analyses revealed no significant between-group differences in coping, enhancement or skill-building motives. However, participants who played social casino games prior to gambling reported higher social motives (i.e., being motivated by the social connections that social casino games provide) compared to those participants who first gambled before beginning to play social casino games (see OSF for the full description of analyses and results: https://osf.io/3shxq/?view_only=ba5242cdf244a659c02acb759424b03). These results provide initial evidence for our supposition that there are differences in the motives for playing social casino games between the two groups. Consequently, we proceeded to test our idea that not only would differences in motives exist, but they would also predict gambling intensity differences over time.

Overview of the Current Research

The current research compares and contrasts the self-reported motives for playing social casino games among those gamblers who started playing social casino games before they started gambling and those others who instead started gambling first. We also examined whether any observed differences in motives for social casino gameplay were associated with the use of social casino games for harm reduction utility over time. Specifically, previous research has found that being motivated to play social casino games as a way to moderate gambling cravings is associated with self-reported decreases in gambling participation (Hollingshead et al., 2016). We expand upon this work by determining whether playing social casino games as a craving or harm reduction tool, and concordant decreases in self-reported gambling over time, was dependent on whether the individual first gambled and then started playing social casino games or vice versa.

Method

Participants and procedure

Using a two-wave longitudinal design, 256 participants were recruited at the initial wave through Amazon's MTurk. Mturk is a valid and reliable means to recruit people who engage in gambling (Kim & Hodgins, 2017, Schluter et al., 2018). Participants were eligible to complete the study if they indicated that they currently played both social casino and gambling games, and were not currently enrolled nor had ever previously sought treatment for their gambling behaviour. Upon granting consent, participants completed questionnaires examining the variables of interest. Participants were paid US\$0.75 for completing the initial phase of the study and were asked whether they would be willing to participate in a follow-up study one month later for which they would be paid an additional US\$1.00.

At Wave 1, 28 participants were removed from the analyses—21 were removed for providing contradictory information across different questions as to whether they had gambled or played social casino games as their first activity and seven were removed for failing attention check items (i.e., responded to items that were asked to be left blank). Thus, at Wave 1 the final sample consisted of 228 participants (108 female, $M_{age} = 35.60$, $SD_{age} = 10.78$). Of these Wave 1 participants, one hundred and thirty-five participants (53%) completed the Wave 2 follow-up study. This level of attrition is typical of online longitudinal studies conducted using crowdsourcing platforms (Chandler & Shapiro, 2016). The current study received ethical clearance from the first author's home institution.

Measures

First game played

Participants were asked to indicate whether they had first played social casino games (before ever gambling) or gambling games for real money (before every playing

social casino games) using a single item (i.e., “What type of game did you first start playing?”)

Motives for playing social casino games

Motives for playing social casino games were assessed using an adapted version of the Gambling Motives Questionnaire to assess motives for using social casino games (Stewart & Zack, 2008, see Hollingshead et al., 2016 for a similar method. The questionnaire was composed of four subscales: five items ($\alpha = .73$) assessed social motives (e.g., “I play social casino games to be sociable”); five items ($\alpha = .80$) assessed coping motives (e.g., “I play social casino games to forget about my worries”); five items ($\alpha = .84$) measured playing social casino games for enhancement reasons (e.g., “I play social casino games because it’s exciting”); and four ($\alpha = .94$) experimenter-created items were used to assess skill-building motives for playing social casino games (i.e., “I play social casino games to help me improve my gambling,” “I play social casino games to practice before I play for real money,” “I play social casino games to build my skills,” and “I play social casino games to get better at gambling”). Response options ranged from 1 (*almost never or never*) to 4 (*almost always or always*). Within each subscale, participant responses were averaged to create a mean score. Higher scores represented higher frequencies for endorsing each motive. For the Social Casino Gaming Motives Questionnaire in its entirety see OSF: https://osf.io/3shxq/?view_only=ba5242cdf244a659c02acb759424b03

Playing social casino games as a method to reduce cravings for gambling was measured using a six-item scale ($\alpha = .82$; see Hollingshead et al., 2016 for a similar method. Response options ranged from 1 (*strongly disagree*) to 7 (*strongly agree*). Examples of items included: “When I play social casino games, it seems to reduce my urge to gamble for real money” and “I purposely play social casino games to reduce my desire to gamble.”

Changes in gambling behaviour

Self-reported change in gambling behaviour was assessed using a single item measure of behaviour change. Participants were asked to indicate on a seven-point scale the extent to which their gambling had increased or decreased over the previous 30 days as a result of their social casino game play. The response was anchored at -3 (*My gambling behavior has decreased as a result of playing social casino games*) and 3 (*My gambling behavior has increased as a result of playing social casino games*). Responses were recoded to range from 1 to 7 for ease of interpretability. Scores above the mid-point (i.e., 4) reflected increases in gambling behaviour, whereas scores below the mid-point of the scale reflected decreases in such behaviour.

Missing Data Analysis

We first examined whether there were differences between the subsample of individuals who completed both Waves 1 and 2 of the study and those participants

who completed only Wave 1. The only significant difference observed between the two subsamples was on age, $t(226) = -2.41, p = .02, d = .32$. Participants who completed both waves of the study, ($M = 37.23, SD = 10.85$) were significantly older than participants who completed only the first wave, ($M = 33.82, SD = 10.45$). As a result of these findings, we concluded that the data were likely consistent with Missing at Random (i.e., missingness on the variables is partly explained by other factors, but not the variable itself), with the missingness, in part, predicted by age. The missing data was handled using Full Information Maximum Likelihood with age included in the analysis as a correlate of both the independent variables and the error term of the dependent variable. We were then able to conduct our main analysis on the full sample size ($N = 228$).

Main Data Analysis

To examine the differences in social casino gaming motives among individuals who played social casino games first compared to those persons who instead gambled first, we analyzed data from Time 1 using five independent sample t -tests, using a family-wise error rate corrected p value of 0.01. Moreover, a moderation regression analysis was conducted using MPlus software to examine whether the relation between the motive for playing social casino games as a way to reduce cravings for gambling (Time 1) and changes in self-reported gambling behaviour over time (Time 2) differed as a function of first activity played. To do so, first activity played (coded as 0 = played social casino games before gambling, 1 = gambled first before playing social casino games), motives for playing social casino games to reduce gambling cravings at Time 1 (mean-centered), and their interaction term were used to predict self-reported changes in gambling behaviour because of social casino gameplay that occurred over the previous 30 days. Self-reported changes in gambling behaviour at Time 1 (i.e., change over the previous 30 days prior to the study) was entered as a covariate.

Results

Mean differences in social casino gaming motives

There were significant differences between the two groups in level of social motives, $t(226) = 3.79, p < .001, d = .59$, representing a moderate effect. People who played social casino games before migrating to gambling reported more frequent “social motives” for playing social casino games ($M = 2.11, SD = .60$) than those participants who gambled before playing social casino games ($M = 1.75, SD = .61$). A sensitivity analysis determined that our sample size provided sufficient power to detect effect sizes larger than 0.44, as such, this result is well powered. No significant difference were found in coping motives, $t(226) = .45, p = .66, d = 0.07$, enhancement motives, $t(226) = -.88, p = .38, d = .14$, or skill-building motives, $t(226) = 1.33, p = .18, d = .22$. The results, however, indicated that when a traditional significant p value was used (i.e., 0.05), there were significant differences between groups in their level of motivation to play social casino games as a way to reduce cravings to gamble $t(226) = 2.32, p = .02$. Those gamblers who played social casino games before

transitioning to gambling were more likely to report playing social casino games as a way to reduce cravings to gamble ($M = 3.85$, $SD = 1.05$) than those participants who first gambled before beginning to play social casino games ($M = 3.40$, $SD = 1.29$; Table 1). Although the result was no longer significant when correcting for multiple comparisons, the effect size of the difference in craving reduction motives for those persons who played social casino games before beginning to gamble and vice versa was small to moderate ($d = .38$).

Motivation to reduce cravings and changes in gambling over time

The results from the omnibus test of the moderated regression analysis indicated that the model accounted for a significant portion of variance in self-reported changes in gambling behaviour as a result of playing social casino games, $R^2 = .17$, $z = 1.99$, $p = .047$. There was a significant main effect of motivation to play social casino games as a way to reduce gambling-related cravings on self-reported changes in gambling behaviour over time, $b = -.81$, $z = -2.98$, $p = .003$, 95% CI = [-1.34, -0.28]. There was not a significant main effect of activity first played (i.e., social casino games or gambling) on changes in gambling behaviour over time, $b = -.21$, $z = -0.72$, $p = .47$, 95% CI = [-.77, .36]. However, there was a significant interaction between level of motivation to play social casino games to reduce cravings to gamble and order of activity first played (i.e., playing social casino games before gambling or vice versa) on self-reported changes in gambling behaviour over time, $b = .91$, $z = 3.14$, $p = .002$, 95% CI = [.34, 1.48]. Results from the simple slopes analyses indicated that playing social casino games as a method to reduce gambling-related cravings was only significantly associated with self-reported 30-day decreases in gambling behaviour (i.e., as reported in the second survey) for people who played social casino games first ($b = -.81$, $z = -2.98$, $p = .003$, 95% CI = [-1.34, -.28]. For every 1.0 unit increase in reported motive to “reduce gambling cravings,” there was a .81 unit decrease in self-reported gambling behaviour 30 days later as reported on the Time 2 survey.

Table 1

Means and Standard Deviations of all Measured Variables at Time 1

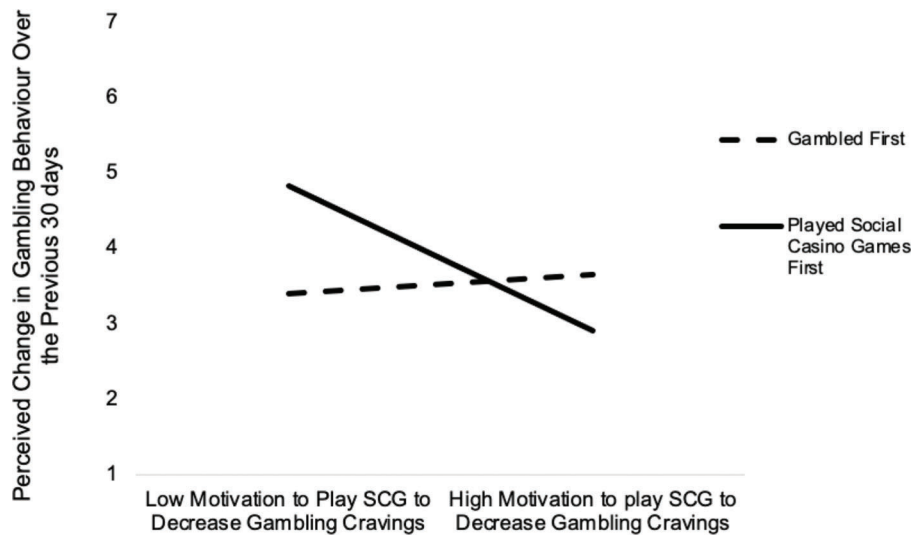
Variable	Scale Range	Played Social Casino Games Before Gambling ($N = 54$)		Gambled Before Playing Social Casino Games ($N = 174$)	
		M	SD	M	SD
Social Motives	1 – 4	2.11**	.60	1.75**	.61
Coping Motives	1 – 4	2.31	.59	2.27	.70
Enhancement Motives	1 – 4	2.75	.61	2.84	.68
Skill-building Motives	1 – 4	2.31	.76	2.12	.96
Craving Reduction Motives	1 – 7	3.85*	1.05	3.40*	1.29
Changes in Gambling ^a	1 – 7	3.53	1.10	3.50	1.20

Note. Significant mean differences between groups are identified. ** $p < .001$, * $p < .05$.

^aRecoded to range from 1 to 7 for ease of interpretability.

Figure 1

Relationship between motives to play social casino games as a way to decrease gambling cravings at Time 1 and self-reported changes in gambling behaviour 30 days later (Time 2) separately for those participants who gambled before playing social casino games and those gamblers who instead played social casino games before gambling.



Note. A value of 4 on the y-axis represents no changes in gambling. A value above 4 represents self-reported increases in gambling whereas a value below 4 represents self-reported decreases in gambling.

However, the motivation to play social casino games to reduce cravings was not predictive of self-reported changes in gambling behaviour among those participants who reported gambling before playing social casino games, $b = .10$, $z = 1.00$, $p = .32$, 95% CI = $[-.10, .30]$, ns (see Figure 1).

Discussion

The results from the current work provide preliminary support for the contention that differences may exist in the motives for playing social casino games among social casino gamers who migrated to gambling and conversely gamblers who migrated to social casino gaming. Thus, motives for playing social casino games may provide novel insight into who may be more likely to transition from gaming to gambling (or vice versa). Specifically, the results suggest that individuals who play social casino games before gambling may have higher social motives for play than do gamblers who transition to gaming. A possible explanation for this finding may be that although social casino games are marketed as being inherently “social,” the games can be quite solitary in nature. That is, although slots-based social casino games such as Slotomania allow the player to share their score with friends, the game itself is played alone. Therefore, if someone is motivated to play such games for social reasons, that person may feel that the social connection being received, or rather lack thereof, is not meeting their needs. Consequently, the person may begin

gambling at land-based casinos as a way to have more face-to-face meaningful social interaction. However, certain social casino games do allow for more immediate socializing. For example, poker-based social casino games can be played in groups. In these instances, members of the group may encourage each other to migrate from the free-to-play games to the play for real money. Kim and colleagues (2016) found that social casino gamers commonly reported first engaging in social casino games with a small group of friends and that this comradery and friendly competition helped to pave the way for the transition to online gambling. Thus, playing social casino games with a small group of friends consistently may be a risk factor for the transition from gaming to gambling.

Unlike social motives, our results indicated that there were no differences in coping, enhancement or skill-building motives for playing social casino games among those gamblers who first played social casino games versus gambling. Thus, regardless of migration pattern, people are playing social casino games to help cope with negative affect, to increase positive affect and to build gambling-related skills to the same degree. These results replicate similar findings reported by Kim and colleagues (2015) who found that skill-building and enhancement motives for playing social casino games did not predict migration from social casino gaming to gambling six-months later. It may be the case that coping, enhancement, and skill-building motives do not play a role in the transition from gaming to gambling or, by the same coin, the transition from gambling to gaming.

The current findings also provide insight into which individuals may find social casino games to be helpful for reducing gambling related cravings and behaviour. To this end, participants who reported playing social casino games before beginning to gamble had higher levels of motivation to play social casino games as a way to reduce their cravings to gamble than those participants who first gambled before transitioning to social casino gaming. Moreover, using social casino games as a tool for moderating gambling-related cravings was only associated with self-reported decreases in gambling behaviour over time among those persons who first played social casino games. These results suggest that social casino games may be useful as a harm reduction tool and help to reduce gambling behaviour but only for individuals who first played social casino games before beginning to gamble.

As a possible explanation for the finding that social casino games may only serve as a harm reduction tool among social casino gamers who later migrated to gambling, individuals who first played social casino games likely chose to begin playing the free-to-play, casino-like games for, among other reasons, entertainment and recreational purposes. Thus, the player would have found these games enjoyable and of some value before eventually migrating to gambling. As a result, it may be easy for these players to return to playing the safer, free-to-play games and to use them as a way to help moderate their gambling behaviour. In contrast, for individuals who initially found excitement in gambling and the potential to win actual money before beginning to play social casino games, it may be more difficult to substitute their gambling activities with the free-to-play options. For these

individuals, social casino games may be less satisfying and thus, may have limited impact on their gambling-related cravings and gambling behaviour.

Implications and Future Directions

The findings from the current work add to the existing literature in two important ways. First, there do appear to be differences in the constellation of motives for playing social casino games between those persons who migrated from social casino gaming to gambling and vice versa. Given that gambling behaviour, if problematic, can be associated with a plethora of negative consequences (e.g., depression; Kessler et al., 2008) it is arguable that the transition from social casino gaming—a free-to-play activity with fewer financial consequences—to gambling for money, may be more problematic than the reverse pattern of migration. Therefore, it is important for researchers and policy makers to understand factors that predict transition pathways. Playing social casino games as a way to connect with others (i.e., social motives) may be one such factor. It may benefit industry and policy makers to screen users for their levels of social motives and provide targeted and effective information on ways to reduce gambling harm and risk to such players. Moreover, it may be prudent for researchers to help identify who may be more (or less) likely to play social casino games for social motives, including examining differences in gender. According to Stewart and Zack (2008) as well as McGrath and colleagues (2010) women (relative to men) report social motives as a reason for their gambling. It is possible that women are also motivated to play social casino games for the social nature of the game. It may behoove researchers to examine possible gender differences as well as other individual difference variables (e.g., financial focus; Tabri et al., 2017) as a possible reason for engaging in social casino games or the migration from social casino games to gambling (and vice versa).

As the second contribution of our work, the findings add to the existing literature by providing support for the supposition that social casino games may be helpful for certain gamblers to serve as a harm replacement tool and that the harm reduction utility of these social casino games could have potentially long-term impact. That is, akin to e-cigarettes or non-alcoholic drinks being used as tools to replace smoking or drinking, respectively (Bullen et al., 2010; Polosa et al., 2013), social casino games may serve as a replacement for gambling and help with craving cessation. Anecdotal evidence supports this finding. Certain disordered gamblers report using social casino games as a substitution for their gambling (Gainsbury et al., 2015; Hollingshead et al., 2016; Parke et al., 2013). For example, Hollingshead and colleagues (2016) found that disordered gamblers who reported playing social casino games as a way to reduce their craving for gambling also reported that their gambling decreased as a result of engagement with social casino games. A longitudinal study by Rockloff et al. (2019) contrarily found that gambling-themed mobile app play in one week was reliably related to increases in real-money gambling in a subsequent week, and thus this issue remains unsettled. A potentially fruitful avenue for future research would be an examination of whether motives for playing social casino games is a function of disordered gambling symptomatology.

Additionally, as a note of caution, Rockloff and colleagues (2018) found in a longitudinal experiment that play on mobile social casino style games was associated with more real-money gambling involvement. The current study, however, suggests that social casino games may be helpful for certain gamblers. That is, social casino games may only help to reduce gambling-related cravings and behaviour among individuals who played social casino games before beginning to gamble. Although further research is needed to examine this supposition in more detail, clinicians may want to consider recommending social casino games as a way to moderate gambling-related cravings among this sub-group of players.

Limitations

There were several limitations to the current work. First, the participants were asked to retrospectively recall whether they had gambled before playing social casino games or vice versa. The retrospective nature of the study design limits our ability to determine conclusively whether the motives for playing social casino games played a role in the migration from one activity to the other. Moreover, secondary data analysis confirmed that the same pattern of results was observed in a separate, larger and more equally distributed sample of social casino gamers who gamble. Therefore, the results from the current work suggest that there are likely differences in the motives for playing social casino games among those gamblers who migrated from gaming to gambling (or the reverse). However, the mean differences between the groups on both social motives and motivation to play social casino games as a way to reduce gambling-related cravings were relatively small (i.e., 0.36 and 0.45, respectively). To assess the practical significance of the mean differences observed and extend the reach of the current findings, experiential sampling of social casino players could be used to assess whether motives for playing social casino games shift and whether any shifts have implications for subsequent gambling behaviour.

A second limitation is that participants were asked to provide a self-report of their changes in gambling behaviour as a result of playing social casino games. Thus, we can only draw conclusions about the effect of social casino gaming motives on perceived (and not objective) behavioural change. Future research should include objective measures of gambling behaviour to assess better whether using social casino games to reduce gambling related cravings is associated with a down-regulation in gambling. Additionally, only a single item assessed self-reported changes in gambling as a result of social casino game play. Single items may be unreliable. As such, research assessing this construct should improve the psychometrics by increasing the number of items. These items should be written in a way that does not make the participant draw inferences about the reason for their behaviour. For example, a longitudinal study could be conducted that asks participants the amount of time and money they spend gambling as well as the amount of time they spend playing social casino games (cf., Rockloff et al., 2019). Changes in gambling behaviour as a function of changes in motives for playing and engagement with social casino games could be assessed. Additionally, it would be of benefit for researchers to examine whether the utility of social casino games as a

harm reduction tool is dependent on how long ago a player migrated from social casino gaming to gambling (or vice versa), as well as how long that player has been engaging in both activities.

Finally, although we adapted the measure of motives for playing social casino games from an established and validated measure of motives for gambling (Devos et al., 2017; Lambe et al., 2015; Stewart & Zack, 2008), the adapted scale we used has not been validated. It may be of interest to researchers to examine how motives for playing social casino games relate to traditional motives for gambling and whether there are differences in gambling motives among those persons who gambled before playing social casino games and vice versa. Additionally, participants' motives for playing social casino games were only measured at Wave 1 of the study, thus limiting our ability to determine the test-retest reliability of the scale. Follow-up studies should assess the reliability and validity of the measure of motives adapted to the social casino gaming context.

Conclusion

In the current paper, we examined whether differences existed in the motives for playing social casino games among social casino gamers who migrated to gambling and gamblers who migrated to social casino gaming. The results indicated that individuals who first played social casino games before beginning to gamble were more likely to report playing social casino games for the social connection they provide and as a way to reduce gambling-related cravings than those participants who gambled before playing social casino games. Moreover, using social casino games as a way to help moderate gambling behaviour was predictive of self-reported decreases in gambling behaviour thirty days later only among those persons who played social casino games before beginning to gamble. The current work suggests that, depending on the order of migration, social casino games may actually be helpful for moderating gambling cravings and behaviour. Clinicians should consider the potential long-term utility of social casino games as a harm reduction strategy with the caveat that it may be counterproductive for people who gamble first before playing these games (Rockloff et al., 2018).

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