Development and randomised controlled trial of safer gambling practices for EGM play

Final Report

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Executive summary

Key findings from the study

This study provides the first evidence from a randomised controlled trial (RCT) to demonstrate that using safer gambling practices (SGPs) results in safer gambling behaviours and outcomes for some EGM players. It identified a set of evidence-based practices that can be more confidently recommended to gamblers. The study has moved SGPs past mere association with safer behaviours to demonstrate reductions in EGM spend and gambling harm when they are recommended to EGM gamblers who subsequently implement them.

These results provide arguably the best evidence to date of the efficacy of SGPs to result in beneficial gambling outcomes.

SGPs communicated to EGM players should include the following actionable practices:

- Setting aside a fixed amount to spend
- Taking regular breaks
- Keeping leisure time busy with other activities
- Not playing due to boredom
- Keeping a household budget.

An additional 13 SGPs were found to have a strong negative association with gambling harm in the Stage 2 survey and, together with the above, could be incorporated into a longer set of SGP guidelines.

These strategies will likely be of most use to regular EGM gamblers who may be low or moderate risk gamblers. EGM gamblers meeting criteria for problem gambling are likely to need additional and stronger strategies, including professional help, to resolve their gambling problem.

The SGPs could also provide the basis for a self-assessment tool to encourage consumers to appraise, assess and self-regulate their gambling by using the promoted SGPs. The SGPs can inform community education to raise awareness and use and educate concerned significant others to support gamblers to implement them. The SGPs can assist treatment providers by identifying actionable strategies clients can use to help reduce the harm from their gambling.

Introduction

A public health approach to gambling aims to minimise gambling-related harm across the population. One widely promoted harm minimisation strategy is providing advice to consumers on the use of safer gambling practices (SGPs). These SGPs constitute self-regulatory strategies that aim to help people prevent or reduce harmful gambling behaviours and outcomes (e.g., ‘If you’re not having fun playing the pokies, stop’; ‘Only play low denomination gaming machines’). However, currently promoted SGPs have little research evidence supporting their efficacy

(Bagot et al., 2021; Hing et al., 2016a). Evidence-based SGPs are needed to guide consumers on what directly actionable practices they can use to lower their risk for experiencing gambling-related harm. This study focuses on SGPs for electronic gaming machine (EGM) play, since EGMs are the largest source of gambling harm in New South Wales (NSW; Browne et al., 2020).

Aim

The study aimed to:

- identify SGPs that best predict non-harmful gambling amongst EGM players who are most vulnerable to gambling-related harm; and
- test the efficacy of these SGPs when delivered as a brief intervention to people wanting to better control their expenditure on EGMs.

Methods

Stage 1 constituted a literature review assessing the level of research evidence for the effectiveness of self-regulatory strategies in minimising harmful gambling, and to inform the selection of SGPs evaluated in Stage 2.

Stage 2 involved conducting a survey of at-least monthly EGM players in NSW (*N* = 2,032) to identify a group of SGPs that best predict non-harmful gambling amongst frequent EGM players. It also assessed whether use of these SGPs differed by personal characteristics such as age, gender and problem gambling status. The survey was conducted between 24 November and 31 December 2020.

Stage 3 involved running a randomised controlled trial (RCT) to test the efficacy of the best performing SGPs in Stage 2 when delivered as a brief intervention. The sample comprised at-least monthly EGM players in NSW who responded ‘yes’ or ‘don’t know’ when asked if they would like to better control how much they spend on EGMs. In the first wave (*N* = 1,088) of the three-wave RCT (*N* = 725 at Wave 3), respondents were randomly allocated to one of 14 conditions, either one of the 13 SGP test conditions, or the control condition. Between the survey waves, conducted 4-weeks apart, the test group was sent a SMS reminder about their allocated SGP, while the control group received a ‘gamble responsibly’ message. The RCT was conducted between 29 May and 2 August 2021.

Analysis and results

Literature review

Twenty relevant studies were identified for the review. Most studies did not assess the use of SGPs for different types or modes of gambling, so the review also did not make these distinctions but instead included all relevant studies on the topic. The review found that people use a wide range of strategies to self-regulate their gambling. These have been grouped into strategies used to reduce or regain control over harmful gambling (behaviour change strategies), and those used to limit and stay in control of their gambling (protective behavioural strategies; Rodda et al.,

2019). There is considerable overlap between these two types of strategies, although people with higher problem gambling severity tend to adhere less to these strategies and to also use stronger avoidance, cognitive and help-seeking strategies which lower-risk gamblers are unlikely to need. While numerous studies have found associations between the use of self-regulatory strategies and gambling outcomes, the literature review found that the current strength of evidence supporting the efficacy of these strategies in reducing harmful gambling is low. No prior research has evaluated the impact of using strategies such as directly actionable safer gambling practices (SGPs) on time or money spent on gambling or consequent gambling harm.

Survey of regular NSW EGM players

A key measure in the survey was respondents' use of 45 SGPs in relation to their EGM gambling (e.g., 'I usually play low denomination pokies'). The principal analyses were constructed to identify what SGPs are most associated with non-harmful gambling outcomes. As a complication, however, people who have gambling harm are more likely to use strategies in order to mitigate their harm. Consequently, it is important to have a comparison group of unharmed people who are nevertheless 'matched' on known factors that expose them to risk for developing gambling harm. The analyses used propensity matching and weighting to identify a set of unharmed persons best matched to people who have experienced harm but are chosen to be at the same level of risk. By comparing these two risk-matched groups, the analyses could identify what SGPs were used with greater frequency by people in the unharmed group. A total of 17 SGPs with the strongest negative association with harm were selected for further analysis and as the basis for the RCT conducted in Stage 3. The sum of the number of these SGPs that were used was negatively associated with both gambling problems (r = -.18) and harm (r = -.09).

The mean number of the 17 effective SGPs used by the survey participants was 10.7 (*SD* = 4.06). There was no significant difference in the use of these practices by gender or EGM gambling frequency. Although older participants tended to use slightly more SGPs, this relationship was extremely weak. Participants whose highest spend was on EGMs used significantly fewer SGPs than those whose highest spend was on race betting, sports betting, scratch tickets and bingo.

RCT

For succinctness and to reduce some overlap, the 17 efficacious SGPs from Stage 2 were reduced to 13 SGPs for evaluation in the RCT.

Safer gambling practices evaluated in the RCT

Code	Safer gambling practice (SGP)
0	Gamble responsibly*
1	Cash out pokie winnings and do not use them later in the session
2	When you play the pokies, always set aside a fixed amount to spend
3	Make sure you take regular breaks every 30 minutes when you are playing the pokies
4	Make sure your leisure time is busy with other hobbies, social activities and/or sports
5	Only play low denomination pokies
6	Don't go and play the pokies just to avoid being bored
7	Only use pokies winnings for fun activities or purchases, and not to pay bills
8	Keep a household budget
9	Don't play the pokies just because your friends are gambling
10	If you're losing after 30 minutes of playing the pokies, quit
11	If you feel yourself getting too emotional when playing the pokies, take a break
12	When you play the pokies, always bet a fixed amount per spin
13	If you're not having fun playing the pokies, stop

* Control condition

A nested experimental design was employed, with the primary level being a comparison of exposure to each of the tested SGP messages (*N* = 733, codes 1-13) with a control message, 'gamble responsibly' (*N* = 355, code 0). Three outcome measures comprised expenditure on EGMs, time spent playing EGMs, and scores on the Short Gambling Harms Screen (SGHS; Browne et al., 2018) in relation to EGM play, with all three variables measured in relation to the last 4 weeks.

Significant decreases in EGM spend over time during the RCT period were observed for *assignment* to the following individual SGPs:

- SGP2: 'When you play the pokies, always set aside a fixed amount to spend'.
- SGP4: 'Make sure your leisure time is busy with other hobbies, social activities and/or sports'.
- SGP6: 'Don't go and play the pokies just to avoid being bored'.

When evaluating the effects of the frequency of reported *utilisation* of the assigned SGP, three SGPs had significant effects on one or more gambling outcomes:

- Frequency of using SGP4: 'Make sure your leisure time is busy with other hobbies, social activities and/or sports', was significantly related to better outcomes on EGM spend and EGM-related harms experienced.
- Frequency of using SGP3: 'Make sure you take regular breaks every 30 minutes when you are playing the pokies', was significantly associated with lower EGM spend.
- Frequency of using SGP8: 'Keep a household budget', was significantly associated with lower EGM-related harm.

Conclusions

The study's findings provide the first evidence from an experimental design to demonstrate that using SGPs results in safer gambling behaviours and outcomes. The analyses have identified a set of practices that can be more confidently recommended to gamblers. The study has moved SGPs past mere association with safer behaviours to a demonstration of positive effects when these practices are recommended to gamblers who subsequently implement them in their daily lives.

Limitations

The Stage 2 and 3 samples may not have been representative of the NSW population of regular EGM players. The analyses did not seek to establish prevalence of SGP use, so population representative samples were not needed. Stage 3 was subject to participant attrition (33.4% from Waves 1-3) which reduced power required for more detailed analyses, such as use of SGPs by socio-demographic characteristics and problem gambling status. Trials with larger samples are needed to conduct more detailed analyses and to confirm the current results, as well as examine outcomes from using different combinations of SGPs. A portion of the Wave 3 assessment period co-occurred with COVID-related lockdowns in some areas of NSW, which limited access to EGM venues. Nonetheless, the effects of lockdowns on the results should be minimal since they did not differ between test and control conditions.

Implications

This study identified five actionable SGPs associated with reductions in EGM spend and gambling harm during the RCT. These results provide arguably the best evidence to date of the efficacy of SGPs to result in beneficial gambling outcomes. Nonetheless, in line with good scientific practice, replication studies are needed to confirm the findings in different samples and jurisdictions, as well as assess gambling outcomes from SGP use over the medium and longer-term. Larger samples would also allow analyses of SGP uptake and their outcomes amongst different socio-demographic and gambler risk groups, as well as the efficacy of combinations of SGPs. The methodology could also be applied to SGP use for other gambling activities, such as wagering and casino gambling.

The five SGPs should be communicated to EGM players as safer gambling guidelines on government, industry and help service websites, in brochures and signage in gambling venues, on gambling websites and apps, and in public education materials. Where succinct guidelines are preferred, the five SPGs could constitute the entirety of the guidelines given their demonstrated efficacy in the current study. However, where longer guidelines are appropriate, all 13 SGPs tested in the RCT could be included, given their strongest negative association with gambling harm in the Stage 2 survey. The promoted SGPs can continue to be refined as further research in this area is completed.

The five SGPs can also be used as a 'call to action' in current safe gambling messages. The frequently used message to 'gamble responsibly' has attracted consumer skepticism for being stigmatising, superficial and lacking helpful advice.

The SGPs could add substance to safer gambling messages, e.g., ‘Help keep your gambling safe: always set aside a fixed amount to spend; ‘Help keep your gambling safe: take regular breaks every 30 minutes when playing the pokies’. The SGPs could also provide the basis for a consumer self-assessment tool that provides feedback, to encourage consumers to appraise, assess and self-regulate their gambling by using the promoted SGPs. The SGPs can inform community education activities conducted by governments, public health agencies and gambling help services to raise consumer awareness and use of the SGPs and educate concerned significant others to support people who gamble to implement the SGPs. The SGPs might assist treatment providers by identifying actionable strategies to help their clients make behavioural changes to reduce the harm from their gambling.

While certain SGPs were effective at reducing EGM spend and/or experiencing gambling harm, adherence to these practices does not guarantee that a person’s gambling will be free from harm. This is why this study has used the terminology ‘safer gambling practices’, rather than ‘safe gambling practices.’ Further, we acknowledge that these practices may be perceived as putting more responsibility on people who gamble to help minimise their harm. These practices are not intended to minimise the role of industry or governments in reducing gambling harm. Instead, they are intended to provide people who gamble with harm minimisation advice. As such, the SGPs are one ingredient in a broader public health approach to harm minimisation which relies upon the integration of a wide spectrum of initiatives addressing harm as experienced by people who gamble, their families and the community, including prevention, reduction and community awareness.

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Chapter 1. Introduction

A public health approach to gambling aims to minimise gambling-related harm across the population, including amongst those in non-problem, low risk, moderate risk and problem gambling categories. One widely implemented harm minimisation strategy is advice for consumers to use various safer gambling practices (SGPs). These constitute self-regulatory strategies to help people prevent or reduce harmful gambling behaviours and outcomes. However, currently promoted SGPs are inconsistent and have little research evidence supporting their efficacy (Bagot et al., 2021; Hing et al., 2016a). Some frequently promoted strategies have good face validity (e.g., don't chase your losses); however, others have conflicting research evidence for their effectiveness (e.g., don't gamble alone; Wood & Griffiths, 2015). Some promoted SGPs provide little actionable advice (e.g., ensure your gambling does not cause harm for yourself or others). Evidence-based, directly actionable practices are needed to advise consumers how to lower their risk of harmful gambling. Because electronic gaming machines (EGMs) are the source of most gambling problems and harm in New South Wales (NSW; Browne et al., 2020), this study focuses on SGPs for EGM play.

To address the above needs, this project aimed to:

- identify SGPs that best predict non-harmful gambling amongst EGM players who are most vulnerable to gambling-related harm; and
- test the efficacy of these SGPs when delivered as a brief intervention to people wanting to better control their expenditure on EGMs.

This chapter presents a literature review on self-regulatory strategies to minimise harmful gambling, conducted as Stage 1 of this study.

Key findings from Stage 1

- Gamblers use a wide range of strategies to self-regulate their gambling. These can be grouped into strategies used to reduce or regain control over harmful gambling (behaviour change strategies), and those used to limit and stay in control of gambling (protective behavioural strategies).
- Higher-risk gamblers wanting to curtail their gambling use many of the same strategies as lower-risk gamblers. However, higher-risk gamblers appear to be less likely than lower-risk gamblers to adhere to these strategies, particularly the critical strategy of limiting financial expenditure on gambling.
- Higher-risk gamblers tend to also use stronger avoidance, cognitive and help-seeking strategies which lower-risk gamblers are unlikely to need; whereas lower-risk gamblers appear more likely to use harm reduction strategies to assist the protective goal of controlling or limiting gambling.
- The current study focuses on protective behavioural strategies that can be used by EGM gamblers to prevent or reduce harmful EGM gambling. These strategies will likely be of most use to regular EGM gamblers who may be low or moderate risk gamblers. EGM gamblers meeting criteria for problem gambling are likely to need additional and stronger strategies, including professional help, to resolve their gambling problem.
- As evident from this literature review, the current strength of evidence supporting the efficacy of protective behavioural strategies such as SGPs in preventing harmful gambling is low. The current study helps to address this gap.

1.1. Methods for the literature review

In 2016, we conducted a systematic literature review to identify SGPs and any research assessing their efficacy (Hing et al., 2016a, 2018). Databases searched included: Cochrane Library, EconLit, Emerald, Informit, MEDLINE, ProQuest, PsycINFO, PubMed, Scopus, ScienceDirect, Web of Science and Wiley Online Library. All databases were searched using combinations of the search terms: *responsibl*, gambl*, self control, self limit*, self moderat*, self help, self regulat*, harm minimis*, harm reduc*, comsumption* and *protect*.* In addition, websites were searched for additional grey literature. No date range was applied to the search so it could be as comprehensive as possible. Only English language papers were reviewed.

The purpose of the current review was to complement, but not replicate, the 2016 systematic literature review in order to assess the level of evidence this body of research provides for the effectiveness of self-regulatory strategies in minimising harmful gambling. Unlike the 2016 review, the current review focused only on studies that examined a suite of strategies, since the focus of the current study was on the briefest most effective set of strategies that can inform safer gambling guidelines. Please see Hing et al. (2016a) for a review of individual actions gamblers take towards implementing each larger strategy (e.g., a strategy of adhering to self-set gambling limits might be achieved through actions including not taking bank cards to gambling venues, only carrying a limited amount of cash, arranging to meet

someone away from the venue at an appointed time to set a time limit on gambling). Key findings from the 2016 review included a comprehensive list of strategies and actions identified in that review, included as Appendix A (Hing et al., 2016a). The 2016 review also concluded that there was very little research evidence at that time to demonstrate the efficacy of these strategies and actions.

For the current review, we searched the literature for peer-reviewed and grey literature published since 2016, using the same search terms as previously. Due to changing terminology in the field, we added the following search terms: *behaviour/behavior change, protective behaviour*, positive play,* and *safe gambling*.

Overall, 20 relevant studies were identified for the current review. Nine of these focused on behaviour change strategies that individuals use to reduce or regain control over their gambling, and 11 studies focused on protective behavioural strategies used to limit gambling and stay in control. Most studies did not assess use of these strategies for different types or modes of gambling, so the current review also does not make these distinctions but instead included all relevant studies on the topic. After reviewing each study, we applied an established hierarchy of evidence framework to assess the strength of this body of evidence and to identify how various shortcomings might be improved upon in the current study.

1.2. Hierarchy of evidence framework

Several hierarchies have been developed to assess the level of evidence provided by different research designs based on the validity of their findings. No single framework is used across all fields, as these vary depending on the maturity and requirements of different areas of research. For example, medicine requires a high standard of evidence to determine evidence-based treatments, so frameworks focus on a hierarchy of evidence provided by randomised controlled trials (RCTs) – systematic reviews of RCTs (such as Cochrane Reviews) are the highest standard, while single RCTs are ranked lower. However, more expansive frameworks are suitable in areas where few, if any, RCTs have been conducted, to recognise other methodologies that can contribute to evidence (Evans, 2003). To accommodate the broader scope of research designs used to assess SGPs, this review included studies using any of the designs shown in Figure 1. It also assessed the overall rigour of this body of research, and how shortcomings can be addressed in future studies.

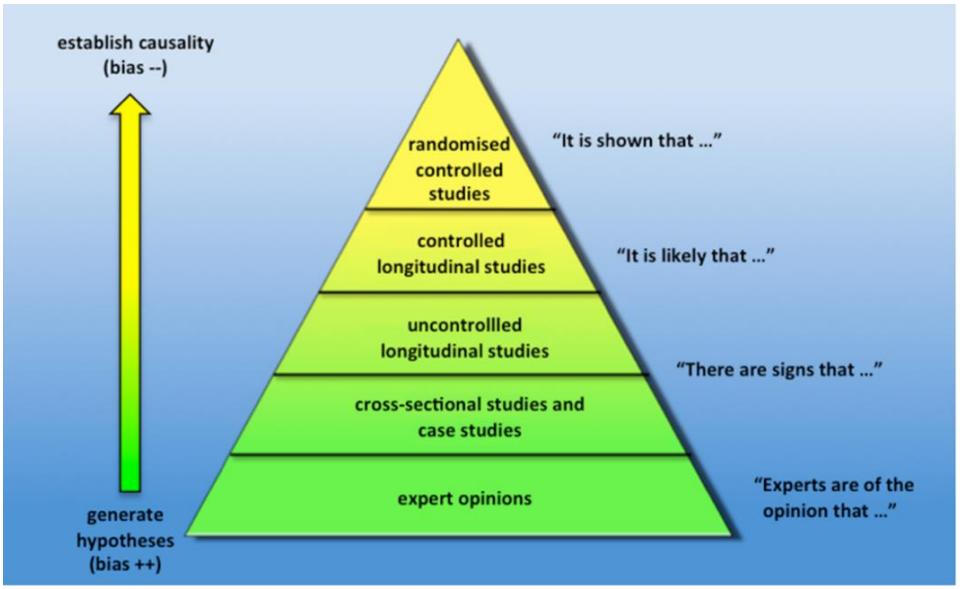

Figure 1 – Levels of evidence of research designs (Center for Evidence-Based Medicine, 2020)

1.3. Self-regulatory strategies for gambling

Studies into self-regulatory strategies used by gamblers can be grouped into those that have primarily focused on 1) behaviour change strategies that individuals use to reduce or regain control over their gambling, and 2) protective behavioural strategies that individuals use to limit their gambling and stay in control (Rodda et al., 2019). Studies into behaviour change strategies have focused mainly on people with a gambling problem, including those in treatment. Studies of protective behavioural strategies have typically focused on general community samples comprising gamblers across all risk groups. There is considerable overlap between the individual practices used in implementing these two types of strategies. However, these two bodies of research are reviewed separately below because they have yielded contrasting findings. Overall, research into behaviour change strategies has generally found they are used most by problem/higher risk gamblers. Conversely, research into protective behavioural strategies has found they are used more by non-problem/lower-risk gamblers to help keep their gambling free from harm.

1.3.1. Behaviour change strategies

An early study seeking to understand the process of recovery from gambling problems documented the actions used by 43 'resolved problem gamblers' to achieve their goal of gambling abstinence (Hodgins & El-Guebaly, 2000). Participants used 2.2 strategies on average from amongst the 12 categories of strategies identified in interviews. Nearly half the participants used stimulus control, involving limiting access to gambling venues and localities; and new activities such as exercise, reading, spending time with family, or becoming more involved in work. Approximately one-quarter of participants used treatment, such as professional help and self-help groups; cognitive strategies such as consciously thinking about the

consequences of gambling and benefits of quitting; and seeking social support from family and friends. Less used strategies were spiritual strategies, using will power and decision-making, limiting access to money, self-reward, and confessing to others.

Thomas et al. (2010) also examined the use of behaviour change strategies amongst gamblers, including their use by different gambler risk groups. Amongst their 43 focus group participants, approximately half met criteria for non-problem/low risk gambling, and half for problem/moderate risk gambling. Five main themes captured the strategies participants used to maintain control over their gambling. Setting limits was a very common strategy, but individuals with a gambling problem were less successful in adhering to their self-imposed monetary and time limits, and were more likely to re-gamble any winnings. Maintaining awareness involved being conscious that losses were more likely than wins when gambling, that gambling losses could pay for other expenses or purchases, and that excessive gambling has negative consequences. This strategy was used by lower-risk gamblers (in the non-problem/low risk group) and higher-risk gamblers (in the problem/moderate risk group), but those recovering from a gambling problem were most likely to reinforce this awareness by relating it to their personal experiences to guard against relapse. Gambling for social entertainment, rather than gambling alone or viewing gambling as a way to make money, was also a key strategy used by both lower-risk and higher-risk gamblers. Setting limits, maintaining awareness, and keeping gambling social were all that were generally needed by lower-risk gamblers to maintain control over their gambling. However, higher-risk gamblers required more powerful strategies. These included abstinence from gambling venues, replacing gambling with healthier alternative activities, and seeking formal and informal help for their gambling. Overall, the self-regulatory strategies used varied considerably and were found to increase in strength amongst higher-risk gamblers.

In a subsequent study, Thomas et al.'s (2010) strategies informed a 20-item instrument administered to a convenience sample of 238 'social gamblers', 63 'problem gamblers' and two unclassified participants (Moore et al., 2012). The study aimed to examine how individuals self-manage their gambling. The 20-items were factor-analysed to yield five subscales: cognitive approaches (trying to re-establish priorities around gambling), direct action (e.g., help-seeking), social experience (keeping gambling socially oriented), avoidance (of venues and the temptation to gamble), and limit setting (of time and money). The most frequently used strategies were focusing on non-gambling activities, keeping track of money spent, and setting limits on money gambled. Less frequently used strategies were setting a time limit on gambling, maintaining awareness of the negative consequences of gambling, and keeping a social perspective on gambling. Attempts to control gambling by getting professional help, destroying credit cards or self-excluding were much less common, as were avoidance strategies such as keeping credit cards at home, avoiding gambling venues, and asking friends to mind their money. The study found that participants with a gambling problem who were trying to reduce their gambling were the most likely to use the strategies, reflecting the inclusion of respondents recruited through gambling treatment services.

Some prevalence studies, with population representative samples, have asked respondents about the practices they use to reduce or contain their gambling. For

example, in a study conducted in Victoria Australia, Hare (2009) focused on respondents meeting criteria for at-risk and problem gambling, and the strategies they considered most useful in reducing their gambling. Strategies with the highest usefulness ratings included having more leisure interests, having a wider social network, having more money, finding a relationship partner, and information on the odds of winning, respectively. A prevalence study conducted in New Zealand (Abbott et al., 2014) asked respondents whether there is anything they do 'to stop themselves from spending too much money and/or time on gambling'. Around 30 per cent of gamblers used self-regulatory strategies, with most using only one strategy. The most widely used strategy was setting a money limit, used by 69 per cent of those who used any self-limiting method. Other methods used, although much less commonly, were separating betting money and stopping gambling when it was spent, avoiding gambling venues, setting a time limit, and leaving bank cards at home. As found in previous studies (Thomas et al., 2010; Moore et al., 2012), use of these practices increased with gambling risk: by 27 per cent of non-problem gamblers to 78 per cent of those in the problem gambling category. Higher risk groups were also more likely to use more than one method and to avoid gambling venues as a way of controlling their gambling. However, some strategies were reported as less effective by respondents with a gambling problem, specifically setting time and monetary limits, and separating their betting money.

A suite of studies by Rodda and colleagues has examined behaviour change strategies used by gamblers. One phase of a national study focused specifically on gamblers in treatment and analysed behaviour change strategies discussed in online counselling sessions with 149 clients of an Australian national online gambling help service (Rodda et al., 2017). Thematic analysis identified six change strategies. Cash control and financial management was the most frequently discussed strategy. Over half the clients also discussed seeking or receiving social support from family and friends to support them in their behaviour change. A little over one-third of clients discussed avoiding or limiting gambling, both in land-based venues and/or online gambling sites. A similar number of clients discussed undertaking alternative activities to gambling, such as household duties, hobbies, exercise, self-care and work. Nearly one-third of clients discussed changing thoughts and beliefs about the harmful consequences of problem gambling, how gambling works, and the benefits of behaviour change. Nearly one in seven clients discussed strategies involving self-assessment and self-monitoring, such as keeping track of gambling losses, identifying their motives and triggers for gambling, setting goals, and tracking gambling-free days. Another phase of the same study analysed 1,370 posts to two online forums for problem gambling (Rodda et al., 2018a). The findings pointed to the wide variety of strategies that individuals use to address a gambling problem, and also that different strategies are used at different stages of change, from pre-decisional to abstinence.

Based on results from the analyses of online counselling sessions and online posts to problem gambling forums (Rodda et al., 2017, 2018a), as well as an audit of strategies suggested on gambling help, government and gambling industry websites (Lubman et al., 2015), an inventory of 99 behaviour change strategies was developed (Rodda et al., 2018b). This was administered to a convenience sample of 489 people who had ever experienced a gambling problem, of whom 333 met criteria for past-year problem gambling on the PGSI (Rodda et al., 2018b). Respondents

were asked if they had ever used each strategy, and if so, to rate its helpfulness. A factor analysis identified 15 categories of behaviour change strategies: cognitive, well-being, consumption control, behavioural substitution, financial management, urge management, self-monitoring, information seeking, spiritual, avoidance, social support, exclusion, planning, feedback, and limit finances. While use of these strategies was not reported by PGSI group, those in the problem gambling group reported greater helpfulness of all strategy categories than lower risk gamblers, except for planning, limiting, finances, and consumption control for which no significant differences were found. The study concluded that most of the strategies reported as helpful by those with a gambling problem were also somewhat helpful for those at low and moderate risk, so they may be useful to promote to help prevent or reduce gambling harm across the community. In further analysis of this same dataset based on different subtypes of gamblers, those in the problem gambling group rated cognitive strategies as most helpful, such as reminding yourself of the consequences of gambling and accepting that their gambling needed to change. Non-problem gamblers reported the most helpful strategy was setting financial limits (Knaebe et al., 2019).

The preceding studies (Abbott et al., 2014; Hare, 2009; Moore et al., 2012; Rodda et al., 2017, 2018a, 2018b; Thomas et al., 2010) have provided useful insights into strategies that individuals use to reduce or regain control over their gambling, particularly amongst higher-risk gamblers. Their overall finding that higher-risk gamblers tend to use more strategies is not surprising, given that gambling problems are accompanied by strong urges and impaired control related to gambling. Accordingly, higher-risk gamblers have a greater need to adopt behavioural change strategies. They are also more likely to use avoidance and direct action strategies such as help-seeking, which lower-risk gamblers are unlikely to need. However, higher-risk gamblers appear to be less likely to adhere to these strategies, compared to lower-risk gamblers, particularly the critical strategy of limiting financial expenditure on gambling. Rodda et al. (2017) identified several issues discussed by 149 clients in online counselling sessions that could thwart their attempts to implement or maintain their behaviour change strategies.

1.3.2. Protective behavioural strategies

Several studies have focused on the use of protective behavioural strategies by different gambler risk groups in order to limit gambling, stay in control, and prevent harmful consequences from their gambling. As such, the focus has been on SGPs, and not only on behaviour change strategies that can be used to reduce harmful gambling.

Lostutter et al. (2014) examined the relationship between the use of protective behaviours for gambling, and gambling frequency, quantity and problem gambling severity. They developed and administered the Gambling Protective Behavior Scale to a convenience sample of 1,922 US college students who had gambled in the past six months. The 16-item scale consisted of two subscales: harm reduction strategies (nine items) to limit money or time spent gambling; and avoidance strategies (seven items) to avoid gambling venues or situations. The most frequently used harm reduction strategies were resisting the urge to return to a gambling venue to win

back losses, keeping track of money spent while gambling, leaving the venue before running out of money, planning their gambling to not interfere with work or study, and controlling bet size to not exceed a personal maximum. The most frequently used avoidance strategies were not taking bank cards to the venue, not drinking alcohol while gambling, and not gambling when feeling down or depressed. Use of protective behaviours was generally associated with lower-risk gambling outcomes, including lower gambling frequency, expenditure and PGSI scores. More specifically, use of harm reduction strategies was associated with lower gambling quantity and problem gambling severity, whereas use of avoidance strategies was associated with lower gambling frequency but not quantity or problem severity. Thus, avoidance strategies appear to align with a behaviour change goal of abstaining from gambling which is more pertinent for higher-risk gamblers; whereas harm reduction strategies assist the protective goal of controlling or limiting gambling which is relevant to a broader range of gamblers.

A study funded by the Victorian Responsible Gambling Foundation in Australia (Hing et al., 2017) focused on responsible gambling practices promoted by the Foundation. It aimed to determine how the use of these practices differed by gambler risk group, and to identify practices whose usage predicted non-problem/low risk gambling. The researchers conducted a cross-sectional survey of a self-selecting non-representative sample of 860 regular gamblers (who gambled at-least monthly on activities other than lotteries or scratch cards). Respondents were recruited in EGM venues (*n* = 639) and via emails sent to a sample of account holders with one online wagering operator (*n* = 201). Respondents were nearly evenly split across the four PGSI categories (23-27% in each category). Knowledge of the practices was reasonably high amongst both lower-risk and higher-risk gamblers, suggesting that this knowledge on its own is insufficient to ensure non-harmful gambling; although this knowledge may support changes in attitudes and behaviours, leading to the adoption of SGPs over time. Lower-risk gamblers were more likely to report using the practices. A logistic regression correctly predicted 82.1 per cent of lower-risk gamblers (non-problem/low risk) and 77.2 per cent of higher-risk gamblers (moderate risk/problem) based on their reported use of the promoted practices. Predictors of lower-risk gambling included: endorsement of lower gambling expenditure and frequency limits; fewer erroneous gambling beliefs; being less likely to gamble to win money, to challenge their skills, or to forget about worries and stresses; and being more likely to gamble for pleasure or entertainment. Lower-risk gamblers were more likely to set a money limit in advance of gambling and to balance their gambling with other activities.

A series of studies by Wood and colleagues, all sponsored by gambling industry operators or associations, have focused on ‘positive play’. In the first of these, Wood and Griffiths (2015) conducted a cross-sectional survey of a self-selecting, non-representative sample of UK National Lottery players, many of whom also gambled on other forms. The study had the broad aim of exploring the behaviours, attitudes and motivations of ‘positive players’. Based on responses to the 2-item Lie/Bet screen, 1,484 respondents showed no signs of at-risk or problem gambling (‘positive players’) and 209 answered yes to both items (‘problem players’). Positive players reported being more likely to: engage in several non-gambling leisure activities; work out what they could afford to spend and set expenditure and time limits before gambling; and take only a predetermined amount of money and not take bank cards

when going to gambling venues. Compared to ‘problem players’, they placed less importance on feeling excited and feeling relaxed to enjoy a gambling session, and were less likely to gamble when bored, depressed or upset, indicating they were less focused on gambling as a way to modify mood states. They were also less likely to gamble with friends and family, perhaps indicating that gambling was less embedded in their social networks.

Wood et al. (2017) then developed the Positive Play Scale, a self-report measure that aims to assess responsible gambling beliefs and behaviours amongst gamblers. The process involved generating a pool of ‘positive’ beliefs about gambling and ‘positive’ gambling behaviours, and testing and refining them in two self-selecting samples of lottery customers in one Canadian province. Factor analysis identified four subscales: honesty and control (how honest a player is with others about their gambling behaviour and feels in control of their behaviour); pre-commitment (the extent to which a player considers how much money and time they should spend gambling); personal responsibility (the extent to which a player believes they should take ownership of their gambling behaviour); and gambling literacy (the extent to which a player has an accurate understanding about the nature of gambling). Scores on the Positive Play Scale correlated negatively with disordered gambling and erroneous gambling beliefs.

In further development of this work, Wood et al. (2019) surveyed an online panel of 7,980 gamblers. Key findings included that gambling literacy was the lowest scoring subscale, followed by pre-commitment; scores on the subscales generally declined with age; and lotteries and scratch cards had a higher percentage of positive players based on all sub-scales (Wood et al., 2019). In a further publication based on this work, Tabri et al. (2020) replicated the four-factor structure of the scale. All four subscales were negatively correlated with measures of disordered gambling, erroneous gambling beliefs, impulsivity, being financially focused, and gambling motives.

The Positive Play Scale (Wood et al., 2017) has been used in other recent studies. Delfabbro et al. (2020) administered it to an online panel of 544 respondents recruited across several countries, but mainly North America (40%). Scores on three of the positive play subscales (honesty and control, pre-commitment and gambling literacy) were negatively related to PGSI score and to a 63-item measure of gambling harm; but scores on the personal responsibility subscale were positively related to PGSI and gambling harms scores. Tong et al. (2020) administered a Chinese version of the scale to a probability sample of 237 gamblers in Macau. All four subscales were negatively correlated with DSM-5 symptoms of gambling disorder, while the scale was positively associated with a one-item measure of responsible gambling self-efficacy which asked the extent to which the respondent thought they are able to practice responsible gambling. Overall, studies to date indicate that the Positive Play Scale has good psychometric properties. However, it aims to assess responsible gambling beliefs and behaviours amongst players, rather than provide a set of actionable practices that gamblers can adopt to keep their gambling safe.

Focusing on protective behavioural strategies that gamblers use in gambling venues, Rodda et al. (2019) developed the 30-item Gambling In-Venue Strategies Checklist to investigate strategies gamblers use to stick to their limits on EGMs. Participants

(*N* = 184) meeting the inclusion criteria of intending to set a limit and gambling on EGMs in the past four weeks, were recruited from 11 EGM venues in Victoria Australia. Four weeks after recruitment, 104 participants were asked which of the strategies in the Checklist they had used in the past 30 days in relation to their EGM gambling. Participants reported using an average of 14 strategies, with no significant differences by PGSI group. The most frequently used strategies, in order, were: to use only the money brought into the venue; only play low denomination poker machines; planned in advance the exact amount of money spent; and using willpower to stick to their money limit. When comparing lower-risk gamblers (non-problem/low risk) to higher-risk gamblers (problem/moderate risk), the lower-risk group was found to use seven strategies more frequently. These were: avoided chasing losses; set cues to keep track of time; used only the money brought into the venue; planned their spending in advance; and viewed gambling as entertainment. Higher-risk gamblers more frequently asked family or friends to look after cards or cash in the venue than lower-risk gamblers. A subsequent RCT by this team demonstrated the potential efficacy of a brief intervention to prompt safer gambling behaviour (Rodda et al., 2020). While the action and coping planning intervention deployed in EGM venues did not improve adherence to players' pre-determined expenditure limits post-intervention or at 30-day follow-up, it was associated with intention to spend less on EGMs in the 30 days after the intervention.

A study in Alberta Canada (Hing et al., 2019) surveyed a convenience sample of 1,174 regular gamblers, recruited through an online panel. The survey measured the respondents' use of 43 potential SGPs, gambling harms and numerous risk factors for harmful gambling. The inventory of 43 practices was based on formative work involving a literature review, content analysis of 30 gambling-related websites managed by governments, industry operators and gambling help services, and a survey of 107 experts in gambling research, treatment, training and policy (Hing et al., 2016a). The Canadian analysis first identified a subset of these gamblers (*n* = 577) who were vulnerable to gambling harm, based on 25 known risk factors for gambling problems (Browne et al., 2019). A second analytical step examined gambling harm scores and the use of SGPs in this subsample. Six practices best predicted non-harmful gambling: If I'm not having fun gambling, I stop; I keep a household budget; I have a dedicated budget to spend on gambling; My leisure time is busy with other hobbies, social activities and/or sports; If I'm feeling depressed or upset, I don't gamble; and When I gamble, I always set aside a fixed amount to spend. Three practices best predicted harmful gambling (and so should be avoided): I research systems or strategies for success at gambling; I use gambling to make money/supplement my income; and I have used cash advances on my credit card to gamble. The authors noted that, with further replication in other locations, these results can inform a brief set of effective practices to underpin safer gambling guidelines that gamblers can use to self-regulate their gambling. The current study builds on this research by 1) replicating the study amongst regular EGM gamblers in NSW, and 2) extending the study through an RCT component to test if the resulting SGPs result in behavioural change when delivered as a brief intervention.

1.4. Strength of current evidence and directions for future research

The studies reviewed above provide useful insights into the behavioural change strategies that people use to reduce or regain control over their gambling, and the protective behavioural strategies they use to control or limit their gambling. In seeking to develop an evidence-based set of SGPs, the current study focuses on protective behavioural strategies that prevent gamblers from experiencing harm from their gambling. The previous review of existing studies, and the generally low strength of evidence that this body of work currently provides, informs the current study by highlighting particular issues for consideration.

Based on the framework in Figure 1 (Center for Evidence-Based Medicine, 2020), the strength of evidence supporting the efficacy of both behaviour change strategies and protective behavioural strategies is currently low. This is due to a range of factors apparent from the studies reviewed above. All quantitative studies have been cross-sectional, enabling only correlational associations to be drawn between strategy use and gambler risk status. These cross-sectional studies, as well as interview studies, have identified a wide range of strategies used by gamblers, with some studies also using factor analysis to group these strategies (Moore et al., 2012; Rodda et al., 2018b). However, these designs do not establish any causation between use of certain strategies and effectively reducing or controlling gambling. Longitudinal and RCT studies are needed to improve the evidence in this area. The current study incorporates a RCT to better examine the efficacy of SGPs when delivered as a brief intervention.

Findings from this body of literature have also been obscured by conceptual overlap between behaviour change strategies and protective behavioural strategies. Drawing distinctions between the goals of these two types of strategies (Rodda et al., 2019) has helped to explain why conflicting results have been found in studies that have sought to determine whether lower-risk or higher-risk gamblers are more likely to use the strategies. Results obtained appear to depend on the strategies surveyed. Some strategies are likely to be used only by individuals with a gambling problem who are aiming to reduce their gambling, such as accepting that their gambling needs to change, asking others to look after their cards or cash when in a venue, avoiding gambling venues, and help-seeking (Abbott et al., 2014; Knaebe et al., 2019; Lostutter et al., 2014; Rodda et al., 2019; Thomas et al., 2010). Thus, whether lower-risk gamblers are likely to use more or fewer strategies than higher-risk gamblers depends on the set of strategies measured. Further, including strategies that are used only by people wanting to address a gambling problem is likely to obscure results because their use would correlate with higher-risk rather than lower-risk gambling.

Further, less frequent and lower-risk gamblers may not use some practices simply because they have no need to do so or may be less aware of them (Wood & Griffiths, 2015). This indicates the importance of restricting research samples to gamblers who are vulnerable to experiencing gambling harm, based on known risk factors, and then comparing the use of SGPs amongst those who either are, or are not, experiencing gambling harm (Hing et al., 2019). Otherwise, including gamblers not needing to use protective gambling strategies is likely to cloud the results.

Inconsistent results in this body of literature also appear to reflect the framing of questions. Studies focusing on behaviour change strategies have variously asked whether respondents use the strategies in 'limiting or reducing your gambling' (Rodda et al., 2018b), 'to avoid gambling too much' and 'to limit your gambling' (Moore et al., 2012), 'to reduce your gambling' (Hare, 2009), and 'to stop yourself from spending too much money and/or time on gambling' (Abbott et al., 2014). Studies focusing on protective behavioural strategies have asked which strategies respondents use to 'stay in control of your gambling' (Hing et al., 2017), 'to avoid spending more than intended' (Wood & Griffiths, 2015), or ask whether, or how often, the respondent has used the strategy (Hing et al., 2019; Lostutter et al., 2014; Wood et al., 2017). These variations indicate that care is needed in framing questions on strategy use. Neutral framing is desirable, such as simply asking whether respondents have used each strategy, without implying a particular intent.

Most of the studies reviewed were based on convenience samples, although some prevalence studies were reviewed that had population-representative samples (Abbott et al., 2014; Hare, 2009). Unfortunately, the prevalence study by Hare (2009) asked only higher-risk gamblers (problem/moderate risk) about their use of strategies, so no comparison with lower-risk groups was possible. Some quantitative studies also had quite small samples (e.g., Moore et al., 2012; Rodda et al., 2018b, 2019), which resulted in small subsamples in each PGSI group. In most studies, this necessitated combining non-problem and low risk gamblers, and comparing them with a combined problem/moderate risk gambler group. These combinations may have obscured differences in strategy use across the original four PGSI groups. These issues indicate the desirability of maximising the sample size and its representativeness where this is possible within a project's resources.

All studies were limited to self-report data, which may be subject to recall, social desirability, and other biases. However, overcoming this weakness is difficult given that many strategies cannot be objectively measured, and it is highly unlikely that this type of research could be conducted during live gambling sessions in venues. Recall bias can be minimised by asking about shorter timeframes, such as the last 30 days (Rodda et al., 2019).

The purpose of protective behavioural strategies is to minimise harm from gambling, but only two studies included a measure of gambling harm (Delfabbro et al., 2020; Hing et al., 2019). Measuring gambling harm as a key outcome variable is an important inclusion in future studies, if the efficacy of strategies in preventing harm is to be assessed.

1.5. Chapter summary

This chapter has built upon the 2016 systematic literature review (Hing et al., 2016a) by including 12 additional studies published since that time. These informed the methodological design and the suite of SGPs incorporated in the empirical stages of the current study. This chapter also extended upon the 2016 review by assessing the strength of evidence and directions for further research highlighted above.

The current review found that gamblers use a wide range of strategies to self-regulate their gambling. These can be grouped into strategies that individuals use to reduce or regain control over harmful gambling (behaviour change strategies), and those that individuals use to limit and stay in control of their gambling (protective behavioural strategies). Higher-risk gamblers wanting to curtail their gambling use many of the same strategies as lower-risk gamblers. However, higher-risk gamblers appear to be less likely than lower-risk gamblers to adhere to these strategies, particularly the critical strategy of limiting financial expenditure on gambling. Higher-risk gamblers tend to also use stronger avoidance, cognitive and help-seeking strategies which lower-risk gamblers are unlikely to need; whereas lower-risk gamblers appear more likely to use harm reduction strategies to assist the protective goal of controlling or limiting gambling.

The current study is focused on protective behavioural strategies that can be used by EGM gamblers to prevent or reduce harmful EGM gambling. These strategies will likely be of most use to regular EGM gamblers who may be low or moderate risk gamblers. EGM gamblers meeting criteria for problem gambling are likely to need additional and stronger strategies, including professional help, to resolve their gambling problem.

As evident from this literature review, the current strength of evidence supporting the efficacy of protective behavioural strategies such as SGPs in preventing harmful gambling is low. The current study helped to address this gap. It conducted 1) survey research to identify SGPs that best predict non-harmful gambling amongst players most vulnerable to gambling-related harm and 2) a RCT to test the efficacy of these practices when delivered as a brief intervention to people wanting to better control their EGM expenditure. The methods and results for these two empirical stages of research are presented in the next two chapters.

Chapter 2. Survey of regular EGM players

Key findings from Stage 2

- A survey of at-least monthly NSW EGM players (*N* = 2,032) was conducted to identify a group of safe gambling practices (SGPs) that best predicted non-harmful gambling amongst frequent EGM players and to assess whether their use differed by gambler characteristics such as age, gender and problem gambling status.
- The analyses used propensity matching and weighting to identify a set of unharmed persons best matched to people who have experienced harm but are chosen to be at the same level of risk. By comparing these two risk-matched groups, the analyses could identify what SGPs were used in greater frequency by people in the unharmed group.
- A total of 17 SGPs with the strongest negative association with harm were selected for further analysis and as the basis for the RCT conducted in Stage 3. Respondents who used more of these 17 SGPs were less likely to be in the moderate-risk or problem gambling categories of the PGSI (r = -.18) and had lower scores on the Short Gambling Harms Screen (r = -.09).
- On average, respondents used 10.7 of the 17 effective SGPs. There was no significant difference in the use of these SGPs by gender or EGM gambling frequency. Although older participants tended to use slightly more SGPs, this relationship was extremely weak. Participants whose highest gambling spend was on EGMs used significantly fewer SGPs than those whose highest spend was on race betting, sports betting, scratch tickets and bingo.

This chapter summarises the methods and results from a survey of regular (at-least monthly) EGM players residing in NSW conducted in Stage 2 of this study. Its purpose was to:

- identify SGPs that best predict non-harmful gambling amongst EGM players who are most vulnerable to gambling-related harm; and
- examine whether their use differs by gambler characteristics.

2.1. Methods for the survey

This stage of the study was approved by CQU Human Research Ethics Committee (approval number 22741).

2.2.1. Recruitment and inclusion criteria

Potential participants were recruited through an online panel aggregator, Qualtrics. Qualtrics recruits participants from numerous panels across Australia, and conducts

quality checks to ensure that respondents can complete each survey only once. Recruitment was conducted between 24 November and 31 December 2020.

Potential participants were sent an email with a link to the online survey. Those who clicked on the link were shown a brief participant information summary, with an option to read the full participant information sheet containing more details about the study. This information sheet explained the nature of the questions in the survey, that confidentiality would be protected and that respondents were free to withdraw at any time. Contact details for the researchers and CQU Ethics Office were provided. Contact details for the Gambling Helpline, Gambling Help Online, and Lifeline were also provided with advice that these services are available 24 hours a day 7 days a week and are free and confidential. Participants were then asked to indicate their informed consent to participate in the study.

Inclusion criteria for survey respondents were that they: consented to take part in the study; lived in NSW; were aged 18 years or older; agreed to provide accurate and thoughtful answers; and gambled on EGMs at least monthly. Participants who did not meet these criteria, assessed in initial screening questions, were thanked for their time and exited the survey.

Data quality checks were conducted. To satisfy inclusion for analysis, responses needed to pass an attention check and not exhibit straight-lining through questions. Of the 2,053 respondents who completed the survey fully, 21 were removed for failing quality checks, leaving 2,032 participants for analysis.

2.2.2. Survey sections and measures

The survey questionnaire is provided in Appendix B. It contained the following measures.

Screening questions: These comprised: whether the participant lives in NSW; age in years; how often they gamble for money on EGMs, scratch tickets, sports betting, race betting, keno, bingo, casino table games, esports, fantasy sports, and private betting.

Safer gambling practices (SGPs). Respondents were asked whether they agree or disagree that they use each of 45 SGPs in relation to their EGM gambling (e.g., ‘I usually play low denomination pokies’; ‘If I’m not having fun playing the pokies, I stop’). The SGPs were distilled from our previous research which compiled a comprehensive list of all SGPs promoted to gamblers (Hing, 2016). To compile this list, we conducted: a systematic literature review; analysis of gambling help, public health, and gambling operator websites; and a survey of 105 gambling researchers, treatment providers and policymakers; all of which spanned Australian and international sources (Hing et al., 2016a). These SGPs were effectively operationalised for research in Canada (Hing et al., 2017). For the current study, we further refined the set of SGPs based on recent research (Rodda et al., 2018b, 2019). The SGPs are listed in Table 1.

Gambling behaviour: Participants were asked about the activity they spent the most money on in the previous 12 months, the distance to the nearest pub, club or casino,

and the distance to the venue where they usually played EGMs. Participants were asked how often they played EGMs alone, and how many of their friends regularly played EGMs.

Childhood exposure to gambling. Participants were asked their age when they first gambled for money. They were also asked when they were growing up how often any adults in their household gambled, how often they gambled with their parents or accompanied them when they gambled, and whether any adults in the household had a gambling problem.

Health: Participants were asked about their alcohol and tobacco consumption, and whether they had a diagnosed health condition. They were also asked if they had a gambling problem within the past two years, and before this time.

Kessler Psychological Distress Scale – Brief (K6; Kessler et al., 2010). The K6 is a 6-item measure of psychological distress over the past 30 days (e.g., 'During the last 30 days, how often did you feel nervous?'). Responses are measured on a 5-point scale from 'none of the time' = 1 to 'all of the time' = 5. Higher total scores indicate greater psychological distress.

Problem Gambling Severity Index (PGSI; Ferris & Wynne, 2001). The PGSI was administered to all respondents, using the validated response options and scoring of 'never' = 0, 'sometimes' = 1, 'most of the time' = 2, and 'almost always' = 3. Responses were summed to identify a total PGSI score for each participant. The analysis also used the PGSI's validated cut-off scores and categories. These comprised ‘non-problem gambler’ = 0, ‘low-risk gambler’ = 1-2, ‘moderate-risk gambler’ = 3-7, and ‘problem gambler’ = 8-27.

Gambling Outcomes Expectancies Scale (GOES; Flack & Morris, 2015). The GOES assesses people's reasons or motivations to gamble, and includes five domains of gambling motivation (social, money, excitement, escape, ego enhancement). Participants are asked to rate, on a 6-point scale from 'strongly disagree' = 1 to 'strongly agree' = 7, their agreement/disagreement with 18 statements. These statements include gambling: 'is a rush', 'helps release tension' and 'is a way to meet new people'. Scores are summed and higher scores in each domain are indicative of greater strength of motivations.

Gambling Urge Scale (GUS; Raylu & Oei, 2004). The GUS is a six-item scale measuring an individual's gambling urges. Participants rate different thoughts and feelings about gambling urges (e.g., ‘I crave a gamble right now’), on a 7-point scale from ‘strongly disagree' = 1 to 'strongly agree' = 7. Higher scores reflect stronger urges.

Gambling Fallacies Measure (GFM; Wood & Williams, 2009). The GFM is a 10-item scale which examines cognitive errors associated with gambling. For example, 'A gambler goes to the casino and wins 75 per cent of the time. How many times has he or she likely gone to the casino? – 4 times / 100 times / it is just as likely that he has gone either 4 or 100 times'. Correct responses are coded as 1 and higher scores are associated with greater resistance to gambling fallacies.

Brief Perceived Social Support Scale (BPSS; Kliem et al., 2015). The BPSS evaluates a range of social resources to measure perceived social support. The measure contains six items (e.g., 'There is someone very close to me whose help I can always count on') measured on a 5-point scale from 'does not apply' = 1 to 'exactly applies' = 5. Higher scores indicate greater perceived social support.

Spirituality. Respondents were asked how important religion or spirituality is in their life (‘not at all important’ = 1, ‘extremely important’ = 5).

Barratt Impulsivity Scale – Brief (BIS-B; Steinberg et al., 2013). The BIS-B measures levels of impulsiveness. Its eight items (e.g., 'I don't pay attention') are measured on a 4-point scale from 'rarely/never' = 1 to 'almost always/always' = 4. Some questions are reverse-scored, with higher total scores indicating greater impulsiveness.

Short Gambling Harms Screen (SGHS; Browne et al. 2018). The SGHS is a validated and reliable measure of gambling-related harm. The 10-item SGHS was administered to all respondents, who were asked if, over the last 12 months, they had experienced any of 10 harms as a result of their EGM gambling. Participants were required to answer yes or no.

Unimpeachable Gambling Harms Scale: (UGHS; Murray-Boyle et al., 2021). The UGHS measures 10 relatively severe gambling-related harms. Respondents were asked to answer either 'yes' or 'no' to questions that probed potential harms due to their EGM gambling over the past 12 months (e.g., 'late payment on bills'). Whilst the SGHS has excellent statistical properties, it does include some items that describe outcomes that are arguably minor or even inconsequential. Items comprising the UGHS were included to supplement the other harms items with further probes that were uncontrovertibly harmful and serious. Despite focusing on a more severe range of outcomes than the SGHS, the UGHS captures the same underlying dimension of harm, and possesses similarly strong psychometric properties (Murray-Boyle et al, 2021). The SGHS and the UGHS were combined to form the Gambling Harms Scale (GHS) used in later analyses in this chapter.

Demographics. Participants reported their gender, age, the state or territory in which they mainly reside, country of birth, Aboriginal or Torres Strait Islander status, current marital status, current living arrangement, highest level of education, current employment situation, the language they mainly speak at home, and estimated household annual pre-tax income.

2.2.3. Data analysis

The analyses are presented in two parts: descriptive statistics of the sample (demographic characteristics, gambling problems and harms, risk factors, and SGPs) and the results of the inferential data analysis. Below we describe the process by which SGPs were identified as associated with a decreased rate of harm.

Individuals experiencing gambling problems and gambling-related harm are likely to employ SGPs to improve upon their outcomes. This self-selection in using SGPs complicates a simple analysis to identify which SGPs may be effective in reducing harm. Some of the worst affected gamblers are likely to employ some good practices

that are nevertheless not 100 per cent effective. To address this confounding issue, the data analyses employed a propensity matching approach. The purpose of propensity matching is to create two matched groups of persons, with weighting as described below, that are either harmed or not harmed by gambling. Critically, after selection and weighting, both groups have an equal chance (or propensity) for being harmed by gambling based on known risk factors, including having parents with gambling problems, frequency of EGM play, playing EGMs alone, gambling urges, gambling fallacies, impulsivity, and spirituality (Browne et al., 2019). SGPs that are more frequently used by the unharmed group of persons can thus more confidently be attributed to the use of such practices, since the propensity matching has controlled (by degrees) for the issue that some people 'at risk' are more likely to use a variety of SGPs out of need.

As a first step in the analyses, participants were matched one-to-one across both groups according to their propensity to develop gambling problems (i.e., the predicted probabilities for their risk for being harmed by gambling). People who could not be matched were discarded. For instance, unharmed persons who were identified as low-risk, and who could not be matched to another harmed person similarly identified as being at low-risk (since these are rare), were eliminated from the analyses. Elimination of unmatched cases is common in propensity matching (Leite, 2016), and in this case it ensured that the groups being compared were as similar as possible on propensity to develop gambling problems. After this step, however, the unharmed group still had a lower overall propensity for being harmed by gambling relative to the harmed group. Discarding unmatched cases cannot eliminate all risk discrepancies between the two groups.

In the second step, cases were weighted inversely with respect to their propensity for risk of gambling harm; in the case of harmed gamblers 1/(p), and for unharmed gamblers 1/(1-p). For example, an unharmed gambler whose behaviour and traits led us to expect them to be at relatively high risk of gambling harm were up-weighted; that is, counted as representing more than one person for the purposes of subsequent analyses. Similarly, a harmed gambler whose behaviour and traits indicated a relatively low-risk was down-weighted; making them count for less than one person in the analyses. This weighting acts to make the two groups equivalent in terms of known risk factors, removing the effect of these confounding variables, and made them more directly comparable when evaluating the effects of SGPs. In our analysis, after matching and weighting, we evaluated SGPs by a simple comparison of their prevalence among (weighted) harmed and unharmed gamblers. In short, SGPs that are used more frequently by the unharmed group, inclusive of weighting, are inferred to be effective at preventing gambling-related harm.

Following the identification of the most efficacious SGPs, secondary analysis was used to assess whether the use of those SGPs differed by gambler characteristics. A total SGP score for each participant was calculated by summing each of the endorsed SGPs. Higher scores were associated with respondents who used a greater number of protective SGPs. Non-parametric tests examined the relationships between SGP scores and the predictors. The relationship between gender and SGP scores was examined using a Mann-Whitney U test. Spearman's correlation examined age and SGP score. Kruskall-Wallis tests examined the relationship between SGP scores and EGM gambling frequency as well as highest spend

gambling activity. Where the Kruskall-Wallis tests were significant, post-hoc tests were conducted using pairwise comparisons using Dunn's procedure with Bonferroni correction.

2.3. Sample characteristics

Characteristics of the sample are summarised below, with the details presented in Appendix C.

The sample comprised 59.7 per cent males and 40.3 per cent females and ranged in age from 18 to 87 years (*m* = 41.1 years). Most participants were married or living with a partner (59.4%), had completed a university degree (57.3%), and had full-time employment (55.1%), with a median household income of $78,000-$90,999.

Reflecting the survey inclusion criteria of at-least monthly EGM gambling, more than half the sample scored in the either moderate-risk (18.9%) or problem gambling (40.3%) categories of the PGSI. The mean number of harms reported from the Short Gambling Harms Screen (SGHS) was 3.14, with the most common harms being having regrets about gambling (38.8%), a reduction of spending money (38.1%) and savings (37.0%) and spending less on recreational activities (36.1%). The most common 'unimpeachable harms,' which comprise a class of more severe harms apart from the SGHS, included: feelings of worthlessness (29.5%), social isolation (28.9%) and feeling insecure or vulnerable (26.5%).

Over half the participants bet on EGMs at least weekly (55.7%) and EGM gambling was the highest spend gambling activity for 35.5 per cent of participants, followed by sports betting (22.1%) and race betting (13.5%). The majority (64.1%) of the sample lived within 5km of their nearest EGM venue.

Three-quarters of the sample recalled adults in their household gambling when they were growing up (74.6%), and around one-third (34.3%) felt their parents had a gambling problem at this time.

The Gambling Outcome Expectancy Scale indicated the participants' strongest motivators for gambling were escape (*m* = 18.53) and social factors (*m* = 18.15). The Gambling Fallacies Measure showed the sample had lower levels of resistance to gambling fallacies (*m* = 6.06) than general population samples, consistent with the high proportion of problem and moderate risk gamblers in this sample. The mean Gambling Urge Scale score was 19.4, with a possible range from 6 to 42, with higher scores representing stronger urges.

Around half of the participants (47.5%) rated religion or spirituality as moderately to extremely important in their lives. The participants' reported lower perceived social support on the Brief Perceived Social Support Scale (*m* = 21.36) than found in the general population. The Barratt Impulsivity Scale mean score was 17.3, with possible scores ranging from 8 to 32 and higher scores indicating greater impulsiveness.

Just under one-quarter of the sample (23.9%) typically drank six or more alcoholic drinks in a session at least weekly, while 45.1 per cent used tobacco products. More than half (52.3%) showed elevated levels of psychological distress.

2.4. Results

This section presents the results for the use of SGPs in the sample and the identification of the most efficacious SGPs. Secondary analysis was also conducted to assess how widely the most efficacious SGPs were used by the participants, and how this use differed by personal characteristics.

2.4.1. Use of SGPs

The most practised SGPs were 'I usually play low denomination pokies' (73.1%), 'When I have a large win on the pokies, it is time for me to quit' (72.6%), and 'I keep a household budget' (70.9%; Table 1). The SGPs which were the least endorsed in this sample were 'I have used cash advances on my credit card to play the pokies' (33.4%), 'I have lowered my limit for ATM cash withdrawals' (37.0%), and 'I usually give pokie winnings to someone else, such as my partner or friend while gambling' (37.4%), and ‘I usually give my cash or cards to family or friends to limit my access’ (37.4%).

Table 1 – Proportion of the sample who endorsed each SGP

	Proportion of sample who agree	
Please indicate whether you disagree or agree with each of the following statements in relation to your gambling:	**n**	**%**
I usually play low denomination pokies	1,485	73.1
When I have a large win on the pokies, it is time for me to quit	1,476	72.6
I keep a household budget	1,441	70.9
If I’m not having fun playing the pokies, I stop	1,430	70.4
When I play the pokies, I always set aside a fixed amount to spend	1,405	69.1
If I'm losing after an hour (or 1/2 hour, 2 hours, etc.) of playing the pokies, my rule is to quit	1,333	65.6
When I feel myself getting too emotional playing the pokies, I take a break	1,329	65.4
My leisure time is busy with other hobbies, social activities and/or sports	1,324	65.2
I restrict myself to playing the pokies only on one or two days a week, or less often	1,309	64.4
As a rule, I don't go and play the pokies just to avoid being bored	1,264	62.2
I usually cash out pokie winnings and do not use them later in the session	1,254	61.7
I only use pokies winnings for fun activities or purchases	1,243	61.2
I have a dedicated budget to spend on the pokies	1,238	60.9
When I play the pokies, I always bet a fixed amount per spin	1,187	58.4
I don't play the pokies just because my friends are gambling	1,150	56.6

I make sure I take regular breaks (at 30min, 1 hour, etc.) when playing the pokies	1,095	53.9
Before I play the pokies, I make a point to think about how I will feel if I lose the money	1,091	53.7
I play free games to help limit my pokie playing	1,091	53.7
Before I play the pokies, I make a point to think about what else I could do with the money	1,086	53.4
I don't play the pokies when I have consumed alcohol or drugs	1,063	52.3
I don't use pokie winnings to pay bills	1,061	52.2
I keep a record of how much I spend on the pokies	1,046	51.5
I don't play the pokies with friends who like higher stakes than I do	1,018	50.1
I usually schedule other activities after playing pokies to limit session times	1,018	50.1
I deliberately ignore or don't read pokies advertisements or promotions	1,005	49.5
When I play the pokies, I only gamble on my favourite machine	989	48.7
If I'm feeling depressed or upset, I don't play the pokies	980	48.2
I make a point of thinking about my family when I play the pokies	971	47.8
Before I play the pokies, I make a point to think about how long it took me to save the money	956	47.0
I always read the information screen on the pokies before I play	925	45.5
I have a rule that I only play the pokies for an hour (or 1/2 hour, etc.) at a time	921	45.3
I prepurchase goods and/or prepay bills to reduce spare cash	908	44.7
I have set up a spending limit on my membership or loyalty cards at my pokie venue(s)	903	44.4
I restrict myself to playing pokies only in the evenings	872	42.9
I always leave my bank cards at home when I play the pokies at venues	870	42.8
I look at the odds of winning on the pokies before I play	847	41.7
I often talk about the pokies with my friends and/or family	815	40.1
I won't go out with friends if I think that they will encourage me to play the pokies	795	39.1
I play the pokies to make money / supplement my income	778	38.3
I have a rule that I don't go and play the pokies alone	766	37.7
I research systems or strategies for success on the pokies	763	37.5
I usually give my cash or cards to family or friends to limit my access	760	37.4
I usually give pokie winnings to someone else, such as my partner or friend while gambling	759	37.4
I have lowered my limit for ATM cash withdrawals	751	37.0
I have used cash advances on my credit card to play the pokies	679	33.4

Questions: 50-53 (in the survey, Appendix B)

2.4.2. Identification of the most efficacious SGPs

As discussed earlier, our first step in this analysis was to construct a propensity model of the likelihood of participants experiencing harm. Because the PSM framework requires two defined groups, we implemented a 0-2 versus 3+ categorisation based on the combined Gambling Harm Scale (GHS). This threshold

is based on current work in our laboratory that suggests that SGHS scores above 2 are associated with a considerable decrement to health and wellbeing. In the original description of the SGHS (Browne et al, 2018), as well as subsequent evaluations (Murray-Boyle et al, 2021), the measure was shown to be associated with regular decrements to wellbeing for all positive scores. A more recent larger scale assessment employed propensity score weighting and controlled for comorbidities (Browne et al, 2020). Scores 1-2 showed a small but statistically significant to health utility. However, scores 3+ showed both a significant difference, and clinically meaningful effect size.

Table 2 provides a summary of the identified 'known' risk factors based on a logistic regression. All effects were significantly associated with the probability of being significantly harmed by EGM play, with parents with gambling problems and playing EGMs alone being the largest risk factors.

Table 2 – Risk factors for experiencing significant harms

	B	SE(B)
Risk factor		
Parents with gambling problems	.72*	.10
Frequency of EGM play	.23*	.05
Playing EGMs alone	.31*	.06
Gambling urges	.06*	.01
Gambling fallacies	.11*	.03
Impulsivity	.20*	.02
Spirituality	.20*	.05
Constant	-7.6*	.47
Null deviance: 2815.9, residual deviance: 1913.1, * $p < .01$		

Note: Unstandardised coefficients

Case matching based on the predicted probabilities was then applied to the 2,032 cases, across the not-harmed (technically less harmed) and more harmed groups, leading to 148 unmatched cases, and a total of 942 matched cases or persons in each group. After matching, weighting was applied to each person to equalise propensity scores across the two groups, where harmed gamblers' propensities were down-weighted and unharmed gamblers were up-weighted (as described in more detail earlier). Lastly, a weighted average frequency in the use of each SGP was calculated in each group, and the difference between use by harmed and unharmed gamblers was calculated. This difference (larger means a stronger association with avoiding harm) was then used to rank and evaluate the SGPs. Table 3 summarises all 17 SGPs that were associated with decreased harm, after matching and weighting to control for propensity to experience harms. The differential P scores in Table 3 describe the difference in the probability that a SGP would be employed by an unharmed gambler, as opposed to a harmed gambler. This heuristic can be used to capture the association between SGP use and the avoidance of harm.

Table 3 – Propensity model of experiencing significant harms

	Safer Gambling Practice	P(use by unharmed) – P(use by harmed)
1.	I usually cash out large pokie winnings and do not use them later in the session	0.080365447
2.	When I play the pokies, I always set aside a fixed amount to spend	0.064569413
3.	I make sure I take regular breaks (at 30min, 1 hour, etc.) when playing the pokies	0.062808615
4.	My leisure time is busy with other hobbies, social activities and/or sports	0.058719524
5.	I usually play low denomination pokies	0.047357401
6.	As a rule, I don't go and play the pokies just to avoid being bored	0.033555601
7.	I only use pokies winnings for fun activities or purchases	0.029636513
8.	I keep a household budget	0.022212198
9.	I don't play the pokies just because my friends are gambling	0.021407019
10.	I don't use pokie winnings to pay bills	0.020623388
11.	When I have a large win on the pokies, it is time for me to quit	0.016793672
12.	If I'm losing after an hour (or 1/2 hour, 2 hours, etc.) of playing the pokies, my rule is to quit	0.013030408
13.	When I feel myself getting too emotional playing the pokies, I take a break	0.012345407
14.	I have a rule that I only play the pokies for an hour (or 1/2 hour, etc.) at a time	0.010869709
15.	I have a dedicated budget to spend on the pokies	0.010421583
16.	When I play the pokies, I always bet a fixed amount per spin	0.008597673
17.	If I'm not having fun playing the pokies, I stop	0.002973718

2.4.3. Use of the most efficacious SGPs by personal characteristics

This analysis aimed to explore the use of the most efficacious SGPs, and how this might differ by age, gender, PGSI, and EGM gambling expenditure and frequency.

Participants ranged from using all 17 SGPs to none, with a mean score of 10.65 (*SD* = 4.06). There was no significant difference between the number of SGPs used between males (*m* = 10.60, SD= 4.12) and females (*m* = 10.71, SD= 3.96); *U* = 501297.50, *z* = .401, *p* = .689. There was a significant but negligible strength positive relationship between age and number of SGPs used (*r* = .073, *p* = .001), with older participants tending to use more SGPs. There were no significant differences in the mean SGP scores for EGM gambling frequency, *H*(4) = 8.27, p = .082 (Table 4). The number of identified SGPs used was associated with a significantly lower likelihood of being in the moderate-risk or problem gambling categories of the PGSI, *r* = -.18, p < 0.01.

The highest spend gambling activity associated with the lowest use of SGPs was EGMs (9.79), followed by casino table games (10.33; Table 5). The highest spend activity associated with most use of SGP practices was bingo (11.85). There was a significant difference between SGP score and highest spend gambling activity, $H(9) = 45.05$, $p < .001$. Post-hoc analysis revealed significant differences between highest spend on EGMs and on the following activities: race betting ($p < .001$), sports betting ($p < .001$), scratch tickets ($p < .001$) and bingo ($p = .002$). Participants whose highest spend was on EGMs used significantly fewer SGPs than those whose highest spend was on race betting, sports betting, scratch tickets or bingo. Additionally, participants whose highest spend was on casino table games used significantly fewer SGPs than those whose highest spend was on bingo ($p = .027$). No significant differences were found between any other combination of activities; however, this may be due to small sample sizes for some activities.

Table 4 – SGP scores by frequency of EGM use

	N	SGP Score
Frequency of EGM use		Mean
Once a month	442	11.02
2-3 times a month	459	10.83
Once a week	535	10.34
2-3 times a week	432	10.55
4 or more times a week	164	10.40

Table 5 – SGP scores by highest spend activity

		SGPs Score
		Mean
EGMs	695	9.79
Casino table games	79	10.33
Fantasy sports betting	21	11.00
Informal betting	26	11.04
Race betting	264	11.06
Sports betting	433	11.20
Scratch tickets	253	11.26
Esports	59	11.27
Keno	59	11.41
Bingo	68	11.85

2.5. Chapter summary

A survey of regular NSW EGM players ($N = 2,032$) was conducted to identify a group of SGPs that best predicted non-harmful gambling amongst frequent EGM players and to assess whether their use differed by gambler characteristics such as age, gender and problem gambling status.

It is important to note that the sample may not be representative of the NSW population of regular EGM players. The sampling method was specifically designed to recruit sufficient ‘harmed’ and ‘unharmed’ EGM players to enable the required analyses. These analyses were based on comparisons between ‘harmed’ and

‘unharmed’ EGM players and did not seek to establish prevalence rates, so a population representative sample was not needed.

The principal analyses were constructed to identify what SGPs are most associated with non-harmful gambling outcomes. As a complication, however, people who have gambling harm are more likely to use strategies in order to mitigate their harm. Consequently, it is important to have a comparison group of unharmed people who are nevertheless ‘matched’ on known factors that expose them to risk for developing gambling harm. The analyses used propensity matching and weighting to identify a set of unharmed persons best matched to people who have experienced harm but are chosen to be at the same level of risk. By comparing these two risk-matched groups, the analyses could identify what SGPs were used in greater frequency by people in the unharmed group.

The propensity of participants to be significantly harmed (>2 gambling harms) was modelled based on known risk factors. The risk model included: having parents with gambling problems, frequency of EGM play, playing EGMs alone, gambling urges, gambling fallacies, impulsivity, and spirituality. The propensity model was then used to exclude unmatched cases, and to derive case weights, to match the harmed/unharmed groups (both N = 942) with respect to these risk factors. SGPs were then evaluated based on their use in the unharmed group, relative to the harmed group. A total of 17 SGPs with the strongest negative association with harm were selected for further analysis and as the basis for the RCT conducted in the next stage of the study. The number of SGPs used in this group was negatively associated with gambling problems (r = -.18) and harm (r = -.09).

The mean number of these 17 effective SGPs used by participants was 10.7 (SD = 4.06). There was no significant difference in use of these practices by gender or EGM gambling frequency. Although older participants tended to use slightly more SGPs, this relationship was extremely weak. Participants whose highest gambling spend was on EGMs used significantly fewer SGPs than those whose highest spend was on race betting, sports betting, scratch tickets and bingo.

Chapter 3. Randomised controlled trial

Key findings from Stage 3

Stage 3 conducted a three-wave RCT to test the efficacy of 13 SGPs when delivered as a brief intervention to people wanting to reduce harmful EGM play. Outcome measures comprised expenditure on EGMs, time spent playing EGMs, and scores on the SGHS in relation to their EGM play, with all three variables measured in relation to the last 4 weeks.

Significant decreases in EGM spend over time were observed for *assignment* to the following SGPs:

- SGP2: 'When you play the pokies, always set aside a fixed amount to spend'.
- SGP4: 'Make sure your leisure time is busy with other hobbies, social activities and/or sports'.
- SGP6: 'Don't go and play the pokies just to avoid being bored'.

When evaluating the effects of the frequency of *utilisation* of the assigned SGP, three SGPs had significant effects on one or more gambling outcomes:

- SGP4: 'Make sure your leisure time is busy with other hobbies, social activities and/or sports' had a significant effect on EGM spend and the SGHS. That is, the frequency with which people used this SGP was related to better outcomes on spend and harms experienced.
- SGP3: 'Make sure you take regular breaks every 30 minutes when you are playing the pokies' also had a significant effect on EGM spend. That is, frequently adhering to regular breaks was associated with lower spending.
- SGP8: 'Keep a household budget' had a significant effect on SGHS. That is, people who more frequently kept a budget had lower gambling-related harm.

This chapter presents the methods and results for the randomised controlled trial (RCT) conducted in Stage 3 of this study. The purpose of the RCT was to test the efficacy of the best performing SGPs identified in Stage 2 when delivered as a brief intervention to people wanting to better control how much they spend on EGMs.

3.1. Methods for the RCT

This stage of the study was approved by the CQUniversity Human Research Ethics Committee, approval number 22959.

3.1.1. Sampling, recruitment and data quality checks

An online convenience sample was recruited by panel aggregator, Qualtrics. Respondents were specifically recruited to take part in a longitudinal study. They were asked to first complete a ~15-minute baseline survey, followed by two further surveys, each one month apart. Respondents were also informed that they would receive text messages in between surveys and were required to opt in for this (see design below for more information).

A total of 5,078 potential respondents started the baseline survey. Of those, 148 indicated that they did not consent to taking part in the study and were excluded. Inclusion criteria were being aged 18 years or older (*n* = 6 excluded), playing EGMs in the last 4 weeks (*n* = 2,417 excluded), living in NSW (*n* = 241 excluded) and having an interest in better controlling how much they spend on EGMs (*n* = 368 excluded). The introductory text (see survey instrument in Appendix D) did not specifically outline the inclusion criteria to respondents. This is standard practice, because if exact inclusion criteria are given prior to screening questions, some respondents may choose options in the screening questions to ensure that they qualify, in order to be compensated. As such, respondents were not aware that they were required to play EGMs in the last 4 weeks, explaining the high exclusion rate.

Data quality checks were built into the survey, including an attention check (*n* = 19 excluded), and a test for speeding (defined as completing the survey in less than one-third of the median completion time of a soft launch group, *n* = 19 excluded). A quota of total completed responses for the Wave 1 survey was set at 1,095, and a further *n* = 580 started the survey but completed it after the required sample size was met and were therefore also excluded. Of the remaining 1,280 respondents, 80 started but did not complete the survey.

Further data quality checks were conducted after fieldwork was complete. Some respondents were excluded for multiple reasons, and thus the number of exclusions for each reason sums to more than the total number of exclusions. In total, 65 respondents were removed for: being duplicate responses (*n* = 33), straight-lining through scales (*n* = 12), being in a country other than Australia based on IP address (*n* = 31), and poor-quality open-ended responses (*n* = 5), leaving 1,135 respondents in total.

Because respondents were to be sent SMS messages between surveys, respondents were required to agree to receive messages. However, the panel also had a separate opt-out mechanism for messages, and some of the respondents who signed up to the study had opted out of receiving messages. The final number of respondents was *N* = 1,088 at Wave 1.

Because the respondents were screened in Wave 1, no further screening checks were conducted in Waves 2 and 3. However, the same data quality checks were conducted after fieldwork in each wave, specifically looking for possible duplicate responses, straight-lining, speeding and poor-quality open-ended responses. For Wave 2, four duplicate responses were identified, and the second instance was removed. No further data quality issues were identified for Wave 2. For Wave 3, seven duplicate responses were detected, and the second instance was removed, and nine respondents completed the survey in under a minute, indicating inattention.

Some straight-lining was detected in Wave 3 in the use of the Safer Gambling Practices (SGPs), but this was deemed appropriate in responding to these questions (e.g., non-use of SGPs), and no exclusions were made on this basis.

The total number of respondents in each wave after exclusions was 1,088 (Wave 1), 756 (Wave 2) and 725 (Wave 3). Respondents who took part in Wave 3 did not necessarily have to complete Wave 2, but all respondents in Waves 2 and 3 completed Wave 1. Figure 2 shows recruitment, exclusions and completed surveys across the three waves

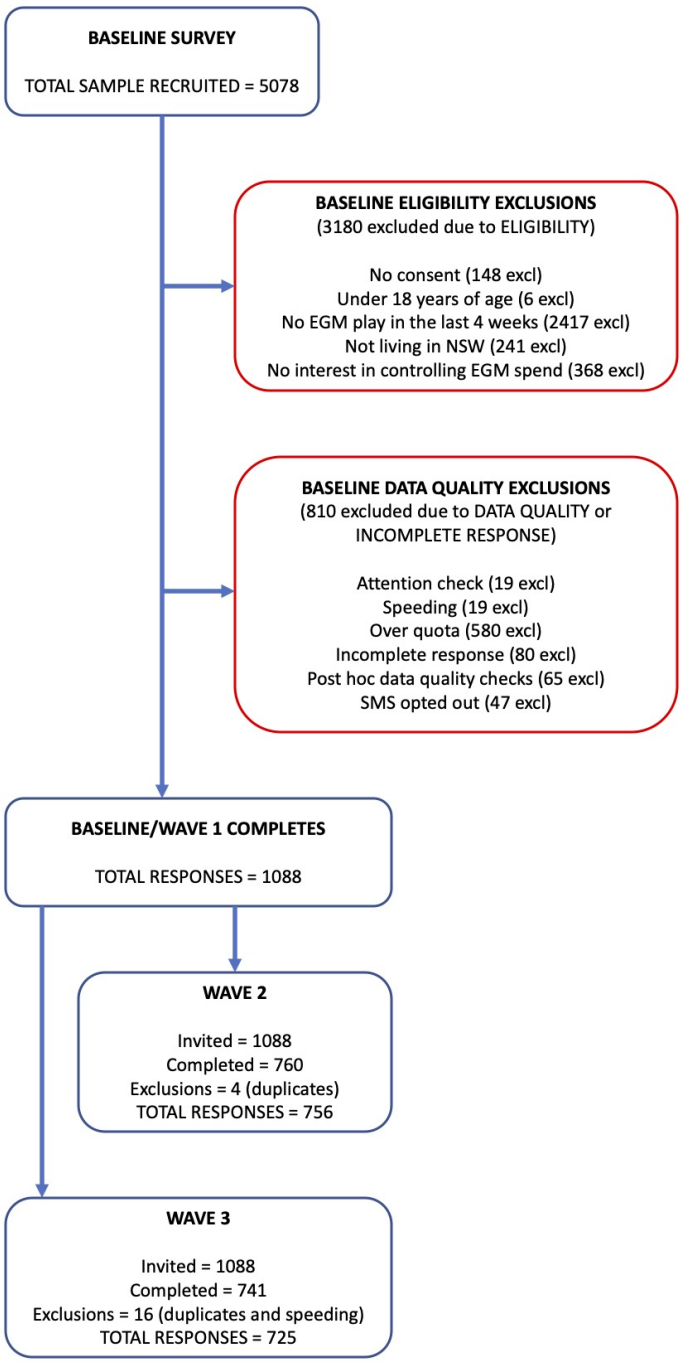

Figure 2 – Recruitment, exclusions and completed surveys, Waves 1-3

3.1.2. Sample characteristics

Table 6 shows the demographic characteristics of the sample at Wave 1. Compared to the Stage 2 survey, Wave 1 of the RCT obtained a more even balance of participants by gender, but participants tended to be younger (mean = 32.7 years, compared to 41.1 in Stage 2). Similar to Stage 2, most respondents were married or living with a partner, had completed a university degree, and worked full-time.

Table 6 – Demographic characteristics at Wave 1

Variable	Test N (%)	Control N (%)	Variable	Test N (%)	Control N (%)
Gender			Main language at home		
Male	359 (48.9)	177 (49.9)	*English*	623 (84.99)	296 (83.38)
Female	374 (51.0)	178 (50.1)	*Other*	110 (15.01)	59 (16.62)
Marital status			Work status		
Single/ never married	219 (29.88)	110 (30.99)	*Work full-time*	396 (54.02)	181 (50.99)
Living w partner/ de facto	175 (23.87)	85 (23.94)	*Work part-time or casual*	176 (24.01)	93 (26.2)
Married	298 (40.65)	146 (41.13)	*Self-employed*	31 (4.23)	14 (3.94)
Divorced or separated	40 (5.46)	12 (3.38)	*Unemployed & looking*	36 (4.91)	17 (4.79)
Widowed	1 (0.14)	2 (0.56)	*Full-time student*	42 (5.73)	10 (2.82)
Household composition			*Full-time home duties*	27 (3.68)	19 (5.35)
Single person	135 (18.42)	69 (19.44)	*Retired*	16 (2.18)	13 (3.66)
One parent with children	48 (6.55)	24 (6.76)	*Sick or disability pension*	4 (0.55)	5 (1.41)
Couple with children	285 (38.88)	128 (36.06)	*Other*	5 (0.68)	3 (0.85)
Couple no children	166 (22.65)	97 (27.32)	Personal income		
Group household	83 (11.32)	34 (9.58)	*$0 to $9,999*	29 (3.96)	10 (2.82)
Other	16 (2.18)	3 (0.85)	*$10,000 to $19,999*	32 (4.37)	20 (5.63)
Education			*$20,000 to $29,999*	53 (7.23)	29 (8.17)
Did not complete primary	3 (0.41)	3 (0.85)	*$30,000 to $39,999*	60 (8.19)	30 (8.45)
Completed primary	8 (1.09)	3 (0.85)	*$40,000 to $49,999*	91 (12.41)	44 (12.39)
Year 10 or equiv	50 (6.82)	27 (7.61)	*$50,000 to $59,999*	94 (12.82)	52 (14.65)
Year 12 or equiv	117 (15.96)	54 (15.21)	*$60,000 to $69,999*	62 (8.46)	27 (7.61)
Trade, tech cert or diploma	143 (19.51)	81 (22.82)	*$70,000 to $79,999*	49 (6.68)	37 (10.42)
Uni or college degree	301 (41.06)	127 (35.77)	*$80,000 to $89,999*	44 (6)	18 (5.07)
Postgrad qualification	111 (15.14)	60 (16.9)	*$90,000 to $99,999*	30 (4.09)	16 (4.51)

Aboriginal or Torres Strait Islander status			*$100,000 to $109,999*	36 (4.91)	14 (3.94)
Non-ATSI	686 (93.59)	329 (92.68)	*$110,000 to $119,999*	17 (2.32)	8 (2.25)
Aboriginal	36 (4.91)	20 (5.63)	*$120,000 to $129,999*	20 (2.73)	12 (3.38)
Torres Strait Islander	7 (0.95)	5 (1.41)	*$130,000 to $139,999*	14 (1.91)	3 (0.85)
Both	4 (0.55)	1 (0.28)	*$140,000 to $149,999*	20 (2.73)	7 (1.97)
Country of birth			*$150,000 to $159,999*	17 (2.32)	8 (2.25)
Australia	538 (73.4)	253 (71.27)	*$160,000 or more*	28 (3.82)	7 (1.97)
Other	195 (26.6)	102 (28.73)	*Don't know*	37 (5.05)	13 (3.66)

Note: Age recorded as continuous score. Mean = 32.7, SD = 11.52, median = 30, range 18-83.

3.1.3. Design

The design was a RCT with three waves of data collection. In the first wave, respondents were randomly allocated to one of 14 conditions using the Qualtrics 'randomizer' function. The conditions were either allocation to one of the 13 SGPs and associated messages, or the control 'gamble responsibly' message (see SGPs evaluated in the RCT, below). The randomisation was constrained so that approximately two-thirds of the respondents were randomly allocated to one of the SGP items, and one-third to the control condition. The randomisation was also a stratified randomisation, based on gender, age (18-34 and 35+ years) and number of hours playing EGMs each week (less than 16 and 16+, based on data from previous stages of this research). This stratified randomisation procedure ensured that each group would have approximately equal gender, age and EGM play representation.

Respondents could be allocated to a SGP even if they already used this practice. This was for two reasons. First, allocating people to conditions that they do not do would create a potential difference between the test and control groups, because the control group was only asked to 'gamble responsibly'. Second, some respondents may have indicated that they already used all the 13 SGPs and would then have been excluded from the study.

Between waves, the test group was sent a SMS reminder about their allocated SGP, while the control group received a 'gamble responsibly' message. Figure 3 illustrates the timeline for the RCT.

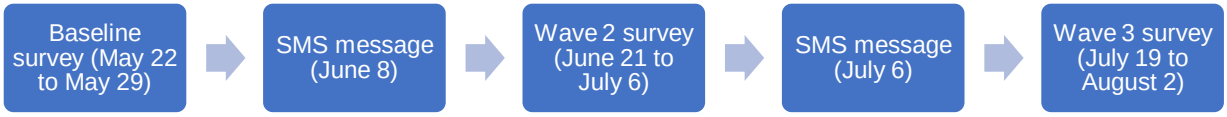

Figure 3 – Timeline of the RCT (2021)

3.1.4. Measures

Many of the same measures were employed across waves (e.g., EGM gambling behaviour), while some questions were only required in Wave 1 (e.g., screening questions, demographics). The questions asked across the surveys are described below and summarised in Table 7. The survey instrument is contained in Appendix D.

Screening questions (Wave 1)

Respondents were initially screened based on their age (excluded if under 18), the state where they mainly lived (people outside of NSW were excluded), whether they had gambled for money on EGMs in the last four weeks (screened out if no), and whether they would like to better control how much they spend on EGMs (excluded if no, included if yes or not sure). Gender (male, female, other) was also asked at this stage because it was used as a quota during stratified randomisation.

Demographics (Wave 1)

In addition to age and gender, captured in the screening block, the Wave 1 survey asked marital status, household composition, highest educational qualification, work status, country of birth, main language spoken at home, Aboriginal or Torres Strait Islander status, and annual personal pre-tax income.

EGM playing behaviour (Waves 1 – 3)

All respondents were asked about their EGM playing behaviour in the last 4 weeks, including how many hours in total they had spent playing EGMs (open-ended text box), whether they played EGMs more, less or about the same as they usually do (5-point Likert scale); whether they played EGMs more, less or about as much as they planned or intended to (5-point Likert scale), and EGM expenditure (defined as losses; open-ended text box). If respondents answered more than $0 for EGM expenditure, they were asked if their expenditure was more, less or about what they usually spent (5-point Likert scale), and whether their expenditure was more, less or about what they planned or intended (5-point Likert scale). Respondents were also asked to indicate how strong their desire to better control their EGM expenditure was on a scale from 1 (extremely weak) to 10 (extremely strong).

Short Gambling Harms Screen (Waves 1 – 3)

The 10 item Short Gambling Harms Screen (SGHS; (Browne et al., 2018) was modified to refer to harms experienced within the last 4 weeks as a result of the respondent's EGM play. Response options were 'yes' or 'no' to each of the 10 harms, for a total score between 0 and 10.

Use of assigned Safer Gambling Practice (Waves 1 – 3, test groups only)

In Wave 1, respondents who were assigned to one of the test conditions (i.e., assigned an SGP and received a message other than 'gamble responsibly') were asked how often they used the assigned SGP during the last 4 weeks (response options: never, sometimes, most of the time, always). Test group respondents were asked the same question in Waves 2 and 3, with the same response options.

Table 7 – Summary of measures across the RCT survey waves

Measure	Wave 1	Wave 2	Wave 3
Screening questions	Yes	No	No
Demographics	Yes	No	No
EGM playing behaviour in the last 4 weeks	Yes	Yes	Yes
Short Gambling Harms Screen (last 4 weeks)	Yes	Yes	Yes
Use of assigned SGP (last 4 weeks) – test group only	Yes	Yes	Yes

3.1.5. Other procedures

Message reminder (Waves 1 and 2, and also SMS messages between waves)

At the end of each survey, test group respondents were reminded to use their allocated SGP during the next four weeks (one of the 13 SGPs), and the control group was reminded to 'gamble responsibly'. Respondents were also sent an SMS with the same message between waves.

Helpline details

Gambling Helpline and Lifeline details were included at the end of each survey, and also at points in the surveys where questions may have raised concerns for respondents, such as the Short Gambling Harms Screen.

3.1.6. SGPs evaluated in the RCT

The SGPs evaluated in the RCT were based on the 17 most efficacious SGPs identified in Stage 2 of the study. However, for parsimony and to reduce overlap, the 17 SGPs were reduced to 13 SGPs for evaluation in the RCT, as explained here:

- 'I only use pokies winnings for fun activities or purchases' and 'I don't use pokie winnings to pay bills' were combined to form SGP7 in Table 8 below.
- 'When I have a large win on the pokies, it is time for me to quit' was not included in the RCT since it is similar to SGP1.
- 'I have a rule that I only play the pokies for an hour (or 1/2 hour, etc)' was not included in the RCT since it is similar to SGP10.
- 'I have a dedicated budget to spend on the pokies' was not included in the RCT since it overlaps with SGP2 and SGP8.

Table 8 provides information on the 13 SGPs evaluated in the RCT: their codes, and number of participants and data points per SGP. A total of 1,088 people participated for a maximum of 3 waves of data collection, making for 3,264 maximum potential observations. Attrition led to 695 missing responses, and a total of 2,569 records available for analysis: 854 in the control condition, and 1,715 in the test condition.

Table 8 – Safer gambling practices, codes, and number of participants and observations per SGP

Code	Safer gambling practice (SGP)	N_{pers}	N_{obs}
0	Gamble responsibly*	355	695
1	Cash out pokie winnings and do not use them later in the session	54	134
2	When you play the pokies, always set aside a fixed amount to spend	55	142
3	Make sure you take regular breaks every 30 minutes when you are playing the pokies	55	122
4	Make sure your leisure time is busy with other hobbies, social activities and/or sports	58	135
5	Only play low denomination pokies	56	134
6	Don't go and play the pokies just to avoid being bored	59	130
7	Only use pokies winnings for fun activities or purchases, and not to pay bills	59	137
8	Keep a household budget	56	124
9	Don't play the pokies just because your friends are gambling	55	134
10	If you're losing after 30 minutes of playing the pokies, quit	54	123
11	If you feel yourself getting too emotional when playing the pokies, take a break	60	136
12	When you play the pokies, always bet a fixed amount per spin	56	123
13	If you're not having fun playing the pokies, stop	56	141

* Control condition

3.1.7. Data analysis

A nested experimental design where multiple observations were nested within participants was employed, with the primary level being a comparison of exposure to each of the tested SGP messages (*N* = 733, codes 1-13) with a control message, 'gamble responsibly' (*N* = 355, code 0). This enabled an evaluation of the effects of the assignment of any treatment condition vs the control condition (Section 3.2.1).

An a-priori power analysis was conducted during the project proposal, but the design was subsequently modified in consultation with the funder. Furthermore, an informative a-priori power analysis demands specification of the expected effect size. In the present case, this is problematic, since the efficacy of SGPs is not known, and there are a large number of SGPs evaluated in parallel. The sample size ensured there were sufficient participants in the experimental group to allow for selected comparisons between individual SGPs to see which is potentially most highly associated with better gambling outcomes. This enabled an evaluation of the effects of assignment of the individual SGPs vs the control condition (Section 3.2.2). Further, data were also collected on the frequency with which participants actually employed the SGP they were allocated: Never (1), Sometimes (2), Most of the time (3), Always (4). This provided the opportunity to conduct a secondary repeated measures observational analysis, in which the association between utilisation of a particular SGP and outcomes was assessed. This enabled an evaluation of the effects of frequency of SGP utilisation on the outcome variables (Sections 3.2.3 and 3.2.4). Our assumption was that actual use of the SGP, rather than simply being assigned to use the SGP, should be associated with better gambling outcomes.

Three key outcomes were employed:

1. **EGM Spend**: Spend on EGMs during the prior period. Transformed using the formula log(x + 1) to stabilise error variance.
2. **EGM Time**: Number of hours spent playing EGMs during the prior period. Transformed using the formula log(x + 1) to stabilise error variance.
3. **SGHS**: Scores on the Short Gambling Harms Screen (SGHS). Untransformed.

Time and spend on gambling are directly implicated in gambling harm and gambling problems (Neal et al., 2005). The Short Gambling Harms Screen is a direct measure of harmful outcomes that SGPs are intended to prevent (Browne et al., 2018).

The repeated measures design was handled using robust linear mixed effects (RLME) modelling, using the *robustlmm* package in the R statistical programming environment. Since each participant received the same SGP for the duration of the experiment, the data structure can be understood as hierarchical, with multiple observations nested within participants. That is, the design was repeated measures on the same outcomes for each participant. As described further below, we considered models in which SGP was treated either as a random factor within the treatment condition (i.e., the SGP was considered representative of a large number of SGPs that might have been included in the study, but the set was not comprehensive), or a fixed effect with 13 levels (i.e., the set of SGPs tested were deemed to be a complete set of possible practices that could be used). For random effects included in the models below, variances, rather than standard deviations, are reported.

3.2. Results

3.2.1. Evaluating the effects of the assignment of any treatment condition vs the control condition

Table 9 summarises our analyses for the broadscale treatment effect: whether allocation to the treatment conditions (i.e., any of the SGP message conditions, codes 1-13; see Table 8) was associated with a differential change in gambling outcomes over time in comparison to the control condition (code 0). For each of the three outcomes, there was no hypothesized relative improvement over time for people assigned to the SGP message condition. This conclusion was manifest in no significant interactions between the variables time (i.e., T2 vs. T1 and T3 vs. T1, respectively) and test (i.e., SGP messages vs. control).

Moreover, model comparisons between the base model (a), including only main effects, and the interaction model (b) that included an additional interaction effect, were not significant in each case. This indicates that, in aggregate, allocation to one of the SGP conditions did not result in a detectable change in gambling outcomes during the study period relative to the control condition. Nevertheless, both groups showed a significant decrease (improvement) in the gambling outcomes over time irrespective of the condition to which they were assigned.

Table 9 – Summary of RLME models testing for an interaction between experimental condition (Test versus Control) and Time, with a random effect for subject nested within SGP.

	EGM Spend		EGM Time		SGHS	
Fixed effects	(a)	(b)	(a)	(b)	(a)	(b)
Main effects						
T1 (Base)	-	-	-	-	-	-
T2	-0.870**	-0.997**	-0.536**	-0.518**	-1.213**	-1.106**
	(0.078)	(0.235)	(0.037)	(0.112)	(0.098)	(0.294)
T3	-2.002**	-2.382**	-0.821**	-0.831**	-1.963**	-2.236**
	(0.080)	(0.238)	(0.038)	(0.114)	(0.100)	(0.299)
Group (Control)	-	-	-	-	-	-
Group (Test)	-0.048	0.054	0.013	0.011	0.173	0.204
	(0.103)	(0.128)	(0.055)	(0.066)	(0.166)	(0.190)
Interactions						
T1 x Test		-		-		-
T2 x Test		0.095		-0.014		-0.080
		(0.166)		(0.079)		(0.207)
T3 x Test		0.285		0.008		0.205
		(0.169)		(0.081)		(0.212)
Constant	4.185**	4.320**	1.783**	1.781**	4.443**	4.483**
	(0.149)	(0.181)	(0.079)	(0.093)	(0.237)	(0.267)
Random effects						
Subject | SGP	1.165	1.165	0.672	0.622	2.164	2.164
Residual	1.609	1.609	0.764	0.764	1.987	1.987

*p<0.05; **p<0.01

3.2.2. Evaluating the effects of assignment of the individual SGPs vs the control condition

The above analysis was repeated using a 14-level factor, 'SGP' in place of the 2-level factor 'Group'. In this analysis, the variable SGP includes message conditions (codes 1-13) as well as the base control condition (code 0). This analysis provides for specificity in evaluating individual SGPs, at the expense of introducing 13 extra degrees of freedom for the base model (one for each SGP sub-group), and a further 26 extra degrees of freedom to capture changes in these subgroups at T2 and T3. These analyses included a random effect for participants only. In the interests of brevity, the full model descriptions are not provided here. Refer to Appendix E for the details of these models. However, an analysis of deviance test providing an omnibus comparison of the interaction model with the main-effects only model found only a marginally significant difference for EGM spend, $\chi^2(26) = 39.03, p = .048$. There were no significant *time X SGP* interactions for the dependent variables of EGM

Time or SGHS. Importantly, this set of analyses – unlike the previous one shown in Table 9 – made the presumption that not all SGPs are "good". The downside of the prior analyses is that many ineffective SGPs can swamp our ability to detect the few SGPs that are truly effective from a larger set that are not.

Given the significant omnibus test for EGM spend, we considered interpretation of the fixed effects for EGM spend. Inspection of the beta coefficients showed significant decreases in EGM spend for assignment to the following SGPs:

1. T3xSGP2 (*B* = -.939, p = .009) 'When you play the pokies, always set aside a fixed amount to spend'
2. T2xSGP4 (*B* = -.822, p = .025), T3xSGP4 (*B* = -.799, p = .034) 'Make sure your leisure time is busy with other hobbies, social activities and/or sports'
3. T3xSGP6 (*B* = -1.170, p = .002) 'Don't go and play the pokies just to avoid being bored'.

Note that, unlike the omnibus chi-square statistic quoted above, these p-values associated with individual beta coefficients do not take into account the multiple comparisons being made within the single regression model.

3.2.3. Whether SGP was associated with differential levels of utilisation

The above analyses are predicated entirely on assignment of participants, at random, to experimental conditions. However, not all participants were adherent to the requested protocol of implementing the SGPs during the course of the RCT. Of the 1,715 observations in the test condition, 390 reported never (1) using the SGP during that period, 695 sometimes (2), 381 most of the time (3), and 249 always (4). Usage of all tested SGPs was significantly higher than the control condition SGP of 'Gamble responsibly'. However, participants in the control condition arguably may have had an ambiguous interpretation as to whether they 'gambled responsibly' during the study period.

We assessed whether SGP was associated with differential levels of utilisation in the test conditions (codes 1-13; Table 8). For this analysis, we excluded the control condition (code 0). Table 10 summarises the models used to make this comparison. For model (b), deviation contrast coding was employed, such that the effect of each SGP was evaluated relative to the grand mean of all SGPs. A model comparison confirmed there were at least some significant differences in SGP utilisation, $\chi^2(12) = 2.504, p = .006$. SGP2, 'When you play the pokies, always set aside a fixed amount to spend' showed a detectable increased rate of utilisation relative to other SGPs. SGP7, 'Only use pokies winnings for fun activities or purchases, and not to pay bills' and SGP12, 'When you play the pokies, always bet a fixed amount per spin' also had significantly increased utilisation, but only marginally. Thus, our prior results were not unduly affected by differential rates of utilisation of SGPs that could have affected our outcomes for reasons other than the effectiveness of the SGPs.

Table 10 – Models evaluating the effect of allocated SGP on utilisation

	Freq SGP Use	
	(a)	(b)
Fixed Effects		
SGP1		0.035 (0.139)
SGP2		0.488** (0.138)
SGP3		0.056 (0.141)
SGP4		0.265 (0.138)
SGP5		0.171 (0.139)
SGP6		0.151 (0.139)
SGP7		0.301* (0.138)
SGP8		0.166 (0.141)
SGP9		0.033 (0.139)
SGP10		0.165 (0.141)
SGP11		-0.049 (0.138)
SGP12		0.280* (0.141)
SGP13		-
Constant	2.283** (0.028)	2.124** (0.097)
Random effects		
Subject|SGP	.2506	
Subject		.237
Residual	.6979	.699

*p<0.05; **p<0.01. Note: Coefficients compare each SGP to that for SGP13, which is why SGP13 is not included in the model.

3.2.4. Evaluating the effects of frequency of SGP utilisation

Given at least somewhat variable rates of utilisation, the dataset provided the opportunity to be analysed as repeated measures relating paired observations of frequency of SGP utilisation and each gambling outcome, rather than an experimental manipulation alone. In this scheme, we can compare the simple effect of frequency of SGP use, with the joint effect of which SGP was allocated, and the frequency with which that SGP was employed. Importantly, people's use of SGP was still related to their assigned experimental condition, but the present analysis allowed that people might differentially use the SGPs to which they were assigned. This allowance can be considered as 'treatment adherence'. In other words, this amounts to a comparison of SGPs as assigned randomly to participants but also takes into account how often the SGP was actually employed (Freq). Table 11 presents these models.

These present analyses looked at the joint effects of treatment assignment, as considered in section 3.2.2, and treatment adherence, per section 3.2.3. Since treatment adherence (i.e., whether people used the SGP) is not an experimental effect, these results are not experimental but rather correlational in nature. Results that are highly significant ($p < .01$) hold even after considering that multiple tests were performed. This analysis is valuable since it stands to reason that SGPs “work” because people employ them rather than just “think” about them.

Table 11 – Summary of models of the effect of SGP allocation and frequency of use on gambling outcomes

	EGM Spend		EGM Time		SGHS	
	(a)	(b)	(a)	(b)	(a)	(b)
Fixed effects						
Main effects						
Freq	-0.025 (0.045)	0.181 (0.182)	-0.0001 (0.022)	0.001 (0.088)	-0.115* (0.062)	0.027 (0.232)
SGP0 (Base)		-		-		-
SGP1		0.711 (0.537)		0.114 (0.266)		0.556 (0.727)
SGP2		-0.167 (0.528)		-0.088 (0.261)		0.786 (0.710)
SGP3		1.389** (0.525)		0.456 (0.263)		1.508* (0.726)
SGP4		1.723** (0.577)		0.824** (0.285)		3.088** (0.774)
SGP5		-0.295 (0.557)		-0.385 (0.278)		0.030 (0.765)
SGP6		-0.593 (0.552)		-0.421 (0.276)		0.009 (0.762)
SGP7		-0.263 (0.506)		0.259 (0.252)		0.285 (0.694)
SGP8		0.742 (0.553)		-0.034 (0.275)		2.333** (0.753)
SGP9		0.846 (0.537)		0.161 (0.265)		0.989 (0.721)
SGP10		0.262 (0.542)		0.206 (0.271)		0.518 (0.745)
SGP11		-0.166 (0.493)		-0.190 (0.247)		-1.045 (0.681)
SGP12		-1.214* (0.584)		-0.444 (0.287)		-0.692 (0.779)
SGP13		-0.246 (0.308)		-0.030 (0.158)		0.354 (0.453)
Interactions						
Freq x SGP1		-0.321 (0.276)		-0.034 (0.134)		-0.095 (0.353)
Freq xSGP2		-0.138 (0.248)		-0.018 (0.120)		-0.461 (0.316)
Freq xSGP3		-0.731** (0.268)		-0.163 (0.131)		-0.327 (0.350)
Freq xSGP4		-0.889** (0.276)		-0.332* (0.134)		-1.242** (0.356)
Freq xSGP5		0.044 (0.275)		0.168 (0.134)		-0.096 (0.358)
Freq xSGP6		0.176 (0.274)		0.160 (0.134)		0.136 (0.358)
Freq xSGP7		-0.105 (0.249)		-0.057 (0.121)		-0.232 (0.321)
Freq xSGP8		-0.271 (0.272)		0.068 (0.132)		-0.642* (0.351)
Freq xSGP9		-0.585* (0.276)		-0.067 (0.133)		-0.392 (0.351)
Freq xSGP10		-0.240 (0.268)		-0.080 (0.131)		-0.203 (0.347)
Freq xSGP11		-0.163 (0.264)		0.064 (0.129)		0.425 (0.342)
Freq xSGP12		0.491* (0.276)		0.227* (0.134)		0.404 (0.353)
Freq xSGP13		-		-		-
Constant	3.515** (0.097)	3.311** (0.201)	1.401** (0.049)	1.385** (0.099)	3.596** (0.140)	3.220** (0.270)
Random Effects						
Subject|SGP	1.056		0.404		4.54	
Subject		1.093		0.415		4.54
Residual	3.575	3.508	0.760	0.752	4.88	4.81

*p<0.05; **p<0.01. Note: for the main effects, the control group is the comparison group, and coefficients are therefore differences between each SGP and the control group. For interactions, the control group was not asked how often they gambled responsibly, so the comparison group for the interaction terms is SGP13, in line with the previous analyses in Table 10.

Comparing (a) / (b) models in Table 11, there was a significant improvement in fit for EGM spend, χ^2 (25) = 50.211, p = .002, and the SGHS, χ^2 (25) = 52.741, p = .001. There was no significant improvement for EGM time, χ^2 (25) = 32.194, p = .1525. Detailed evaluation of significant beta coefficients for these two outcomes can be made with respect to Table 11 above. However, SGP4 'Make sure your leisure time is busy with other hobbies, social activities and/or sports' stands out as having a significant effect on EGM spend and the SGHS, at the .01 threshold for both main effects of SGP, and frequency x SGP interactions. Thus, the frequency with which people used this SGP was related to better outcomes on spend and harms experienced. SGP3, 'Make sure you take regular breaks every 30 minutes when you are playing the pokies' also showed consistent main effects for EGM spend, as well as an interaction for EGM spend. Thus, frequently adhering to regular breaks was associated with lower spending. Lastly, SGP8, 'Keep a household budget' had a significant main effect and frequency interaction effect for the SGHS. People who more frequently kept a budget had lower gambling-related harm.

3.3. Chapter summary

Stage 3 of this study conducted a RCT to test the efficacy of the SGPs identified in Stage 2 when delivered as a brief intervention to people wanting to reduce harmful EGM play. The sample comprised at-least monthly EGM players in NSW who reported an interest in better controlling how much they spend on EGMs. In the first wave (N = 1,088) of the three-wave RCT, respondents were randomly allocated to one of 14 conditions, either one of the 13 SGP test conditions, or the control condition. Between waves, the test group was sent a SMS reminder about their allocated SGP, while the control group received a 'gamble responsibly' message. Outcome measures comprised expenditure on EGMs, time spent playing EGMs, and scores on the SGHS in relation to their EGM play, with all three variables measured in relation to the last 4 weeks.

The results indicated that being assigned to any of the SGP treatment conditions (in aggregate) did not result in a detectable change in gambling outcomes during the RCT period relative to the control condition. However, significant decreases in EGM spend over time were observed for *assignment* to the following SGPs:

- SGP2: 'When you play the pokies, always set aside a fixed amount to spend'.
- SGP4: 'Make sure your leisure time is busy with other hobbies, social activities and/or sports'.
- SGP6: 'Don't go and play the pokies just to avoid being bored'.

When evaluating the effects of the frequency of *utilisation* of the assigned SGP, three SGPs had significant effects on one or more gambling outcomes:

- SGP4: 'Make sure your leisure time is busy with other hobbies, social activities and/or sports' had a significant effect on EGM spend and the SGHS. That is, the frequency with which people used this SGP was related to better outcomes on spend and harms experienced.

- SGP3: ‘Make sure you take regular breaks every 30 minutes when you are playing the pokies’ also had a significant effect on EGM spend. That is, frequently adhering to regular breaks was associated with lower spending.
- SGP8: ‘Keep a household budget’ had a significant effect on SGHS. That is, people who more frequently kept a budget had lower gambling-related harm.

Chapter 4. Discussion, conclusion and implications

4.1. Discussion of the study's findings

Electronic gaming machines (EGMs) are the form of gambling associated with most gambling harm in NSW (Browne et al., 2020), as well as across Australia (Armstrong & Carroll, 2017). Importantly, gambling harm is not confined to those with a clinically diagnosable gambling disorder, but also extends to those at low and moderate risk of problem gambling (Browne et al., 2016, 2017; Canale et al., 2016; Raisamo et al., 2015; Salonen et al., 2018). Few gamblers seek professional treatment for gambling harm before crisis point, and formal help is rarely used by low and moderate risk gamblers even though they may be experiencing gambling harm. However, gamblers are more amenable to using self-regulatory strategies that aim to limit or reduce their gambling (Hing et al., 2012; Lubman et al., 2015). Research indicates that gamblers have positive attitudes towards using self-regulatory gambling strategies and believe they are able to implement them (Bagot et al., 2021; Lubman et al., 2015). It is therefore important that self-regulatory strategies promoted to gamblers are evidence-based. However, prior to the current study, no research has evaluated the impact of using strategies such as directly actionable safer gambling practices (SGPs) on gambling time or money spent, or the severity of gambling problems and harm (Bagot et al., 2021). The current study was designed to help address this gap in knowledge.

A key consideration was to move beyond the methodologies previously employed that have identified associations between the use of SGPs and gambling outcomes, to provide stronger evidence about the efficacy of SGPs in reducing harmful gambling. Formative research (Hing et al., 2016a) identified a suite of SGPs that have been promoted to gamblers, and these were further refined based on recent research (Rodda et al., 2018b, 2019). Based on a survey of 2,032 regular EGM players in NSW which contained 45 candidate SGPs, we then identified those SGPs that best predicted non-harmful gambling amongst EGM players who were most vulnerable to gambling-related harm. The 13 SGPs with the best predictive power were then included in a randomised control trial (RCT) that encompassed three assessment waves, with a baseline sample of 1,088 regular EGM players in NSW.

The purpose of the RCT was to evaluate evidence for whether the use of so-called safer gambling practices (SGPs) can contribute to safer gambling-related behaviours and outcomes. There has been a host of evidence that some SGPs are associated with fewer gambling-related problems, even after adjusting for known covariant factors such as the impulsivity of the gambler (e.g., Delfabbro et al., 2020; Hing et al., 2017, 2019; Lostutter et al., 2014; Rodda et al., 2019; Wood & Griffiths, 2015; Wood et al., 2017, 2019). Nevertheless, stronger evidence was sought with the help of the RCT that directed participants to use specific SGPs over a period of eight weeks to observe the differential effects of such practices on gambling outcomes. By randomly assigning participants to use of SGPs, inclusive of the control condition where participants were told only to 'gamble responsibly', the trial enabled observation as to whether SGPs decrease EGM spend, reduce the time spent playing EGMs and result in the report of fewer gambling-related harms (as measured by the Short-Gambling Harms Screen, SGHS; Browne et al., 2017).

The results explored two different but related sources of evidence for the effect of SGPs on the behavioural outcomes. First, the analyses looked at the traditional approach to analysing RCTs whereby the analysed effects were related purely to each participant's assigned condition; being the SGP that they were asked to employ during the trial. This first set of analyses ignores the extent to which participants adhered to the advice to use the SGP to which they had been assigned. While this may at first blush seem ill advised, a strong feature of experimental design is that participants should not be allowed to choose their own assignment to condition. Considering treatment adherence, in contrast, necessarily allows for people to opt out of their assigned condition by not undertaking use of the SGP. This breaks with the underlying logic of the random assignment of participants to an experimental condition, thereby clouding interpretation of the results. Thus, our first set of results adheres to the tradition of analysing assignment of participants to SGPs irrespective of adherence with respect to use of SGPs.

Our first set of results also included an analysis of whether assignment to SGPs improves gambling outcomes over the time-course of the trial. One of the strong elements of the RCT design is to examine whether improvements occur over time, since presumably effective SGPs should have better outcomes that accumulate with implementation. As illustrated in Table 9, main effects showed a general trend of improvement in time on the gambling outcomes of EGM spend, time spent on EGMs and SGHS. These overall improvements were evident irrespective of what SGPs people were assigned to use. However, a model comparison that included an exploration of whether being assigned to SGPs, as opposed to the control condition advising people to 'gamble responsibly', show no differentially greater improvement for people assigned to the test group of real SGPs. One concern of this analysis, however, is that ineffective - or marginally effective - SGPs could cloud the ability to find reliable results for a potentially smaller set of SGPs that are individually effective. Consequently, it was important to consider analyses that examined individual SGPs rather than grouping SGPs together as a single set of a defined treatment.

A second analysis followed the logic of the first, as outlined above, but considered each assigned SGP as an individual factor. An omnibus test of significance for the interactions suggested that at least some SGPs were demonstrating reliably better outcomes than the control condition of 'gamble responsibly' with respect to EGM spend. People assigned to the SGPs of 'When you play the pokies, always set aside a fixed amount to spend', 'Make sure your leisure time is busy with other hobbies, social activities and/or sports' and 'Don't go and play the pokies just to avoid being bored' were spending less on EGMs over time compared to others assigned to use different SGPs. Thus, these SGPs show evidence, based on randomised assignment to condition and with no other known confounding criteria, that suggests they are effective in limiting spending.

An alternative approach to analysing the results recognises that treatment adherence may be an important factor in determining whether some SGPs are more effective than others. As noted above, this approach breaks with the strict criteria that participants should not be able to determine – with respect to analysis of results – the condition to which they are assigned. Nevertheless, treatment adherence, or the degree to which people try to implement SGPs, likely has some impact on

whether their assignment to condition is likely to yield beneficial outcomes. Thus, additional analyses that considered this factor of treatment adherence were also performed.

First, an analysis was performed to check as to whether there was evidence of differential utilisation (i.e., treatment adherence) for people assigned to different SGPs (see Table 10). The results of this analysis revealed that at least some SGPs were more frequently used than others. In particular, the SGP of 'When you play the pokies, always set aside a fixed amount to spend' was on average used more frequently than the SGPs used by people assigned to other conditions. This analysis suggests that utilisation of SGPs was an important variable to consider in estimating how SGPs might affect gambling outcomes, such as EGM spend, time spent playing EGMs and the experience of gambling-related harms (i.e., SGHS).

Lastly, as illustrated in Table 11, an analysis was conducted with main effects being the assignment of participants to condition (SGPs) and interactions of this assignment with the level of utilisation of the SGPs (i.e., treatment adherence). Due to limited degrees of freedom available, the model excluded a consideration of the time-of-measurement on the outcomes. This last model showed evidence for a new set of SGPs being effective, including SGP3, 'Make sure you take regular breaks every 30 minutes when you are playing the pokies' and SGP8, 'Keep a household budget.' It reaffirmed SGP 4, 'Make sure your leisure time is busy with other hobbies, social activities and/or sports' showing that when utilisation is considered, the practice is associated with lower EGM spending and lower gambling harm.

While these results show that certain safer gambling practices were effective at reducing EGM spend and/or experiencing gambling harm, adherence to these practices does not guarantee that a person's gambling will be free from harm. This is why we have used the terminology 'safer gambling practices', rather than 'safe gambling practices.' Further, we acknowledge that these practices may be perceived as putting more responsibility on people who gamble to help minimise their harm. These practices are not intended to minimise the role of industry or government in reducing harm from gambling. Instead, they are intended to provide people who gamble with tools to help reduce the likelihood of experiencing harm from gambling, as one ingredient in a broader public health approach to harm minimisation.

4.2. Limitations of the study

The Stage 2 and 3 samples may not have been representative of the NSW population of regular EGM players. For Stage 2, the sampling method was specifically designed to recruit sufficient 'harmed' and 'unharmed' EGM players to enable the required analyses. The analyses did not seek to establish prevalence rates, so a population representative sample was not needed. Stage 3 also did not require a representative sample but instead prioritised recruiting sufficient participants to evaluate the effects of each of the 14 RCT conditions on gambling outcomes. Recruiting representative samples would have required much larger samples to obtain sufficiently large subgroups of interest (e.g., 'harmed' and 'unharmed' regular EGM players; EGM players interested in better controlling their EGM expenditure), which was not affordable within the project budget. Stage 3 was

also subject to participant attrition (33.4% from Wave 1 to Wave 3) which reduced power required for more detailed analyses, such as use of SGPs by personal characteristics (e.g., age, gender, PGSI). Further trials with larger samples are needed to confirm the results and to conduct these more detailed analyses. Some of the period assessed in Wave 3 of the RCT co-occurred with COVID-related lockdowns in some areas of NSW, which limited access to EGM venues at this time. Nonetheless, the effects of lockdowns on the results should be minimal since they affected both the test and control conditions in the RCT.

In the RCT, except for SGP 4, 'Make sure your leisure time is busy with other hobbies, social activities and/or sports', a different set of SGPs was found to be effective using the traditional analyses of participants assigned to condition and the subsequent analyses that included a consideration of utilisation. SGP 4 has the strongest evidence base; having demonstrated itself in both sets of analyses. Importantly, assuming adequate statistical power for both sets of analyses, the same SGPs that are effective should demonstrate significance regardless of whether we used traditional analyses or considered utilisation of the SGP. However, in practice there are several differences between the two sets of analyses, both in terms of degrees of freedom and consideration of the element of time. These differences led to some SGPs showing evidence in one set of analyses but not the other.

4.3. Conclusion and implications

The RCT showed some evidence for the beneficial effects of SGPs on EGM gambling spend and gambling-related harm. Differential improvements over time on some of these outcomes were observed for people who were asked to '…set aside a fixed amount to spend', 'Don't play… to avoid being bored' and '...make sure your leisure time is busy...'. In addition, people who utilised the practices of 'keep(ing) a household budget' and '... tak(ing) regular breaks...' also benefited. These findings are important since they are, to our knowledge, the first evidence from an experimental design to demonstrate that using SGPs results in safer gambling behaviours and outcomes. These analyses have identified a set of practices that can be more confidently recommended to gamblers. The study has moved SGPs past mere association with safer behaviours to a demonstration of positive effects when these practices are recommended to gamblers who subsequently implement them in their daily lives.

The five actionable SGPs that were associated with reduced EGM spend and decreased gambling-related harm over the course of the RCT were:

- Make sure your leisure time is busy with other hobbies, social activities and/or sports.
- When you play the pokies, always set aside a fixed amount to spend.
- Don't go and play the pokies just to avoid being bored.
- Make sure you take regular breaks every 30 minutes when you are playing the pokies.
- Keep a household budget.

These findings provide arguably the best evidence to date of the efficacy of SGPs to result in beneficial gambling outcomes. Nonetheless, this area of investigation is in its early stages and, in line with good scientific practice, replication studies are needed to confirm the current findings in different samples and jurisdictions. Replication studies using the same methodologies are needed, as well as trials that assess gambling outcomes over the medium and longer-term. Larger samples would also allow analyses of SGP uptake and their outcomes amongst different socio-demographic and gambler risk groups, as well as the efficacy of combinations of SGPs. The methodology could also be used to assess SGPs in relation to gambling on other activities, such as casino games and wagering.

The five SGPs should be communicated to EGM players as safer gambling guidelines provided on government, industry and help service websites, in brochures and signage in gambling venues, on gambling websites and apps, and in public education materials. Where succinct guidelines are preferred, the five SPGs could constitute the entirety of the guidelines given the demonstrated efficacy of these SGPs in the current study. However, where longer guidelines are appropriate, all 13 SGPs tested in the RCT could be included, given their strongest negative association with gambling harm in the Stage 2 survey. The promoted SGPs can continue to be refined as further research in this area is completed.

The five SGPs can be used to add a ‘call to action’ in current responsible gambling messages. The frequently used message to ‘gamble responsibly’ has attracted consumer skepticism for being stigmatising, superficial and lacking helpful advice (Hing et al., 2014, 2016b; Sproston et al., 2015). The SGPs could add substance to safer gambling messages, e.g., ‘Help keep your gambling safe: always set aside a fixed amount to spend; ‘Help keep your gambling safe: take regular breaks every 30 minutes when playing the pokies’.

The SGPs could also provide the basis for a consumer self-assessment tool. Self-appraisal messages and tools appear to be more effective in changing gambling behaviour compared to general information, warnings and slogans (Auer & Griffiths, 2015; Monaghan & Blaszczynski, 2009, 2010). Gamblers may be more receptive to a SGP screen than a problem gambling screen, as the former may carry less stigma (Hing et al., 2016b, 2016c; Rockloff & Schofield, 2004). The SGP self-assessment tool should provide feedback that encourages consumers to appraise, assess and self-regulate their gambling by using the promoted SGPs.

The SGPs can also inform community education activities conducted by governments, public health agencies and gambling help services to raise consumer awareness and use of the SGPs. Concerned significant others could also be educated to encourage and support people who gamble to implement the SGPs. The SGPs might assist treatment providers by identifying actionable strategies to help their clients make behavioural changes to reduce the harm from their gambling.

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Appendices

Appendix A. Safer gambling strategies and actions identified by Hing et al. (2016a)

Ensuring gambling expenditure is affordable
1. Only gamble with money that is not needed for necessities such as bills, rent, food, etc.
2. Avoid borrowing money or getting money on credit (including credit cards) to gamble with
3. Only gamble what you can afford to lose
4. Set an affordable gambling budget
5. Set deposit limits for Internet gambling accounts
6. Use only online gambling websites with daily spend limits
Keeping gambling in balance
7. Ensure that you gamble in a way that does not cause harm or problems for other individuals
8. Ensure that gambling doesn't dominate your leisure time
9. Ensure that gambling doesn't dominate your thoughts when you are not gambling
10. Engage in other leisure activities, hobbies or interests other than gambling
11. Prioritise your responsibilities (e.g., to family, friends, work, study) over gambling
Limiting persistence at gambling
12. Avoid chasing losses when gambling
13. Avoid increasing bets when losing
14. Set and stick to a limit on how much money you spend when you gamble
15. Avoid increasing bets when winning
16. Avoid betting on every race/sport/other gambling outcome
17. Avoid having multiple online gambling accounts
18. Set and stick to a limit on your maximum bet size when you gamble
19. Set and stick to a limit on how often you gamble
20. Cash out all or a portion of winnings and don't gamble those winnings later in the session
21. Set and stick to a limit on how long you gamble for each session
22. Take frequent breaks when gambling
Understanding gambling
23. Understand that gambling outcomes are affected by chance – that any skill will not ensure a win
24. Understand that gambling for longer makes no difference to your chances of winning
25. Understand that feeling lucky makes no difference to your chances of winning
26. Expect to lose when gambling
27. Understand that you cannot win money from gambling in the long run
28. Ensure that you do not overestimate your skill at gambling
29. Understand the odds before you gamble
30. Think about the possible negative consequences of gambling (e.g. financial, relationship or personal problems)
31. Read the fine print on promotions before you enter them
32. Think about how long it took to save the money that you use to gamble
33. Think about how you feel when your gambling money is gone
34. Think about other things that the money spent on gambling could be used for
'Positive' motivations for gambling
35. Avoid gambling to pay bills
36. Avoid gambling in order to make money
37. Only gamble for entertainment/fun/pleasure
38. Avoid gambling when you feel depressed or upset
39. Avoid taking gambling too seriously, as it is just a game
40. Avoid gambling to impress or challenge other people
41. Avoid gambling to relieve boredom
A planned approach to gambling
42. Avoid gambling when affected by alcohol or recreational drugs
43. Don't give in to peer pressure to gamble
44. Avoid gambling with heavy gamblers
45. Avoid gambling in the heat of the moment
46. Avoid being tempted to gamble by advertisements or promotions
Use help and support if needed
47. Seek professional gambling help if needed
48. Self-exclude from gambling venues and/or websites if needed
49. Block online gambling websites if needed
50. Have someone in your life who you can talk to openly about gambling
51. Develop a support network

Appendix B. Survey instrument for Stage 2

Safer gambling practices

You are invited to participate in a study about how to gamble more safely on the Pokies. The study aims to understand which behaviours reflect a safer approach to gambling on Pokies, and understand how adults may adopt these practices when gambling. The results will help public health agencies, researchers, policy makers and other key stakeholders gain a better understanding of safer gambling practices. To participate, you must meet certain eligibility criteria based on some screening questions at the start of the survey.

What this study involves

Participating in this study involves completing an anonymous online survey. The survey asks about: basic demographic information; your gambling behaviour; safer gambling practices; a scale that measures risk of gambling problems; questions about gambling urges; and whether you have experienced harms related to gambling. On average, answering this survey takes about 20 minutes.

Questions?

If you have any questions, please contact the research team at n.hing@cqu.edu.au

Ethics approval

Ethical approval for this project has been received from the Central Queensland University Human Research Ethics Committee (XXX).

Do you want more details?

If you wish to read more details about this study, please click on the button below. Otherwise, please proceed to the screening questions on the next page.

- o Yes - I'd like to see more details before starting the survey (1)
- o No - I'd like to start the screening questions (2)

Safer gambling practices

Project Team: Professor Nerilee Hing, Professor Matthew Rockloff, Professor Matthew Browne, Dr Alex Russell, and Ms Hannah Thorne. Qualtrics is assisting with recruiting participants for this study.

ADDITIONAL INFORMATION

This project is funded by the NSW Responsible Gambling Fund. The study is being conducted by Central Queensland University.

How your confidentiality will be protected

Your participation in this survey is completely voluntary and you can stop the survey at any time. You can also continue the survey from where you left off if you use the same device and browser. If you opt out of the survey part way through, we will not use or retain any responses you have provided. Once you have submitted your responses, we will be unable to withdraw your data as it will be merged with other responses.

We ask that you be as honest as possible when answering the survey. The survey does not ask for your name or any other identifying details. Your information will be integrated with that from other survey respondents and no individual respondents will be identified. The data available to the research team will be anonymous and confidential. Your name will not appear in the research report or any associated publications or presentations. These reports and presentations will present only summarised results based on combining your responses with those of all survey participants.

Information from the survey will be stored securely on the survey platform Qualtrics. Only the researchers will handle the information collected from the survey for analysis and report preparation. All research material is stored securely in perpetuity at Central Queensland University using password protected computer systems.

How you will receive feedback

Information about how to access the final report for this study will be made available through our research team's Facebook page after the project is completed - https://www.facebook.com/cquegrl/

The results may also be published in research reports, articles, and books, and presented at conferences or other forums. You can contact us and request a copy of any publications or locate and download these, once available, from www.researchgate.net

Where you can get further information

If you want further information or have any questions, please contact Professor Nerilee Hing: n.hing@cqu.edu.au. You can also contact the Ethics Coordinator at CQUniversity's Office of Research: 07 4923 2603 or at ethics@cqu.edu.au

If you experience discomfort at any point during the survey, you can contact the Gambling Helpline on 1800 858 858 or www.gamblinghelponline.org.au or Lifeline on 13 11 14. These are free and confidential help services that operate 24 hours a day, 7 days a week.

Please make a note of these contact details before proceeding to the survey, or take a screenshot, or print the page.

Taking part

If you would like to participate, please continue. You can then complete the screening questions to see if you are eligible to complete the online survey.

- YES! - Continue survey (1)
- QUIT SURVEY (2)

Q3 Please indicate below if you are 18 years or over and consent to participate in this survey

I am aged 18 years or over

- Yes (1)
- No (2) (screen out)

Q4 I am providing informed consent to participate in this project.

- Yes (1)
- No (2) (screen out)

Q5 We care about the quality of our data.

In order for us to get the most accurate measures of your opinions, it is important that you thoughtfully provide your best answers to each question in this survey. Do you commit to thoughtfully provide your best answers to each question in this survey?

- I will provide my best answers (1)
- I will not provide my best answers (2) (screen out)
- I can't promise either way (3) (screen out)

Screening questions

Q6 How old are you? (Please enter a whole number)

_____ (screen out if under 18 years)

Q7 Which state or territory do you live in?

- New South Wales (1)
- Victoria (2)
- Queensland (3)
- South Australia (4)
- Western Australia (5)
- Tasmania (6)
- Australian Capital Territory (7)
- Northern Territory (8)
- Other territory (e.g., Norfolk Island) (9)

Skip To: End of Block If Which state or territory do you live in? != New South Wales

Q8 What is the postal code of your primary residence?

(valid NSW postal codes are 1000-1999, 2000-2599, 2619-2899, 2921-2999, and border towns that share postcodes across state/territory lines: 2611; 3500; 3585; 3586; 3644; 3691; 3707; 4380; 4377 and 4385)

_____

Q30 During the last 12 months, how often did you gamble **for money** on each of the following activities? This includes through land-based venues, on the internet, and by phone.

(Please select one response for each activity)

	Not at all in the last 12 months (1)	Less than once a month (2)	Once a month (3)	2-3 times a month (4)	Once a week (5)	2-3 times a week (6)	4 or more times a week (7)
Pokies (Q30_1)	○	○	○	○	○	○	○
Scratch tickets (Q30_2)	○	○	○	○	○	○	○
Sports betting (Q30_3)	○	○	○	○	○	○	○
Race betting (Q30_4)	○	○	○	○	○	○	○
Keno (Q30_5)	○	○	○	○	○	○	○
Bingo (Q30_6)	○	○	○	○	○	○	○
Casino table games, such as blackjack, poker, dice, roulette, craps or baccarat (Q30_7)	○	○	○	○	○	○	○
Gambled on esports (Q30_8)	○	○	○	○	○	○	○
Gambled on fantasy sports (Q30_9)	○	○	○	○	○	○	○
Informal private betting (such as playing cards for money at home) (Q30_10)	○	○	○	○	○	○	○
Please select "once a week" for this question (Q30_11)	○	○	○	○	○	○	○

Skip To: End of Block If During the last 12 months, how often did you gamble for money on each of the following activities... = Pokies [Not at all in the last 12 months]

Skip To: End of Block If During the last 12 months, how often did you gamble for money on each of the following activities... = Pokies [Less than once a month]

Skip To: End of Survey If During the last 12 months, how often did you gamble for money on each of the following activities... != Please select "once a week" for this question [Once a week]

Demographics

Q11 What is your gender?

- Male (1)
- Female (2)
- Other (3)

Q12 Where were you born?

- Australia (1)
- Other (please specify) (2)
  _____

Q13 What language do you speak most often at home?

- English (1)
- Other (please specify) (2)
  _____

Q14 For statistical purposes, are you of Aboriginal or Torres Strait Islander origin?

- No, not Aboriginal or Torres Strait Islander (1)
- Yes, Aboriginal (2)
- Yes, Torres Strait Islander (3)
- Yes, both Aboriginal and Torres Strait Islander (4)
- Prefer not to say (5)

Q15 What is your current marital status?

- Single/never married (1)
- Living with partner/de facto (2)
- Married (3)
- Divorced or separated (4)
- Widowed (5)

Q16 What sort of living arrangement best describes your household?

- Live alone (1)
- Couple (no dependents) (2)
- Couple with at least one dependent child (3)
- Couple living with independent child(ren) (4)
- Single parent living with at least one dependent child (5)

- Single parent living with independent child(ren) (6)
- Share house with other adults (not your parents or children) (7)
- Live with parents (8)
- Other (please specify) (9)
  _____

Q19 What is your highest educational qualification?

- Year 10 or less (1)
- Year 12 or equivalent (2)
- A trade, technical certificate or diploma (3)
- A university or college degree (4)
- A postgraduate qualification (5)

Q20 Which of the following best describes your current work status?

- Work full-time (1)
- Work part-time or casual (2)
- Self-employed (3)
- Unemployed and looking for work (4)
- Full-time student (5)
- Full-time home duties (6)
- Retired (7)
- Disability pension (8)
- Other (please specify) (9)
  _____

Q22 How important is religion or spirituality in your life?

- Not all important (1)
- Somewhat important (2)
- Moderately important (3)
- Very important (4)
- Extremely important (5)

Q23 What do you estimate your personal weekly (or annual) income before taxes was last year?
(Remember that this survey is anonymous. Please select one response)

- ○ $3,000 or more per week -- $156,000 or more per year (15)
- ○ $2,000 - $2,999 per week -- $104,000 - $155,999 per year (14)
- ○ $1,750 - $1,999 per week -- $91,000 - $103,999 per year (13)
- ○ $1,500 - $1,749 per week -- $78,000 - $90,999 per year (12)
- ○ $1,250 - $1,499 per week -- $65,000 - $77,999 per year (11)
- ○ $1,000 - $1,249 per week -- $52,000 - $64,999 per year (10)
- ○ $800 - $999 per week -- $41,600 - $51,999 per year (9)
- ○ $650 - $799 per week -- $33,800 - $41,599 per year (8)
- ○ $500 - $649 per week -- $26,000 -$33,799 per year (7)
- ○ $400 - $499 per week -- $20,800 - $25,999 per year (6)
- ○ $300 - $399 per week -- $15,600 - $20,799 per year (5)
- ○ $150 - $299 per week -- $7,800 - $15,599 per year (4)
- ○ $1 - $149 per week -- $1 - $7,799 per year (3)
- ○ Nil income (2)
- ○ Negative income (1)

Q25 Please indicate how much each of the following statements apply to you.

	Does not apply (1)	(2)	(3)	(4)	Exactly applies (5)
I receive a lot of understanding and security from others (1)	○	○	○	○	○
There is someone very close to me whose help I can always count on (2)	○	○	○	○	○
If I need to, I can borrow something from friends or neighbors without any problems (3)	○	○	○	○	○
I know several people with whom I like to do things (4)	○	○	○	○	○
When I am sick, I can ask friends/relatives to handle important things for me without hesitation (5)	○	○	○	○	○
If I'm very depressed, I know who I can turn to (6)	○	○	○	○	○

Q26 How old were you when you first gambled **for money** (including private gambling such as on card games at home)? (Remember this survey is anonymous).

_____

Q27 When you were a child growing up, how often did any of the adults in your household gamble?

- Never (1)
- Sometimes (2)
- Often (3)
- Very often (4)

Q28 When you were a child growing up, how often did you gamble with your parents or accompany them when they gambled?

- Never (1)
- Sometimes (2)
- Often (3)
- Very often (4)

Q29 When you were a child growing up, did any of the adults in your household have a gambling problem?

- No gambling problem (1)
- Mild gambling problem (2)
- Severe gambling problem (3)

Q31 During the last 12 months have you gambled online?

- Yes (1)
- No (2)

Display This Question:

If During the last 12 months, how often did you gamble for money on each of the following activities... [Not at all in the last 12 months] (Count) <= 8

Q32 Which of the following gambling activities have you spent the most money on in the last 12 months?

During the last 12 months, how often did you gamble for money on each of the following activities... != Pokies [Not at all in the last 12 months]

- Pokies (1)

During the last 12 months, how often did you gamble for money on each of the following activities... != Scratch tickets [Not at all in the last 12 months]

- Scratch tickets (2)

During the last 12 months, how often did you gamble for money on each of the following activities... != Sports betting [Not at all in the last 12 months]

- Sports betting (3)

During the last 12 months, how often did you gamble for money on each of the following activities... != Race betting [Not at all in the last 12 months]

- Race betting (4)

During the last 12 months, how often did you gamble for money on each of the following activities... != Keno [Not at all in the last 12 months]

- Keno (5)

During the last 12 months, how often did you gamble for money on each of the following activities... != Bingo [Not at all in the last 12 months]

- Bingo (6)

During the last 12 months, how often did you gamble for money on each of the following activities... != Casino table games, such as blackjack, poker, dice, roulette, craps or baccarat [Not at all in the last 12 months]

- Casino table games, such as blackjack, poker, dice, roulette, craps or baccarat (7)

During the last 12 months, how often did you gamble for money on each of the following activities... != Gambled on esports [Not at all in the last 12 months]

- Gambling on esports (8)

During the last 12 months, how often did you gamble for money on each of the following activities... != Gambled on fantasy sports [Not at all in the last 12 months]

- Gambling on fantasy sports (9)

During the last 12 months, how often did you gamble for money on each of the following activities... != Informal private betting (such as playing cards for money at home) [Not at all in the last 12 months]

- Informal private betting (such as play cards for money at home) (10)

Q33 About how far from where you live is the nearest pub, club or casino where you gamble on the pokies?

- Less than 1 kilometre (1)
- 1-5 kilometres (2)
- 6-10 kilometres (3)
- 11-20 kilometres (4)
- 21-50 kilometres (5)
- 51-100 kilometres (6)
- More than 100 kilometres (7)
- I don't play the pokies at any land-based venues (8)

Q34 About how far from where you live is the nearest pub, club or casino where you can play pokies (even if you don't play them there)?

- Less than 1 kilometre (1)
- 1-5 kilometres (2)
- 6-10 kilometres (3)
- 11-20 kilometres (4)
- 21-50 kilometres (5)
- 51-100 kilometres (6)
- More than 100 kilometres (7)

Q35 When you play the pokies, how often do you play them alone?

- Never (1)
- Sometimes (2)
- Often (3)
- Almost always (4)

Q37 How many of your friends regularly play the pokies?

- None (1)
- Less than half (2)
- About half (3)
- More than half (4)
- Nearly all of them (5)

Q38 Please rate your agreement or disagreement with the following statements.

Gambling:

	Strongly Disagree (1)	(3)	(4)	(5)	(6)	Strongly Agree (7)
is a rush (1)	○	○	○	○	○	○
is a way to win big money immediately (2)	○	○	○	○	○	○
is about enjoying intensive feelings (3)	○	○	○	○	○	○
gives a feeling of being really alive (4)	○	○	○	○	○	○
provides a good chance to win big with small money (5)	○	○	○	○	○	○
is a way to forget everyday problems (6)	○	○	○	○	○	○
is the best way to relax (7)	○	○	○	○	○	○
can help clear your mind (8)	○	○	○	○	○	○
helps release tension (9)	○	○	○	○	○	○
is about feeling like an expert (10)	○	○	○	○	○	○
produces a feeling of importance (11)	○	○	○	○	○	○
is about feeling in control (12)	○	○	○	○	○	○
produces a feeling of being powerful (13)	○	○	○	○	○	○
is a way to make big money (14)	○	○	○	○	○	○
provides an opportunity to be with similar people (15)	○	○	○	○	○	○
is a way to meet new people (16)	○	○	○	○	○	○
provides an opportunity to get along with others favourably (17)	○	○	○	○	○	○
provides an opportunity to be with friends (18)	○	○	○	○	○	○

Q39 Please answer each of the multiple choice questions below based on your general knowledge about gambling.

Which of the following set of lottery numbers has the greatest probability of being selected as the winning combination?

- 1, 2, 3, 4, 5, 6 (1)
- 8, 18, 3, 55, 32, 28 (2)
- each of the above have an equal probability of being selected (3)

Q40 Which gives you the best chance of winning the jackpot on a slot machine?

- Playing a slot machine that has not had a jackpot in over a month. (1)
- Playing a slot machine that had a jackpot an hour ago. (2)
- Your chances of winning the jackpot are the same on both machines. (3)

Q41 How lucky are you? If 10 people's names were put into a hat and one name drawn for a prize, how likely is it that <u>your name</u> would be chosen?

- About the same likelihood as everyone else (1)
- Less likely than other people (2)
- More likely than other people (3)

Q42 If you were to buy a lottery ticket, which would be the best place to buy it from?

- a place that has sold many previous winning tickets (1)
- a place that has sold few previous winning tickets (2)
- one place is as good as another (3)

Q43 A positive attitude or doing good deeds increases your likelihood of winning money when gambling.

- Disagree (1)
- Agree (2)

Q44 A gambler goes to the casino and wins 75% of the time. How many times has he or she likely gone to the casino?

- 4 times (1)
- 100 times (2)
- It is just as likely that he has gone either 4 or 100 times (3)

Q45 You go to a casino with $100 hoping to double your money. Which strategy gives you the best chance of doing this?

- Betting all your money on a single bet (1)
- Betting small amounts of money on several different bets (2)
- Either strategy gives you an equal chance of doubling your money. (3)

Q46 Which game can you consistently win money at if you use the right strategy?

- Slot machines (1)
- Roulette (2)
- Bingo (3)
- None of the above (4)

Q47 Your chances of winning a lottery are better if you are able to choose your own numbers.

- Disagree (1)
- Agree (2)

Q48 You have flipped a coin and correctly guessed 'heads' 5 times in a row. What are the odds that heads will come up on the next flip. Would you say…

- 50% (1)
- more than 50% (2)
- or less than 50% (3)

Q49 On a typical day, how would you respond to the following statements? (Please select one response on each line)

	Strongly disagree (1)	Moderately disagree (2)	Mildly disagree (3)	Neither agree nor disagree (4)	Mildly agree (5)	Moderately agree (6)	Strongly agree (7)
All I want to do now is gamble (1)	○	○	○	○	○	○	○
It would be difficult to turn down a gamble this minute (2)	○	○	○	○	○	○	○
Having a gamble now would make things seem just perfect (3)	○	○	○	○	○	○	○
I want to gamble so bad I can almost feel it (4)	○	○	○	○	○	○	○
Nothing would be better than having a gamble right now (5)	○	○	○	○	○	○	○
I crave a gamble right now (6)	○	○	○	○	○	○	○

Q50 Please indicate whether you disagree or agree with each of the following statements in relation to your gambling.

	Disagree (0)	Agree (1)
I have a dedicated budget to spend on the pokies (Q50_1)	○	○
I always leave my bank cards at home when I play the pokies at venues (Q50_2)	○	○
I have used cash advances on my credit card to play the pokies (Q50_3)	○	○
I restrict myself to playing the pokies only on one or two days a week, or less often (Q50_4)	○	○
I restrict myself to playing pokies only in the evenings (Q50_5)	○	○
I have a rule that I don’t go and play the pokies alone (Q50_6)	○	○

I have a rule that I only play the pokies for an hour (or 1/2 hour, etc.) at a time (Q50_7)	○	○
My leisure time is busy with other hobbies, social activities and/or sports (Q50_8)	○	○
I keep a household budget (Q50_9)	○	○
When I play the pokies, I always set aside a fixed amount to spend (Q50_10)	○	○
When I play the pokies, I always bet a fixed amount per spin (Q50_11)	○	○
When I play the pokies, I only gamble on my favourite machine (Q50_12)	○	○
When I have a large win on the pokies, it is time for me to quit (Q50_13)	○	○
I make sure I take regular breaks (at 30min, 1 hour, etc.) when playing the pokies (Q50_14)	○	○

Q51 Please indicate whether you disagree or agree with each of the following statements in relation to your gambling.

	Disagree (0)	Agree (1)
I research systems or strategies for success on the pokies (Q51_1)	○	○
If I'm losing after an hour (or 1/2 hour, 2 hours, etc.) of playing the pokies, my rule is to quit (Q51_2)	○	○
I keep a record of how much I spend on the pokies (Q51_3)	○	○
I look at the odds of winning on the pokies before I play (Q51_4)	○	○
I make a point of thinking about my family when I play the pokies (Q51_5)	○	○
Before I play the pokies, I make a point to think about what else I could do with the money (Q51_6)	○	○
Before I play the pokies, I make a point to think about how long it took me to save the money (Q51_7)	○	○
Before I play the pokies, I make a point to think about how I will feel if I lose the money (Q51_8)	○	○
I always read the information screen on the pokies before I play (Q51_9)	○	○
I don't use pokie winnings to pay bills (Q51_10)	○	○
I only use pokies winnings for fun activities or purchases (Q51_11)	○	○
I play the pokies to make money / supplement my income (Q51_12)	○	○
If I'm feeling depressed or upset, I don't play the pokies (Q51_13)	○	○

If I’m not having fun playing the pokies, I stop (Q51_14)	○	○
I often talk about the pokies with my friends and/or family (Q51_15)	○	○

Q52 Please indicate whether you disagree or agree with each of the following statements in relation to your gambling.

	Disagree (0)	Agree (1)
As a rule, I don’t go and play the pokies just to avoid being bored (Q52_1)	○	○
I don’t play the pokies when I have consumed alcohol or drugs (Q52_2)	○	○
I don’t play the pokies just because my friends are gambling (Q52_3)	○	○
I won’t go out with friends if I think that they will encourage me to play the pokies (Q52_4)	○	○
I don’t play the pokies with friends who like higher stakes than I do (Q52_5)	○	○
When I feel myself getting too emotional playing the pokies, I take a break (Q52_6)	○	○
I deliberately ignore or don’t read pokies advertisements or promotions (Q52_7)	○	○
I have set up a spending limit on my membership or loyalty cards at my pokie venue(s) (Q52_8)	○	○

Q53 Please indicate whether you disagree or agree with each of the following statements in relation to your gambling

	Disagree (0)	Agree (1)
I play low denomination pokies (Q53_1)	○	○
I cash out pokie winnings and do not use them later in the session (Q53_2)	○	○
I give pokie winnings to someone else, such as my partner or friend while gambling (Q53_3)	○	○
I schedule other activities after playing pokies to limit session times (Q53_4)	○	○
I give my cash or cards to family or friends to limit my access (Q53_5)	○	○
I lowered my limit for ATM cash withdrawals (Q53_6)	○	○
I prepurchase goods and/or prepay bills to reduce spare cash (Q53_7)	○	○
I play free games to help limit my pokie playing (Q53_8)	○	○

Q54 Have you had a gambling problem **within** the past 2 years?

- ○ Yes (1)
- ○ No (2)

Q55 Have you had a gambling problem **prior to** the past 2 years?

- ○ Yes (1)
- ○ No (2)

Q56 Considering the **last 12 months**, did you experience any of the following because of your pokie playing?

	No (0)	Yes (1)
Reduction of my available spending money (1)	○	○
Reduction of my savings (2)	○	○
Less spending on recreational expenses such as eating out, going to movies or other entertainment. (3)	○	○
Had regrets that made me feel sorry about my gambling (4)	○	○
Felt ashamed of my gambling (5)	○	○
Sold personal items (6)	○	○
Increased credit card debt (7)	○	○
Spent less time with people I care about (8)	○	○
Felt distressed about my gambling (9)	○	○
Felt like a failure (10)	○	○

Q63 Considering the last 12 months, did you experience any of the following because of your pokie playing?

	No (0)	Yes (1)
Late payment on bills (1)	○	○
Less spending on essential expenses (e.g., food, medicine) (2)	○	○
Social Isolation (3)	○	○
Experienced greater tension in my relationships (4)	○	○
Felt insecure or vulnerable (5)	○	○
Felt worthless (6)	○	○

Loss of sleep due to spending time gambling (7)	○	○
Didn't eat as much or as often as I should have (8)	○	○
Was absent from work or study (9)	○	○
Didn't fully attend to the needs of children (10)	○	○

Q57 During the last **12 months**, how often:

	Never (0)	Sometimes (1)	Most of the time (2)	Almost always (3)
Have you gambled more than you could really afford to lose? (Q57_1)	○	○	○	○
Have you felt guilty about the way you gamble or what happens when you gamble? (Q57_2)	○	○	○	○
Have you needed to gamble with larger amounts of money to get the same feeling of excitement? (Q57_3)	○	○	○	○
When you gamble, did you go back another day to try to win back the money you lost? (Q57_4)	○	○	○	○
Have you borrowed money or sold anything to get money to gamble? (Q57_5)	○	○	○	○
Has your gambling caused any financial problems for you or your household? (Q57_6)	○	○	○	○
Has gambling caused you any health problems, including stress or anxiety? (Q57_7)	○	○	○	○
Have people criticised your gambling or told you that you had a gambling problem because of your gambling, regardless of whether or not you thought it was true? (Q57_8)	○	○	○	○
Have you felt that you might have a problem with gambling? (Q57_9)	○	○	○	○

Q58 Have you ever been diagnosed with a mental health disorder by a professional (e.g., by a doctor, psychiatrist, psychologist)?

- ○ Yes (1)
- ○ No (2)

Q59 During the last 30 days, how often did you feel...

	None of the time (1)	A little of the time (2)	Some of the time (3)	Most of the time (4)	All of the time (5)
Nervous (1)					
Hopeless (2)					
Restless or fidgety (3)					
That everything was an effort (4)					
So depressed that nothing could cheer you up (5)					
Worthless? (6)					

Q60 How often did you have a drink containing alcohol in the past year?

- Never (1)
- Monthly or less (2)
- Two to four times a month (3)
- Two to three times a week (4)
- Four or more times a week (5)

Display This Question:

If How often did you have a drink containing alcohol in the past year? != Never

Q61 How many drinks did you have on a typical day when you were drinking in the past year?

- None, I do not drink (1)
- 1 or 2 (2)
- 3 or 4 (3)
- 5 or 6 (4)
- 7 to 9 (5)
- 10 or more (6)

Display This Question:

If How often did you have a drink containing alcohol in the past year? != Never

And How many drinks did you have on a typical day when you were drinking in the past year? != None, I do not drink

Q62 How often did you have six or more drinks on one occasion in the past year?

- Never (1)
- Less than monthly (2)
- Monthly (3)
- Weekly (4)
- Daily or almost daily (5)

Q63 Do you consume (use) tobacco products?

- Yes (1)
- No (2)

Q64 Read each statement and mark the appropriate number on the right side of each item. Do not spend too much time on any statement. Answer quickly and honestly.

	Rarely/ Never (1)	Occasionally (2)	Often (3)	Almost Always/ Always (4)
I plan tasks carefully (1)				
I do things without thinking (2)				
I don't "pay attention" (3)				
I am self-controlled (4)				
I concentrate easily (5)				
I am a careful thinker (6)				
I say things without thinking (7)				
I act on the spur of the moment (8)				

If you experienced discomfort at any point during the survey, you can:

Call the Gambling Helpline on:

1 800 858 858

Or click on the link below (or cut and paste into your browser) to find out more about gambling help and support:

https://www.gamblinghelponline.org.au/

Or call Lifeline on 13 11 14

Results from this study will be available on the EGRL Facebook page once the report has gone through peer review, expected in late 2021.

https://facebook.com/cquegrl/

Thank you very much for participating in this survey.

Please click on the **SUBMIT button** below to lodge your survey responses.

Appendix C. Characteristics of the Stage 2 sample

This appendix presents descriptive statistics on the total survey sample for Stage 2, including demographic characteristics, gambling problems and harms, and the risk factors measured.

2.3.1. Demographics

Of the 2,032 respondents, 1,213 (59.7%) identified as male, 818 (40.3%) identified as female, and 1 (0.0%) identified as a gender other than male or female (Table C.1). Reported age ranged from 18-87 years, with a mean age of 41.13 years (*SD*=15.83, median=37). All participants resided in NSW, the majority were born in Australia (85.9%) and 14.1 per cent identified as Aboriginal or Torres Strait Islander origin. The majority (59.4%) of respondents were married or living with a partner, and 22.6 per cent lived alone. More than half of the sample (57.3%) had completed a university or postgraduate qualification and 95.3 per cent spoke English as their main language at home. The most popular languages, other than English, were Hindi, Cantonese, Mandarin, Nepali and Vietnamese. Most of the sample had full-time employment (55.1%), and the sample reported a median annual household income of $78,000-$90,999 (pre-tax).

Table C.1 – Demographic statistics

	n	%
Gender		
Male	1,213	59.7
Female	818	40.3
Other	1	0.0
Country of birth		
Australia	1,745	85.9
Other	287	14.1
Main language spoken at home		
English	1,937	95.3
A language other than English	95	4.7
Aboriginal or Torres Strait Islander origin		
Not, not Aboriginal or Torres Strait Islander	1,707	84.0
Yes, Aboriginal	187	9.2
Yes, Torres Strait Islander	39	1.9
Yes, both Aboriginal and Torres Strait Islander	60	3.0
Prefer not to say	39	1.9
Marital status		
Married	936	46.1
Living with partner/de facto	270	13.3
Single/never married	650	32.0
Separated or divorced	137	6.7
Widowed	39	1.9
Living arrangements		
Live alone	459	22.6
Couple (no dependents)	446	21.9
Couple with at least one dependent child	516	25.4
Couple living with independent child(ren)	228	11.2

Single parent living with at least one dependent child	94	4.6
Single parent living with independent child(ren)	41	2.0
Share house with other adults (not your parents or children)	98	4.8
Live with parents	139	6.8
Other	11	0.5
Highest level of education		
Year 10 or below	170	8.4
Year 12 or equivalent	285	14.0
A trade, technical certificate or diploma	414	20.4
A university or college degree	782	38.5
Postgraduate qualifications	381	18.8
Employment		
Work full-time	1,119	55.1
Work part-time or casual	286	14.1
Self-employed	160	7.9
Unemployed and looking for work	73	3.6
Full-time student	46	2.3
Full-time home duties	67	3.3
Retired	222	10.9
Disability pension	45	2.2
Other	14	0.7
Annual household pre-tax income		
Negative income	11	0.5
Nil income	18	0.9
$1 to $7,799	18	0.9
$7,800 to $15,599	20	1.0
$15,600 to $20,799	39	1.9
$20,800 to $25,999	75	3.7
$26,000 to $33,799	108	5.3
$33,800 to $41,599	112	5.5
$41,600 to $51,999	127	6.3
$52,000 to $64,999	130	6.4
$65,000 to $77,999	149	7.3
$78,000 to $90,999	229	11.3
$91,000 to $103,999	222	10.9
$104,000 to $155,999	456	22.4
$156,000 to $259,999	235	11.6
$260,000 or more	83	4.1

Note: Most common 'LOTE' responses - Hindi (11), Cantonese (8), Mandarin (7), Nepali (6), Vietnamese (5)
Questions: 6, 11-16, 19-20, 22-23.

2.3.2. Gambling problems and harms

Reflecting the sampling of at least monthly EGM players, most of the sample were at risk of gambling-related problems: 25.1 per cent were non-problem gamblers, 15.6 per cent low-risk gamblers, 18.9 per cent moderate-risk gamblers and 40.3 per cent problem gamblers (Table C.2). The mean PGSI score was 7.04 (SD=7.20), median = 5. Around one-quarter of the sample (23.9%) reported having a gambling problem within the past 2 years, and a similar number (24.7%) reported having had a gambling problem prior to this.

SGHS harms scores ranged from 0 to 10, with a mean score of 3.14 (SD = 3.20, median = 2). The most experienced SGHS harms (Table C.3) were having regrets (38.8%), reduction of spending money (38.1%) and savings (37.0%), and less spent on recreational activities (36.1%). The unimpeachable harms again ranged from 0 to 10, with the mean score of 2.43 (SD = 3.07, median = 1). The most common UGHS harms (Table 3) were feelings of worthlessness (29.5%), social isolation (28.9%), feeling insecure or vulnerable (26.5%) and loss of sleep (25.4%).

Table C.2 – Gambling problems

	n	%
Have you had a gambling problem within the past 2 years?		
Yes	485	23.9
No	1,547	76.1
Have you had a gambling problem prior to the past 2 years?		
Yes	502	24.7
No	1,530	75.3
PGSI category		
Non-problem gambler	510	25.1
Low-risk gambler	318	15.6
Moderate-risk gambler	385	18.9
Problem gambler	819	40.3

Questions: 54 – 55, 57

Table C.3 – Gambling-related harms

	Proportion of sample who said yes	
	n	%
SGHS: Considering the last 12 months, did you experience any of the following because of your pokie playing:		
Had regrets that made me feel sorry about my gambling	788	38.8
Reduction of my available spending money	774	38.1
Reduction of my savings	752	37.0
Less spending on recreational expenses such as eating out, going to movies or other entertainment	734	36.1
Felt ashamed of my gambling	648	31.9
Felt like a failure	605	29.8
Spent less time with people I care about	583	28.7
Felt distressed about my gambling	582	28.6
Increased credit card debt	475	23.4
Sold personal items	437	21.5
UGHS: Considering the last 12 months, did you experience any of the following because of your pokie playing?		
Felt worthless	599	29.5
Social isolation	588	28.9
Felt insecure or vulnerable	538	26.5
Loss of sleep due to spending time gambling	516	25.4
Less spending money on essential expenses (e.g. food, medicine)	510	25.1
Experienced greater tension in my relationship	499	24.6
Late payment on bills	486	23.9
Didn't eat as much or as often as I should have	471	23.2
Was absent from work or study	388	19.1
Didn't fully attend to the needs of children	384	18.9

Questions: 56, 63

2.3.3. Potential risk factors for gambling harm

Gambling behaviour

Over half the participants gambled on EGMs on at least a weekly basis (55.7%; Figure C.1). This high betting frequency reflects the survey inclusion criteria of EGM gambling at least once a month. The next most common forms of gambling were sports betting (30.7% at least weekly) and race betting (29.3% at least weekly). Over the previous 12 months, 72 per cent of participants had gambled online.

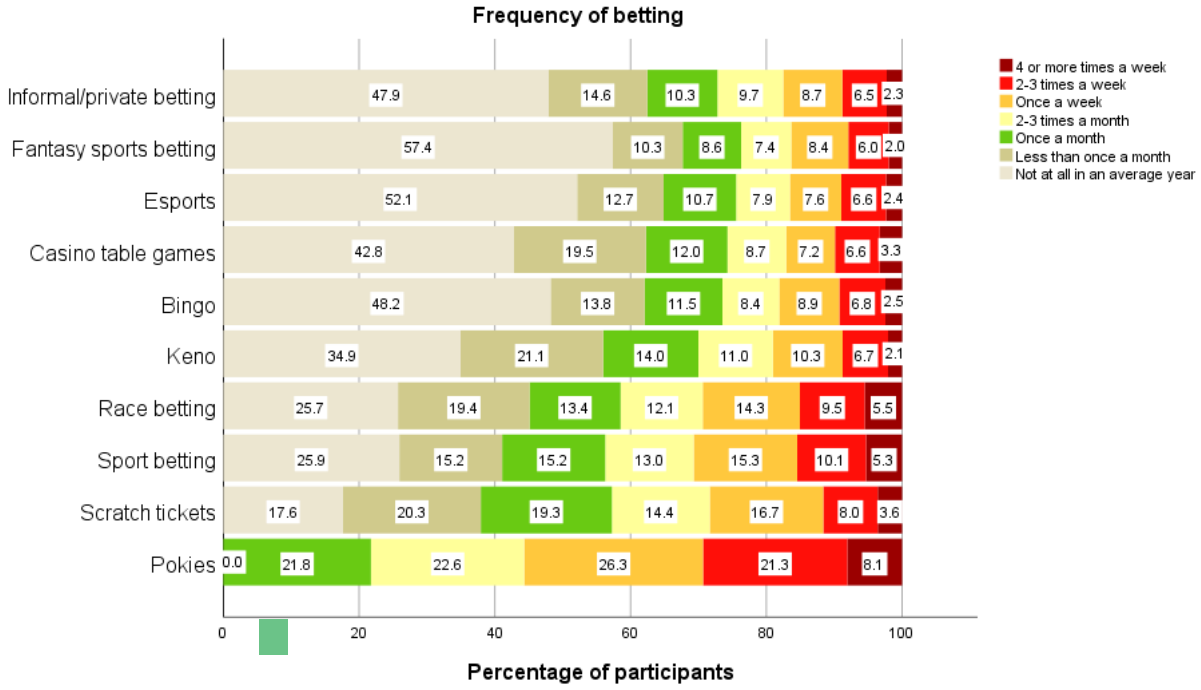

Figure C.1 - Frequency of betting (N=1,213)
Question: 30.

In the previous 12 months, the gambling activities where participants had spent the most money were EGMs (35.5%), sports betting (22.1%), and race betting (13.5%; Figure C.2).

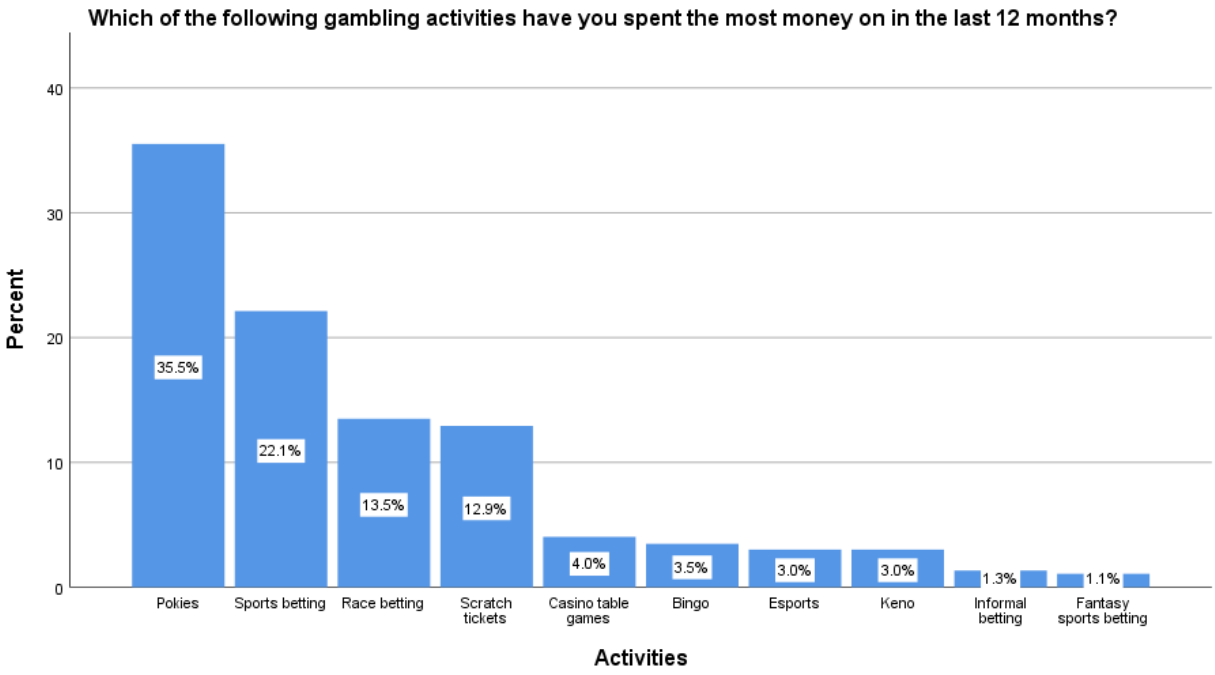

Figure C.2 – Highest spend gambling activity (N=1,213)
Question: 32

The majority of participants lived within 5km of their nearest EGM venue (64.1%; Figure C.3) and 60.6 per cent gambled at a venue within 5km of their home.

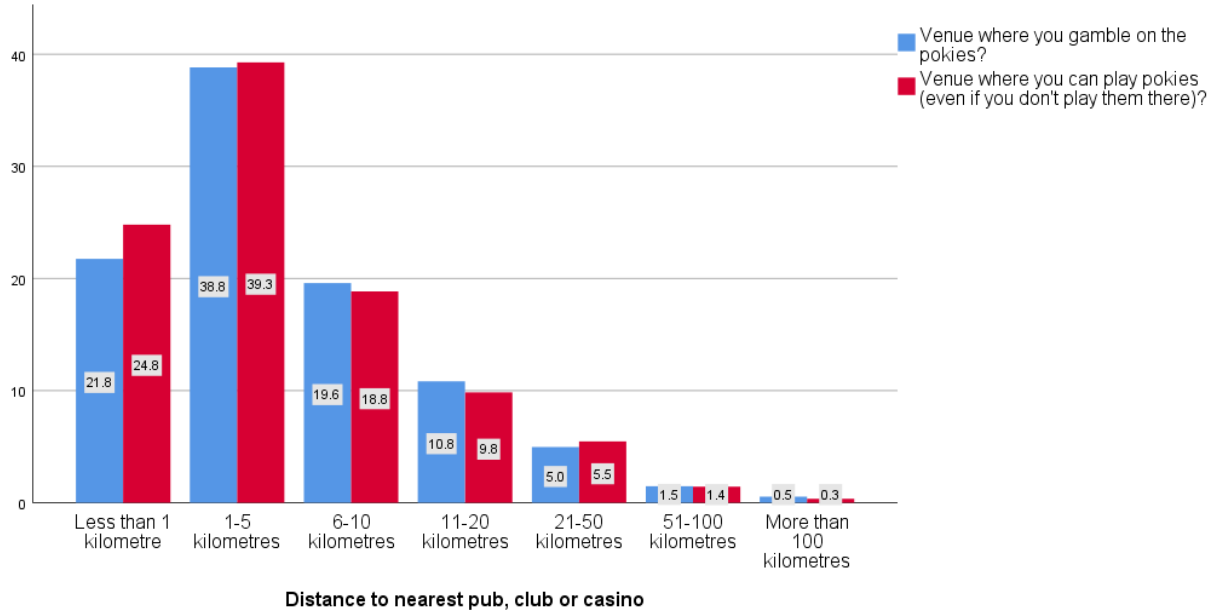

Figure C.3 – Distance to EGM venues (N=1,213)
Questions: 33-34

Of total participants, 39.9 per cent often or always played EGMs alone, and nearly half the participants reported that half or more of their friends regularly played EGMs (Table C.4).

Table C.4 – Social gambling behaviour

	n	%
When you play the pokies, how often do you play them alone?		
Never	326	16.0
Sometimes	895	44.0
Often	410	20.2
Almost always	401	19.7
How many of your friends regularly play the pokies?		
None	213	10.5
Less than half	888	43.7
About half	567	27.9
More than half	279	13.7
Nearly all of them	85	4.2

Questions: 35, 37

Early experiences of gambling

As shown in Table C.5, over half the participants (53.3%) were under 19 years old when they first gambled for money, and 8.3 per cent were 14 years or younger. The majority of respondents recalled an adult in their household gambling when they were growing up (74.6%), and 17.9 per cent often or very often gambled with their parent/s or accompanied them while they gambled. Around one-third (34.3%) of participants felt that one or more adults in their household when they were growing up had a gambling problem.

Table C.5 – Early gambling experiences

	n	%
How old were you when you first gambled for money		
Mean = 20.74, SD = 7.08, median = 19		
Under 5 years	15	0.7
5 to 9 years	28	1.4
10 to 14 years	126	6.2
15 to 19 years	911	44.8
20 to 24 years	517	25.4
25 to 29 years	227	11.2
30 to 34 years	101	5.0
35 to 39 years	44	2.2
40 to 44 years	29	1.4
45 to 49 years	10	0.5
50 years and over	24	1.2
When you were a child growing up, how often did any of the adults in your household gamble?		
Never	519	25.4
Sometimes	938	46.2
Often	407	20.1
Very often	168	8.3
When you were a child growing up, how often did you gamble with your parents or accompany them when they gambled		
Never	946	46.6
Sometimes	721	35.5
Often	277	13.6
Very often	88	4.3
When you were a child growing up, did any of the adults in your household have a gambling problem?		
No gambling problem	1,335	65.7
Mild gambling problem	569	28.0
Severe gambling problem	128	6.3

Questions: 26-29

Gambling attitudes and cognitions

Participants' mean scores for the Gambling Fallacies Measure was 4.82 (*SD* = 2.46), with scores ranging from 0 to 10. The mean score is lower than the scores associated with problem gamblers (*m* = 6.06, *SD* = 2.08) and recreational gamblers (*m* = 6.97, *SD* = 1.40) in a large general population Canadian study (Leonard & Williams, 2016), indicating a lower resistance to gambling fallacies within this sample. The reported mean for the Gambling Urge Scale was 19.40 (*SD* = 10.61), with possible scores ranging from 6 to 42 and higher scores representing stronger urges. The overall mean score for the Gambling Outcome Expectancy Scale was 81.37 (*SD* = 22.41), with the five domains of gambling motivation shown in Figure C.4. 'Escape' and 'Social' were the strongest motivators for gambling across the sample, followed by 'Ego', 'Excitement' and 'Money'.

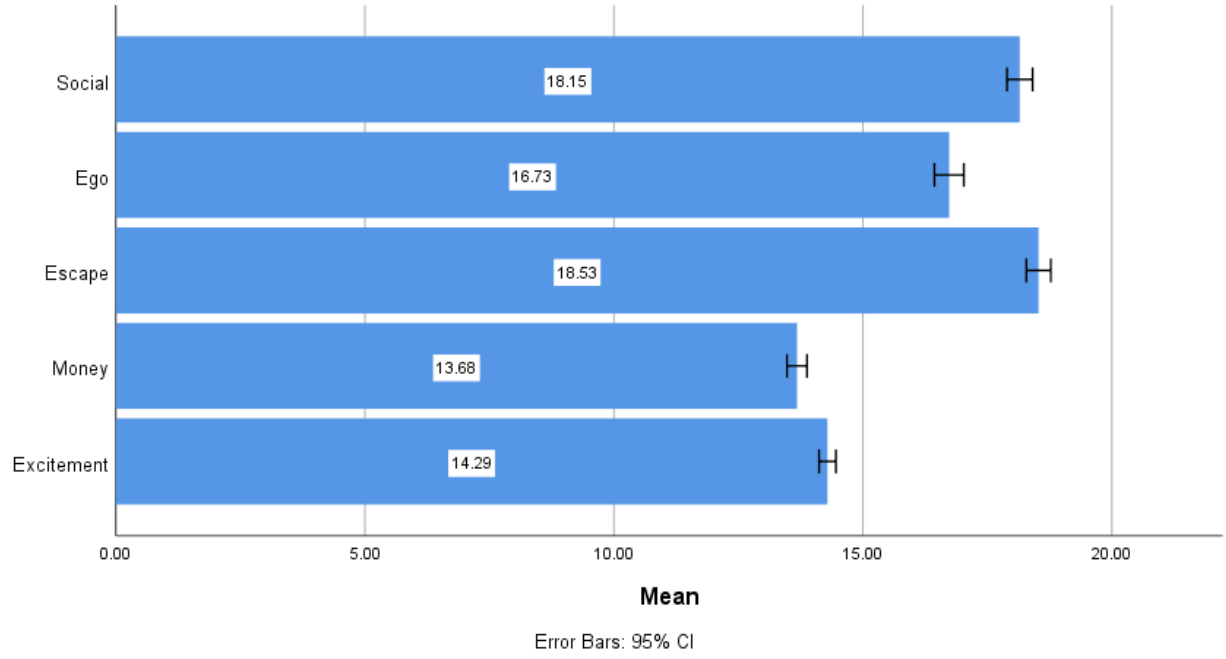

Figure C.4 – Mean GOES scores across each domain (N=1,213)
Questions: 38

Religiosity, social support, and impulsivity

Nearly half of the participants (47.5%) rated religion or spirituality as moderately to extremely important in their lives (Table C.6). The mean score on the Barratt Impulsivity Scale (Q64) was 17.29 (*SD* = 4.07), with scores ranging from 8 to 32 and higher scores indicating greater impulsiveness. On the Brief Perceived Social Support Scale (Q25), the mean was 21.36 (*SD* = 5.09), with scores ranging from 6 to 30. This mean is less than the general US population norms (Lin et al., 2019) of 25.38 (*SD* = 3.29), with the current sample reporting overall lower perceived levels of support.

Table C.6 – Importance of religion and spirituality

	n	%
Importance of religion or spirituality in your life		
Not at all important	550	27.1
Somewhat important	515	25.3
Moderately important	423	20.8
Very important	322	15.8
Extremely important	222	10.9

Question: 22

Health

Amongst all respondents, 39.3 per cent drank alcohol more than twice a week, with 23.9 per cent typically having six or more drinks in a session at least weekly (Table

C.7). Close to half (45.1%) used tobacco products. While 28.1 per cent of participants had a diagnosed mental health disorder, more than half (52.3%) showed mild to moderate (33.8%) or high levels (18.5%) of psychological distress in the previous 30 days (Table C.8).

Table C.7 – Alcohol and tobacco use

	n	%
How often did you have a drink containing alcohol in the past year?		
Never	232	11.4
Monthly or less	494	24.3
Two to four times a month	509	25.0
Two to three times a week	491	24.2
Four or more times a week	306	15.1
How many drinks did you have on a typical day when you were drinking in the past year?		
None, I do not drink	45	2.5
1 or 2	822	45.7
3 or 4	488	27.1
5 or 6	275	15.3
7 to 9	74	4.1
10 or more	96	5.3
How often did you have six or more drinks on one occasion in the past year?		
Never	433	24.7
Less than monthly	505	28.8
Monthly	387	22.6
Weekly	304	17.3
Daily or almost daily	116	6.6
Do you consume (use) tobacco products?		
Yes	916	45.1
No	1116	54.9

Questions: 60-63

Table C.8 – Psychological health

	n	%
Have you ever been diagnosed with a mental health disorder by a professional		
No	1462	71.9
Yes	570	28.1
Kessler Psychological Distress Scale - Brief		
No mental health disorder	971	47.8
Mild to moderate psychological distress	686	33.8
High levels of psychological distress	375	18.5

Questions: 58-59

Appendix D. Survey instrument for Stage 3

A randomised controlled trial to develop safe gambling guidelines for pokies play

INFORMATION SHEET

This project is being conducted by CQUniversity for the NSW Office of Responsible Gambling.

By participating, you can help us to identify “safe gambling practices” which can assist people to control how much they spend on poker machines (pokies).

Participating in this project involves completing 3 surveys. The current survey will take you about 15 minutes to complete. It asks about your gambling behaviour, as well as some questions about you.

Then, for the next 2 months, we will ask you to complete a 5-10 minute survey once a month. These 2 shorter surveys will ask about your gambling behaviour in the previous 4 weeks.

In between each survey, we will send you a text message with a safe gambling message. We would like you to read the text message but you do not need to respond to it.

If you have any questions, please contact the research team at n.hing@cqu.edu.au

CQUniversity Ethics Approval number: 22959

Would you like to see more details about the study?

- Yes (goes to next page)
- No (skipped to consent form)

A randomised controlled trial to develop safe gambling guidelines for pokies play

ADDITIONAL INFORMATION

How your confidentiality will be protected

Only the research panel which recruited you to the study will have access to your contact details. These will not be shared with the researchers. Only your anonymous survey responses will be provided to the researchers. They will be combined with hundreds of other responses so no one will know your individual answers. The anonymous data will be stored securely and indefinitely by CQUniversity.

Participation is voluntary

Participation in this study is completely voluntary. You are free to withdraw at any stage. If you withdraw before completing any of the surveys, we will not use any of your responses to the incomplete survey/s. You should also clear your browsing history so that no one can access your responses.

How you will receive feedback

Information about the results of the research will be made available through CQUniversity's gambling research Facebook page - https://www.facebook.com/cquegrl/ .

Where you can get further information

If you want further information or have any questions, please contact Professor Nerilee Hing: n.hing@cqu.edu.au. You can also contact the Ethics Coordinator at CQUniversity's Office of Research: 07 4923 2603.

If you experience discomfort at any point during the survey, you can contact **Gambling Help on 1800 858 858 or www.gamblinghelponline.org.au** or **Lifeline on 13 11 14.** These are free and confidential telephone/online help services that operate 24 hours a day, 7 days a week.

Participation

If you would like to participate, please indicate your consent on the next screen. Next, we will ask some questions to determine whether you can participate in the project. If you meet our criteria, you can then take part in the first survey.

Project team

Professor Nerilee Hing (Chief Investigator), Professor Matthew Rockloff, Professor Matthew Browne and Dr Alex Russell. Qualtrics is assisting with recruiting respondents to this survey.

Consent

I consent to participate in this research project and agree that:

- I have read and understood the Information Sheet that describes this study.
- Any questions I had about the study were answered by either the Information Sheet or the researchers.
- I understand I have the right to withdraw from the surveys at any time.
- The research findings, which will not identify me, may be included in the researchers' publications on the study which may include conference presentations and research articles.
- To protect my privacy, my name will not be recorded or used in publication(s).
- I am providing my consent to participate in this study.
- I am 18 years of age or over.

    - Yes (continue to next question)
    - No (screened out)

SCREENING QUESTIONS (Ask all respondents)

ONLY IN MONTH 1 SURVEY FOR TEST AND CONTROL GROUPS

IMPORTANT – this survey includes attention checks that you must answer correctly to continue with the survey. Please read each question carefully.

(S1) How old are you? (Please enter numbers only below)

(Text box, validation 0-100)

Screen out if under 18

(S2) What is your gender? (Please select one response)

- Male
- Female
- Other

(S3) Where do you mainly live? (Please select one response)

- Australian Capital Territory
- New South Wales
- Northern Territory
- Queensland
- South Australia
- Tasmania
- Victoria
- Western Australia
- I do not live in any of these areas

Screen out if not in NSW

(S4) During the LAST 4 WEEKS, have you **gambled any money** on each of the following activities? (Please select one response on each line)

	No	Yes
Bet on sporting events		
Bet on horse, harness or greyhound races		
Played keno		
Played casino games (e.g. blackjack, roulette, poker)		
Played gaming machines, such as pokies		

Screen out if No to Played gaming machines in (S4)

(S5) Would you like to better control how much you spend on the pokies? (Please select one response)

- Yes
- No
- Not sure

Screen out if No to (S5)

Your pokie playing

IN ALL MONTHS 1-3 SURVEYS FOR TEST AND CONTROL GROUPS

(PP1) During the LAST 4 WEEKS, about how many hours **in total** have you spent playing the pokies? (e.g., if you usually play 1 hour every week, insert 4 hours below.)

(Text box) hours in total during the LAST 4 WEEKS

(PP2) During the LAST 4 WEEKS, did you play the pokies more, less or about the same as you usually do? (Please select one response)

- A lot more
- A bit more
- About the same
- A bit less
- A lot less

(PP3) During the LAST 4 WEEKS, did you play the pokies more, less or about the same as you planned or intended to do? (Please select one response)

- A lot more
- A bit more
- About the same
- A bit less
- A lot less

(PP4) During the LAST 4 WEEKS, about how much money **in total** have you spent (lost) on playing the pokies? (e.g., if you usually spend $20 every week, insert $80 below. If you won overall, please enter $0)

$ (Text box) in total during the LAST 4 WEEKS

(skip PP5 and PP6 if answer $0 to PP4)

(PP5) During the LAST 4 WEEKS, did you spend (lose) more, less or about the same amount of money on the pokies as you usually do? (Please select one response)

- A lot more
- A bit more
- About the same
- A bit less
- A lot less

(PP6) During the LAST 4 WEEKS, did you spend (lose) more, less or about the same amount of money on the pokies as you planned or intended to do? (Please select one response)

- A lot more
- A bit more
- About the same
- A bit less
- A lot less

(PP7) How strong is your desire to better control how much you spend on the pokies? (radio buttons)

(Scale 1-10 where 1 is extremely weak to 10 = extremely strong)

IN ALL MONTHS 1-3 SURVEYS FOR TEST AND CONTROL GROUPS

(GUS) On a typical day, how would you respond to the following statements? (Please select one response on each line)

	Strongly disagree (1)	Moderately disagree (2)	Mildly disagree (3)	Neither agree nor disagree (4)	Mildly agree (5)	Moderately agree (6)	Strongly agree (7)
All I want to do now is gamble (1)							
It would be difficult to turn down a gamble this minute (2)							
Having a gamble now would make things seem just perfect (3)							
I want to gamble so bad I can almost feel it (4)							
Nothing would be better than having a gamble right now (5)							
I crave a gamble right now (6)							

Short term harms from gambling

IN ALL MONTHS 1-3 SURVEYS FOR TEST GROUP AND CONTROL GROUPS

(STGH1) During the LAST 4 WEEKS, did you experience any of the following **as a result of your pokie playing**? (Please select one response on each line)

	No	Yes
Reduction of your available spending money		
Less spending on recreational expenses such as eating out, going to the movies or other entertainment		
Reduction of your savings		
Sold personal items		
Increased credit card debt		
Had regrets that made you feel sorry about your gambling		
Felt like a failure		
Felt ashamed of your gambling		
Felt distress about your gambling		
Spent less time with people you care about		

STGH_info If gambling is a problem for you or others, please call the Gambling Helpline on 1800 858 858 or go to www.gamblinghelponline.org.au for free, confidential advice, available 24/7. If this questionnaire has raised any other issues for you, please call Lifeline on 13 11 14.

PGSI

ONLY IN MONTH 1 SURVEY FOR TEST AND CONTROL GROUPS

(PGSI) During the **LAST 12 MONTHS**, how often … (Please select one response on each line)

	Never (0)	Sometimes (1)	Most of the time (2)	Almost always (3)
Did you need to gamble with larger amounts of money to get the same feeling of excitement? (1)	o	o	o	o
Did people criticise your betting or tell you that you had a gambling problem, regardless of whether or not you thought it was true? (2)	o	o	o	o
Did you feel that you might have a problem with gambling? (3)	o	o	o	o
When you gambled, did you go back another day to try to win back the money you lost? (4)	o	o	o	o
Did gambling cause you any health problems, including stress or anxiety? (5)	o	o	o	o
Did you feel guilty about the way you gamble or what happened when you gambled? (6)	o	o	o	o
Did your gambling cause any financial problems for you or your household? (7)	o	o	o	o
Did you bet more than you could really afford to lose? (8)	o	o	o	o
Did you borrow money or sell anything to get money to gamble? (9)	o	o	o	o

PGSI_info If gambling is a problem for you or others, please call the Gambling Helpline on 1800 858 858 or go to www.gamblinghelponline.org.au for free, confidential advice, available 24/7. If this questionnaire has raised any other issues for you, please call Lifeline on 13 11 14.

Demographics

ONLY IN MONTH 1 SURVEY FOR TEST GROUP AND CONTROL GROUPS

(D2) Which of the following best describes your current marital status? (Please select one response)

- Single/never married
- Living with partner/de facto
- Married
- Divorced or separated
- Widowed

(D3) Which of the following best describes your household? (Please select one response)

- Single person
- One parent family with children
- Couple with children
- Couple with no children
- Group household
- Other (please specify - text box)

(D4) What is your highest educational qualification? (Please select one response)

- Did not complete primary school
- Completed primary school
- Year 10 or equivalent
- Year 12 or equivalent
- A trade, technical certificate or diploma
- A university or college degree
- Postgraduate qualification

(D5) Which of the following best describes what you do? (Please select one response)

- Work full-time
- Work part-time or casual
- Self-employed
- Unemployed and looking for work
- Full-time student
- Full-time home duties
- Retired
- Sick or disability pension
- Other (please specify - text box)

(D6) In which country were you born? (Please select one response)

- Australia
- Other (please specify – text box)

(D7) What is the main language that you speak at home? (Please select one response)

- English
- A language other than English (please specify – text box)

(D8) For statistical purposes, are you of Aboriginal or Torres Strait Island origin? (Please select one response)

- No
- Yes, Aboriginal
- Yes, Torres Strait islander
- Yes, both Aboriginal and Torres Strait islander

(D9) To the nearest thousand dollars (in Australian dollars), how much is your total **annual personal** income **before taxes**? (Please select one response)

- $0 to $9,999
- $10,000 to $19,999
- $20,000 to $29,999
- $30,000 to $39,999
- $40,000 to $49,999
- $50,000 to $59,999
- $60,000 to $69,999
- $70,000 to $79,999
- $80,000 to $89,999
- $90,000 to $99,999
- $100,000 to $109,999
- $110,000 to $119,999
- $120,000 to $129,999
- $130,000 to $139,999
- $140,000 to $149,999
- $150,000 to $159,999
- $160,000 or more
- Don’t know

MONTH 1 SURVEY ALLOCATION TO TEST AND CONTROL GROUPS

Randomly assign 2/3 to test group and 1/3 to control group and direct to appropriate survey. Quotas for age (S1), gender (S2) and number of hours spent playing the pokies (PP1)

IN MONTH 1 SURVEY FOR TEST GROUP ONLY

(SGP2) Earlier, you indicated that you might like to better control how much you spend on the pokies. There are some practices that people can use to help them do this. We'd like to ask you about one of these.

In the LAST 4 WEEKS, how often did you use the following practice when you played the pokies? (insert one item randomly allocated from items below)

- Never
- Sometimes
- Most of the time
- Always

For the NEXT 4 WEEKS, please try to consistently use this practice when you play the pokies. To remind you, this practice is:

(insert item from SGP2)

In the next survey, you can tell us how easy or difficult this was for you.

(Not shown to participants)

Cash out pokie winnings and do not use them later in the session
When you play the pokies, always set aside a fixed amount to spend
Make sure you take regular breaks every 30 minutes when you are playing the pokies
Make sure your leisure time is busy with other hobbies, social activities and/or sports
Only play low denomination pokies
Don't go and play the pokies just to avoid being bored
Only use pokies winnings for fun activities or purchases, and not to pay bills
Keep a household budget
Don't play the pokies just because your friends are gambling
If you're losing after 30 minutes of playing the pokies, quit
If you feel yourself getting too emotional when playing the pokies, take a break
When you play the pokies, always bet a fixed amount per spin
If you're not having fun playing the pokies, stop

IN MONTHS 2 and 3 SURVEYS FOR TEST GROUP ONLY

In the previous survey, we asked you to try to consistently use the following practice when playing the pokies: (Insert selection from SGP2 in Month 1 survey)

(SGPuse) In the LAST 4 WEEKS, how often did you use this practice when you played the pokies?

- Never
- Sometimes
- Most of the time
- Always

(SGPease) In the LAST 4 WEEKS, how easy or difficult did you find it to use this practice?

- Extremely easy
- Moderately easy
- Somewhat easy
- Somewhat difficult
- Moderately difficult
- Extremely difficult

Can you please tell us why you found using this practice easy or difficult?

(open text box)

IN MONTH 2 SURVEY FOR TEST GROUP ONLY

(SGP2) Earlier, you indicated that you might like to better control how much you spend on the pokies. There are some practices that people can use to help them do this. We'd like you to please try one of these.

For the NEXT 4 WEEKS, please try to consistently use the same practice as last month when you play the pokies:

(insert same SGP as in Month 1)

In the next survey, you can tell us how easy or difficult this was for you.

IN MONTHS 1 and 2 SURVEYS FOR TEST GROUP ONLY

Remember!

For the NEXT 4 WEEKS, please: (Insert selection from SGP2).

Please write this practice down so you remember it.

IN MONTHS 1 and 2 SURVEYS FOR CONTROL GROUP ONLY

Remember!

Gamble responsibly.

Use of SGPs during the last 4 weeks

IN MONTH 3 SURVEYS FOR TEST AND CONTROL GROUPS

(SGP1) Listed below are some practices that people can use to help control how much they spend on the pokies. How often do you USE each of these when you play the pokies? (Please select one response on each line)

	Never	Sometimes	Most of the time	Always
Cash out pokie winnings and do not use them later in the session				
When you play the pokies, always set aside a fixed amount to spend				
Make sure you take regular breaks every 30 minutes when you are playing the pokies				
Make sure your leisure time is busy with other hobbies, social activities and/or sports				
Only play low denomination pokies				
Don't go and play the pokies just to avoid being bored				
Only use pokies winnings for fun activities or purchases, and not to pay bills				
Keep a household budget				
Don't play the pokies just because your friends are gambling				
If you're losing after 30 minutes of playing the pokies, quit				
If you feel yourself getting too emotional when playing the pokies, take a break				
When you play the pokies, always bet a fixed amount per spin				
If you're not having fun playing the pokies, stop				

ALL SURVEYS AND GROUPS

If gambling is a problem for you or others, please call the Gambling Helpline on 1800 858 858 or go to www.gamblinghelponline.org.au for free, confidential advice, available 24/7. If this questionnaire has raised any other issues for you, please call Lifeline on 13 11 14.

Thank you for completing this survey

Please click SUBMIT to record your answers

Appendix E. Models evaluating the effects of assignment of the individual SGPs vs the control condition

	Dependent variable:					
	lnPokieSpend		lnPokieHrs		SGHS	
	(1)	(2)	(3)	(4)	(5)	(6)
Weekw2	-0.869***	-0.806***	-0.535***	-0.545***	-1.210***	-1.266***
	(0.078)	(0.135)	(0.037)	(0.064)	(0.098)	(0.169)
Weekw3	-2.002***	-1.811***	-0.820***	-0.815***	-1.960***	-1.826***
	(0.080)	(0.138)	(0.038)	(0.066)	(0.100)	(0.173)
SGP1	0.271	0.257	0.055	0.147	0.409	0.239
	(0.231)	(0.289)	(0.124)	(0.149)	(0.372)	(0.429)
SGP2	-0.165	0.122	-0.102	0.028	-0.292	-0.185
	(0.226)	(0.287)	(0.122)	(0.148)	(0.366)	(0.426)
SGP3	-0.033	0.053	0.079	0.104	0.759**	0.869**
	(0.236)	(0.287)	(0.126)	(0.148)	(0.376)	(0.426)
SGP4	-0.166	0.269	0.028	0.111	0.165	0.510
	(0.227)	(0.281)	(0.121)	(0.144)	(0.363)	(0.416)
SGP5	0.058	0.138	0.005	-0.100	-0.154	-0.219
	(0.229)	(0.285)	(0.123)	(0.147)	(0.368)	(0.423)
SGP6	-0.002	0.432	-0.085	0.014	0.272	0.093
	(0.229)	(0.279)	(0.122)	(0.143)	(0.364)	(0.413)
SGP7	-0.274	-0.297	0.115	0.151	-0.276	-0.246
	(0.226)	(0.279)	(0.121)	(0.143)	(0.362)	(0.413)
SGP8	0.267	0.110	0.089	0.035	0.790**	0.799*
	(0.234)	(0.285)	(0.125)	(0.147)	(0.373)	(0.423)
SGP9	-0.183	0.037	0.019	0.041	0.185	0.142
	(0.230)	(0.287)	(0.123)	(0.148)	(0.370)	(0.426)
SGP10	-0.106	-0.082	0.006	0.026	0.021	0.313
	(0.235)	(0.289)	(0.126)	(0.149)	(0.376)	(0.429)
SGP11	-0.385*	-0.581**	-0.088	-0.258*	-0.203	-0.326
	(0.225)	(0.277)	(0.121)	(0.142)	(0.360)	(0.410)
SGP12	0.173	0.283	0.079	-0.032	0.243	0.174
	(0.234)	(0.285)	(0.125)	(0.147)	(0.373)	(0.423)
SGP13	-0.025	-0.001	-0.015	-0.107	0.420	0.549
	(0.226)	(0.285)	(0.122)	(0.147)	(0.365)	(0.423)
Weekw2:SGP1		0.291		-0.084		0.077
		(0.369)		(0.176)		(0.462)
Weekw3:SGP1		-0.253		-0.249		0.539
		(0.370)		(0.177)		(0.464)

Weekw2:SGP2	-0.088	-0.074	0.113
	(0.354)	(0.169)	(0.443)
Weekw3:SGP2	-0.939***	-0.384**	-0.517
	(0.363)	(0.173)	(0.454)
Weekw2:SGP3	-0.061	0.125	-0.069
	(0.391)	(0.187)	(0.494)
Weekw3:SGP3	-0.262	-0.225	-0.394
	(0.389)	(0.186)	(0.490)
Weekw2:SGP4	-0.822**	-0.158	-0.538
	(0.365)	(0.174)	(0.458)
Weekw3:SGP4	-0.799**	-0.160	-0.810*
	(0.375)	(0.179)	(0.472)
Weekw2:SGP5	-0.229	0.039	0.269
	(0.370)	(0.177)	(0.464)
Weekw3:SGP5	-0.066	0.353**	-0.030
	(0.371)	(0.177)	(0.466)
Weekw2:SGP6	-0.559	-0.150	0.508
	(0.377)	(0.181)	(0.476)
Weekw3:SGP6	-1.170***	-0.261	0.242
	(0.382)	(0.183)	(0.481)
Weekw2:SGP7	0.125	-0.059	0.011
	(0.368)	(0.176)	(0.463)
Weekw3:SGP7	-0.028	-0.081	-0.137
	(0.369)	(0.177)	(0.465)
Weekw2:SGP8	0.249	0.123	0.620
	(0.383)	(0.184)	(0.484)
Weekw3:SGP8	0.415	0.099	-0.702
	(0.392)	(0.188)	(0.495)
Weekw2:SGP9	-0.105	-0.069	0.060
	(0.370)	(0.177)	(0.465)
Weekw3:SGP9	-0.692*	-0.014	0.087
	(0.369)	(0.176)	(0.463)
Weekw2:SGP10	-0.249	-0.083	-0.542
	(0.384)	(0.184)	(0.483)
Weekw3:SGP10	0.177	0.004	-0.629
	(0.389)	(0.186)	(0.490)
Weekw2:SGP11	0.691*	0.300*	0.417
	(0.364)	(0.174)	(0.458)
Weekw3:SGP11	0.051	0.378**	0.068
	(0.377)	(0.181)	(0.476)

Weekw2:SGP12		-0.364		0.234		0.028
		(0.394)		(0.189)		(0.497)
Weekw3:SGP12		-0.079		0.219		0.239
		(0.384)		(0.184)		(0.484)
Weekw2:SGP13		-0.156		0.088		0.108
		(0.354)		(0.169)		(0.443)
Weekw3:SGP13		0.086		0.253		-0.624
		(0.368)		(0.176)		(0.461)
Constant	4.280***	4.212***	1.757***	1.759***	4.095***	4.076***
	(0.092)	(0.105)	(0.048)	(0.054)	(0.143)	(0.156)
Observations	2,569	2,569	2,569	2,569	2,569	2,569
Log Likelihood	-5,298.884	-5,283.212	-3,521.917	-3,528.224	-6,109.569	-6,096.638
Akaike Inf. Crit.	10,633.770	10,654.420	7,079.834	7,144.448	12,255.140	12,281.280
Bayesian Inf. Crit.	10,739.090	10,911.880	7,185.157	7,401.904	12,360.460	12,538.730

Note: *p<0.1; **p<0.05; ***p<0.01