A behavioural trial of voluntary opt-out pre-commitment for online wagering in Australia

Gambling Research Australia

A national research partnership

3rd Revised report

A behavioural trial of voluntary opt-out pre-commitment for online wagering in Australia

Prepared for:

Gambling Research Australia

Prepared by:

Nerilee Hing, Matthew Browne, Alex M. T. Russell, Matthew Rockloff and Catherine Tulloch

Experimental Gambling Research Laboratory

Central Queensland University

26 August, 2021

Acknowledgements

Citing this report

Citation:

Hing, N., Browne, M., Russell, A. M. T., Rockloff, M., & Tulloch, C. (2021). *A behavioural trial of voluntary opt-out pre-commitment for online wagering in Australia*. Sydney, NSW: Gambling Research Australia.

Executive summary

The National Consumer Protection Framework for Online Wagering introduced a voluntary opt-out pre-commitment scheme in May 2019. This measure requires Australian-licensed operators to enable all consumers to set voluntary binding limits on their online wagering activity by pre-committing to deposit limits that apply on a per-operator basis. Operators are also required to regularly prompt customers about setting or reviewing limits. The uptake of deposit limits has reportedly been quite low. This report describes a behavioural trial conducted to examine how to increase this uptake.

Aims and objectives

This study aimed to build evidence and understanding of the impact of different features of pre-commitment deposit limits on the effectiveness of the measure, including for different customer groups. It addressed the following specific objectives:

1. Examine how regular bettors are using pre-commitment limits.
2. Determine the optimal message features that promote the uptake of deposit limits, including for different customer groups.
3. Test the effects of these optimal messages on attitudes, intentions, take-up and review of deposit limits.
4. Examine if setting limits impacts on gambling behaviour and related harm.

Methods

In addition to a literature review, two stages of empirical research were conducted.

Discrete choice experiment (DCE). A survey of 3,141 regular race and sports bettors systematically tested consumer preferences for different pre-commitment message features: terminology and purpose, types of limits, message framing, message targeting, message personalisation, and information to help set limits. The analyses examined attitudes, intention and behaviours relating to limit-setting, and identified the optimal features to promote the uptake and review of pre-commitment limits.

Randomised controlled trial (RCT). The RCT tested the effect of the optimal message developed in the DCE on attitudes, intentions, take-up and review of deposit limits. It comprised a baseline survey of regular bettors (N=1,249); a 4-week intervention period when the test groups were sent the messages; and a follow-up survey (N=660). The 2x2x2+2 design aimed to test message provision (yes vs no), message frequency (weekly vs fortnightly), and message tailoring (personalised vs non-personalised). There were two control groups (with an existing deposit limit or not), which are denoted by the "+2" in the description of the design. This was a quasi-experimental effect since these were pre-existing groups. Effects of the message condition on attitudes, intention and actual behaviour in relation to setting deposit limits were tested for participants who did not have an existing deposit limit,

and on frequency of reviewing their limit for participants who did have a prior limit. The RCT also tested the effects of limit-setting on potential beneficial outcomes of safer gambling behaviour and reduced harm.

Results for Objective 1. Examine how regular bettors are using pre-commitment limits

Only a minority of regular bettors had deposit limits in place in the DCE (40.8%) and RCT baseline (31.9%) surveys. Nevertheless, these rates of limit setting amongst regular bettors are higher than rates found for all online bettors (inclusive of less frequent bettors) in a prior online survey (13.2%; Jenkinson et al., 2019). No representative Australian data are yet available. While there may be scope to increase the uptake of deposit limits, most DCE (53.5%) and RCT baseline (60.7%) respondents who did not have one in place reported being unlikely to set one. This creates a challenge for effective messaging in the face of this potential resistance.

Most bettors with deposit limits found them useful, which is consistent with previous studies (Gainsbury et al., 2020; Griffiths, 2009; Jenkinson et al., 2019). Over 93 per cent of DCE and RCT respondents with deposit limits found them helpful in managing their betting. One-quarter (25.7%) of DCE participants with deposit limits had been stopped from exceeding their limit at least once a week, with even higher proportions found in the RCT baseline (32.9%) and follow-up (44.2%) surveys.

Bettors set different types of limits. Over half (58.8%) of the DCE respondents had at least one type of limit. After deposit limits (40.8%), the most common were a maximum/single bet (36.0%), spend (36.4%), loss (28.9%), bet frequency (24.2%), number of bets (24.1%) and time (22.4%) limit. Slightly lower uptake was found in the RCT baseline survey but in the same order of popularity. Offering a wider range of limits may increase uptake of at least one type of limit by providing more choice.

Higher-risk gamblers are more likely to set limits. In the DCE survey, significantly more problem gamblers (45.6%) had at least one limit, compared to moderate risk (24.8%), low risk (15.6%) and non-problem (14.1%) gamblers.[1] Higher-risk gamblers (defined as moderate risk and problem gamblers) are also more likely to set deposit limits. In the RCT baseline, problem gamblers (39.5%) were significantly more likely to have a deposit limit, compared to moderate risk (23.2%), low risk (18.9%) and non-problem (18.4%) gamblers. Higher-risk gamblers have more difficulties controlling their gambling and can benefit most from binding limits. Therefore, it is understandable that bettors who could best benefit from limit-setting were also more likely to use them. Limit-setters were also significantly more likely to be younger, university-educated, and to have more wagering accounts.

---

[1] The report refers to bettors as gamblers in relation to the PGSI only. This is because the PGSI measures problem gambling severity which may or may not be related to the person's betting. Higher-risk gamblers' refer to those who score on the PGSI as moderate risk or problem gamblers. 'Lower-risk gamblers' refers to those who score on the PGSI as low risk gamblers or non-problem gamblers.

Lower-risk gamblers (defined as low risk and non-problem gamblers) may be resistant to setting limits because they already feel in control of their betting. The DCE and RCT baseline surveys found that only about one in six non-problem and low risk gamblers had set limits. Prior research indicates that the main reason people do not set limits is that they feel in control of their gambling and see no need for binding limits (Auer et al., 2020a; Gainsbury et al., 2020; Griffiths et al., 2009).

Many higher-risk bettors do not want to limit their gambling. Most higher-risk gamblers in both surveys did not have a deposit limit. Some gamblers do not want to limit their expenditure (Behavioural Insights Team, 2018). Problem denial, not wanting to stop gambling, and wanting to self-manage the problem are key barriers to help-seeking, including using measures such as limit-setting (Hing et al., 2012). Shifting these customers from the pre-contemplation to action stage of behavioural change likely requires additional and stronger measures than messaging.

Bettors may not set limits because they are easy to circumvent. One-half (50.7%) of bettors with an existing limit reported increasing it in the past year (DCE) and around one-third (35.8%) within the past 4 weeks (RCT baseline). DCE and RCT respondents who increased their limit outnumbered those who decreased it. Many DCE (37.3%) and RCT baseline (53.6%) respondents had limits that were at least double their usual deposit amount, including limits at least 10 times higher (DCE 6.9%; RCT 14.2%). Design flaws in voluntary pre-commitment schemes enable customers to not set a limit, increase or remove it, select an ineffective limit size, open new accounts without a limit, and bet with multiple accounts (Behavioural Insights Team, 2018; Ivanova et al., 2019). Wagering inducements may also lead bettors to open new accounts, or resist setting a limit, due to fear of missing promotional offers (Hing et al., 2018a).

Not all bettors are aware that they can set deposit limits. The DCE and RCT surveys found that, amongst account holders betting with the top 10 volume operators, 20 to 60 per cent reported not receiving information from their operator about setting a deposit limit. Other research indicates that not all online gamblers are aware of limit-setting tools (Auer et al., 2020a; Gainsbury et al., 2020; Griffiths et al., 2009).

Results for Objective 2. Determine the optimal message features that promote the uptake of deposit limits, including for different customer groups

The DCE found that the *type of limit* was the most influential message feature, followed (in order) by *terminology and purpose*, *information to help set limits*, *message personalisation, message framing* and *message targeting*. The optimal message for the overall sample had the following levels of each feature:

- Terminology and purpose: Managing and self-monitoring
- Types of limits: Loss limit (Deposit limit and Spend limit also had high utility)
- Message framing: Positive
- Message targeting: Inclusive

- Message personalisation: Tailored
- Information to help set limits: Remind and prompt to reflect

While slight differences were observed by gender, age, PGSI group, and whether participants had existing limits, most were not statistically significant, providing little evidence for the need for different messaging for different subgroups in the RCT.

Results for Objective 3. Test the effects of these optimal messages on attitudes, intentions, take-up and review of deposit limits

While limit-setting increased over the 4-week RCT period, the RCT (N=650) found that receiving the optimal message had no significantly better effect on participants' attitudes towards, intention to set, or actually setting of a deposit limit; including for the weekly vs fortnightly messages and the personalised vs non-personalised messages. There was also no significant effect on the frequency of reviewing existing deposit limits from an optimised message relative to other messages (or no message). Although higher-risk gamblers were more likely to set a deposit limit during the RCT period, there was no detected interaction with the message condition with respect to their likelihood of doing it.

Results for Objective 4. Examine if setting deposit limits impacts on gambling behaviour and related harm

Initiating a deposit or other type of limit during the 4-week RCT period had a small but significant effect on decreasing the frequency of race betting, but no significant effect on sports betting frequency, betting expenditure or the experience of gambling harms. Those initiating a deposit limit during the RCT were ironically more likely to increase their deposited amount. Inherent weaknesses in voluntary pre-commitment systems, including the ability to avoid having limits on all accounts, increase limits or set very high limits, are likely explanations for these results. Prior research has yielded inconsistent results on the effects of limits on gambling behaviour (Auer & Griffiths, 2013; Auer et al., 2020b Heirene & Gainsbury, 2021; Ivanova et al., 2019).

Limitations and other considerations in interpreting the results

Population representative survey samples were not affordable for this research since large samples would be needed to obtain sufficient respondents meeting the inclusion criteria. Instead, a purposive sampling strategy recruited respondents with specific characteristics of interest (i.e., a sizeable proportion of high-risk gamblers who might benefit from limit setting). The sample demographics were consistent with representative research indicating that Australian bettors tend to be younger adult males with higher-than-average incomes (Armstrong & Carroll, 2017a, 2017b). Rates of problem, moderate risk and low risk gambling were higher in the present samples, reflecting the strategy of recruiting regular bettors. This provided larger sub-samples of interest (e.g., problem gamblers; limit-setters) to enable the planned analyses. All previous studies on limit-setting have used non-representative samples so

comparisons should be made with caution. Methodological differences can affect results, particularly with respect to prevalence estimates.

The main output of the DCE was one message for testing in the RCT which incorporated the optimal features and their associated wording. However, some of the optimal features were only marginally preferred over others, so it is possible that other combinations of features would have similar potential effectiveness. There were also significant differences in sub-group preferences for some message attributes. Because effect sizes were small, and because the RCT was constrained to testing only one message, we selected the optimal message for testing based on the DCE results for the whole sample.

The sample size for the RCT was modest and significant effects of the intervention *may* have been found in a larger sample. A large-scale trial conducted with wagering operators was an alternative. However, the research team wanted to avoid potential or perceived conflicts of interest associated with relying on input from the gambling industry for a major element of the study, and their potential effects on the credibility of results. However, even if a larger sample had yielded statistically significant effects, the effect size would be small. There is an important distinction between statistical significance and clinical or practical importance, especially with larger samples. The null effect of the intervention on limit-setting was not so much due to the sample size or statistical power, but that the intervention itself did not have a large enough effect to be of practical significance to the population of bettors. *A larger sample would not change the effectiveness of the message,* but rather only the ability to detect minor differences in message effectiveness. The ability of messages to prompt uptake of deposit limits amongst those who have already opted out is very weak, as previously demonstrated. Notably, in a study involving 26,560 participants recruited by wagering operators, only 161 people newly set a deposit limit after receiving message prompts (Heirene & Gainsbury, 2021). While the main result was significant, the uptake of deposit limits after messaging was very small (0.7%). Given this limited uptake, it is not surprising that the current study found no effect even when the optimum message was carefully constructed for maximal impact.

The message was delivered as a text message to participants' mobile phones. This approach was taken so the trial was independent of industry, but it also meant the message was unable to include a direct link to a deposit limit-setting function. While this is a limitation that may have contributed to the null result, the study aimed to test messages that may be communicated in a variety of ways, some of which cannot include a direct link (e.g., public health messages). The high initiation of new limits during the RCT period, including amongst people given no message, suggests that absence of a direct link was not a major deterrent.

The RCT tested messages with customers who are most resistant to setting a deposit limit, given they had already opted out of doing so. Conversely, the purposive

sample may have been biased towards people who were already thinking about or were more likely to think about limit setting. This may have muted any effect from the subsequent messaging. The intervention occurred over 4 weeks with two or four messages sent over that time frame (for treatment conditions). Messaging over a longer time period may be required to shift behaviour in the most resistant groups who may, over time, see the relevance of limits for them. There was also very little impact on gambling behaviour or symptomatology for the 77 gamblers who set a new deposit limit during the intervention. This may also be due to the short time period of the intervention.

The outcome variable in the RCT was based on self-report data so may be subject to recall and social desirability bias. People's recall may be poor or selective; they have no incentive to report correctly; and there may be high social desirability bias involved in reporting gambling-related activities and gambling problems. There was also some selection bias due to sample attrition. Respondents who were younger, single, and less likely to be retired and those with gambling problems and with deposit limits were more likely to drop out after the baseline survey.

Nonetheless, many respondents who had not previously set a limit did so during the RCT period. Amongst these respondents, and regardless of the message condition (inclusive of no message), 32.4 per cent set at least one new type of limit, including 18.4 per cent who initiated a deposit limit, in the 4 weeks immediately after the baseline survey. This suggests that the baseline survey likely prompted the new limit-setting, masking any effects of the message condition. Importantly, respondents who changed from having no limits at baseline to having at least one limit at follow-up were more likely to be younger and classified as a problem gambler. Thus, encouraging self-reflection on one's betting behaviour is likely to prompt a substantial proportion of bettors to initiate a limit independent of any specific encouraging message. People may feel empowered to make their own decision in absence of direction. Further research with participants who set these new limits, such as in-depth interviews, may yield important insights into factors that prompted this new limit-setting, which may inform measures to increase pre-commitment going forward.

Conclusions and implications

The main conclusions of this study are that:

1. Messages appear to be a relatively weak measure to bring about behavioural change in pre-commitment behaviour, compared to more a more intensive intervention that prompts self-reflection.

2. On their own, messages are highly unlikely to increase the uptake of deposit limits amongst more than a small minority of bettors who have previously opted out of setting a deposit limit.

3. The optimal message developed in this study may still have good utility to promote limit-setting behaviour, given that its design was based on rigorous research and testing. However, differences in some options were small or non-significant in the DCE, so other combinations may have similar potential effectiveness which could be assessed in future research.

4. However, additional measures (suggested below) are needed to increase the use of limits.

5. A substantial proportion of bettors are likely to set new limits with a more intensive intervention that prompts self-reflection on their betting rather than directing them what to do.

Additional measures for consideration include:

1. Sustained messaging.

2. More intensive prompts that encourage self-reflection, such as self-assessment tools.

3. Promoting the benefits of deposit limits for lower-risk gamblers and not just people experiencing gambling problems.

4. Behavioural tracking systems that enable operators to send regular tailored messages, including for limit-setting, based on a customer's betting behaviour.

5. A requirement for operators to promote and offer other limits (for example, maximum/single bet limits, spend limits and loss limits) in addition to deposit limits.

6. Mandatory limit-setting for all bettors with a reasonable maximum imposed or that requires an affordability check.

7. A universal pre-commitment scheme that requires customers to set a total limit across all their wagering accounts.

8. A reduction in wagering advertisements and inducements since these can undermine setting and adhering to limits.

9. A stronger public health approach that focuses on both preventing and reducing harm amongst all gamblers to encourage the use of protective tools including limits.

10. Qualitative research to better understand pre-commitment behaviour for online wagering, such as reasons for setting and not setting limits, effective ways of using limit setting tools, why some bettors set limits that greatly exceed their usual spending, and factors that prompted uptake of new limits amongst respondents who did so during the RCT.

11. Quantitative research could inform the further refinement of pre-commitment messages, such as trialling both self-monitoring and self-appraisal options for any differential effectiveness and further investigating the effectiveness of different message attributes for different gambler risk groups, e.g., framing, targeting and personalisation.

About this report

This report is structured into four chapters. Chapter 1 presents the literature review. Chapter 2 presents the methods and results for the discrete choice experiment and Chapter 3 presents the methods and results for the randomised controlled trial. Chapter 4 discusses the study's results and implications.

Table of Contents

List of Tables

List of Figures

Chapter 1. Introduction

1.1. Introduction

The growth of online wagering has been one of the most significant changes in the Australian gambling environment; it is the fastest growing gambling segment, expanding at 15 per cent per year (Gambling Research Australia, 2019). Rates of problem and moderate risk gambling are far higher amongst online than offline gamblers, including those engaged in online wagering (Browne et al., 2019; Hing et al., 2014a; Rockloff et al., 2019). A substantial proportion of sports bettors and race bettors find it difficult to control their betting, with approximately 40 per cent of at-least monthly bettors experiencing one or more symptoms of problem gambling (Armstrong & Carroll, 2017a, 2017b). To enhance consumer protection for online bettors, the National Consumer Protection Framework for Online Wagering ("National Framework") introduced a voluntary opt-out pre-commitment scheme in May 2019. This measure requires all Australian-licensed operators to enable all consumers to set voluntary binding limits on their online wagering activity by pre-committing to deposit limits that apply on a per-operator basis. Operators are also required to regularly prompt customers about setting or reviewing limits.

This chapter reviews key literature on pre-commitment, limit-setting for online gambling, and public health messages that seek to bring about behavioural change, particularly as applied to gambling. Given the paucity of evidence specific to the online wagering environment, the review also draws on knowledge from other forms of gambling and related public health fields.

1.2. Pre-commitment and types of limits

Pre-commitment is a system that enables gamblers to set money and time limits on expenditure prior to the commencement of a session or period of gambling (Dickerson, 2003; Ladouceur et al., 2012; Parke et al., 2008). The Productivity Commission (2010) identified pre-commitment as a key mechanism for minimising harm and improving informed consent and consumer protection, increasing people's capacity to control their gambling in a way that reinforces self-responsibility. Pre-commitment helps to promote more rational, informed decision-making because limits are set in advance, instead of during gambling sessions when people may feel excited, frustrated, emotional, vulnerable to erroneous beliefs, subject to peer pressure, or tempted to chase losses (Dickerson, 2003; Parke et al., 2008).

Pre-commitment systems can offer one or more types of limits, depending on the type of gambling, with the most common being:

- Deposit limit, which is the maximum amount of money that a customer can deposit into a gambling account during the nominated period, e.g., maximum deposit of $20 per month.
- Maximum or single bet limit, which is the maximum amount that a customer can place on a single bet using their account, e.g., maximum $20 placed on any one bet.
- Loss limit, which is the maximum amount a customer can lose on betting (after any winnings) during the nominated period, e.g., maximum of $20 in net losses per month.
- Spend limit, which is the maximum amount a customer can spend on betting during the nominated period regardless of any winnings, e.g., maximum of $20 in bets placed per month.
- Number of bets limit, which is the maximum number of bets a customer can place during the nominated period, e.g., maximum of 5 bets per month.
- Bet frequency limit, which is how often a customer can bet, e.g., maximum of once a week.
- Time limit, which is the maximum amount of time a customer can spend gambling or keep their betting account open during the nominated period, e.g., maximum of 2 hours per week.

Pre-commitment systems are thought to be most effective when they are mandatory for all gamblers to use, have binding limits which do no not allow further gambling once limits are reached, and are jurisdiction-wide (not just venue or operator-based) (Rintoul & Thomas, 2017). However, even voluntary, operator-based pre-commitment systems, as required under the National Consumer Protection Framework for Online Wagering, can assist gamblers to set time and money goals, gain awareness of their gambling, know when they reach their time and money limits, recognise if they are losing control over gambling (if they commonly increase their limits), and track time spent and expenditure on gambling (Productivity Commission, 2010). Further, the National Framework requires operators to provide pre-commitment on an opt-out basis, which should help to overcome the general reticence observed to opt into pre-commitment systems (Ladouceur et al., 2012; Parke et al., 2008; Productivity Commission, 2010). The Framework's requirement for the provision of deposit limits also reflects distinct preferences of gamblers to set expenditure rather than time limits (Bernhard et al., 2008; Ladouceur & Sevigny, 2009; Omnifacts Bristol Research, 2005, 2007). Expenditure limits are also more appropriate in the wagering environment, where betting sessions might span the time also involved in researching bets and watching betting events. The pre-commitment requirements under the National Framework also provide for self-selected limits, which gamblers clearly favour over enforced limits (Bernhard et al., 2008; Hare, 2010; Wood & Griffiths, 2010).

Where pre-commitment systems are available, they mainly apply to gambling on electronic gaming machines (EGMs) using card-based technology, and to online

gambling using betting transactions data. Research in both of these areas is reviewed below.

1.3. Pre-commitment for EGM gambling

Several empirical studies have been conducted into pre-commitment for EGMs (e.g. Bernhard et al., 2008; Delfabbro, 2012; Ladouceur & Sevigny, 2009; McDonnell-Phillips, 2006; Nower & Blaszczynski, 2010; Omnifacts Bristol Research, 2005, 2007; Schellinck & Schrans, 2007, 2010; Schottler Consulting, 2009a, 2009b, 2010a, 2010b). In a review of pre-commitment for EGMs, Ladouceur et al. (2012) reported that about 30 per cent of gamblers use limit-setting when available – although much lower take-up has been found in pre-commitments trials in Australia (see below), and the UK (Salis et al., 2015). Further, gamblers may not set affordable limits. Ladouceur et al. (2012) reported that about 50 per cent of gamblers spend less than usual when using a pre-commitment system, but about 40 per cent spend more. Thus, the potential for low take-up and the risk of unintended consequences are important considerations for the online wagering pre-commitment scheme under the National Framework.

People with more severe gambling problems appear more inclined to use pre-commitment than other gambler risk groups. For example, 46 per cent of EGM players in a Queensland population survey reported they would set monetary limits, while 29 per cent reported they would set time limits, with these proportions being 69 per cent and 48 per cent respectively amongst problem gamblers (Department of Justice and Attorney General, 2012). As noted in relation to the National Framework, encouraging all gamblers to use pre-commitment limits is desirable, as it can be a useful tool to monitor gambling expenditure over a period of time, and help individuals to make informed choices about their betting decisions based on a better understanding of their wagering activity. In a voluntary pre-commitment system in Nova Scotia, pre-commitment cards became a stigmatising marker of perceived problem gambling (Schellinck & Schrans, 2010). This indicates the importance of destigmatising and normalising the use of limit-setting across the population of gamblers. It is therefore important for the online wagering pre-commitment scheme in Australia to encourage wide uptake amongst all gamblers.

Mandatory pre-commitment systems for EGMs operate in some international jurisdictions (e.g. Norway, Sweden). In Norway, the maximum limit is prescribed (Lund, 2009), while in Sweden all gamblers are required to set limits (Rossow & Hansen, 2015). Nova Scotia had extensive trials of a voluntary EGM pre-commitment system, but the system was disabled in 2014 due to operator concerns about declining revenues and reported design problems (Schellinck & Schrans, 2007, 2010). However, only partial pre-commitment systems have been introduced in

Australia, and government-commissioned trials of these systems provide more comparable insights into the take-up of voluntary systems.

In Victoria, the YourPlay system operates with either a registered pre-commitment card or loyalty program card inserted into the machine. Players' self-set limits apply to all EGMs in the state, although EGMs can still be played without the card. On reaching the limit, the EGM is momentarily disabled and the player notified they have reached their limit. The player can continue playing by clicking through the screen or exit the system by removing the card. If using a loyalty card, loyalty points will not accrue after reaching the limit. Thus, the system is informative rather than preventative. An independent evaluation found that in 2017/18 YourPlay cards were used in sessions amounting to only 0.1 per cent of EGM turnover in Victorian hotels and clubs, with the highest in any one venue being 0.8 per cent (South Australian Centre for Economic Studies, 2019). The most common reasons given by EGM players for not using YourPlay was that they gambled only infrequently, they did not need to use the system because their gambling was not a problem, or they were not familiar with or aware of the system. Further, the most common limit set was a daily loss limit of $1,000,000, negating the utility of the limit and the receipt of warnings on reaching 70 per cent and 90 per cent of the limit. Nonetheless, amongst players using YourPlay cards, 23 to 28 per cent reported being more aware of their expenditure, and 24 to 29 per cent reported that YourPlay made it easier to stick to their self-set limits. Survey results indicated that higher-risk gamblers were more likely to use YourPlay, but this was based on a small non-representative sample.

In South Australia, over 70 venues provide various pre-commitment systems (Rintoul & Thomas, 2017). In the Worldsmart trial, turnover decreased by 32 per cent amongst players who elected to use the card, and by 56 per cent amongst high-risk gamblers (Responsible Gambling Working Party, 2010). A trial at two venues allowed Maxetag loyalty card holders to set a limit. Very few of these customers opted to set monetary limits (n=16, 1.8% at one venue; n=3, 0.8% at the other venue). More than half then exceeded this limit (n = 9), and most of these players did not set limits again (n = 6) (Delfabbro, 2012). We caution against relying on this evidence due to very small numbers. The limit-setting features were also described as potentially confusing for users.

In Queensland, the Sandgate RSL Trial of the eBet partial pre-commitment system found that 58 per cent of card users felt it supported them to consider their EGM expenditure, and 45 per cent to consider if their EGM play was affordable (Schottler Consulting, 2009b). However, only 18 of the 64 card users actually set a limit. EGM expenditure decreased more amongst those who had set a limit ($64 to $39), compared with those who had not ($53 to $52). The Redcliffe RSL Trial also found that few EGM players adopted the SIMPLAY card which enabled pre-commitment, despite active venue marketing. Only 13 per cent used the pre-commitment options, with the remainder using the card only for cashless gambling. Amongst the 45

participants who set a daily limit, 30 of them exceeded it during the trial; and a larger proportion of those using the system (4.4%) increased their spending than of those not using the system (1.4%) (Schottler Consulting, 2009a).

While the trials described above apply to EGM pre-commitment systems, they highlight the desirability of active and ongoing marketing to optimise take-up, of ensuring its features are simple to use and adequately explained to customers, and of having binding limits to prevent customers exceeding their self-set limits. A review of pre-commitment systems also highlighted the desirability of: encouraging take-up amongst all gamblers to normalise the system; of providing meaningful account summaries so they can monitor their gambling; careful communication about the benefits and security of the system; intuitive and simple functionality and customer interfaces; and keeping pre-commitment systems separate from loyalty programs to avoid sending users conflicting messages about their spending (Rintoul & Thomas, 2017).

1.4. Pre-commitment for online gambling, including wagering

Online gamblers can often exceed the informal limits they set for themselves when these limits are not part of a binding pre-commitment system. Hing et al. (2015b) examined self-limiting strategies used in online gambling by 25 moderate risk and problem gamblers. Most strategies involved monetary limits, including limiting amounts deposited or available in online gambling accounts, and limiting amounts gambled per day or week to a dollar amount or a percentage of overall funds available. However, participants cited several examples of exceeding their limits, such as when a favourite horse was racing, following a near win, when affected by alcohol, when tempted by advertising and promotions, and when credit was available for gambling. These findings indicate that online bettors are amenable to self-set limits, at least on an informal basis, but sometimes have difficulty adhering to them. Being able to set binding limits for online gambling through a pre-commitment system should therefore be a useful tool.

Limit-setting options are now commonly offered by online gambling operators. Studies have found that 90 per cent of the world's 50 most well-known gambling sites (Bonello & Griffiths, 2017), all of the 18 sites examined in France (Marrionneau & Järvinen-Tassopolous, 2017) and all 10 sites examined in Italy (Calvosa, 2017) offer deposit limits, with many also offering spend limits.

1.4.1. Attitudes to and use of pre-commitment for online gambling

Gamblers tend to hold supportive attitudes towards pre-commitment being available. Of 10,865 online gamblers surveyed from 96 countries, 70 per cent considered that voluntary spend limits would be a useful responsible gambling feature, while 50 per cent thought that time limits would be useful (International Gaming Research Unit,

2007). However, actual uptake of limits is modest. Griffiths et al. (2009) examined attitudes and behaviours towards using the PlayScan responsible gambling tool, implemented by Svenska Spel in Norway. Of the 2,232 survey respondents, 26 per cent had used PlayScan. Reasons for use included wanting to set time and money limits (34%), wanting to play safely (23%), concern they were gambling too much (12%), and wanting to better understand their gambling behaviour (11%). About one-half (52%) of users reported the tool was useful and that its most useful feature was limit setting (70%), and 56 per cent had used spending limits. The main reason for non-usage was players not feeling they needed the tool.

Another study examined attitudes towards a global loss limit of NOK20,000 per month (about 2,100 euro) introduced by Norwegian Government-owned Norsk Tipping (Auer et al., 2020a), and whether customers shift their gambling to other websites once they reach their limits. A survey of 2,352 customers found that four-fifths of the sample had a positive attitude towards the limit. Importantly, only a minority of customers gambled with other operators once they reached their limit, although this was higher amongst high-risk players (16%) than amongst low risk players (6%). Other interesting findings from this study were that high-risk players were more likely than low risk players to agree that: the limits were relevant to them (41% cf 18% respectively); the loss limits are helpful to maintain a sufficient overview of, and control over, how much money they lose (56% cf 40%); but that they set a limit that was high enough to ensure that they could spend all they wanted to (28% cf 18%).

An Australian study conducted with six online wagering operators contacted 12,000 account holders who had bet in the past 6 months (Gainsbury et al., 2020). Amongst the 564 respondents, who tended to be very regular bettors, 24.5 per cent had used deposit limits. Problem and moderate risk gamblers were significantly more likely to use deposit limits than low risk and non-problem gamblers. Awareness (85.5%) and satisfaction (72.8%) amongst the 81 deposit users were high. Forty-seven respondents thought that deposit limits had changed their gambling by reducing the amount of money (63.8%) and time (46.8%) spent gambling, increasing control over gambling (53.2%) and reducing thinking about gambling (23.4%). Conversely, a minority reported thinking about their gambling more (17.0%) and spending more time gambling (2.1%) due to deposit limits. The main reasons reported for using deposit limits were to limit gambling spend, feel in control of their gambling, track their gambling spend, and avoid developing a gambling problem. The main reasons reported for not setting a deposit limit were thinking they can control their gambling without setting a limit, not thinking they need to use a deposit limit, and not having any problems with their gambling.

Also in Australia, Jenkinson et al. (2019) surveyed a self-selecting sample of 5,076 past-year online bettors as part of the baseline study conducted for the National Consumer Protection Framework for Online Wagering. Amongst these respondents,

48.8 per cent had seen deposit limit tools on websites or apps and 13.2 per cent had set a deposit limit during the previous 12 months. The majority (70.7%) of those who had set deposit limits found them useful, including 42.2 per cent who found them 'very useful'. Open-ended responses indicated that deposit limits were considered useful because they provide the ability to control betting expenditure by removing the temptation to spend more and to chase losses. However, some respondents thought that deposit limits were useful only for people with a gambling problem, bettors can easily bypass limits by opening a new account, and that prolific wagering advertisements and inducements can undermine the effectiveness of pre-commitment systems.

1.4.2. Effects of pre-commitment on online gambling behaviour

Some studies have evaluated the impacts of online pre-commitment systems on gambling behaviour. Auer and Griffiths (2013) analysed three months of betting data of 100,000 account-holders with the Win2day operator, of whom 5,000 had voluntarily set limits. Setting these limits resulted in significant reductions in gambling amongst intense gamblers; with money limits impacting most on spending amongst casino and lottery gamblers, and time limits on playing duration of poker players.

Two studies were conducted using data from the bwin online gambling operator which is primarily a sports betting site. This operator imposes mandatory default deposit limits of 1,000 euros per 24 hours or 5,000 euros per 30 days, although bettors can set lower limits. Nelson et al. (2008) studied 18 months of betting data of 47,134 account-holders, of whom 567 had used the site's self-limit-setting function. Those who had set deposit limits reduced their overall betting on the site, but not necessarily the amount wagered per bet. Another study of bwin data found that only 0.3 per cent of bettors had exceeded limits. However, it could not distinguish how many exceeded their own self-set limits, compared to the site's very high default limits which few would be expected to exceed (Broda et al., 2008). After receiving one or more notifications for exceeding deposit limits, the average number of bets per day marginally decreased although the average bet size steeply increased. The authors concluded that receiving the notification did little to reduce gambling behaviour, although simply having default deposit limits might deter higher spending (Broda et al., 2008).

Also based on wagering data, Auer and colleagues (2020b) examined whether setting voluntary monetary limits had any effect on online gambling expenditure. The dataset included 49,560 customers from across seven European countries with accounts with the online gambling operator Kindred. Over the three-month review period, 1.3 per cent of these customers set a voluntary monetary limit for the first time, with higher spending gamblers more likely to set a limit. Over a one-year period, the highest spending gamblers with voluntary monetary limits significantly reduced their gambling expenditure, with no significant effects for less intense

gamblers. Overall, these studies suggest that limit-setting is likely to be more effective in reducing gambling spend amongst high-spending gamblers.

Insights into the effects of limit-setting on gambling behaviour have also been provided by randomised controlled trials, as discussed below.

1.4.3. Randomised controlled trials of pre-commitment for online gambling

This section considers previous randomised controlled trials of pre-commitment. These have examined the effects of limit-setting on gambling behaviour, and some have also tested the effects of pre-commitment messages on the uptake of limits.

A trial involving 4,328 customers of the Finnish online gambling monopoly compared gambling intensity (net loss) between those who were prompted and not prompted to set a deposit limit (Ivanova et al., 2019). Participants were randomly allocated to receive a prompt at 1) registration, 2) before or 3) after their first deposit or 4) to an unprompted control condition. Participants receiving a prompt had greater uptake of deposit limits, which ranged from 21.9 per cent of those prompted post-deposit to 45.0 per cent of those prompted at registration, compared to the control group (6.5%). However, the study found no difference over 90 days after registration in net loss between customers who did and did not set limits, including for the whole sample and those with the highest expenditure. It is important to note that this trial involved new customers who may not have been aware they could set deposit limits until prompted or had not had the opportunity to do so. This explains the much higher uptake of limits in this trial, compared to trials assessing uptake amongst existing customers who have previously resisted setting a limit, including those discussed below.

In the UK, the Behavioural Insights Team (2018) conducted trials with two online gambling operators, drawing on insights from behavioural economics. One aim was to test whether behavioural interventions could increase the uptake of deposit limits amongst 'risky' players. The Sky Betting and Gaming (SBG) trial involved 12,711 customers who were randomly allocated to one of four message conditions – 1) the operator's usual responsible gambling message, 2) normative feedback on the customer's gambling behaviour, 3) normative feedback plus reduced friction (direction to the web page which linked to the limit-setting tool), and 4) normative feedback, reduced friction plus a message encouraging self-reflection on their gambling. Only the third condition saw a significant increase in setting a deposit limit in the following five days, compared to the usual responsible gambling message. However, this relative increase was very small (1.1%). The bet365 trial involved 7,564 customers, again with four message conditions – 1) control, 2) reduced friction (direct link to the limit-setting tool), 3) normative feedback, and 4) reduced friction plus normative feedback. The second and fourth conditions resulted in significant increases in limit-setting compared to the control, of 5.8 per cent and 4.5 per cent respectively. The results of these trials suggest that making it easier for customers to

access deposit limits may increase uptake. However, the study found very small increases in the uptake of deposit limits even with the most effective message and no effect of setting deposit limits on subsequent gambling behaviour, including amount deposited.

The only previous Australian trial of deposit limits for online wagering involved 26,560 customers of four online wagering websites who had bet on at least five of the past 30 days (Heirene & Gainsbury, 2021). Messages were sent by the operators by email or in-account notification, with three types of messages tested – 1) informative, describing the availability and purpose of the limit-setting tool, 2) social, highlighting the benefits other people gain from using the tool, 3) personal, promoting the benefit the customer could gain from using the tool. A control group received no message. Amongst those receiving a message, only 0.7 per cent (n=161) set a deposit limit after receiving one or two messages designed to increase the use of these limits, although this result was statistically significant compared to uptake by the control group (0.08%). No significant differences were found between social, personal and informational messages, nor for in-account vs email messages. Customers who set a deposit limit significantly reduced their average daily wager, net loss and betting intensity over the 90 days after setting a limit, compared with non-limit-setters. However, these effects applied only to low to moderate spenders, but not to higher spenders.

Overall, these studies suggest that messages have very limited effectiveness in bringing about behaviour change amongst those who have previously resisted setting limits. Nonetheless, setting deposit limits may be beneficial for some gamblers in reducing their gambling expenditure. Overall, the uptake of pre-commitment remains modest. A particular challenge in promoting a pre-commitment scheme is to convince customers of its benefits, including both for those who feel in control of their gambling and those who are gambling at problematic levels. Operators also need to effectively promote the scheme to customers and to regularly remind them to set and review their limits.

1.5. Public health messaging

Providing information to gamblers is an important harm minimisation measure. Messages are frequently used to convey information about the game (e.g. probability of winning), responsible gambling, warnings about potential dangers, signs of problem gambling, sources of help, and an individual's own gambling activity (Auer et al., 2015c; Parke et al., 2014). Messages are also needed to encourage people to utilise tools to monitor and safeguard their gambling, such as pre-commitment. These need to be appropriately designed and evaluated to optimise uptake.

Consistent with behaviour change models (Davis et al., 2015), evaluations of public health messages typically measure changes in attitudes, intentions and, ideally, behaviour when exposed to the messages. Reviews of gambling awareness campaigns and messages have concluded that they typically change attitudes and knowledge in the short-term and so need to be repeated over time; however, similar to other public health messaging, changes in behaviour are far less common (Hing et al., 2016; Rockloff et al., 2014; Williams et al., 2012). In seeking to improve the efficacy of gambling messaging in prompting behavioural change, several studies have focused on discerning optimal message attributes, often drawing on theoretical and applied research in other areas of public health. Several attributes of these messages have been considered. These have been researched mainly in relation to gambling warning messages, but these findings can nevertheless inform the design of optimal messages to promote pre-commitment. These studies and message attributes are discussed below.

1.5.1. Message purpose

Informative messages aim to convey or reinforce knowledge to build resistance to cognitive distortions; they are usually presented as statements of fact, such as contact details for gambling help, risks associated with product use, or explaining how a gambling product works (Monaghan & Blaszczynski, 2010; Lemarie & Chebat, 2013). However, factual information in isolation has little efficacy in bringing about behaviour change (Parke et al., 2014; Williams et al., 2012). *Self-monitoring messages*, often posed as a question, may better facilitate behaviour change through creating self-awareness by prompting people to think about their own behaviour so they can assess whether it aligns with their own values and beliefs (Monaghan & Blaszczynski, 2010). They are designed to prompt the person to pause or focus their attention on considering aspects or consequences of their current behaviour (Rockloff et a., 2014). *Self-evaluation messages* extend self-monitoring by also prompting people to consider the consequences of their behaviour and how their behaviour might be modified to achieve a desired outcome (Rockloff et al., 2014). Consistent with their purpose to challenge gamblers to evaluate their behaviour over time rather than just in that instance, self-evaluation messages have been shown: to reduce harm beyond the current gambling session (Monaghan & Blaszczynski, 2010); to be more frequently recalled by gamblers (Communio, 2014; Gainsbury et al., 2015a, 2015b); and to have more impact on perceived intentions (Riley-Smith & Binder, 2003), compared to informative and self-monitoring messages. Self-evaluation messages can also increase the personal relevance of the communication, enhancing the likelihood that it will be acted upon (Parke et al., 2014; Williams et al., 2012).

Research also indicates that these message types should ideally progress from information, through self-monitoring to self-evaluation, as gambler risk level and time and money commitments to gambling increase (Monaghan & Blaszczynski, 2010;

Rockloff et al., 2014). Thus, the purpose of pre-commitment messages for online wagering might be varied in this way according to an individual's gambling expenditure, or by using more sophisticated algorithms that detect gambler risk levels.

1.5.2. Message framing

The same information in a message can be framed in either positive or negative terms, which creates cognitive biases in the way that individuals process and respond to the information (Tversky & Kahneman, 1981). Message framing is conveyed by the affective wording of a message, which might be *positive* (focusing on positive outcomes of compliance), *negative* (focusing on non-specific threats from non-compliance), or negative and also *challenging* (focusing on harmful outcomes from non-compliance) (Rockloff et al., 2014). Based on predictions from Tversky and Kahneman's Prospect Theory (1981), preventative health messages should be more effective if they are gain-framed (emphasise the benefits of adherence to a health-enhancing behaviour); whereas messages encouraging early detection of a health problem should be more effective if they are loss-framed (emphasise the potential losses from non-adherence to the health-enhancing behaviour).

However, empirical support for the effects of health message framing is mixed. One meta-analysis of 94 studies found that gain-framed messages were more likely than loss-framed messages to encourage prevention behaviour, particularly for skin cancer prevention, smoking cessation, and physical activity (Gallagher & Updegraff, 2011). Conversely, a meta-analysis of 32 studies found no significant difference in the persuasiveness of gain-framed and loss-gained messages for vaccination (O'Keefe & Nan, 2012). Further, a systematic review of 35 studies concluded that framing may have little if any consistent effects on health consumers' behaviour (Akl et al., 2011). These inconsistencies most likely reflect limits in the current understanding of other variables that may impact on framing effects (Akl et al., 2011; Gong et al., 2013).

Importantly, message framing effects are strongly linked to the level of audience involvement, and loss-framed messages may be more salient for people already engaging in unhealthy behaviours (Johns et al., 2017; Maheswaran & Meyers-Levy, 1990). Some research has found that negatively framed and challenging messages have more impact on highly involved gamblers. Muñoz et al. (2010) found that strong gambling warnings, like those used in tobacco and road safety campaigns, positively affected the depth of information processing amongst highly involved gamblers, which in turn enhanced change; but the threats did not have the same effect on the less involved gamblers. In a second study, Muñoz et al. (2013) added a graphic display, which further enhanced cognitive responses to the warning amongst highly involved gamblers, and also precipitated attitude change toward gambling. These findings align with earlier research on fear communication (Leventhal, 1970) and the value of graphics within messages (Gainsbury et al., 2018; Noar et al., 2007). Muñoz

et al. (2013) concluded three essential conditions are needed for messages to change attitudes to gambling: the protection process proposed by the warning to reduce the risk of problems seems efficacious; the gambler feels they can follow the proposed process; and the warning triggers enough cognitive activity.

Other gambling studies have examined more preventative-focused messages that promote responsible gambling or milder warning messages. In a Queensland study on how to best provide meaningful player information and responsible gambling messages, positively framed messages had greater impact on the self-reported future intentions of regular EGM players (Reid, 2005b). A field experiment found that positively framed self-appraisal gambling messages were more frequently recalled than negatively framed informative messages, but that the negatively framed messages were more influential (Gainsbury et al., 2015a). However, in contrast to Muñoz et al.'s (2010) study, no differences in recall or influence were detected amongst different gambler risk groups. In two experimental studies, Orazi et al. (2015) demonstrated that messages warning of the social consequences of gambling reduced positive attitudes and intention to gamble more than messages warning of material consequences, and this effect was stronger amongst problem gamblers. Additionally, loss-framed messages warning of social consequences reduced positive attitudes and intention to gamble more than when these messages were gain-framed.

A further variable that may impact on framing effects is whether the gambler is winning or losing when the message is received. In a computer-simulated gambling task, participants in the loss condition gambled at significantly higher speed and higher average bet size, compared to those in the win condition (Harris & Parke, 2016). A computer-generated self-appraisal message significantly reduced betting speed, but only in the loss condition. In contrast, Ginley et al.'s (2016) experimental study found that warning messages moderated risky play, but only when players were winning. Participants in the loss condition did not decrease their number of spins or rate of betting after receiving a warning message, although they did decrease their average bet size.

The mixed findings from these gambling studies reflect the complexity of the issue and align with research into other health behaviours, where the effects of messages can be sensitive to the nature and presentation of the message, type of product, and the perceived cost of compliance with the message (Johns et al., 2017). The well-regarded Health Belief Model proposes that messages are most likely to bring about behaviour change when the audience perceives they are susceptible to the health problem, perceives the health problem to be severe, recognises benefits and few barriers to taking the promoted health action, has confidence they can adhere to the health action, and receives multiple cues to instigate action (Champion & Skinner, 2008).

Overall, the above findings, although limited, indicate the potential value of identifying the optimal framing of pre-commitment messaging for online wagering, and whether this varies as gambling risk or involvement increases.

1.5.3. Message tailoring and targeting

The extent of message tailoring can range from *generic messaging* (to the public at large), through to *targeted messages* (e.g., messages targeting all gamblers), *tailored messages* (e.g., individualised messages based on the gambler's own expenditure); and *intelligent messages* (e.g., with the gambler's own expenditure also compared to normative data) (Rockloff et al., 2014).

Historically, most gambling messages have been targeted to all gamblers. These include static messages such as signage in venues and 'gamble responsibly' messages in advertising, and non-personalised dynamic messages that pop-up or scroll across gambling screens. Static messages can increase knowledge and awareness, but appear to have limited impact on behavioural change and are highly subject to habituation (Hing, 2004; Moodie & Reith, 2009; Reid, 2005; Rockloff et al., 2014). Dynamic messages also increase knowledge and awareness, but effects on behaviour have been mixed. Some in-venue EGM studies have found a reduction in length of play (Ladouceur & Sevigny, 2003; Schellinck & Schrans, 2002), but not expenditure (Schellinck & Schrans, 2002; Wynne & Stinchfield, 2004). One laboratory study found reduced gambling spend with very frequent pop-up messages (Floyd et al., 2006), and another no difference in persistence between those receiving, and not receiving, a message (Cloutier et al., 2006). In an experimental study, undergraduate students receiving an on-screen prompt to pre-set a time limit for an EGM session gambled for significantly less time than unprompted students (Kim et al., 2014). A comparison of real-world behavioural data of around 200,000 gamblers before and after a pop-up message was introduced, which appeared after 1,000 consecutive EGM gambles, concluded that these dynamic messages can influence a small group of gamblers to cease their play (Auer et al., 2014). Overall, non-personalised dynamic messages appear to have some effect, but may be limited due to their inability to cater to people's different information needs (Rockloff et al., 2014). One review of pop-up messages concluded that they are most effective when interactive, appear during wagering opportunities, and require the gambler to take some action to remove the message (Ginley et al., 2017).

Tailored gambling messages have also been tested, often in relation to limit-setting. In an experimental study, 72 EGM players played an EGM in a virtual reality environment (Wohl et al., 2013). All participants were asked to set monetary limits on their play, but only half were reminded when they reached their limit. Those receiving the pop-up reminder were more likely to stay within their preset limit. Similarly, in a randomised controlled experiment with 59 participants, participants who received a monetary limit pop-up reminder were more likely to adhere to their pre-set limits compared to participants not receiving a reminder (Stewart & Wohl, 2013). EGM pre-

commitment systems operate in several jurisdictions, as detailed earlier, and typically involve an on-screen message to players when they are approaching or have reached their pre-set limit. For example, in Victoria, the YourPlay system reminds players when they have reached 70 per cent and 90 per cent of their limit, and players can personalise the reminder message to be displayed on-screen. Real-time statements of money lost and time spent can also be displayed on-screen, although this can be hidden to maintain privacy (https://www.yourplay.com.au/#faq).

Several studies have assessed the effects of providing this type of personalised feedback to gamblers, with the most robust of these examining real-world player data. A study of 5,528 online gamblers on the Norsk Tipping platform found that those who received personalised feedback (showing amount lost last month and over the previous six months) significantly reduced their gambling behaviour, compared to control groups receiving no message (Auer & Griffiths, 2016). Similarly, the same researchers evaluated the effects of personalised messages among 7,314 Swedish customers of the ComeOn Group (Auer & Griffiths, 2020). Those receiving text messages with personalised feedback on their gambling behaviour wagered significantly less money on the day they received the message, as well as seven days later. These findings are consistent with these authors' previous studies, also using behavioural tracking data, showing that personalised feedback on gambling behaviour can help gamblers to decrease their gambling (Auer et al., 2014; Auer & Griffiths, 2015a, 2015b). These positive effects of providing personalised feedback to gamblers align with recommendations in the behavioural economics field (Gainsbury et al., 2018) and are generally consistent with those for other health behaviours, including smoking cessation (Head et al., 2013; Obermayer et al., 2004; Stotts et al., 2009), and physical activity (Head et al., 2013; Vandelanotte et al., 2018). Tailored messages have been found to attract more attention, increase motivational readiness for behavioural change, and stimulate that change due to increased personal relevance (Rimer & Kreuter, 2006). Online wagering operators also capture personal and betting data that can be used to tailor messages for individual bettors, based on factors such as current or accumulated betting behaviour, and reminders about betting limits.

Messages can also be 'intelligent' by enabling individuals to self-evaluate their own behaviour against normative data, which can further enhance message effectiveness. This approach aligns with the persuasive technique of social proof (Cialdini, 1984) by providing normative data to encourage conformance to social norms, and also with recommendations from the behavioural economics literature (Gainsbury et al., 2018). Interventions based on the social norms approach assume that correcting misperceptions through revealing actual healthier norms of the relevant social group results in individuals reducing unhealthy behaviours or increasing protective factors (Marchica & Derevensky, 2016). Providing personalised normative feedback has been demonstrated to improve message effectiveness for other health behaviours, including in relation to alcohol use and misuse (Dotson et

al., 2015; LaBrie et al., 2013; Riper et al., 2009), smoking (Van den Putte et al., 2009), marijuana use (Yzer et a., 2007) and condom use (Yzer et al., 2007).

A systematic review of personalised normative feedback interventions with at-risk and problem gamblers included six studies that had comparative groups (Marchica & Derevensky, 2016). In all six studies, participants receiving the feedback showed decreased problem gambling symptomatology compared to control groups and, where measured, decreased gambling expenditure and frequency. Studies with follow-up assessments found these reductions in gambling were sustained at 3-, 6- and 12-months. Further, the review noted that perceived gambling norms were higher for the at-risk and problem gamblers compared to the population at baseline in the one study where this was measured; and that all four studies that measured perceived gambling norms found they decreased amongst participants receiving the feedback. The review concluded that interventions incorporating personalised normative feedback appear to benefit problematic gamblers and may also be effective preventative measures amongst at-risk gamblers. Similarly, a meta-analysis of brief personalised feedback interventions for problematic gambling, some of which also provided normative feedback also supported their use as a low-cost, easily disseminated harm-reduction strategy (Peter et al., 2019). However, this analysis also found greater efficacy in populations with greater gambling severity, when accompanied by gambling-related educational information, and when used in conjunction with motivational interviewing.

A comprehensive study of intelligent warning messages for a pre-commitment scheme found strong evidence that they are an improvement over static and dynamic messages (Rockloff et al., 2014). The authors reasoned that the diversity of groups who gamble and who experience gambling problems, along with the complexity of factors that initiate and maintain gambling behaviour and gambling problems, mean that no one message will be optimally effective for all individuals. Intelligent messages that are specific to a person's individual and behavioural characteristics may therefore provide the best opportunity to prompt behavioural change.

The current study tests generic, tailored and intelligent messages to promote pre-commitment, and examines responses amongst different customer groups. It also examines responses to generic messages (with no explicit target group), messages that target frequent bettors, and messages that target all bettors.

1.5.4. Other aspects of messages

Studies of gambling messaging have identified other features that appear to enhance their effectiveness. These features include that messages should: be noticeable, facilitate retention and comprehension, be varied to promote comprehension, require less rather than more effort to comply with the advice, and inform the receiver of potential risks and actions required to avoid those risks (Floyd

et al., 2006). Further, short-term consequences should be presented, as these are more salient than longer-term consequences (Fagerlin et al., 2007; Gerend & Cullen; 2008, Hoek et al., 2013). Messages should also be direct, honest, brief, easy to read, and include a generic component that ties messages together (e.g. 'gamble safely') (Ginley et al., 2017; Rockloff et al., 2014). Where possible, these features will be incorporated into the messages to be tested in this pre-commitment trial. Other persuasive techniques such as authority and liking (Cialdini, 1984) should be considered in how a message is delivered. When message delivery is implemented, the messenger effect (Kassin 1983) suggests that it can be enhanced when delivered by a likable, attractive, trusted and expert source (Chaiken 1980; 1979; Dolan et al., 2010; Pornpitakpan 2004).

1.6. Summary

Most research on pre-commitment has focused on EGMs. Overseas studies on EGM pre-commitment have limited relevance to Australia because of the different features of these systems (e.g., being mandatory, spending limits being capped), and have therefore not been reviewed in this chapter. Australian studies on pre-commitment for EGM gambling have generally been of low quality, mainly due to the small proportions of patrons participating in the trial or the pre-commitment system under study. This has prevented firm conclusions being drawn about the effectiveness of these systems in moderating EGM gambling behaviour. Research into pre-commitment for online gambling has included cross-sectional research conducted in collaboration with some overseas gambling operators. While having the benefit of being able to source actual limit-setting and spend data from online gambling operators, these cross-sectional studies have not been able to assess the effects of limit-setting on different PGSI groups, nor the effects of messaging on the uptake of pre-commitment. Three behavioural trials of pre-commitment for online gambling provide stronger evidence of its effectiveness and uptake in response to messaging. Like two overseas trials, the most relevant of these, an Australian trial (Heirene & Gainsbury, 2021), found very low uptake of deposit limits after messaging. Low and moderate spenders who set a deposit limit reduced their betting after setting a deposit limit, but no effects were found for higher spenders.

Overall, research on pre-commitment, including for land-based EGMs and online gambling, has sometimes shown positive effects of limit-setting, especially where limits are binding. However, where pre-commitment is voluntary, it has had very modest rates of uptake amongst customers. Higher-risk gamblers who would most benefit from having limits on their gambling can be reluctant to voluntarily partake in the system; while lower-risk gamblers see little need to set formal limits. This indicates the need for operators to effectively promote their pre-commitment systems.

Lessons from public health research suggest that there are numerous features of messages that warrant trialling in the current study in order to develop optimal messages to promote pre-commitment for online wagering in Australia. As detailed in the next chapter, insights from the review of public health messaging informed the design of a discrete choice experiment that tested responses to different permutations of six message features – terminology and purpose, types of limits, message framing, message targeting, message personalisation, and information to help set limits.

1.7. Aims and objectives of the study

This study aims to build evidence and understanding of the impact of different features of pre-commitment on the effectiveness of the measure, including for different customer groups. It addresses the following specific objectives:

1. Examine how regular bettors are using pre-commitment limits.

2. Determine the optimal message features that promote the uptake of deposit limits, including for different customer groups.

3. Test the effects of these optimal messages on attitudes, intentions, take-up and review of deposit limits.

4. Examine if setting limits impacts on gambling behaviour and related harm.

Chapter 2. Discrete choice experiment

2.1. Introduction

This chapter presents the methods and results from an online survey of race bettors and sports bettors from across Australia with active wagering accounts. The aims of this stage were to:

- examine how bettors are currently using limit-setting for online wagering, as well as intentions towards limit-setting under the voluntary opt-out pre-commitment scheme; and
- determine the optimal features that promote the uptake and review of pre-commitment limits, including for different customer groups.

2.2. Methods

The study was approved by CQU Human Research Ethics Committee (approval number 21883).

2.2.1. Recruitment and inclusion criteria

A population representative sample was not affordable within the project budget as it would have required a very large starting sample to include sufficient numbers of respondents who met the inclusion criteria. We therefore used a purposive sampling strategy to recruit respondents with particular shared characteristics of interest. These inclusion criteria were that respondents: lived in Australia; were 18 years or older; had at least one active online or telephone account with a wagering operator or bookmaker; and bet on racing or on sports/ esports/ fantasy sports at least once a month. Consent to participate was also required for participation.

Potential survey participants were recruited between the 4th and 25th September 2019 through Qualtrics. Qualtrics recruits participants from numerous online panels across Australia, with quality checks to ensure that respondents complete the survey only once. Potential participants emailed a link to a participant information sheet, consent form and online survey (Appendix A).

Responses were screened for data quality. To satisfy inclusion for analysis, responses needed to pass an attention check, complete the survey in a reasonable amount of time (not less than ⅓ of the median response time of an initial pilot sample), and not exhibit straight-lining through questions. Of the 4,518 eligible respondents who passed the screening questions and started the survey, 3,141 completed the survey fully and passed all quality checks, giving a completion rate of 69.5 per cent. Please see Appendix C for full reporting of exclusions. Participants were compensated for participating based on the internal points-based systems of Qualtrics' panel providers, where accrued points can be exchanged for rewards.

2.2.2. Survey sections and measures

The survey questionnaire is provided in Appendix A. Table 2.1 summarises the measures.

Table 2.1 – Measures in the DCE survey

> **Screening questions.** These comprised: whether the participant lives in Australia; age in years; number of wagering operators or bookmakers they have an active account with; how often they bet money on races and on sports, esports or fantasy sports for money.
>
> **Deposit limit setting prompts.** Respondents were asked which of 36 Australian-licensed wagering operators (listed on the ACMA website) they had an active account with, and also a single category option for 'on-course bookmakers'; which of these operators had provided prompts and information about setting a deposit limit; and ease of finding this information.
>
> **Current limits.** Participants were asked if they currently had in place each of seven types of limits: deposit, maximum or single bet, loss, spend, number of bets, bet frequency, and time limits. For each type of limit they had, participants were asked: on how many accounts they had set that type of limit; the total amount that each limit is set to across all of their accounts; their actual behaviour in relation to the focus of each type of limit (e.g., how much they usually deposit); how often during the last 12 months they had attempted to exceed their limit but been stopped by the limit; and how helpful they found each limit. They were also asked how easy or difficult it was to set each limit; how often they reviewed each type of limit; and how many times they had increased or decreased each limit during the last 12 months. Participants who did not have a particular type of limit were asked how likely they would be to set that type of limit.
>
> **Betting behaviour.** Participants were asked their usual monthly deposit amount across all their betting accounts, the largest bet size they usually place, and their monthly expenditure on race and sports betting.
>
> **Problem Gambling Severity Index** (PGSI; Ferris & Wynne, 2001). The PGSI was administered to all respondents Responses were scored as: 'never' = 0, 'sometimes' = 1, 'most of the time' = 2, and 'almost always' = 3. Cut-off scores and categories were: 'non-problem gambler' = 0, 'low risk gambler' = 1-2, 'moderate risk gambler' = 3-7, and 'problem gambler' = 8-27.
>
> **Demographics.** Participants reported their gender, age, state or territory where they reside, education, language they mainly speak at home, and household annual pre-tax income.
>
> **Discrete choice experiment.** The second part of the survey was a discrete choice experiment (DCE), where participants indicated their choices amongst different messages that promoted limit-setting on wagering accounts. Details on the DCE design and analysis are described below.

2.2.3. Design of the discrete choice experiment

The purpose of the DCE was to determine optimal messaging for the subsequent RCT. The DCE survey asked respondents which of two messages they thought would be most helpful in getting them to set new limits or to review existing limits, with eight choice sets presented. Sample messages are shown in Table 2.2.

Table 2.2 – Sample DCE messages for a single trial

Message 1	Message 2
Do you sometimes spend more on betting than intended? Improve your online wagering experience	**Do you sometimes spend more on betting than intended? Improve your online wagering experience**
Set a bet frequency limit. This is the maximum frequency of how often you can place a bet (e.g., once a week).	Set a loss limit. This is the maximum amount that you can lose on betting (after any winnings) during the period you nominate.
If you don't set limits, it's easy to go over your betting budget.	Setting limits will help you stay within your betting budget.
Your betting expenditure is within the amount recommended to keep betting expenditure at low risk.	Your betting expenditure is within the amount recommended to keep betting expenditure at low risk.

One of the key features of a DCE design is that participants are not required to rate every single possible combination of features and levels against every other possible combination of features and levels. DCEs therefore minimise respondent burden while still providing a full appraisal of all features and levels. Instead, the utilities for each level of each feature are calculated mathematically based on ratings of carefully selected sets of options generated by the specific conjoint software. This software systematically generates feature combinations for respondents to assess, based on the features and levels specified by the researchers. For the current sample, participants were only required to answer eight such trials. The order of the trials was randomised to negate any order effects.

Table 2.3. outlines the features and the levels of each feature that were tested. These were designed based on the literature review for this study which identified the most salient message features and levels for testing. The six features were: the *terminology and purpose* of the message, the *type of limit* described, the *message framing*, the *message targeting*, *message personalisation,* and *information to help set limits*. The research team, encompassing four experts in gambling research, drafted the wording of the message options in a way that aligned with each level within each feature. This was then reviewed by Gambling Research Australia and refined based on their feedback. This is a similar method used in other studies to develop initial message features for further testing. For example, in their behavioural trial of setting deposit limits, Heirene and Gainsbury (2021) used a three-step process for developing messages for the trial: 1) developed an initial set of messages based on a literature review, 2) the messages were then reviewed by researchers, and 3) the messages were then evaluated via an online poll of consumers which asked them to what extent each message would encourage them to set a deposit limit (based on a 7-point scale). Instead of this third step, the current study used a more rigorous process, using a discrete choice experiment to determine the message for the subsequent trial.

Presenting six features for each message was not considered desirable because it places too high a cognitive load on the participant to consider the impact of so many features in unison. Thus, we used a 'partial profile' approach where participants were shown a selection of four features at a time. All participants saw the first two features (*terminology and purpose*, and *types of limits*), because these features were seen as crucial to any message. Participants were randomly allocated to conditions to see a selection of two options from the remaining four features. This design does not affect the conclusions that can be drawn from the results but was likely to have improved the quality of the data obtained.

The decision task was a response to the question *'Which of these messages would be most helpful in getting you to set new limits or to review existing limits?'* The respondent could select from two different messages composed of four statements each from Table 2.3. Only the statement (not the titles in italics) was shown to the respondent.

Table 2.3 – DCE features and levels

Feature	Level 1	Level 2	Level 3	Level 4	Level 5
Group 1: Terminology & purpose	*Constraining & information* **Do you set limits on your wagering accounts? Limit your online wagering.**	*Managing & Self-monitoring* **Do you monitor how much you spend on betting? Manage your online wagering.**	*Improving & Self-appraisal* **Do you sometimes spend more on betting than intended? Improve your online wagering experience.**		
Group 2: Types of limits	*Deposit Limit* Set a deposit limit. This is the maximum amount you can deposit into your wagering account during the period you nominate (e.g. per week or month).	*Maximum Bet Limit* Set a maximum bet limit. This is the maximum amount you can place on a single bet using your account.	*Loss Limit* Set a loss limit. This is the maximum amount that you can lose on betting (after any winnings) during the period you nominate (e.g. per week or month).	*Spend Limit* Set a spend limit. This is the maximum amount that you can place on bets (regardless of any winnings) during the period you nominate (e.g. per week or month).	*Bet Frequency Limit* Set a bet frequency limit. This is the maximum frequency of how often you can place a bet (e.g. once a week).
Group 3: Message framing	*Challenge* Betting more than intended can lead to problems.	*Negative* If you don't set limits, it's easy to go over your betting budget.	*Positive* Setting limits will help you stay within your betting budget.		
Group 4: Message targeting	*Generic* Setting limits is important.	*Targeted* Setting limits is important for people like yourself who bet frequently.	*Inclusive* Setting limits is important for all bettors, no matter how much (or how little) you currently bet.		
Group 5: Message personalisation	*Generic* Many gamblers find it helpful to keep track of their betting expenditure.	*Tailored* You usually spend [self-reported amount] on betting each month.	*Intelligent* Your betting expenditure is [within/more than] the amount recommended to keep betting expenditure at low risk.		
Group 6: Information to help set limits	*None* Be sure to choose your limit.	*Prompt to reflect on previous expenditure* When you choose your limit, think about whether you want to spend more, less or about the same as you currently spend.	*Remind of previous expenditure and prompt to reflect* When you choose your limit, think about whether you want to spend more, less or about the same as you currently spend. You usually spend [self-reported amount] on betting each month.		

2.2.4. Data analysis

The analyses are presented in two main sections: descriptive results and results from the DCE analysis. Fifteen participants appeared to provide responses to questions related to expenditure and limits that were unlikely to be true, but otherwise appeared to answer the rest of the survey appropriately. Thus, their results were not included in analyses related to limits, but were included for other analyses, including the DCE analyses. Because the DCE analyses involved a gender comparison when calculating the weights, and because only 10 respondents identified as a gender other than male or female, those respondents could not be included in the DCE analyses due to their small group size, because these included gender comparisons. These respondents were, however, included in all other analyses presented.

Data analysis for the descriptive results

In the descriptive results, some comparisons are made between those who had and did not have current limits. These results compare two independent groups and consist of chi-square tests of independence (with tests of independence for variables with multiple levels) and independents samples or Welch *t*-tests.

Data analysis for the discrete choice experiment

Discrete choice analysis treats each feature (in this case, statement) as contributing to the overall utility of the package, which is reflected in a respondent's tendency to select that package. Typically used in consumer choice studies, utility is the theoretical framework that respondents are assumed to use to make a choice between two package options. Respondents are assumed to be utility-maximisers and as the utility of the package rises, the probability that it will be selected increases. Statistical modelling is used to estimate the utilities from respondents' decisions in the survey. To estimate the utilities of each feature, a hierarchical Bayesian multinomial logit model is used. This is essentially a sophisticated means to infer the contribution of each feature to the choice made by participants. Equivalently, participant choices indicate they prefer packages with that feature over those that do not contain the feature.

A person's individual utility for a single feature can be thought of as composed of a mean for that feature from the entire population, plus effects for the specific covariate groups to which the respondent belongs, plus a final shift for the individual's unique preferences. For this study we estimated covariate effects for four different categories: gender (male, female), age (under 35, 35 or older), PGSI score (0-2, 3-27; i.e., non-problem and low risk vs moderate risk and problem gamblers), and whether or not the respondent had previously set limits of any kind. Table 2.4 shows the sample size of these various covariate groups in our sample.

Table 2.4 – Group size for individual comparisons of utilities and optimal messages

Category	Group	Sample size
Gender	Male	1,907
	Female	1,224
Age	Under 35	1,476
	35 or older	1,665
PGSI	0-2 (non-problem and low risk gamblers)	1,294
	3 or more (moderate risk and problem gamblers)	1,847
Previously set a limit	No	1,293
	Yes	1,848

2.3. Descriptive survey results

2.3.1. Sample characteristics

Most of the 3,141 respondents were male (60.7%), lived in New South Wales, Victoria or Queensland (81.4%), and spoke English as their main language at home (97.0%). Almost half (47.9%) had university qualifications. Mean age was 38.8 years and median household income was $80,000-$99,999. These demographic characteristics are consistent with representative Australian figures indicating that race bettors and sports bettors tend to be younger adult males with a higher-than-average income (Armstrong & Carroll, 2017a, 2017b).

Consistent with a nationally representative sample of online gamblers (Hing et al., 2014), most respondents had one (45.0%) or two (30.1%) accounts with different operators. Approximately half of the sample bet on sports and/or races at least weekly. Based on the PGSI, 21.4 per cent were non-problem gamblers, 19.8 per cent low risk gamblers, 24.4 per cent moderate risk gamblers and 34.4 per cent problem gamblers. Reflecting the purposive sampling of at-least monthly bettors, problem and at-risk gambling was much more prevalent compared to those found in a nationally representative survey of Australian online gamblers (Hing et al., 2014) where 58.9 per cent were non-problem gamblers, 24.8 per cent low risk gamblers, 12.6 per cent moderate risk gamblers and 2.7 per cent problem gamblers.

2.3.2. Attitudes, intentions and behaviour relating to limits

Amongst the 3,141 participants, just over half (58.8%, n=1,848) had set at least one type of limit. The most commonly set were deposit (40.8%), spend (36.4%), and maximum or single bet (36.0%) limits, followed by loss (28.9%), bet frequency (24.2%), number of bets (24.1%), and time (22.4%) limits. Of those who had set limits (n=1,848), the vast majority (91.7%) found it easy to set these limits.

Over 90 per cent of those who had set each type of limit (n=703 to n=1,281 for these sub-samples) found it helpful in managing their betting. Between 37.4 per cent and

66.3 per cent of those with each type of limit reported that the limit had stopped their betting or deposit behaviour at least once every few weeks during the last 12 months.

Between 22.9 per cent and 44.7 per cent of participants using each type of limit usually bet up to the level of their limit. However, many respondents had set limits that were higher than their usual betting amount. Between 17.1 per cent and 40.8 per cent had set limits that were 2 – 9.99 times higher than their usual betting amount; and a further 2.7 per cent and 7.8 per cent had set limits that were at least 10 times higher than their usual betting amount, effectively negating the utility of a limit.

Amongst participants who had set any type of limit (n=703 to n=1,281 for these sub-samples), slightly under half (48.5%) reported reviewing these limits at least once every few weeks, while 23.4 per cent reported never reviewing these limits within the last 12 months. More respondents who had set any type of limit reported increasing (50.7%) rather than decreasing their limit (43.9%).

Over half the participants who had not set a particular type of limit indicated they were unlikely to set time (70.0%), bet frequency (66.5%), number of bets (64.1%), maximum or single bet (56.5%), spend (55.0%), deposit (53.5%) or loss (52.6%) limits.

2.3.3. Attitudes, intentions and behaviour relating to deposit limits

Amongst participants with accounts with the top 10 operators in the sample (n=190 to n=1,582 for these sub-samples), between 42.7 per cent and 64.3 per cent had been prompted by the operator to set a deposit limit, and between 49.1 per cent and 68.4 per cent had been provided with information about setting a deposit limit. Most participants (87.2%) who had tried to find information on setting deposit limits, (n=2,558) reported it was easy to find.

Deposit limits were the most common type of limit set; 40.8 per cent (n=1,281) of the sample had set a deposit limit. The vast majority (93.4%) of those who had set a deposit limit found it helpful in managing their betting. Over one-third (37.4%) of participants with a deposit limit reported being stopped from depositing more than their limit about once every few weeks during the last 12 months. However, nearly one-third (30.4%) had set their deposit limit at 2 – 9.99 times higher than the amount they actually deposited, with a further 6.9 per cent setting a deposit limit that was over 10 times their usual deposit amount, effectively negating the utility of this limit.

A little over half of respondents (53.5%) who had not set a deposit limit reported they were unlikely to set one.

2.3.4. Comparisons between participants who had and had not set limits

Participants who were female, younger, had a university qualification, and mainly spoke a language other than English at home were more likely to set at least one type of limit, as were more frequent bettors and those classified as a problem gambler. No significant differences were observed by state of residence or income.

2.4. Discrete choice experiment results

This section presents the results for the preferred features of the messages tested in the DCE, preferred level of each feature, and preferred levels by subgroups. It then presents the optimal message as discovered in the DCE. Importantly, 'preferred' features and levels refers to message attributes that respondents indicated 'would be most helpful in getting you to set new limits or to review existing limits', not just the message attributes that they might prefer to receive.

2.4.1. Preferred features of messages

Figure 2.1 shows the importance of each feature. Feature importance is a measure of how important the items in those groups are in making a message desirable or undesirable. The *types of limit* group was the most influential group in determining what messages respondents found influential. This indicates that getting the messaging around the type of limits correct will be the most impactful part of any messaging campaign. The next most influential features were, in descending order of influence, *terminology and purpose*, *information to help set limits*, *message personalisation*, *message framing* and *message targeting*.
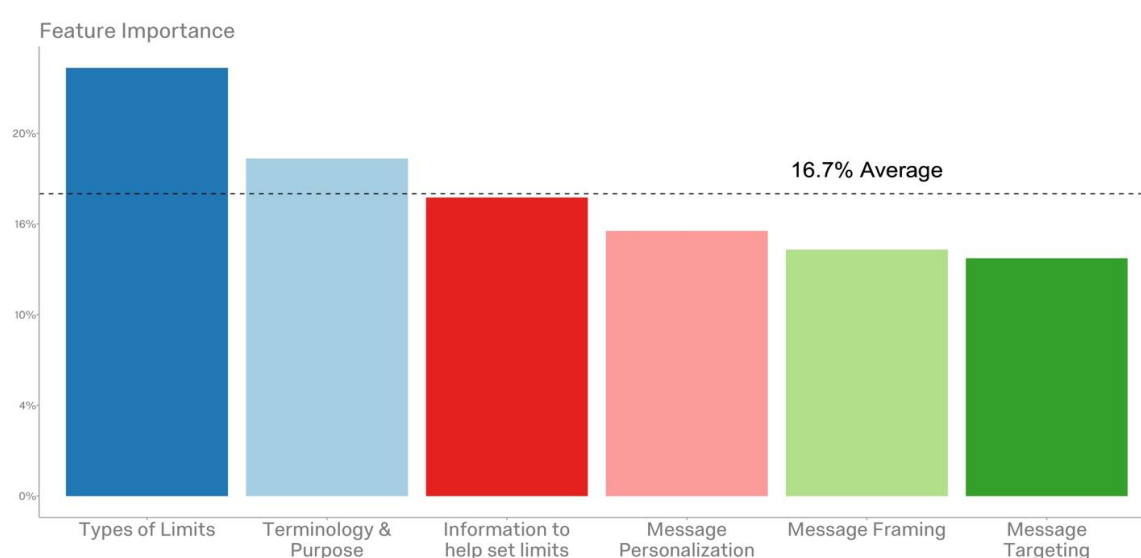
Figure 2.1 – Importance of each feature

2.4.2. Preferred levels within features

Within each feature, the optimal level was then determined, based on which levels were most likely to be selected in this sample (see Table 2.5 and Figure 2.2).

- *Terminology and purpose:* The optimal level was quite clear, with *managing and self-monitoring* being preferred over *constraining and information*, and *improving and self-appraisal*. The preferred message reads 'Do you monitor how much you spend on betting? Manage your online wagering.'

- *Type of limit:* The *loss limit* was the most preferred, but *deposit limit* and *spend limit*, while preferred a little less, were not significantly different from the *loss limit*. Importantly, the *bet frequency limit* was by far the least preferred level over any feature, and the *maximum bet limit* was also relatively unpopular. The loss limit statement read 'Set a loss limit. This is the maximum amount that you can lose on betting (after any winnings) during the period you nominate (e.g., per week or month).' Given the current policy focus on deposit limits, the deposit limit statement was used in the message tested in the RCT. This read 'Set a deposit limit. This is the maximum amount you can deposit into your wagering account during the period you nominate (e.g., per week or month).'

- *Message framing: Positive framing* was preferred over *challenge* and *negative framing*. This message stated, 'Setting limits will help you stay within your budget'.

- *Message targeting:* The optimal level was a *generic message*: 'Setting limits is important', which was slightly preferred to the *inclusive message*, while the *targeted message* was least preferred. For the RCT, we opted to use the *inclusive* message rather than the *generic* message, due to low support for generic messages in the literature and because its overall utility was not significantly different.

- *Message personalisation:* A *tailored message* was slightly preferred over a *generic message*, but *intelligent messaging* was least preferred. Tailored messaging read 'You usually spend [respondent was shown self-reported amount] on betting each month.'

- *Information to set limits: Reminding the person of their previous expenditure and prompting them to reflect* was similarly preferred to *no information*, both of which were preferred to *prompting the person to reflect on their previous expenditure*. The optimal level was 'When you choose your limit, think about whether you want to spend more, less or about the same as you currently spend. You usually spend [respondent was shown self-reported amount] on betting each month.'

For some features, the optimal level is not necessarily far and away the best option. For example, looking at Figure 2.2, the bars for *loss limit* and *spend limit*, as well as

deposit limit, are not significantly different from each other. As noted earlier, *generic* and *inclusive* message targeting were not significantly different. Therefore, while we constructed one optimal message from the DCE results for testing in the RCT, other combinations of message attributes might have similar potential efficacy.

Table 2.5 – Preferred level within each feature

Feature	Level	Probability of highest average
Terminology & Purpose	Managing & self-monitoring	92.7%
Types of Limits	Loss Limit	58.6%
Message Framing	Positive	96.3%
Message Targeting	Generic	58.3%
Message Personalization	Tailored	75.3%
Information to Help Set Limits	Remind and prompt to reflect	65.8%

Note: This table reports the Bayesian posterior probability that the statement with the highest average utility is the actual highest average utility accounting for sampling uncertainty. The percentage describes our confidence that the top-ranking level of each feature really is significantly better than other alternatives. For example, we have a high confidence (92.7%) that managing and self-monitoring is the best feature in the terminology and purpose feature group.
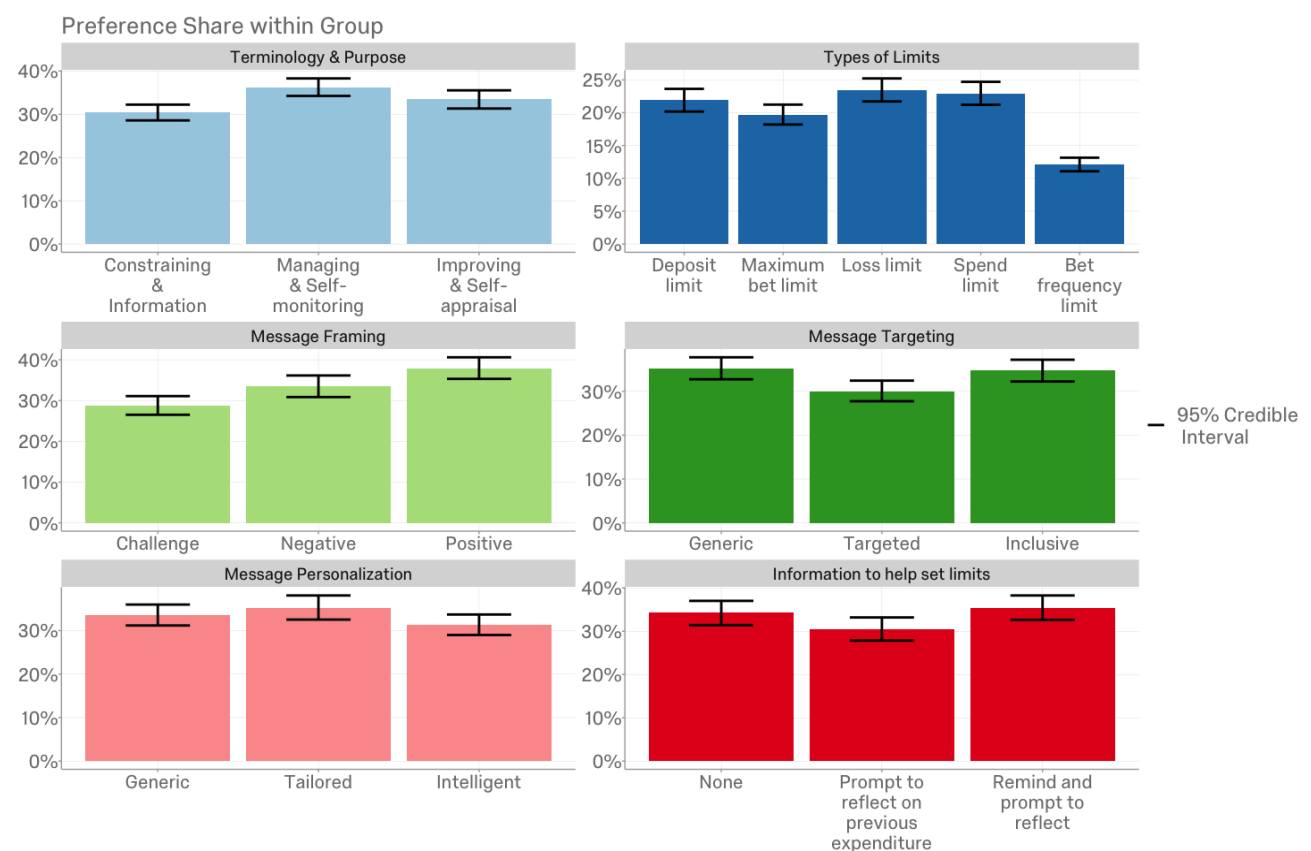
Figure 2.2 – Preference share of each level within each feature

2.4.3. Preferred levels by subgroups

To determine whether the optimal levels were similarly preferred for each gender, age group (<35 vs 35+), PGSI group (non-problem and low risk vs moderate risk and problem gamblers) and previous limit-setting status (no vs yes), we conducted pairwise comparisons for the average utility for each level of each feature.

Figure 2.3 indicates the results by gender. Four significant differences were observed by gender. While slight differences were observed, most were not statistically significant and represented a miniscule difference in raw utility scores.

In terms of *terminology and purpose*, the preferred level for women is the *improving and self-appraisal* statement, whereas for men it is *managing and self-monitoring*. However, because the *managing and self-monitoring* option had a strong preference in the overall sample (see Table 2.5), and because the majority of online bettors are male, we retained this option for testing in the RCT. For *message framing*, while the *positive messaging* is the preferred level for both genders, it is more preferred by men than by women.

No other comparisons were significantly different by gender. However, as indicated when describing the optimal messages by gender (see below), there are marginal differences in the preferred levels, although these were not statistically significant.
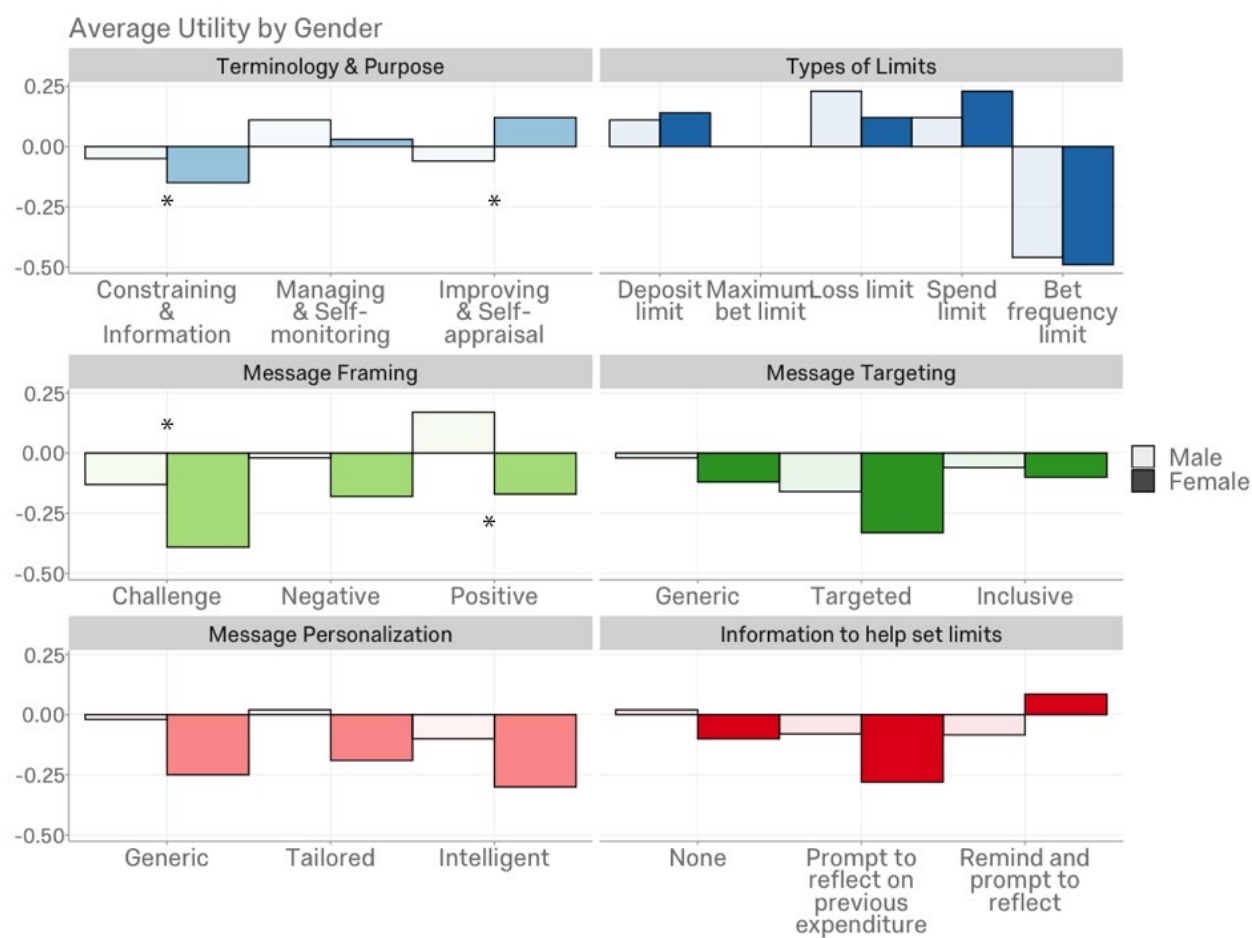
Figure 2.3 – Gender comparisons for average utility of each feature

Figure 2.4 shows level comparisons by age. While slight differences were observed, most were not statistically significant and represented a miniscule difference in raw utility scores.

Younger people preferred the *improving and self-appraisal* option in the *terminology and purpose* messaging, while older people preferred the *managing and self-monitoring* messaging. However, because the *managing and self-monitoring* option had a strong preference in the overall sample (see Table 2.5), we retained this option for testing in the RCT. In terms of *types of limits*, the older group preferred *deposit limits* to the younger group but had a stronger dislike of *bet frequency limits*. Deposit limits were therefore used for the RCT message and aligned with current requirements for online wagering operators to offer deposit limits to their customers. Like the comparisons for gender, while both age groups preferred the *positive message framing*, it was more preferred by the older group. The younger group were less inclined to choose *generic messaging* for *message personalisation* and to prefer the *prompt to reflect on previous expenditure* compared to older people. As explained in the next chapter, the RCT tested both personalised and non-personalised versions of the optimal message.

Average Utility by Age
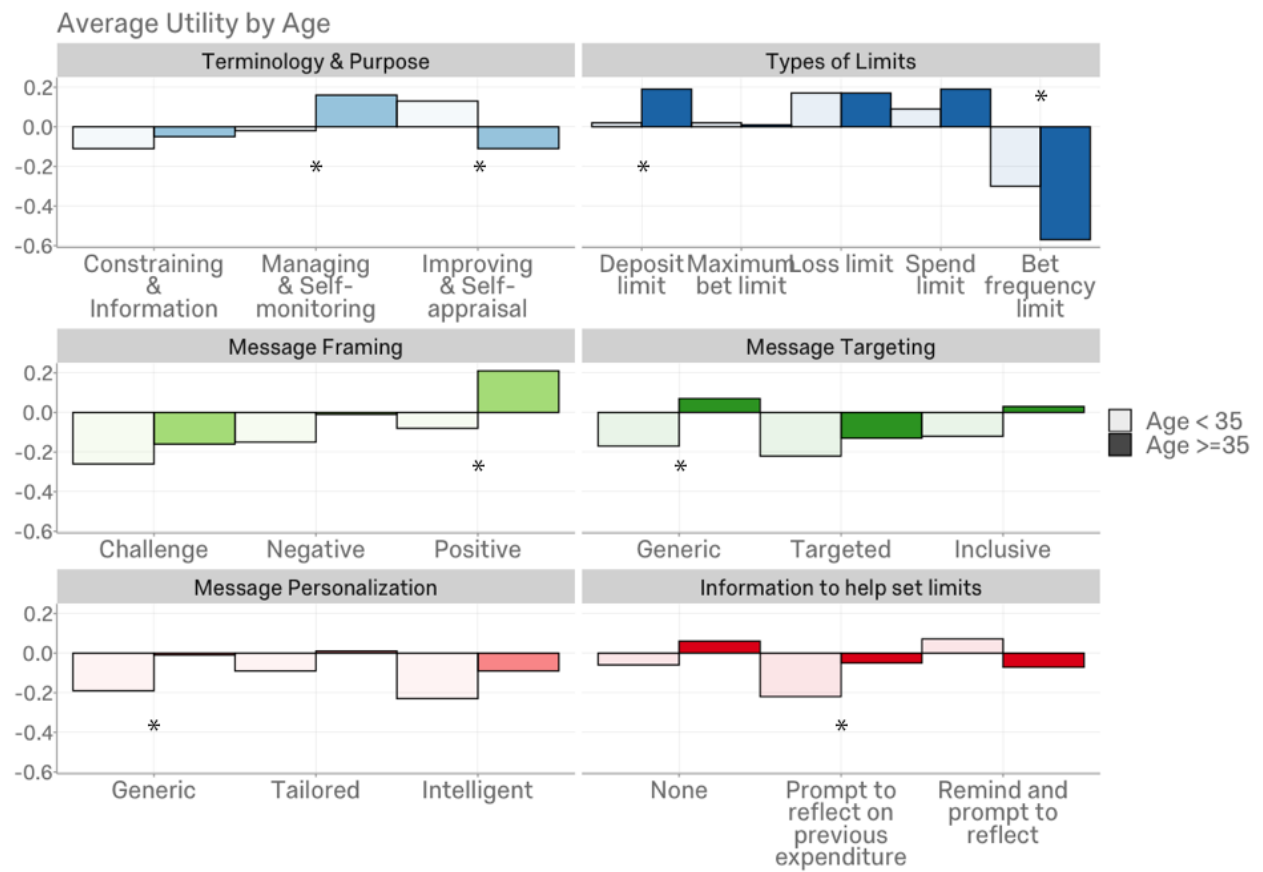
Figure 2.4 – Age group comparisons for average utility of each feature

Figure 2.5 shows significant differences by PGSI groups, comparing non-problem and low risk gamblers to moderate risk and problem gamblers. While slight differences were observed, most were not statistically significant and represented a miniscule difference in raw utility scores.

The lower-risk group more strongly preferred the *managing and self-monitoring* option in the *terminology and purpose* feature compared to the higher-risk group, while the higher-risk group preferred the *improving and self-appraisal* messaging compared to the lower-risk group. As explained earlier, the *managing and self-monitoring* option had a strong preference in the overall sample (see Table 2.5), so we retained this option for testing in the RCT. Also of note is that the *information to help set limits* option included in the RCT message, *remind and prompt to reflect on previous expenditure,* also encouraged self-appraisal. The lower-risk group preferred a *maximum bet limit* more strongly than the higher-risk group but were less likely to select a *bet frequency limit*. No other significant differences were observed.
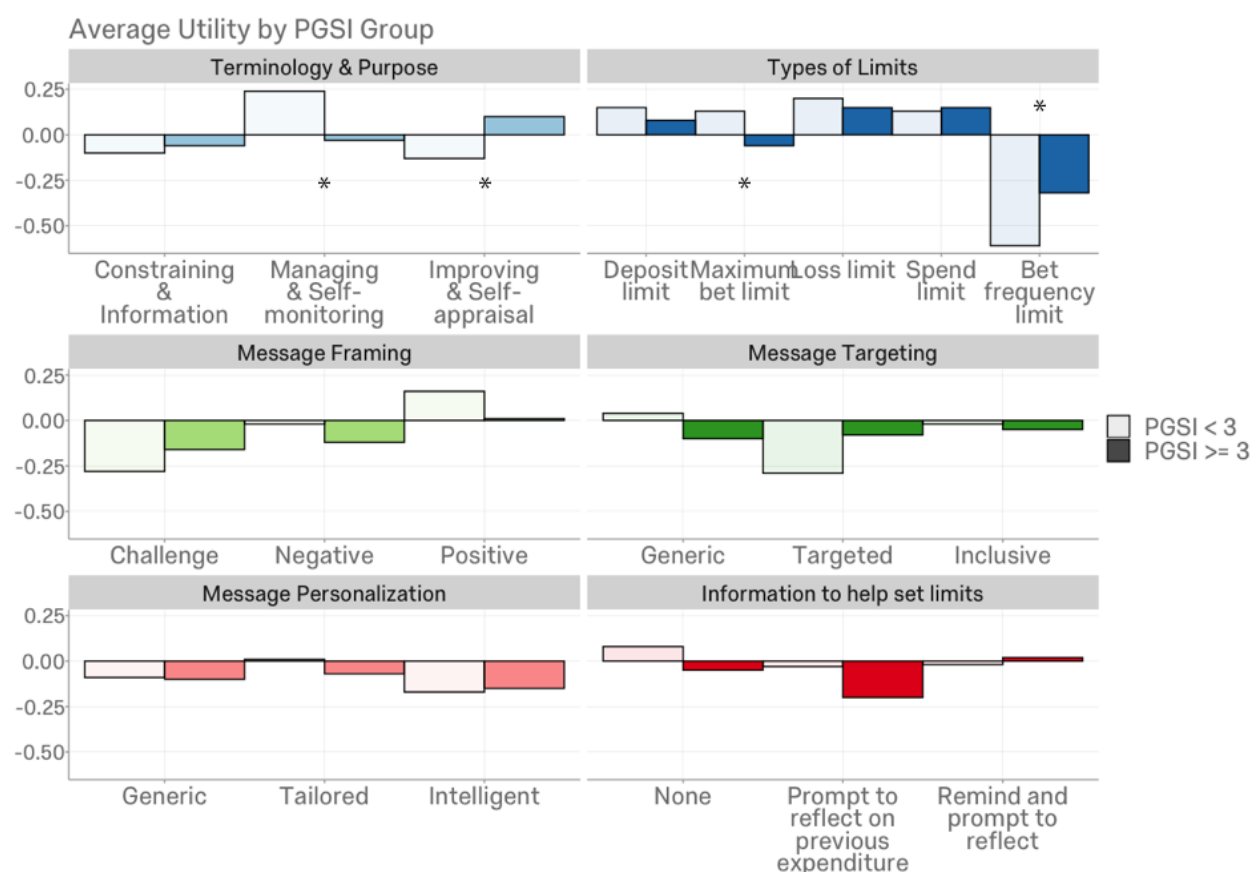
Figure 2.5 – PGSI group comparisons for average utility of each feature

Figure 2.6 shows significant differences in terms of messaging between those who have and have not previously set a limit. While slight differences were observed, most were not statistically significant and represented a miniscule difference in raw utility scores.

Those who had not previously set a limit were less likely to choose the *constraining and information* option for *terminology and purpose*, compared to those who had set a limit. Participants who had not previously set a limit were more likely to select a *loss limit*, and less likely to select a *bet frequency limit*. No other significant differences were observed.
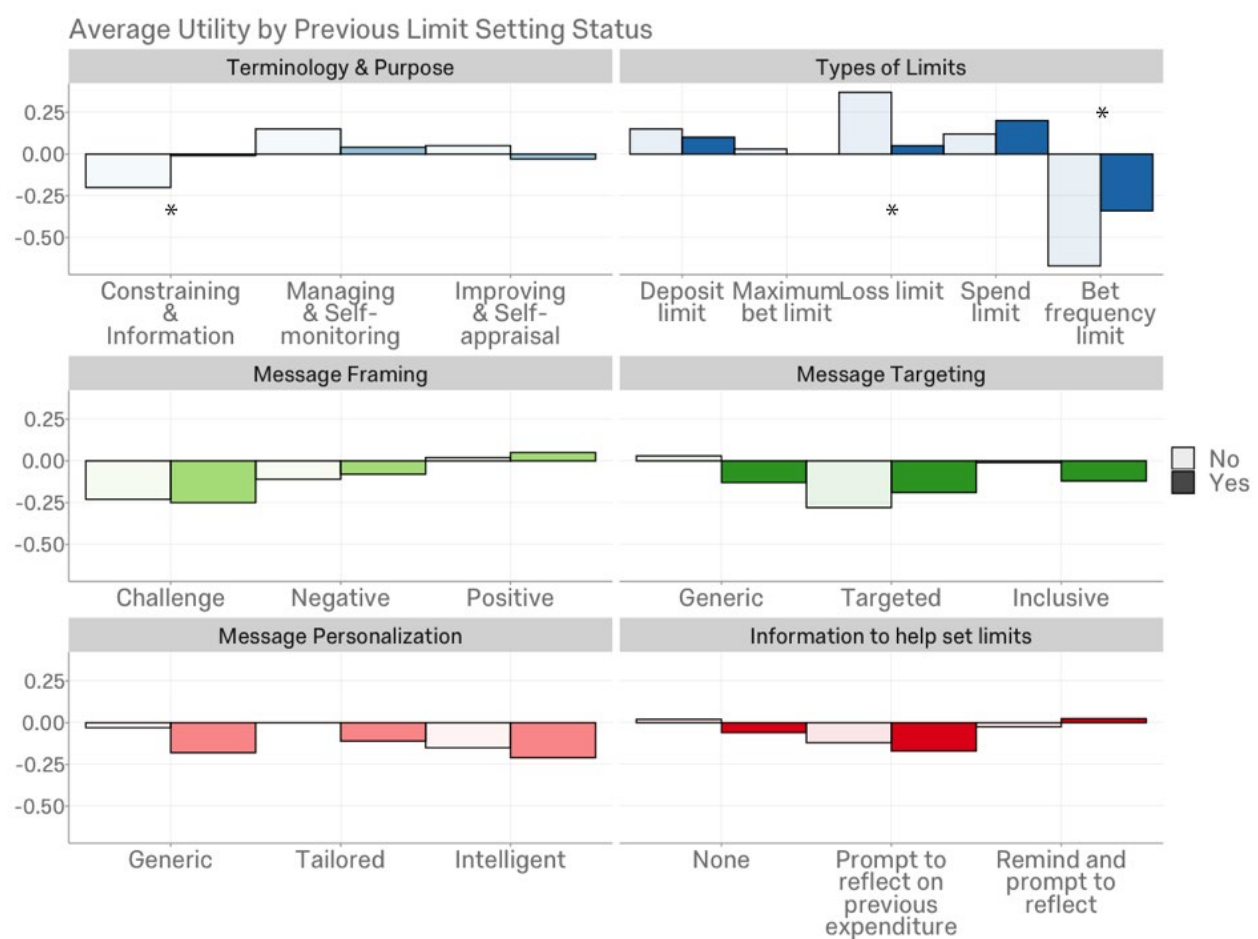
Figure 2.6 – Limit vs non-limit setters comparisons for average utility of each feature

2.4.4. The optimal message overall

The optimal message for the overall sample had the levels listed below, with the relevant statements shown in Table 2.6. A shorter message (Table 2.7) could also be constructed by constraining the statements to the three most influential features (1, 2 and 6 below). A shorter message may be useful in certain media where space or time is limited, such as in television, radio or transit advertising. Further, to align with the type of limit that is currently required by the voluntary opt-out pre-commitment scheme, the *deposit limit* statement could be used instead of the loss limit statement given its overall utility was not significantly different. Thus, this option is shown as an alternative to the loss limit statement in Tables 2.6 and 2.7. For message targeting, we opted to use the *inclusive* message rather than the *generic* message, due to low support for generic messages in the literature and because its overall utility was not significantly different. For the remaining features, the optimal message tested in the RCT included those levels with the highest preference of the overall sample in the DCE.

1. Terminology and purpose: Managing and self-monitoring
2. Types of limits: Loss limit
3. Message framing: Positive
4. Message targeting: Inclusive
5. Message personalisation: Tailored
6. Information to help set limits: Remind and prompt to reflect

Table 2.6 – The optimal message – based on the whole sample

Do you monitor how much you spend on betting? Manage your online wagering.

Set a loss limit. This is the maximum amount that you can lose on betting (after any winnings) during the period you nominate (e.g. per week or month). OR Set a deposit limit. This is the maximum amount you can deposit into your wagering account during the period you nominate (e.g. per week or month).

Setting limits will help you stay within your betting budget.

Setting limits is important for all bettors, no matter how much (or how little) you currently bet.

When you choose your limit, think about whether you want to spend more, less or about the same as you currently spend. You usually spend [respondent was shown self-reported amount] on betting each month.

Table 2.7 – A shorter optimal message – based on the whole sample

Do you monitor how much you spend on betting? Manage your online wagering.

Set a loss limit. This is the maximum amount that you can lose on betting (after any winnings) during the period you nominate (e.g. per week or month) OR Set a deposit limit. This is the maximum amount you can deposit into your wagering account during the period you nominate (e.g. per week or month).

When you choose your limit, think about whether you want to spend more, less or about the same as you currently spend. You usually spend [respondent was shown self-reported amount] on betting each month.

2.4.5. The optimal message by subgroups

Tables 2.3 – 2.11 display the preferred levels by gender, age, PGSI group, and whether participants had previously set limits. As noted earlier, while slight differences are observed, most of these differences are not statistically significant and represent a miniscule difference in raw utility scores. As such, based on this information alone, it is difficult to recommend different messaging for different subgroups.

Table 2.8 – Preferred level within each feature by gender

Feature	Male preference	Female preference
Group 1: Terminology & purpose	Managing & self-monitoring	Improving & self-appraisal
Group 2: Types of limits	Loss limit	Spend limit
Group 3: Message framing	Positive	Positive
Group 4: Message targeting	Generic	Inclusive
Group 5: Message personalisation	Tailored	Tailored
Group 6: Information to help set limits	None	Remind and prompt to reflect

Table 2.9 – Preferred level within each feature by age group

Feature	Age < 35 preference	Age 35+ preference
Group 1: Terminology & purpose	Managing & self-monitoring	Improving & self-appraisal
Group 2: Types of limits	Loss limit	Deposit limit
Group 3: Message framing	Positive	Positive
Group 4: Message targeting	Inclusive	Generic
Group 5: Message personalisation	Tailored	Tailored
Group 6: Information to help set limits	Remind and prompt to reflect	None

Table 2.10 – Preferred level within each feature by PGSI group

Feature	PGSI (non-problem and low risk gamblers) preference	PGSI (moderate risk and problem gamblers) preference
Group 1: Terminology & purpose	Managing & self-monitoring	Improving & self-appraisal
Group 2: Types of limits	Loss limit	Loss limit
Group 3: Message framing	Positive	Positive
Group 4: Message targeting	Generic	Inclusive
Group 5: Message personalisation	Tailored	Tailored
Group 6: Information to help set limits	None	Remind and prompt to reflect

Table 2.11 – Preferred level within each feature by whether or not the participant had previously set limits

Feature	No previous limit set preference	Previously set limit preference
Group 1: Terminology & purpose	Managing & self-monitoring	Managing & self-monitoring
Group 2: Types of limits	Loss limit	Spend limit
Group 3: Message framing	Positive	Positive
Group 4: Message targeting	Generic	Inclusive
Group 5: Message personalisation	Tailored	Tailored
Group 6: Information to help set limits	None	Remind and prompt to reflect

2.5. Limitations

A population representative sample was not affordable within the project budget as it would have required a very large starting sample to include enough respondents who met the inclusion criteria. We therefore used a purposive sampling strategy to recruit respondents with particular shared characteristics of interest. The demographic characteristics of the sample were consistent with representative Australian figures indicating that race bettors and sports bettors tend to be younger adult males with a higher-than-average income (Armstrong & Carroll, 2017a, 2017b). However, rates of problem, moderate risk and low risk gambling were higher in the sample, reflecting the purposive strategy of recruiting regular bettors. This suited the purpose of the study as it allowed for larger sub-samples of particular interest (e.g., at-risk and problem gamblers; limit-setters) which enabled the planned analyses to be conducted.

The survey relied on self-report and may therefore be subject to some recall and social desirability bias. As a cross-sectional survey, the DCE was unable to assess the effect of the different message attributes on participants' actual behaviour and was instead based on attributes they considered most likely to be effective in getting

them to set new limits or to review existing limits. This stage of the study may have also benefited from qualitative research with online bettors in designing the message options, but this was not included in the project design or budget. A qualitative stage may have also avoided another potential limitation by helping to provide more certainty that all words in the message were understood as intended, although there was no evidence that misunderstanding did in fact occur. We did, however, consult with members for Gambling Research Australia in designing the messages for testing and the optimal message for the RCT. No representative studies have been conducted on limit-setting. Comparisons with previous surveys should be made with caution as differences in methodologies can affect results.

The main output of the DCE was one message for testing in the RCT which incorporated the optimal features and their associated wording. However, some of the optimal features were only marginally preferred over others, so it is possible that other combinations of features would have similar potential effectiveness. There were also significant differences in sub-group preferences for some message attributes. Because effect sizes were small, and because the RCT was constrained to testing only one message, we selected the optimal message for testing based on the DCE results for the whole sample.

2.6. Chapter summary

Most participants (58.8%, n=1,848) had in place at least one type of the seven types of limits they were asked about. The most common were deposit (40.8%), spend (36.4%), and maximum or single bet (36.0%) limits, followed by loss (28.9%), bet frequency (24.2%), number of bets (24.1%), and time (22.4%) limits. More than half of participants who had not set each type of limit indicated they were unlikely to do so.

Nearly half the participants reported reviewing their limits at least once every few weeks, while 23.4 per cent reported never doing so. More respondents who had set any type of limit reported increasing (50.7%) rather than decreasing their limit (43.9%). Between 22.9 per cent and 44.7 per cent of participants using each type of limit usually bet up to the level of their limit. However, some respondents set limits greatly exceeding their usual deposit and betting amounts. The use of limits had stopped between 37.4 per cent and 66.3 per cent of those with each type of limit from exceeding their limit, at least once every few weeks during the last 12 months. At least 90 per cent of those with each type of limit reported they found the limits helpful.

Participants who were female, younger, had a university qualification, and mainly spoke a language other than English at home were more likely to set at least one

type of limit, as were more frequent bettors and those classified as a problem gambler.

The discrete choice experiment found that the *type of limit* was the most influential message feature, followed (in order) by: *terminology and purpose*, *information to help set limits*, *message personalisation, message framing* and *message targeting*. The optimal message for the overall sample had the following levels of each feature:

- Terminology and purpose: Managing and self-monitoring
- Types of limits: Loss limit (although Deposit limit and Spend limit also had high utility)
- Message framing: Positive
- Message targeting: Inclusive
- Message personalisation: Tailored
- Information to help set limits: Remind and prompt to reflect

While slight differences were observed in preferred levels of each feature by gender, age, PGSI group, and whether participants had previously set limits, most were not statistically significant. Thus, these results provide little evidence to support the need for different messaging for different subgroups. Consistent with the voluntary opt-out pre-commitment system under the National Consumer Protection Framework for Online Wagering, these results confirm the relative appeal of deposit limits, although loss limits and spend limits are also appealing. The results provide a good evidence base to inform the next stage of the study which tests the optimal message in an RCT.

Chapter 3. Randomised controlled trial

3.1. Introduction

This chapter presents the methods and results for a Randomised Controlled Trial (RCT) of regular race bettors and sports bettors from across Australia with active wagering accounts. It aimed to test the effectiveness of the optimal message developed from the DCE, and of its frequency and personalisation, on attitudes, intentions, take-up and review of deposit limits.

For participants without an existing deposit limit, the analyses tested the effects of the message condition on attitudes, intention and actual behaviour in relation to setting deposit limits. Specifically, the RCT addressed the following research questions for this group:

1. Does receiving the optimal message lead to more favourable attitudes towards setting a deposit limit, and do the effects differ with frequency of message and whether it is personalised or not?

2. Does receiving the optimal message lead to stronger intentions to set a deposit limit, and do the effects differ with frequency of message and whether it is personalised or not?

3. Does receiving the optimal message lead to increased actual setting of deposit limits, and do the effects differ with frequency of message and whether it is personalised or not?

4. Do the above effects of messages vary by problem gambling severity?

5. Does setting a limit impact on gambling behaviour and related harm?

For participants with an existing deposit limit, the analyses tested the effects of the message condition on how often they reviewed their limit. This analysis was undertaken because wagering operators are required to regularly prompt their customers to review their limit, presumably to consider whether it is still affordable for them. Specifically, the RCT addressed the following research question for this group:

6. Does receiving the optimal message lead to increased review of existing deposit limits, and do the effects differ with frequency of message and whether it is personalised or not?

3.2. Methods

The study was approved by CQU Human Research Ethics Committee (approval number 22193). The overall design comprised a baseline survey, a four-week intervention period when the optimal message was delivered to the test groups, and a follow-up survey.

3.2.1. Sample, recruitment and inclusion criteria

Sample size

A series of power analyses determined the minimum sample size required for the RCT. Using conservative values of an alpha of .01 and estimated power of .95, a sample of 300 was required for a small effect. However, a larger sample was desired to allow for further analysis of smaller subgroups to determine for whom, specifically, the intervention works best (e.g., comparisons by age, gender, problem gambling severity). The project therefore budgeted for a final sample of 600 respondents who completed both the baseline and follow-up surveys. Based on our past longitudinal studies (e.g., Hing et al., 2018a, 2018b; Rockloff et al., 2018), we allowed for an attrition rate of 50 per cent, and therefore required a starting sample of 1,200 respondents for the baseline survey.

Baseline survey

A population representative sample was not affordable within the project budget as it would have required a very large starting sample to include enough respondents who met the inclusion criteria. We therefore used a purposive sampling strategy to recruit a population with particular shared characteristics of interest. These inclusion criteria were that respondents: lived in Australia; were 18 years or older; had at least one active online or telephone account with a wagering operator or bookmaker; and bet on racing or on sports/ esports/ fantasy sports at least once a month. Consent to participate and providing a mobile phone number so they could be sent text messages during the RCT were also required for participation.

Potential respondents were recruited between 8 and 24 September 2020 through Qualtrics. Qualtrics recruits respondents from numerous online panels across Australia, with quality checks to ensure respondents complete the survey only once. Potential respondents were emailed a link to the participant information sheet, consent form and online survey.

Responses were screened for data quality. To satisfy inclusion for analysis, responses needed to pass an attention check, complete the survey in a reasonable amount of time (not less than ⅓ of the median response time of a pilot sample), and

not exhibit straight-lining through questions. Of the 1,444 eligible[2] respondents who started the survey, 1,249 completed the survey fully and passed all quality checks, giving a completion rate of 86.5 per cent. See Appendix D for full details.

Follow-up survey

All respondents who completed the baseline survey were invited to complete the follow-up survey, between 19th October and 1st November 2020. Only respondents who completed the baseline survey could access the follow-up survey, through an authentication check with the panel providers. Any respondents who replied to the MMS messages sent during the RCT saying "STOP" or similar opt-out messages were deemed to have withdrawn from the study (n = 30). At least seven and up to 11 reminders were sent by each panel provider to drive further survey completions.

Of the 1,219 respondents who were invited to the follow-up survey, 660 completed it and passed data quality checks, giving a retention rate of 54.1 per cent. The retention rate was better than anticipated and ensured an adequate final sample size based on the power analysis. While the profile of the sample who completed both surveys showed some differences to the sample completing the baseline survey only (as presented later), neither sample was intended to be population representative so sample attrition is not of concern and is expected in any longitudinal study. Of more importance in testing the intervention is that the RCT included a control group, against which to compare the results for the test groups.

Participants were compensated for participating in each of the baseline and follow-up surveys based on the internal points-based systems of Qualtrics' panel providers, where accrued points can be exchanged for rewards.

3.2.2. Survey sections and measures

The baseline and follow-up surveys (Appendix B) contained the measures in Table 3.1. Most questions in the follow-up survey asked about the last 4 weeks, which was the period since the participant completed the baseline survey. Several questions in the baseline survey also asked about the last 4 weeks, so responses could be directly compared to the follow-up responses.

---

[2] Eligible respondents in this context were those who had passed the screening questions and agreed to give their mobile phone number in order to receive messages.

Table 3.1 – Measures in the RCT baseline and follow-up surveys

Initial/screening questions. The baseline survey asked: whether the participant lives in Australia; age in years; and the number of wagering operators they have an active account with. Both surveys asked frequency of betting on races and on sports, esports or fantasy sports (asked in relation to the last 4 weeks in the follow-up survey).

Deposit limit setting prompts. Respondents were asked which of 33 Australian-licensed wagering operators (listed on the ACMA website) they had an active account with, and also a single category option for 'on-course bookmakers'; which of these operators had provided prompts and information about setting a deposit limit; and ease of finding this information (asked in relation to the last 4 weeks in the follow-up survey).

Current limits. Participants were asked if they currently had in place each of seven types of limits: deposit, maximum or single bet, loss, spend, number of bets, bet frequency, and time limits. For each type of limit they had, participants were asked: on how many accounts they had set that type of limit; the total amount that each limit is set to across all of their accounts; and how often they reviewed each type of limit. Participants without a particular type of limit were asked their attitudes and intentions to setting that type of limit. In the baseline survey, those with deposit limits were asked additional questions: how much they usually deposit across their accounts; how often in the last 4 weeks they had tried to exceed their limit but been stopped by the limit; how helpful they find a deposit limit; and how many times they had increased or decreased their deposit limit during the last 4 weeks. The follow-up survey asked these additional questions in relation to all types of limits the respondent had set.

Account-based vs cash betting. Participants were asked: the percentage of total betting they conducted via computer/laptop, smartphone, tablet/iPad, telephone calls, and cash-based betting outlets; and the total amounts spent, won and deposited in a typical month across account-based and cash-based bets. These questions were asked in relation to a typical month in the baseline survey and in the last 4 weeks in the follow-up survey.

Gambling behaviour. Participants were asked: the amounts they usually place, win and deposit with the operator they had their main betting account with; and frequency and expenditure on 10 gambling forms. These questions were asked in relation to a typical month in the baseline survey and in the last 4 weeks in the follow-up survey.

Problem Gambling Severity Index (PGSI; Ferris & Wynne, 2001). The PGSI was administered to all respondents in the baseline survey only. Responses were scored as: 'never' = 0, 'sometimes' = 1, 'most of the time' = 2, and 'almost always' = 3. Cut-off scores and categories were: 'non-problem gambler' = 0, 'low risk gambler' = 1-2, 'moderate risk gambler' = 3-7, and 'problem gambler' = 8-27.

Short Gambling Harms Screen (SGHS; Browne, et al. 2018). The 10-item SGHS was administered to all respondents. They were asked if, over the last 4 weeks, they had experienced any of 10 harms as a result of their betting on races, sport, esports or fantasy sports. Response options were 'yes' or 'no'.

Demographics. The baseline survey asked respondents' gender, age, state or territory where they reside, marital status, education, employment situation, language they mainly speak at home, and household annual pre-tax income. The follow-up survey asked current employment situation, and their past-month household pre-tax income.

3.2.3. The intervention

The intervention focused only on deposit limits because this was the only type of limit that wagering operators were required to provide at the time of the study. (However, as described above, the survey asked about attitudes, intentions and use relating to other types of limits to provide additional insights beyond only deposit limits).

The intervention involved a 2x2x2+2 design (10 groups). This design aimed to test message frequency (weekly vs fortnightly), message tailoring (personalised vs non-personalised) and whether the respondent had an existing deposit limit already set. There were two control groups (with existing deposit limit or not). Participants were randomly allocated into groups with a constraint so that each group had equal proportions of those who did and did not already have a deposit limit in place.

Figure 1 shows the non-personalised message. A personalised version was also used which inserted the following text below the non-personalised message: 'You usually deposit [self-reported amount] on average each month', with this amount derived from the participant's response in the baseline survey (Question 15). While DCE participants assessed the personalised (tailored) message as likely to be more helpful in getting them to set or review their limit, the RCT also tested a non-personalised version because pre-commitment messaging may be delivered in settings that do not allow for personalisation, such as in public health messages. The final messages tested were reviewed and approved by Gambling Research Australia.

The message was delivered as a text message to participants' mobile phones. This approach avoided perceptions of conflicts of interest that could have arisen if the trial had been conducted with wagering operators delivering the message and the potential effect on the credibility of trial results. However, the approach used also meant that the message was unable to include a direct link to the operators' deposit limit-setting function which may otherwise be provided by operators in some of their customer communications. While this is a limitation of the approach used, the study aimed to test the effect of messages that may be communicated in a variety of ways, some of which would not enable a direct link to be provided to a limit-setting function (e.g., in public health messages).

The intervention period was 4 weeks, immediately following recruitment for the baseline survey and before the follow-up survey was administered.

Figure 3.1. Non-personalised message delivered in the RCT

3.2.4. Data analysis

The analyses are presented in three parts: descriptive results from the baseline survey, descriptive results from the follow-up survey, and the results of the effectiveness of the intervention.

Data analysis for the baseline and follow-up surveys

In the descriptive results, some comparisons are made between those who completed the follow-up survey and those who did not. These results compare two independent groups and consist of chi-square tests of independence (with tests of independence for variables with multiple levels) and independents samples or Welch *t*-tests. The same tests were used for analyses comparing those who had and had not set limits during the 4-week RCT period. When comparing results from baseline to follow-up surveys, paired samples *t*-tests were employed.

Data analysis to model the effects of the study intervention

As noted above, the participants were randomly allocated into 10 groups with a constraint so that each group had equal proportions of those who did and did not already have a deposit limit in place. As shown in Table 3.2, assignment to these conditions represented a combination of (a) whether or not they already had a deposit limit in place, (b) whether or they were in the control or treatment condition, (c) messaging frequency, and (d) whether or not messages were personalised. These nested binary contrasts (b-d) formed the principal independent variables of our analysis. This use of planned contrasts was intended to maximise power, given

the relatively low number of participants per group. That is, analyses were not done on a per-cell basis, but on a family basis (e.g., messaging as a whole, frequency as a whole). Evaluating a full interaction model, or the use of post-hoc comparisons between every experimental group, would have consumed a large number of model degrees of freedom, and/or required the use of a more stringent critical threshold for significance. We note that statistical power is determined by a number of factors; not only total sample size, but also the true effect size (expressed, e.g., as the increased odds of setting a limit given the intervention), as well the base-rate (e.g., of limit-setting, without any intervention).

For participants who did not have a limit in place (as reported in the baseline survey), the messaging was designed to encourage them to set a deposit limit. Accordingly, the key outcome variable for this subset (N = 463, groups 1-5, excluding 10 participants with inconsistent reporting) was whether or not they had set a deposit limit on any of their online wagering accounts at the end of the intervention period. Secondary outcomes for this group included attitudes towards setting a deposit limit (4-point Likert, extremely positive to extremely negative), and intention to set a deposit limit (4-point Likert, extremely likely to extremely unlikely). These questions were asked at the beginning and at the end of the intervention period. The difference between these attitudes and intentions measures were analysed, capturing the change over the study period.

Participants who did already have a limit in place (N = 187, groups 6-10) were analysed separately. Similar contrasts (Table 3.2, b-d) were employed. However, the messaging for this group was designed to encourage them to review (rather than set) their limits. The outcome of interest was how often participants 'checked or reconsidered' their deposit limits over the last month, with size levels ranging from 'never' to 'a few times a week'.

Table 3.2 – Summary of experimental conditions

Group	N complete observations	Deposit limit/s at outset (a)	Messaging (b)	Frequency (c)	Personalisation (d)
1	93	No	No (Control)	N/A	N/A
2	88	No	Yes (Treat)	Fortnightly	Non-personalised
3	106	No	Yes (Treat)	Fortnightly	Personalised
4	97	No	Yes (Treat)	Weekly	Non-personalised
5	89	No	Yes (Treat)	Weekly	Personalised
6	32	Yes	No (Control)	N/A	N/A
7	42	Yes	Yes (Treat)	Fortnightly	Non-personalised
8	46	Yes	Yes (Treat)	Fortnightly	Personalised
9	27	Yes	Yes (Treat)	Weekly	Non-personalised
10	40	Yes	Yes (Treat)	Weekly	Personalised

Five regression models were run to test the effects of messaging. Analyses to address RQ1-RQ4 dealt with those participants who did not have a deposit limit in place at the beginning of the study. Analyses to address RQ1-RQ4 involved participants who did have a deposit limit in place at the beginning of the study. Addressing RQ1 (attitudes to setting a deposit limit), RQ2 (intention to set a deposit limit) and RQ6 (frequency of reviewing a deposit limit) used standard regression models predicting a change (i.e., T2 – T1) over the course of the intervention. Addressing RQ3 involved a logistic regression model predicting the probability of having a deposit limit in place at the end of the intervention. Addressing RQ4 required a similar analysis but checked specifically for an interaction between the effect of messaging (treatment) and at-risk problem gambling status.

3.3. Baseline survey results

This section summarises the sample characteristics and limit setting behaviour of the baseline survey sample. These figures should not be considered to be representative of the population due to the purposive sampling strategy. Detailed statistics, tables and figures are presented in Appendix D.

3.3.1. Sample characteristics

Most of the 1,249 respondents were male (62.3%), married or living with a partner (66.1%), and mainly spoke English at home (95.9%). Mean age was 40.6 years. They most commonly resided in New South Wales, Victoria or Queensland (78.7%). Almost half (48.9%) had completed a university or postgraduate qualification, most had full-time employment (56.9%), and the median income was $80,000-$99,999. These demographic characteristics align with representative Australian figures indicating that race bettors and sports bettors tend to be younger adult males, in full-time employment, with a higher-than-average income (Armstrong & Carroll, 2017a, 2017b).

Most respondents had one (44.4%) or two (30.3%) accounts with different wagering operators. Almost half bet on sports (44.8%) and/or races (47.7%) at least weekly. Most respondents used a smartphone (54.0%) or computer/laptop (30.5%) to bet. Around three-quarters of the money they spent (77.2%) was via account-based betting rather than cash-based betting. The mean reported amount deposited by participants across all their betting accounts was $366.64 per month (median = $100).

Based on the PGSI, 29.7 per cent were non-problem gamblers, 18.7 per cent low risk gamblers, 22.3 per cent moderate risk gamblers and 29.2 per cent problem gamblers, in line with higher problem gambling severity expected amongst the purposive sample of regular bettors. Based on the SGHS, about one-half (51.6%)

experienced at least one harm from their betting during the previous 4 weeks. A little over one-quarter (26.4%) experienced four or more harms.

3.3.2. Attitudes, intentions and behaviour relating to deposit limits

Amongst participants with accounts with the top 10 operators in the sample (n=61 to n=671 for these sub-samples), between 43.5 per cent and 80.3 per cent had been prompted by the operator to set a deposit limit, and between 51.3 per cent and 82.4 per cent had been provided with information about setting a deposit limit. The vast majority (90.9%) of participants who had tried to find information about setting deposit limits (n=1,057) reported it was easy to find.

Just under half the respondents (48.4%, n=604) had in place at least one of the seven types of limits they were asked about. Deposit limits were the most commonly set; 31.9 per cent of the sample had set a deposit limit. The vast majority (93.4%) of those who had set a deposit limit (n=380) found them helpful in managing their betting. Nearly two-fifths (58.7%) of participants with a deposit limit reported being stopped from depositing more than their limit during the 4 weeks prior to the survey. Amongst participants with a deposit limit, around two-thirds (66.3%) reported reviewing their limits in the previous 4 weeks, but more participants actually increased (35.8%) than decreased (27.6%) their deposit limits during this time.

Amongst respondents who had set a deposit limit (n=380), most (82.2%) deposited less than their limit in the previous 4 weeks, 8.9 per cent deposited the amount of their limit, and 9.4 per cent reported depositing more than their limit. Over half the participants had set their deposit limit at more than double the amount they actually deposited, including around 15 per cent with limits which were over 10 times the amount spent. This indicates that some participants set much higher limits than their typical deposit amount, *effectively negating the use of a limit*.

Problem gamblers (39.5%) were significantly more likely to have a deposit limit in place, compared to moderate risk (23.2%), low risk (18.9%) and non-problem gamblers (18.4%).

Most respondents (81.4%) who had not set a deposit limit (n=850) had a positive attitude towards setting a deposit limit. However, intentions to set a deposit limits were much lower; 60.7 per cent reported they were unlikely to set a deposit limit.

3.3.3. Attitudes, intentions and behaviour relating to other types of limits

Based on the whole sample (n=1,249), 21.3 per cent had set a maximum or single bet limit (21.3%), followed by spend (17.7%), loss (13.6%), number of bets (11.2%), bet frequency (9.4%), and time (7.8%) limit. Amongst participants who had set each type of limit (n=97 to n=266 for these sub-samples), over half reported checking or reconsidering these limits at least once every few weeks.

Most respondents who had not set a particular limit (n=983 to n=1,152 for these sub-samples) had a positive attitude towards setting a loss limit (78.3%), followed by setting a spend (75.3%), number of bets (62.2%), bet frequency (60.9%), and time (53.3%) limit. However, intentions to set these limits were much lower. More than half the participants who had not set a particular type of limit indicated they were unlikely to set time (71.5%), bet frequency (66.3%), number of bets (64.9%), maximum or single bet (59.5%) and spend (54.5%) limits, and nearly one-half were unlikely to set loss limits (49.7%).

3.3.4. Comparisons between participants who had and had not set limits

Participants who had at least one type of limit (n=604) were significantly more likely to be younger, have a university qualification, be classified as a problem gambler, and have more wagering accounts. Participants who had not set any of the seven limits (n=645) were significantly more likely to be older, have a trade, technical certificate or diploma, have fewer wagering accounts, and be classified as a non-problem or low risk gambler. No significant differences were observed by gender, language, state of residence or income.

3.4. Follow-up survey results

This section summarises the sample characteristics and limit setting behaviour of the follow-up survey sample. These figures should not be considered to be population-representative due to the purposive sampling strategy used for the baseline survey. Detailed statistics, tables and figures are presented in Appendix D.

3.4.1. Sample characteristics

Of the 1,249 participants who completed the baseline survey, 660 (52.8%) completed the follow-up survey. Most respondents who completed both surveys were male (60.3%), married or living with a partner (67.7%), and mainly spoke English at home (96.4%). The mean age was 43.7 years. They most commonly resided in New South Wales, Victoria or Queensland (78.5%). Almost half the sample (48%) had a university or postgraduate qualification, most had full-time employment (55.3%), and the median income was $80,000-$99,999.

Compared to participants retained in the follow-up survey, those who did not complete it were significantly more likely to be younger, single, and less likely to be retired. There were no significant differences across gender, state or territory of residence, education, main language spoken at home or income. The demographic characteristics of those retained in the follow-up survey still align with representative Australian figures indicating that race and sports bettors tend to be younger adult males, in full-time employment, with higher-than-average income (Armstrong & Carroll, 2017a, 2017b).

Most follow-up survey respondents had one (45.2%) or two (29.4%) accounts with different wagering operators. Almost half had bet on sports (44.0%) and/or races (48.1%) at least weekly in the 4 weeks prior to the survey. Most respondents used a smartphone (51.2%) or computer/laptop (35.1%) to bet. Over three-quarters of the money they spent (86.2%) was via account-based betting rather than cash-based betting. The mean reported amount deposited by participants across all their betting accounts was $262.41 in the previous 4 weeks (median = $85). Those who completed only the baseline survey were significantly more likely to have a deposit limit (34.0%) compared to those who completed both surveys (27.3%).

Based on the PGSI, 35.9 per cent of those completing the follow-up survey (n=660) were non-problem gamblers, 17.6 per cent were low risk gamblers, 20.8 per cent were moderate risk gamblers, and 25.8 per cent were problem gamblers. Those who completed the follow-up survey (n = 660) were significantly more likely to be non-problem gamblers than those who did not, which brought the frequency of non-problem gamblers in the follow-up sample closer to Australian population norms (Armstrong & Carroll, 2017a, 2017b). Nonetheless, those in the problem gambling category were overrepresented in both the baseline and follow-up surveys. Based on the SGHS, 45.5 per cent of follow-up survey participants experienced at least one harm from their betting during the previous 4 weeks. Just less than one-quarter (22.4%) experienced four or more harms.

3.4.2. Attitudes, intentions and behaviour relating to deposit limits

Of the 473 follow-up survey participants without a deposit limit at the time of the baseline survey, 87 (18.4%) reported setting a deposit limit during the 4-week RCT period, although 10 of them provided conflicting responses later in the survey. Amongst the remaining 77 participants, most had set deposit limits on one (55.2%) or two (19.5%) accounts. During the 4 weeks prior to the follow-up survey, 72.8 per cent of the 77 participants with a newly set deposit limit reported being stopped from depositing more than their limit, and nearly all participants (96.1%) found deposit limits to be helpful in managing their betting. Amongst the 77 participants with newly set deposit limits, over three quarters (76.6%) reported reviewing this limit during the previous 4 weeks, but more reported increasing (40.3%) rather than decreasing (27.3%) this limit. Problem gamblers (48.0%) were significantly more likely to set deposit limits during the RCT, compared to moderate risk (19.5%), low risk (10.4%) and non-problem (22.1%) gamblers.

Of the 473 participants without a deposit limit at the time of the baseline survey, 386 (81.6%) also did not set one during the 4-week RCT period. Nevertheless, most (73.5%) reported positive attitudes towards setting a deposit limit. However, far fewer intended to set a deposit limit; nearly three-quarters (71.9%) of those who had not set a deposit limit reported being unlikely to do so.

Of the 187 respondents who had deposit limits in place when surveyed at baseline and also completed the follow-up survey, 72 failed to confirm that they still had a deposit limit when surveyed at follow-up. Most (69.6%) of the remaining 115 participants reported reviewing their limits during the 4-week RCT period, but more reported increasing (31.3%) rather than decreasing (21.7%) their deposit limit during this time.

3.4.3. Attitudes, intentions and behaviour relating to other types of limits

Amongst the follow-up survey participants (n=660), one-third (32.4%%) set limits throughout the 4-week RCT period, mainly one or two new limits. Amongst the 214 participants who initiated new limits during the RCT, deposit limits were the most commonly set (40.6%), followed by maximum or single bet (34.1%), spend (26.2%), loss (20.6%), number of bets (15.0%), bet frequency (14.0%) and time (9.3%) limits.

Amongst participants with each type of newly initiated limit (n=18 to n=87 for these sub-samples), the majority (59.6%-94.4% depending on the type of limit) reported being stopped from exceeding their limit during the previous 4 weeks. Nearly all participants found their newly set limits to be helpful in managing their betting.

Amongst participants who set other limits (apart from deposit limits) during the RCT period, the majority (67.3%-94.4% depending on the type of limit) reported reviewing their limits during that time, although more increased (32.7%-66.7%) rather than decreased (28.8%-61.1%) their limit.

Most participants who did not have a particular limit at baseline and did not set one during the 4-week RCT period (n=467 to n=625 depending on the type of limit) had positive attitudes to setting these limits. These ranged from 73.5 per cent of respondents feeling positively about setting a maximum or single bet limit, to 55.2 per cent for time limits. However, fewer respondents intended to set these limits. Most respondents without these limits reported being unlikely to set them; ranging from 57.2 per cent for loss limits to 70.2 per cent for time limits.

3.4.4. Comparisons between participants who did and did not set limits during the RCT

Participants in the follow-up survey (n=660) who had no limits set in the initial survey (n=365) and initiated new limits during the 4-week RCT period (n=79) were significantly more likely to be younger and be classified as a problem gambler. Participants who continued to not set any of the seven limits during the RCT period (n=286) were significantly more likely to be older and be classified as a non-problem or low risk gambler. No significant differences were found by gender, location, main language spoken at home, education, income, marital status, or number of wagering accounts.

3.5. Results of the RCT

The results of the RCT are presented below in line with each research question (RQ).

3.5.1. Results for Research Question 1

RQ1. Does receiving the optimal message lead to more favourable attitudes towards setting a deposit limit, and do the effects differ with frequency of message and whether it is personalised or not?

This analysis involved participants who did **not** have a deposit limit in place at the beginning of the study. It used standard regression models predicting a change (i.e., T2 – T1) over the course of the intervention. Three conditions were tested: receiving the message (yes/no), frequency of the message (weekly/fortnightly) and tailoring of the message (personalised/non-personalised).

As can be seen by the reported p-values in Table 3.3, we did not detect a significant effect for any of the three treatment conditions, indicating that receiving the message, message frequency and message tailoring did not significantly increase favourable attitudes towards setting a deposit limit. However, the confidence interval of two estimated effects came close to not intersecting with zero. Thus, estimates for the effect of messaging and message personalisation on attitudes towards setting a deposit limit were in the expected direction, with p-values that approached 0.05. The total proportion of variance explained was 1.5%, so the estimated effects were not large enough to conclude that they were significantly different from zero.

Table 3.3 – Effect of messaging, message frequency, and message personalisation on attitudes towards setting a deposit limit

Predictors	How do you feel about setting a deposit limit…? (Change between Time 1 and Time 2)		
	Estimates	*CI*	*p*
(Intercept)	-0.47	-0.82 – -0.11	0.010
Messaging (Yes)	0.25	-0.04 – 0.55	0.089
Frequency (Weekly)	0.14	-0.06 – 0.33	0.165
Personalisation (Yes)	0.17	-0.02 – 0.36	0.080
Observations	386		
R^2 / R^2 adjusted	0.011 / 0.003		

Note: This is a linear regression, so the null value for confidence intervals is 0.

3.5.2. Results for Research Question 2

RQ2. Does receiving the optimal message lead to stronger intentions to set a deposit limit, and do the effects differ with frequency of message and whether it is personalised or not?

This analysis involved participants who did **not** have a deposit limit in place at the beginning of the study. It used standard regression models predicting a change (i.e. T2 – T1) over the course of the intervention. Three conditions were tested: receiving the message (yes/no), frequency of the message (weekly/fortnightly) and tailoring of the message (personalised/non-personalised).

As can be seen by the reported p-values in Table 3.4, we did not detect a significant effect for any of the three treatment conditions, indicating that receiving the message, message frequency and message tailoring did not significantly increase intentions to set a deposit limit. The total amount of variance explained was less than 1%, and therefore even accounting for sample size limitations, any true non-zero effect of message properties is unlikely to be large.

Table 3.4 – Effect of messaging, message frequency, and message personalisation on intentions to set a deposit limit

Predictors	How likely are you to set a deposit limit on any of your wagering accounts? (Change between Time 1 and Time 2)		
	Estimates	CI	p
(Intercept)	-0.31	-0.68 – 0.07	0.107
Messaging (Yes)	0.23	-0.08 – 0.54	0.142
Frequency (Weekly)	0.10	-0.10 – 0.30	0.329
Personalisation (Yes)	0.04	-0.15 – 0.24	0.676
Observations	386		
R^2 / R^2 adjusted	0.007 / 0.001		

Note: This is a linear regression, so the null value for confidence intervals is 0.

3.5.3. Results for Research Question 3

RQ3. Does receiving the optimal message lead to increased actual setting of deposit limits, and do the effects differ with frequency of message and whether it is personalised or not?

This analysis involved participants who did **not** have a deposit limit in place at the beginning of the study. Table 3.5 is a logistic regression model predicting the

probability of having a deposit limit in place at the end of the intervention. Three conditions were tested: receiving the message (yes/no), frequency of the message (weekly/fortnightly) and tailoring of the message (personalised/non-personalised).

As can be seen by the reported p-values in Table 3.5, we did not detect a significant effect for any of the three treatment conditions, indicating that receiving the message, message frequency and message tailoring did not significantly increase the actual setting of deposit limits.

Table 3.5 – Effect of messaging, message frequency, and message personalisation on setting a deposit limit

Predictors	Have you set a deposit limit on ANY of your online wagering accounts? (Logistic, binomial)		
	Odds Ratios	CI	p
(Intercept)	0.31	0.09 – 1.04	0.058
Messaging (Yes)	0.72	0.25 – 2.01	0.532
Frequency (Weekly)	0.80	0.39 – 1.57	0.530
Personalisation (Yes)	0.82	0.42 – 1.57	0.563
Observations	463		
Pseudo R^2	0.001		

Note: This is a logistic regression, so the null value for confidence intervals is 1.

3.5.4. Results for Research Question 4

RQ4. Do the above effects of messages vary by problem gambling severity?

This analysis involved participants who did not have a deposit limit in place at the beginning of the study. Table 3.6 is a logistic regression model that checks specifically for an interaction between the effect of receiving a message or not and at-risk problem gambling status (defined as PGSI moderate risk and problem gambler categories combined). Although at-risk gamblers were more likely to set a deposit limit during the study period, there was no detected interaction with receiving the message or not. Thus, there was no evidence that at-risk gamblers were more or less likely than other gamblers to set a limit after the intervention.

Table 3.6 – Testing for an interaction between the effect of messaging and at-risk problem gambling status

Predictors	Have you set a deposit limit on ANY of your online wagering accounts? (Logistic, binomial)		
	Odds Ratios	CI	p
(Intercept)	0.11	0.04 – 0.24	<0.001
Messaging (Yes)	0.87	0.35 – 2.47	0.769
At-Risk (PGSI)	3.79	1.22 – 12.58	**0.023**
Messaging x At-Risk	0.98	0.26 – 3.54	0.979
Observations	463		
R^2 Tjur	0.057		

Note: This is a logistic regression, so the null value for confidence intervals is 1.

3.5.5. Results for Research Question 5

RQ5. Does setting a limit impact on gambling behaviour and related harm?

We conducted a specific analysis of the 77 gamblers who did not have a deposit limit at Time 1, and subsequently had set a deposit limit at Time 2. Our goal was to determine whether these individuals showed changes in the amount deposited, harms experienced, frequency and expenditure on race and sports betting. Because some variables were not normally distributed, we conducted a two-tailed non-parametric repeated measures test (Wilcox test) for each, to determine whether there was a statistically significant increase or decrease in each outcome. Table 3.7 indicates a significant decrease in race betting frequency, but no significant effects for sports betting frequency, race betting and sports betting expenditure, funds deposited or gambling harms.

Table 3.7 – Summary statistics and non-parametric test of difference between repeated measures for 77 gamblers who took up a deposit limit at time 2

Outcome	Mean (Median)		p
	Time 1	Time 2	
Race betting frequency	3.69 (4)	3.11 (3)	**0.03**
Sports betting frequency	3.44 (3)	3.10 (3)	1.00
Funds deposited ($)	606.05 (100)	264.67 (100)	.968
Race betting expenditure	50.67 (35)	68.07 (25)	.938
Sports betting expenditure	55.40 (25)	69.92 (35)	.986
Gambling Harms (SGHS)	3.14 (3)	2.97 (2)	.670

We conducted a more general analysis of all 650 participants who provided valid data at the baseline and follow-up surveys. We considered both whether they had a deposit limit at Time 1 and Time 2, and also the total number of different kinds of limits they had at each time. Again, because of the non-normal distributions of the variables, we opted not to conduct a parametric (linear mixed effects or repeated measures) model, but rather to cast the data into a form amenable to non-parametric analysis. Accordingly, both limit setting scores and outcomes were converted into difference values (Time 2 – Time 1), and then a Spearman non-parametric correlation was used to compare changes in limits, with changes in outcomes. Thus, a negative coefficient would indicate that positive changes in limit setting (e.g., transitioning from no deposit limit to a deposit limit) were associated with larger scores on the outcome (e.g., an increase in race betting frequency). This analysis differs from the previous one, because consider both positive and negative changes in limits (including no change), rather than just evaluating the subset of individuals who transitioned from no limit to employing a limit.

As shown in Table 3.8, there were associations between limit setting, in both positive and negative directions. Most effects were of negligible size (< .10), non-significant, or only marginally significant. However, limit setting was significantly associated with lower race betting frequency. There was also a positive association of changes in

deposit limits on the amount of funds deposited. That is, those who set a deposit limit increased the funds they deposited.

Table 3.8 – Non-parametric Spearman correlation between limit setting status and outcomes

Outcome	Rho (p)	
	Deposit limit (delta, T2-T1)	Total number of types of limit (delta, T2-T1)
Race betting frequency	**-.13 (p < .001)**	**-.11 (p = .003)**
Sports betting frequency	-.08 (p = .038)	-.07 (p = .056)
Funds deposited ($)	**+.19 (p = .002)**	+.08 (p = .047)
Race betting expenditure	-.09 (p = .053)	+.03 (p = .448)
Sports betting expenditure	-.02 (p = .670)	+.07 (p = .148)
Gambling Harms (SGHS)	-.02 (p = .58)	-.03 (p = .492)

3.5.6. Results for Research Question 6

RQ6. Does receiving the optimal message lead to increased review of existing deposit limits, and do the effects differ with frequency of message and whether it is personalised or not?

This analysis involved participants who did have a deposit limit in place at the beginning of the study. It used standard regression models predicting a change (i.e., T2 – T1) over the course of the intervention. Three conditions were tested: receiving the message (yes/no), frequency of the message (weekly/fortnightly) and tailoring of the message (personalised/non-personalised).

As can be seen by the reported p-values in Table 3.9, we did not detect a significant effect for any of the three treatment conditions, indicating that receiving the message, message frequency and message tailoring did not significantly increase how often participants reviewed their deposit limit. However, the confidence interval of one estimated effect came close to not intersecting with zero. The estimate for the effect of message frequency on how often participants reviewed their deposit limit were in the expected direction, with a p-value approaching 0.05. The explained variance (4%) was somewhat larger, but not large enough to be statistically distinguishable from zero.

Table 3.9 – Effect of messaging, message frequency, and message personalisation on frequency of checking or reconsidering deposit limits among participants with a limit already in place

Predictors	Estimates	How often did you check or reconsider your deposit limits? (Change between Time 1 and Time 2)	
		CI	p
(Intercept)	-0.53	-1.19 – 0.13	0.117
Messaging (Yes)	0.18	-0.66 – 1.02	0.673
Frequency (Weekly)	0.53	-0.06 – 1.13	0.079
Personalisation (Yes)	0.05	-0.55 – 0.65	0.880
Observations	114		
R^2 / R^2 adjusted	0.041 / 0.015		

Note: This is a linear regression, so the null value for confidence intervals is 0.

3.6. Limitations and other considerations in interpreting the results

A population representative sample was not affordable as a very large sample would be needed to obtain sufficient respondents meeting the inclusion criteria. Instead, a purposive sampling strategy recruited respondents with specific characteristics of interest. The sample demographics were consistent with representative research indicating that Australian bettors tend to be younger adult males with a higher-than-average income (Armstrong & Carroll, 2017a, 2017b). Rates of problem, moderate risk and low risk gambling were higher in the samples, reflecting the strategy of recruiting regular bettors. This provided larger sub-samples of interest (e.g., problem gamblers; limit-setters) to enable the planned analyses. All previous studies on limit-setting have used non-representative samples. Comparisons should be made with caution as methodological differences can affect results.

The sample size for the RCT was modest and it is possible that significant effects of the intervention *may* have been found in a larger sample. A large-scale trial conducted with wagering operators was an alternative, but the research team wanted to avoid conflicts of interest and their potential effect on the credibility of results. However, even if a larger sample had yielded statistically significant effects, the effect size would be small. There is an important distinction between statistical significance and clinical or practical importance, especially with larger samples. The issue is not so much with the sample size or statistical power, but that the

intervention itself did not have a large enough effect, and *a larger sample would not change the effectiveness of the message*. The ability of messages to prompt uptake of deposit limits amongst those who have already opted out is very weak, as demonstrated in other studies. Notably, in a study involving 26,560 participants recruited by wagering operators, only 161 set a deposit limit after receiving one or two messages designed to increase the use of these limits (Heirene & Gainsbury, 2021). While the main result was significant, the uptake of deposit limits after messaging was very small (0.7%). Given this limited uptake, it is not surprising that the current study found no effect of the messages.

The current study actually observed much higher rates of setting deposit limits in the 4-week RCT period amongst both test and control group respondents who had not previously set these limits. Amongst these respondents, 18.4 per cent initiated a deposit limit, and 32.4 per cent set at least one new type of limit, in the 4 weeks immediately after the baseline survey. The higher-than-expected take-up of these limits after the baseline survey, regardless of the message condition, suggests that the baseline survey was likely to have prompted new limit-setting amongst respondents, obscuring any effects of the message condition during the RCT. This result indicates that a more intensive intervention than a message, and one that encourages self-reflection on their betting behaviour and any associated harms, may prompt a substantial proportion of bettors to initiate a limit.

The message was delivered as a text message to participants' mobile phones. This approach was taken to ensure the trial was conducted independently of any industry influence. However, this also meant that the message was unable to include a direct link to the operators' deposit limit-setting function which may otherwise be provided in some customer communications from operators. This is a limitation of the approach used and cannot be discounted as contributing to the null result. However, the study aimed to test the effect of messages that may be communicated in a variety of ways, some of which would not enable the inclusion of a direct link to a limit-setting function (e.g., in public health messages). Further, Heirene and Gainsury's study (2021) described above found that in-account messages were no more effective than email messages that required additional steps to set a deposit limit. This suggests that non-inclusion of a direct link to the deposit-limit tool was unlikely to have been a major deterrent in the current study, especially given the unexpectedly high initiation of new limits during the RCT period, regardless of message condition (including no message). Additionally, the message that was tested was long, and a larger sample size would have allowed testing of shorter messages. Only being able to test a long message was therefore a further limitation.

It is important to note that the RCT tested the effect of messaging on customers who are most resistant to setting a deposit limit and had already opted out of doing so. All wagering operators have been required to provide voluntary opt-out deposit limits since May 2019, over 12 months before the RCT was conducted. Thus, customers

most open to setting deposit limits would have already done so before the RCT. Conversely, the purposive sample may have been biased towards people who were already thinking about or were more likely to think about limit setting. This may have muted any effect from the subsequent messaging.

The intervention occurred over 4 weeks with two or four messages sent over that time frame (for treatment conditions). Messaging over a longer time period may be required to shift behaviour in the most resistant groups who may, over time, see the relevance of limits for them. There was also very little impact on gambling behaviour or symptomatology for the 77 gamblers who set a new deposit limit during the intervention. This may also be due to the short time period of the intervention.

The outcome variable in the RCT was based on self-report data so may be subject to some recall and social desirability bias. People's recall may be poor or selective; they have no incentive to report correctly; and there may be high social desirability bias involved in reporting gambling-related activities. Due to the social stigma attached to problem gambling, self-reported behaviour in this context may be unreliable. There was also some selection bias due to sample attrition. Respondents who were younger, single, and less likely to be retired and those with gambling problems and with deposit limits were more likely to drop out after the baseline survey.

Finally, the RCT was conducted after the suspension of professional sports due to COVID-19 ended and during the final weeks of the 2020 ARL and NRL competitions. This period of pent-up and high demand for sports betting may have also affected the uptake of deposit limits during the RCT period. The message tested in the RCT was based on the DCE, which was conducted before the pandemic. The effects of the pandemic may have impacted on the efficacy of the optimal message during the RCT due to changes in online betting and people's risk tolerance due to COVID-19.

3.7. Chapter summary

At the time of the baseline survey, nearly half (48.4%) of the 1,249 participants had one or more limits in place, most commonly deposit (31.9%), maximum/single bet (21.3%) or spend (17.7%) limits, followed by loss (13.6%), number of bets (11.2%), bet frequency (9.4%), and time (7.8%) limits. About two-thirds (66.3%) of those with a deposit limit (n=380) reported reviewing this limit at least once a month. However, more of these participants increased (35.8%) than decreased (27.6%) their deposit limit. Problem gamblers (39.5%) were significantly more likely to have a deposit limit in place at baseline, compared to moderate risk (23.2%), low risk (18.9%) and non-problem gamblers (18.4%). Most participants (81.4%) without a deposit limit (n=850) had positive attitudes towards setting a deposit limit. However, 60.7 per cent reported being unlikely to set a deposit limit.

Around one-third (32.4%) of the 660 follow-up survey participants set a new type of limit during the 4-week RCT period, with 18.4 per cent of follow-up participants initiating a deposit limit, 13.5 per cent initiating a maximum/single bet limit and 10.0 per cent initiating a spend limit. Most (76.6%) participants with newly set deposit limits at the time of follow-up (n=77) reported reviewing this limit during the previous 4 weeks. However, more of these participants increased (40.3%) than decreased (27.3%) their deposit limit. Problem gamblers (48.0%) were significantly more likely to initiate a deposit limit during the RCT, compared to moderate risk (19.5%), low risk (10.4%) and non-problem (22.1%) gamblers. Most (81.6%) follow-up survey participants without a deposit limit at baseline (n=473) did not set one during the 4-week RCT period. While most (73.5%) of these participants had positive attitudes to setting a deposit limit, 71.9 per cent reported being unlikely to do so.

In both surveys, over 93 per cent of participants with deposit limits considered them helpful in managing their betting. In both surveys, those who had set any limit were significantly more likely to be younger, university-educated, have more wagering accounts, and be classified as a problem gambler.

While limit-setting increased over the 4-week RCT period, the RCT (N=650) found that receiving the optimal message had no significant effect on participants' attitudes towards setting a deposit limit, intention to set a deposit limit, or actually setting a deposit limit; including for the weekly vs fortnightly messages and the personalised vs non-personalised messages. There was also no significant effect on the frequency of reviewing deposit limits amongst those with this limit already in place. Although at-risk gamblers were more likely to set a deposit limit during the RCT period, there was no detected interaction with the message condition (including not receiving a message). However, amongst those without an existing deposit limit at baseline, the effect of messaging and message personalisation on attitudes towards setting a deposit limit were in the expected direction, with p-values that approached 0.05. The effect of message frequency on reviewing deposit limits amongst those with a limit already in place was also in the expected direction, with p-values that approached 0.05.

Initiating a deposit or other type of limit during the 4-week RCT period had a significant but small effect on decreasing the frequency of race betting, but no significant effect on sports betting frequency, betting expenditure or gambling harms. Those initiating a deposit limit during the RCT were more likely to increase their deposited amount.

Chapter 4. Discussion, conclusions and implications

4.1. Introduction

In May 2019, the National Consumer Protection Framework for Online Wagering introduced a voluntary opt-out pre-commitment scheme for online wagering. This requires all Australian-licensed operators to enable their customers to set voluntary binding deposit limits and to prompt customers about setting or reviewing those limits on a regular basis. This study was conducted to help inform the design, delivery and potential effectiveness of those message prompts.

A literature review assessed evidence for the current uptake of pre-commitment limits and their effects on sports and race betting, as well as features of public health messages that can impact on their effectiveness. A discrete choice experiment (DCE) was then conducted to determine the features of optimal messages that promote the uptake and review of limits. These messages were used as the intervention in a randomised controlled trial (RCT), with varying conditions for message frequency (weekly vs fortnightly) and message tailoring (personalised vs non-personalised). For participants without a deposit limit, the RCT tested the effects of the message condition on attitudes, intention and behaviour in relation to setting deposit limits. For participants with an existing deposit limit, the RCT tested the effects of the message condition on how often they reviewed their limit.

This chapter integrates and discusses the results of the study for each research objective and identifies implications of the findings for the National Consumer Protection Framework for Online Wagering.

4.2. Results for Objective 1

Objective 1 was to examine how regular bettors are using pre-commitment limits. This is discussed below in terms of uptake, perceived helpfulness, and attitudes and barriers to the use of deposit and other types of limits.

4.2.1. A minority of bettors have set deposit limits, but uptake is higher amongst regular bettors and much higher than for EGM gambling

Many Australian-licensed wagering operators have offered deposit limits for some time, including before the national pre-commitment scheme commenced. However, customer uptake of deposit limits has reportedly been low (Gambling Research Australia, 2019).

No Australian representative data have been collected on the use of deposit limits, and available figures vary depending on the sample. For example, based on a self-

selecting sample of 5,076 past-year online bettors, the baseline study conducted for the National Consumer Protection Framework for Online Wagering (Jenkinson et al., 2019) found that 13.2 per cent had set a deposit limit during the previous 12 months. Another Australian study conducted with six online wagering operators contacted 12,000 account holders who had bet in the past 6 months; and 24.5 per cent of the 564 respondents had used deposit limits (Gainsbury et al., 2020). However, these 564 respondents tended to be very regular bettors. Higher rates of having current deposit limits were found in the present study, ranging from 31.9 per cent of the 1,249 respondents to the RCT baseline survey to 40.8 per cent of the 3,141 respondents to the DCE survey, both of which surveyed at-least monthly bettors. Based on the available evidence, deposit limits appear to be used by a minority of online bettors. While their use is elevated amongst regular bettors, it appears that most regular bettors have not set deposit limits. There is evident scope to increase the use of deposit limits amongst Australian bettors.

However, it is noteworthy that lower uptake of deposit limits has been found in overseas studies. For example, amongst a representative sample of 49,560 customers from seven European countries who had accounts with one operator, only 1.3 per cent had set a voluntary limit for the first time in the three-month data review period (Auer et al., 2020b). Similarly, amongst customers of a US-based online sports betting operator, only 1.2 per cent of customers had set a voluntary deposit limit (Nelson et al., 2008). In the United Kingdom, 9 per cent of gamblers had any type of monetary gambling limit in 2019 (UK Gambling Commission, 2020). These figures suggest that the uptake of deposit limits in Australia is comparatively high and may indicate difficulty in achieving further improvement under a voluntary system. Further, both the DCE and RCT baseline surveys found that most respondents without a deposit limit were resistant to setting one. In the DCE survey, 53.8 per cent of those without a deposit limit reported being unlikely to set one, while this proportion was 60.7 per cent in the RCT baseline survey.

Nonetheless, uptake of deposit limits for online wagering is much higher than the use of voluntary pre-commitment options for EGM gamblers in Australia (Rintoul & Thomas, 2017; Schottler Consulting, 2009a, 2009b; South Australian Centre for Economic Studies, 2019).

4.2.2. Consumers report that deposit limits are helpful in managing their online gambling

Most bettors with deposit limits report them to be useful, indicating the potential benefits of their increased uptake. In the current study, over 93 per cent of those with deposit limits in the DCE and RCT surveys thought they were helpful in managing their betting, including between one-quarter and two-fifths who thought they were 'extremely helpful'. These surveys also found that most bettors had sometimes attempted to deposit more than their limit but had been stopped from doing so by the system. This prevention occurred fairly frequently. In the DCE survey, one-quarter

(25.7%) of participants with deposit limits had been stopped from exceeding their limit at least once a week, with even higher proportions found in the RCT baseline (32.9%) and follow-up (44.2%) surveys. Other studies have also found that most online gamblers with deposit limits report finding them useful in managing their betting (Gainsbury et al., 2020; Griffiths et al., 2009; Jenkinson et al., 2019). Open-ended responses in Jenkinson et al.'s (2019) study indicated that deposit limits are considered useful because they provide the ability to control betting expenditure by removing the temptation to spend more and to chase losses. In another Australian study which recruited 81 deposit limit users (Gainsbury et al., 2020), the main perceived benefits were reduced betting expenditure, followed by increased control over gambling, reduced time spent gambling, and reduced thinking about gambling.

The current study found that most participants in the DCE and RCT had only one or two active accounts and did the vast majority of their betting online via accounts. Under current policy settings, limits apply only to a single operator. Under these conditions, there is more potential for limit-setting to be an effective harm minimisation mechanism and for tailored messaging about limits to be effective.

4.2.3. Bettors are amenable to setting different types of limits

In addition to deposit limits, participants in the current study had set a range of different limits. In the DCE survey, a little over half (58.8%) of the 3,141 respondents had at least one type of limit in place. These were most commonly a deposit limit (40.8%), followed by maximum or single bet (36.0%), spend (36.4%), loss (28.9%), bet frequency (24.2%), number of bets (24.1%) and time (22.4%) limits. Slightly lower proportions were found in the RCT baseline survey. Nearly half (48.4%) of the 1,249 participants had one or more limits in place, most commonly deposit (31.9%), maximum/single bet (21.3%) or spend (17.7%) limits, followed by loss (13.6%), number of bets (11.2%), bet frequency (9.4%), and time (7.8%) limits.

These findings indicate that bettors are amenable to setting different types of limits, dependent on preferences, with the most popular being deposit, maximum/single bet, spend, and loss limits. The results also show that the proportion of respondents with any type of limit exceeded the proportion with deposit limits; meaning that not everyone chose a deposit limit when given a menu of limit-setting choices. Some consumers have set alternative limits, even though they have opted out of setting a deposit limit. These alternative types of limits can also moderate betting expenditure and harm and, in some respects, are interchangeable with deposit limits for the purpose of harm minimisation. For example, there is no real need to set a deposit limit if a spend or loss limit is in place.

It is not known why some bettors prefer divergent types of limits, but over 90 per cent of DCE respondents who had set each type of limit found it helpful. It is likely that consumers tend to choose the limit/s they consider will be most effective for them. For example, setting maximum/single bet limits may help bettors to avoid losing a

large amount in one bet and thereby reduce the temptation to chase a large loss. Setting bet frequency and time limits may help consumers to constrain their betting to fewer days of the week or hours per session so they are not overly distracted from other responsibilities and activities. Overall, these findings indicate that offering a wider range of limits is likely to increase the uptake of at least one type of limit amongst consumers by providing more choice to set the type/s of limits that may best suit their circumstances. They also suggest that it would be worthwhile, to expand the range of limit-setting options offered at sign up and in encouragement and reminder messaging, whilst maintaining simplicity in messaging.

4.2.4. Higher-risk gamblers are more likely to set limits

A consistent finding across studies is that higher-risk gamblers are more likely to set limits. In the DCE survey in the current study, 45.6 per cent of problem gamblers and 24.8 per cent of moderate risk gamblers had set at least one type of limit, compared to 15.6 per cent of low risk gamblers and 14.1 per cent of non-problem gamblers. The RCT baseline survey found similar figures: 43.5 per cent of problem gamblers, 22.5 per cent of moderate risk gamblers, 15.6 per cent of low risk gamblers and 18.4 per cent of non-problem gamblers had set at least one type of limit.

In relation to deposit limits specifically, the RCT baseline survey found that problem gamblers (39.5%) were significantly more likely to have a deposit limit in place, compared to moderate risk (23.2%), low risk (18.9%) and non-problem gamblers (18.4%). For comparison, in a prior study of a small sample of deposit users recruited through six online wagering operators (n=81), 40.0 per cent of problem gamblers and 34.9 per cent of moderate risk gamblers had set deposit limits, compared to 20.2 per cent of low risk gamblers and 10.3 per cent of non-problem gamblers (Gainsbury et al., 2020). Thus, the available evidence indicates that, amongst regular bettors, around 40 per cent of problem gamblers and one-quarter to one-third of moderate risk gamblers set deposit limits, although these figures are drawn from purposive and self-selecting samples.

While limits may act as a useful harm prevention measure amongst lower-risk gamblers, those at higher problem gambling severity, by definition, have more difficulties controlling their gambling and are likely to benefit most from binding limits. However, it is unclear whether limit-setting is actually more effective for higher-risk gamblers in terms of reducing their expenditure or in moderating spending more than initially intended. Most prior studies of limit-setting have used databases provided by wagering operators and have not been able to survey customers to ascertain their problem gambling severity and their experience of gambling harm (Auer & Griffiths, 2013; Auer et al., 2020b; Heirene & Gainsbury, 2021; Ivanova et al., 2019; Nelson et al., 2008).

4.2.5. Lower-risk gamblers may be resistant to setting limits because they already feel in control of their betting

As noted above, the uptake of deposit limits is particularly modest amongst lower-risk gamblers. The DCE and RCT baseline surveys found that only about one in six non-problem and low risk gamblers had set limits. Several studies have found that the primary reason that people do not set limits is that they feel in control of their betting and therefore see no need to set binding limits. For example, a survey of 2,352 customers of Norsk Tipping (Auer et al., 2020a) found that low risk gamblers (18%) were less likely than high-risk gamblers (41%) to agree that the limits were relevant to them. Similarly, Griffiths et al. (2009) found that the main reason for not using the PlayScan system, which includes limit-setting tools, was that most respondents (75%) did not feel they needed the tool. In open-ended responses, some explained they kept in control of their own limits, they did not gamble often enough, or they did not gamble with large enough sums of money to warrant using the system. Similarly, Gainsbury et al. (2020) found the main reasons for not setting a deposit limit were respondents feeling they could control their gambling without the limit (59.6%), they saw no need to access the deposit limit tool (46.2%), and they did not have any problems with their gambling (44.8%). In qualitative research, the Behavioural Insights Team (2018) in the UK found that recreational gamblers generally had an internal limit on the amount of time or money they were willing to spend, and several also had withdrawal strategies to avoid leaving large sums in their betting accounts. If these strategies are effective, there is likely to be no perceived need to set binding limits.

Related to the above reasons is that limit-setting can be seen as a tool that is only useful for problem gamblers. For example, 11 per cent of Griffith's (2009) respondents who had not initiated PlayScan, and 17.3 per cent of Gainsbury et al.'s (2020) respondents who had not set deposit limits, considered that the tool was only relevant for people with a gambling problem. There may also be some stigma associated with setting limits. For example, in Nova Scotia, pre-commitment cards for EGM gambling reportedly became a stigmatising marker of perceived problem gambling (Schellinck & Schrans, 2010). However, in Australia, only 1.9 per cent of respondents who had not set a deposit limit reported this was because they did not want anyone to think that they needed assistance with their gambling (Gainsbury et al., 2020).

In Australia and elsewhere, there has been a long-standing 'narrative' suggesting that gambling problems and harm are confined to a small proportion of people with a diagnosable gambling disorder. In addition, most previous interventions, such as self-exclusion and treatment services, have focused on gamblers with severe problems. While this is changing with the greater adoption of a public health perspective on gambling, a binary view of gamblers as either 'problem' or 'recreational' persists and may be impeding the uptake of measures that can help to prevent problems and harm, such as limit-setting. This suggests that greater

emphasis in the public discourse on preventing harm amongst all gamblers, instead of only problem gamblers, might encourage the uptake of preventative measures such as limit-setting. Clearly this requires a longer-term and more multi-faceted strategy than sending messages to bettors about setting limits.

4.2.6. Higher-risk bettors may be resistant to setting limits because of problem denial, not wanting to stop gambling, and a belief that they can self-manage the problem

While higher-risk gamblers are more likely to set limits, some of them have clearly opted out of setting a limit. In the DCE and RCT baseline surveys, a little over half of problem gamblers and approximately three-quarters of moderate risk gamblers had not set a deposit limit. Other Australian research (Gainsbury et al., 2020) also found that most problem and moderate risk bettors in the sample had not set limits. One reason for this may be that some bettors do not want to limit how much they spend, as previously reported by 14.8 per cent of those who had not set a deposit limit (Gainsbury et al., 2020). Qualitative research by the Behavioural Insights Team (2018) in the UK also found that some bettors do not set limits because they want to retain the freedom to spend their money as they wish. Not wanting to stop gambling, problem denial, and a belief in being able to beat the problem on their own are well-documented barriers to help-seeking for gambling problems, including using self-help measures such as limit-setting (Hing et al., 2012). Bettors at the pre-contemplation stage of behavioural change are likely to be particularly resistant to limit-setting. Reducing this resistance requires strategies to shift these customers from the pre-contemplation to action stage of behavioural change (Prochaska & DiClemente, 1982), which likely requires additional and stronger measures than messaging.

4.2.7. Bettors may also be deterred from setting limits because they are easy to circumvent

In the current study, nearly one-half of bettors with a limit reported increasing this limit in the previous 12 months (DCE survey) and around one-third (35.8%) in the previous 4 weeks (RCT baseline survey). In the RCT baseline survey, about two-thirds of participants with a deposit limit (66.3%) reported reviewing this limit at least once a month, but those who reported increasing their limit outnumbered those who reported decreasing it. Similar trends were found in the DCE survey. Many bettors also set much higher limits than their usual deposit amount, effectively negating the utility of the limit. For example, 30.4 per cent of DCE respondents and 39.4 per cent of RCT baseline respondents with deposit limits had set limits that were at least double their usual deposit amount; and 6.9 per cent of DCE respondents and 14.2 per cent of RCT baseline respondents had set limits that were at least 10 times higher. Studies of EGM pre-commitment have also found that people often set higher limits than what they usually spend. Doing so may reflect a harm minimisation strategy (i.e., the maximum they are prepared to lose) rather than a harm prevention

strategy. Higher limits may also provide customers with some day-to-day flexibility in their betting behaviour and/or reflect a conflict on the part of some higher-risk gamblers between a need to control gambling and an unwillingness to be bound by limits in the heat of gambling (Thomas et al., 2016). Nonetheless, the ability to circumvent effective limits in these ways may deter some consumers from setting limits or from keeping them in place.

Other studies have also noted the design flaws in voluntary pre-commitment systems that make limits easy to circumvent and limit their effectiveness. For example, Ivanova et al. (2019) note that a limit is voluntary, there is no upper limit imposed, and it is relatively easy to increase or remove the limit. This enables customers most in need of a limit to choose not to set it, choose to increase or remove it, or select an ineffective (large) limit size (Behavioural Insights Team, 2018; Griffiths et al., 2009; Ivanova et al., 2019). Jenkinson et al. (2019) also observed that bettors can have multiple betting accounts that they can use simultaneously and can easily open new accounts without limits. These inherent features are likely to reduce the uptake of limits and undermine the effectiveness of voluntary pre-commitment schemes.

Given these design flaws, prolific wagering advertisements and inducements can further undermine the effectiveness of pre-commitment systems, as noted by some respondents in Jenkinson et al.'s (2019) study. As found in other research (Hing et al., 2018a), the prolific inducements offered by wagering operators and communicated directly to customers may heighten the temptation to open new accounts, or resist setting a limit, due to fear of missing betting promotions.

4.2.8. Not all bettors may be aware that they can set deposit limits

Lack of awareness about setting limits may also be a reason for not setting them. The DCE and RCT surveys found that, amongst account holders betting with the top 10 volume operators, approximately 20 per cent to 60 per cent reported not receiving prompts and information from their operator about setting a deposit limit. While these results might be subject to recall bias, other research has also shown that not all online gambling account holders are aware of limit-setting tools (Gainsbury et al., 2020; Griffiths et al., 2009). For example, one study found that one-third of respondents did not know how to set limits on their account (Auer et al., 2020a).

Lack of prior information or prompts to set limits may explain the relatively high uptake of limits in the 4 weeks immediately following the baseline survey. This is because the survey itself may have raised awareness and prompted participants to set limits, regardless of which message condition they were exposed to in the RCT. During the 4 weeks following the baseline survey, 32.4 per cent of respondents to the follow-up survey set a least one new type of limit, including 18.4 per cent who newly initiated a deposit limit. This suggests that some consumers without limits are amenable to behaviour change and that measures that raise awareness of limit-

setting tools should prompt greater uptake, and therefore should be of value, irrespective of the form of the messaging.

4.3. Results for Objective 2

Objective 2 was to determine the optimal message features that promote the uptake of deposit limits, including for different customer groups.

Messages are most likely to bring about health behaviour change in situations where certain conditions are met. Based on the well endorsed Health Beliefs Model, these include when the audience perceives they are susceptible to the health problem, perceives the health problem to be severe, recognises benefits and few barriers to taking the promoted health action, has confidence they can adhere to the health action, and receives multiple cues to instigate action (Champion & Skinner, 2008). Meta-analyses of the Health Beliefs Model have demonstrated its overall effectiveness in explaining and predicting health behaviour (Carpenter, 2010; Harrison et al., 1992; Janz & Becker, 1984), and it has been used to explain the outcomes of some gambling awareness campaigns (Williams et al., 2012).

Consideration of this model indicates several inherent challenges for pre-commitment behaviour. Non-problem and low risk gamblers are unlikely to think that they are susceptible to gambling harm or will experience severe harm. They are likely to perceive few benefits of limit-setting if they feel they can already control their betting. Some higher-risk gamblers may also perceive susceptibility and severity to be low due to problem denial and a belief that they can self-manage their gambling. They may also consider the benefits of limit-setting to be low relative to the difficulties or loss of enjoyment from reducing their betting activity. As discussed above, research has identified numerous perceived barriers to limit-setting, while confidence in adhering to limits can be undermined by the ease with which they can be circumvented.

Given these challenges, it is critical that messages that aim to encourage the uptake of pre-commitment are designed with optimal features to maximise their potential effect. Previous gambling research that has found that self-monitoring and self-evaluation messages tend to be more impactful than information-based messages (Rockloff et al., 2014; Williams et al., 2012); that positively framed messages elicit greater recall and stronger intentions than negatively framed messages (Gainsbury et al., 2015a, Reid et al., 2005); and that tailored and intelligent messages tend to be more effective than generic messages (Marchica & Derevensky, 2016; Peter et al., 2019). However, research on gambling messaging is not extensive and many inconsistent results have been found. It was therefore considered essential in the current study to identify optimal message features specifically in relation to setting and reviewing betting limits.

A discrete choice experiment (DCE) was conducted to identify optimal messages. Respondents (N=3,131) were presented with a sequence of choice sets, each containing two different messages, and asked to select which would be most helpful in getting them to set new deposit limits or to review existing deposit limits. Six message features, each with several levels, were tested in this design.

The DCE found that type of limit was the most influential message feature, followed (in order) by: terminology and purpose, information to help set limits, message personalisation, message framing and message targeting. The optimal message for the overall sample had the following levels of each feature:

- Terminology and purpose: Managing and self-monitoring
- Type of limit: Loss limit (although Deposit limit and Spend limit also had high utility)
- Message framing: Positive
- Message targeting: Inclusive
- Message personalisation: Tailored
- Information to help set limits: Remind and prompt to reflect

While slight differences were observed in preferred levels of each feature by gender, age, PGSI group, and whether participants had previously set limits, most were not statistically significant. Thus, these results provided little evidence to support the need for different messaging for different subgroups in the RCT. One message was therefore designed for testing in the RCT which incorporated the optimal features and their associated wording as discovered through the DCE. We note, however, that some of the optimal features were only marginally preferred over others, so it is possible that other combinations of features would have similar potential effectiveness. Because all media that might eventually be used to communicate these messages do not allow for personalisation of messages tailored to a person's betting behaviour, the RCT tested a non-personalised as well as personalised version of the message, even though the latter was preferred by the DCE respondents.

4.4. Results for Objective 3

Objective 3 was to test the effects of these optimal messages on attitudes, intentions, take-up and review of deposit limits.

4.4.1. The optimal messages did not prompt differential improvements in behavioural change in setting or reviewing deposit limits

The RCT aimed to test the effectiveness of the optimal message developed from the DCE, and of the frequency and personalisation of its promotional message, on attitudes, intentions, take-up and review of deposit limits. The RCT involved a

2x2x2+2 design (10 groups). This design aimed to test the provision of the message via text (yes vs no), message frequency (weekly vs fortnightly), and message tailoring (personalised vs non-personalised), and also accommodated whether the participants had an existing deposit limit already set or not (i.e., the +2 quasi-experimental effect). There were two control groups (with an existing deposit limit or not). For participants without an existing deposit limit, the analyses tested the effects of the message condition on attitudes, intention and actual behaviour in relation to setting deposit limits. For participants with an existing deposit limit, the analyses tested the effects of the message condition on how often they reviewed their limit.

While limit-setting increased over the 4-week RCT period, the RCT (N=650) found that receiving the optimal message had no significant effect on participants' attitudes towards setting a deposit limit, intention to set a deposit limit, or actually setting a deposit limit; including for the weekly vs fortnightly messages and the personalised vs non-personalised messages. There was also no significant effect on the frequency of reviewing deposit limits amongst those with this limit already in place. Although at-risk gamblers were more likely to set a deposit limit during the RCT period, there was no detected interaction with the message condition.

In summary, the message did not result in significant changes in attitudes, intentions and behaviours relating to setting or reviewing a deposit limit, beyond the changes also observed in the control groups. However, this result is not surprising in light of the findings from the only previous Australian trial of deposit limits conducted after the start of the voluntary pre-commitment scheme, when bettors had already had the opportunity to set a deposit limit or opt out. In that trial, involving 26,560 participants, only 161 (0.7%) set a deposit limit after receiving one or two messages designed to increase the use of these limits, with no significant differences found between social, personal and informational messages, nor for in-account vs email messages (Heirene & Gainsbury, 2021). While the main result was significant, the uptake of deposit limits after messaging was very small (0.7%). Along with the current study, this demonstrates the very limited effectiveness of messages to bring about behaviour change amongst those who have previously resisted this change. As discussed earlier, there are many barriers to the uptake of pre-commitment limits that undermine the optimal conditions for behaviour change, especially amongst those who have already opted out of using pre-commitment. This indicates that stronger new measures in addition to messages are needed to substantially increase uptake.

4.4.2. It is highly probable that the baseline survey had stronger effects than any effects of the text messages

Even though the RCT found no significant differences in the uptake of deposit limits between those who had or had not received the message, 18.4 per cent of follow-up survey participants who did not have a deposit limit at baseline set one during the following 4 weeks. This is clearly many times higher than the 0.7 per cent who set a deposit limit after receiving messages in Heirene and Gainsbury's (2021) trial. This

magnitude of difference cannot be explained by differences in the time period assessed in the two studies, nor any self-report or social desirability biases in the RCT follow-up survey.

Instead, it is highly probable that completing the baseline survey served as a prompt to set limits amongst respondents in both the test and control groups who had not previously set these limits. Amongst these respondents, 32.4 per cent reported setting at least one new type of limit, including the 18.4 per cent who initiated a deposit limit, regardless of the message condition. Thus, completing the baseline survey appears to have had a stronger effect on limit-setting that overwhelmed and potentially supplanted any effect of the message condition. Nevertheless, conducting the baseline survey was necessary to measure PGSI, gambling harms and other relevant variables that would not have been available if the trial had relied only on operator data.

While the apparent effect of the baseline survey masked the detection of any effect of the messages, it does indicate that a reasonable proportion those who have previously opted out of setting limits may be amenable to behaviour change if given appropriate prompts. Importantly, those who had changed from having no limits at baseline to having at least one limit at follow-up were more likely to be younger and be classified as a problem gambler. This indicates that bettors who are most amenable to initiating new limits in response to a more intensive prompt are those likely to benefit most from having limits.

4.5. Results for Objective 4

Objective 4 was to examine if setting limits impacts on gambling behaviour and related harm.

Research has yielded mixed results on the effects of limits on gambling behaviour. The RCT found that initiating a deposit or other type of limit during the 4-week RCT period had a significant but small effect on decreasing the frequency of race betting, but no significant effect on sports betting frequency, betting expenditure or on the experience of gambling harms. In fact, those who had initiated a deposit limit during the RCT were more likely to increase the funds deposited in their betting accounts. This finding is generally consistent with the greater tendency of bettors to increase rather than decrease their limits when they review them, as discussed earlier.

Two prior studies have found that setting a deposit limit was associated with reduced expenditure but only amongst the 10 per cent of highest spending gamblers. From a sample of 5,000 account holders with one Austrian operator, gambling losses amongst the highest spending gamblers were reduced over the 30 days after deposit limits were set (Auer & Griffiths, 2013). Similarly, in a multi-country sample of 49,560 gamblers with another operator, those with the highest gambling expenditure and

who had set deposit limits gambled significantly less money on the site one year later (Auer et al., 2020b). Conversely, Heirene and Gainsbury (2021) found that only low and moderate spenders, but not high spenders, who set deposit limits (n=161) significantly reduced their average daily wager, net loss and betting intensity over the 90 days after setting a limit, compared with non-limit-setters. In contrast, a study of customers of the Finnish online gambling monopoly (Ivanova et al., 2019) found no difference in net loss between gamblers who did and did not set limits, either for the whole sample or those with the highest expenditure.

Taken together, the above findings indicate that setting limits does not necessarily lead to benefits such as reduced expenditure or gambling harm. Weaknesses in voluntary pre-commitment systems, including the ability to circumvent limits, increase limits or set very high limits, are likely explanations for these disappointing effects of limit-setting.

4.6. Limitations of the study

The limitations of the DCE and RCT stages of this study are presented in Chapters 3 and 4, respectively, and also summarised in the Executive Summary. As such, they are not repeated here but readers are referred to those sections of the report to inform the interpretation of the findings discussed above.

4.7. Conclusions

The main conclusions of this study are as follows:

- Messages appear to be a relatively weak measure to bring about behavioural change in pre-commitment behaviour, compared to more a more intensive intervention that prompts self-reflection.

- On their own, messages are highly unlikely to increase the uptake of deposit limits amongst more than a small minority of bettors who have previously opted out of setting a deposit limit.

- The optimal message developed in this study may still have good utility to promote limit-setting behaviour, given that its design was based on rigorous research and testing. However, differences in some options were small or non-significant in the DCE, so other combinations may have similar potential effectiveness which could be assessed in future research (see below).

- However, additional measures are needed to increase the use of betting limits (please see implications below).

- A substantial proportion of bettors are likely to set new limits with a more intensive intervention that prompts self-reflection on their betting.

4.8. Implications of the findings

Based on the findings of this study, additional measures should be considered in the continued implementation of the pre-commitment measure under the National Consumer Protection Framework:

- Sustained messaging is needed. Trials of messaging to date have involved sending only one or a few messages to bettors, whereas health behaviour change is more likely to occur when messaging is sustained over a longer period (Champion & Skinner, 2008). While sustained messages may still have limited effectiveness, they are more likely to have some effect compared to short-term message delivery. The relatively high initiation of new limits after the baseline survey suggests that sustained efforts to raise awareness of limit-setting options may be of value. Given the lack of effects found using the optimal message, a mix of message combinations based on prior and current evidence may be useful.

- Nevertheless, more intensive prompts are much more likely to prompt behaviour change. The relatively high initiation of new limits after the baseline survey indicates that a substantial proportion of higher-risk gamblers will set limits in response to more intensive prompts. Given that this group is most likely to benefit from limit-setting, consideration should be given to how prompts for these bettors can be intensified. One way would be to require wagering operators to provide an online self-assessment tool linked to the limit-setting tool and to encourage its use. Similar to completing the baseline survey, completing a self-assessment tool which also provides automated feedback can encourage self-reflection which may lead to behaviour change.

- There is a need to articulate and promote the benefits of setting limits because limits can be perceived as only useful for people with a gambling problem, particularly amongst lower-risk groups. While pre-commitment can be a harm prevention tool for those currently in control of their gambling, promoting other benefits such as assisting with money management and reducing the need to keep track of betting expenditure may be more impactful amongst this group.

- Wagering operators should provide regular, automated and tailored messages, including for limit-setting, based on their individual customers' betting behaviour as identified through behavioural tracking systems. Many such systems have been implemented overseas and represent good practice in pre-commitment schemes that could be adopted in Australia. Providing regular feedback to

customers based on behavioural tracking is also likely to prompt self-reflection on their betting which should, in turn, encourage limit-setting.

- Operators should be required to provide and promote additional types of limits, given that the RCT and DCE surveys found that some other types of limits are nearly as popular as deposit limits. This would increase choice for consumers who could set the type/s of limits which may be most effective given their individual circumstances. In addition to deposit limits, other types of limits used by participants included maximum/single bet limits, spend limits, loss limits, bet frequency limits, number of bets limits, and time limits.

- Mandatory limit-setting for all bettors would certainly increase its uptake. This has best potential for reducing gambling harm where a reasonable maximum limit is imposed or where limits set by customers are subject to an affordability check. Similarly, a mandatory minimum review period for limits could also be required.

- A universal pre-commitment scheme that requires customers to set a total limit across all their wagering accounts should be implemented. This would reduce the ease with which customers can currently circumvent their limits through using multiple accounts and opening additional accounts. Continued efforts to block illegal offshore sites would also be needed to deter bettors from circumventing a universal scheme by using offshore operators.

- Wagering advertisements and inducements should also be reduced because they can deter consumers from setting limits due to fear of missing promotions, and trigger betting activity, betting more than planned and riskier betting (Hing et al., 2018a).

- In line with a public health approach to gambling, all stakeholders should contribute to shaping a public discourse that focuses on preventing and reducing harm amongst gamblers at all risk levels and protecting their wellbeing, and that avoids assigning sole responsibility for gambling harms to individuals who gamble. The broader contribution of gambling policies, practices, products and environments to gambling harm needs greater emphasis to help reduce the stigma that can discourage the use of interventions such as pre-commitment.

Suggestions for future research

The findings of this study indicate several areas that would benefit from qualitative research to better understand pre-commitment behaviour for online wagering:

- Insights into reasons for setting and not setting pre-commitment limits could be explored, including the perceived benefits and disbenefits of both options, and barriers and facilitators to uptake.

- Qualitative research could also investigate whether limit setting is being used differently by different people/groups and whether there are more, or less, effective ways of using limit setting tools.

- Qualitative research could assist in understanding why some bettors set limits that greatly exceed their usual spending. This would provide valuable insights into this seemingly contradictory behaviour and could inform how setting of more realistic limits might be encouraged.

- In this study, 32.4 per cent of RCT follow-up respondents set new types of limits following the baseline survey, including 18.4 per cent who newly initiated deposit limits. In-depth interviews with these participants may yield new and important insights into the factors that prompted their uptake of new limits, which may inform measures to increase pre-commitment going forward.

Given that the optimal message developed in this study had no effect on behaviour change, quantitative research could inform the further refinement of pre-commitment messages. A further trial or a framed field experiment may be particularly informative to test for differential effectiveness between options that were considered by DCE participants to be most potentially effective versus those found in previous research to be most likely to change behaviour. For example:

- Both self-monitoring and self-appraisal options could be trialled for any differential effectiveness given there was variability in preference across sub-groups.

- Research could further investigate the effectiveness of different message attributes for different gambler risk groups, e.g., framing, targeting and personalisation.

References

Akl, E. A., Oxman, A. D., Herrin, J., Vist, G. E., Terrenato, I., Sperati, F., ... & Schünemann, H. (2011). Framing of health information messages. *Cochrane Database of Systematic Reviews*, (12).

Armstrong, A., & Carroll, M. (2017a). *Sports betting in Australia*. Melbourne: Australian Gambling Research Centre. Retrieved from: https://aifs.gov.au/agrc/publications/sports-betting-australia

Armstrong, A., & Carroll, M. (2017b). *Race betting in Australia*. Melbourne: Australian Gambling Research Centre. Retrieved from: https://aifs.gov.au/agrc/publications/race-betting-australia

Auer, M., & Griffiths, M. D. (2013). Voluntary limit setting and player choice in most intense online gamblers: An empirical study of gambling behaviour. *Journal of Gambling Studies*, *29*(4), 647-660.

Auer, M., & Griffiths, M. D. (2015a). Testing normative and self-appraisal feedback in an online slot-machine pop-up message in a real-world setting. *Frontiers in Psychology, 6*, 339.

Auer, M., & Griffiths, M. D. (2015b). The use of personalized behavioral feedback for online gamblers: An empirical study. *Frontiers in Psychology, 6*,1406.

Auer, M., & Griffiths, M. D. (2016). Personalized behavioral feedback for online gamblers: A real world empirical study. *Frontiers in Psychology*, *7*, 1875.

Auer, M., & Griffiths, M. D. (2020). The use of personalized messages on wagering behavior of Swedish online gamblers: An empirical study. *Computers in Human Behavior*, *110*, 106402.

Auer, M., Littler, A., & Griffiths, M. D. (2015c). Legal aspects of responsible gaming pre-commitment and personal feedback initiatives. *Gaming Law Review and Economics*, *19*(6), 444-456.

Auer, M., Malischnig, D., & Griffiths, M. (2014). Is" pop-up" messaging in online slot machine gambling effective as a responsible gambling strategy? *Journal of Gambling Issues*, (29), 1-10.

Auer, M., Reiestad, S. H., & Griffiths, M. D. (2020a). Global limit setting as a responsible gambling tool: What do players think? *International Journal of Mental Health and Addiction*, 18, 14–26.

Auer, M., Hopfgartner, N., & Griffiths, M. D. (2020b). The effects of voluntary deposit limit-setting on long-term online gambling expenditure. *Cyberpsychology, Behavior, and Social Networking*, *23*(2), 113-118.

Behavioural Insights Team. (2018). *Can behavioural insights be used to reduce risky play in online environments?* Retrieved from: https://www.begambleaware.org/media/1869/gambleaware-phase-iii-report_updated-v1.pdf

Bernhard, B. J., Lucas, A. F., & Dongsuk, J. (2008). *Responsible gaming device research report*. Las Vegas: International Gaming Institute, University of Nevada.

Bonello, M., & Griffiths, M. D. (2017). Analyzing consumer protection for gamblers across different online gambling operators: A descriptive study. *Gaming Law Review and Economics*, *21*(3), 278-285.

Broda, A., LaPlante, D. A., Nelson, S. E., LaBrie, R. A., Bosworth, L. B., & Shaffer, H. J. (2008). Virtual harm reduction efforts for Internet gambling: Effects of deposit limits on actual Internet sports gambling behavior. *Harm Reduction Journal*, *5*(1), 27.

Browne, M., Goodwin, B., & Rockloff, M. (2018). Validation of the Short Gambling Harm Screen (SGHS): A tool for assessment of harms from gambling. *Journal of Gambling Studies, 34*(2), 499-512. doi:10.1007/s10899-017-9698-y

Browne, M., Rockloff, M., Hing, N., Russell, A. M. T., Boyle, C. M., Rawat, … & Sproston, K. (2019). *NSW Gambling Survey 2019*. Sydney: Office of Responsible Gambling.

Calvosa, P. (2017). Responsible gambling strategies for internet gambling: An empirical investigation into the Italian gambling market. *International Journal of Business Management, 12*(7), 17.

Carpenter, C. J. (2010). A meta-analysis of the effectiveness of health belief model variables in predicting behavior. *Health Communication, 25*(8), 661–669.

Chaiken, S. (1979). Communicator physical attractiveness and persuasion. *Journal of Personality and Social Psychology, 37*(8), 1387–1397.

Chaiken, S. (1980). Heuristic versus systematic information processing and the use of source versus message cues in persuasion. *Journal of Personality and Social Psychology, 39*(5), 752–766.

Champion, V. L., & Skinner, C. S. (2008). The health belief model. *Health Behavior and Health Education: Theory, Research, and Practice*, *4*, 45-65.

Cialdini, R. B. (1984). *Influence: The psychology of persuasion*. Boston, MA: Allyn & Bacon.

Cloutier, M., Ladouceur, R., & Sévigny, S. (2006). Responsible gambling tools: Pop-up messages and pauses on video lottery terminals. *The Journal of Psychology, 140*, 434–438.

Communio (2014). *Trial of dynamic warning messages*. Canberra: Department of Social Services.

Davis, R., Campbell, R., Hildon, Z., Hobbs, L., & Michie, S. (2015). Theories of behaviour and behaviour change across the social and behavioural sciences: A scoping review. *Health Psychology Review*, *9*(3), 323-344.

Delfabbro, P. (2012). *Evaluation of the Maxetag budget setting feature: Final report*. Adelaide: School of Psychology, University of Adelaide.

Department of Justice and Attorney General. (2012). *Queensland household gambling survey 2011-12.* Retrieved from: https://publications.qld.gov.au/dataset/liquor-and-gambling-research/resource/79c83075-5dd6-48f7-84b1-8bd6b106eaff?inner_span=True

Dickerson, M. G. (2003). Exploring the limits of responsible gambling: Harm minimisation or consumer protection? *Gambling Research*, *15*(1), 29.

Dolan, P., Hallsworth, M., Halpern, D., King, D., & Vlaev, I. (2010). *MINDSPACE: Influencing behaviour through public policy*. Retrieved from: http://www.instituteforgovernment.org.uk/publications/mindspace

Dotson, K. B., Dunn, M. E., & Bowers, C. A. (2015). Stand-alone personalized normative feedback for college student drinkers: A meta-analytic review, 2004 to 2014. *PloS one*, *10*(10), e0139518.

Fagerlin, A., Ubel, P. A., Smith, D. M., & Zikmund-Fisher, B. J. (2007). Making numbers matter: present and future research in risk communication. *American Journal of Health Behavior*, *31*(1), S47-S56.

Ferris, J. A., & Wynne, H. J. (2001). *The Canadian Problem Gambling Index*. Ottawa, ON: Canadian Centre on Substance Abuse.

Floyd, K., Whelan, J. P., & Meyers, A. W. (2006). Use of warning messages to modify gambling beliefs and behavior in a laboratory investigation. *Psychology of Addictive Behaviors*, *20*(1), 69.

Gainsbury, S. M., Angus, D. J., Procter, L., & Blaszczynski, A. (2020). Use of consumer protection tools on internet gambling sites: Customer perceptions, motivators, and barriers to use. *Journal of Gambling Studies*, *36*(1), 259-276.

Gainsbury, S. M., Aro, D., Ball, D., Tobar, C., & Russell, A. (2015a). Optimal content for warning messages to enhance consumer decision making and reduce problem gambling. *Journal of Business Research*, *68*(10), 2093-2101.

Gainsbury, S., Aro, D., Ball, D., Tobar, C., & Russell, A. (2015b). Determining optimal placement for pop-up messages: Evaluation of a live trial of dynamic warning messages for electronic gaming machines. *International Gambling Studies*, *15*(1), 141-158.

Gainsbury, S. M., Tobias-Webb, J., & Slonim, R. (2018). Behavioral economics and gambling: A new paradigm for approaching harm-minimization. *Gaming Law Review, 22*(10),608-617.

Gallagher, K. M., & Updegraff, J. A. (2011). Health message framing effects on attitudes, intentions, and behavior: a meta-analytic review. *Annals of Behavioral Medicine*, *43*(1), 101-116.

Gambling Research Australia (2019). *Statement of requirements: Behavioural trials for two measures under the National Consumer Protection Framework for online wagering in Australia: Consistent gambling messaging and voluntary opt-out pre-commitment*. Sydney: Gambling Research Australia.

Gerend, M. A., & Cullen, M. (2008). Effects of message framing and temporal context on college student drinking behavior. *Journal of Experimental Social Psychology*, *44*(4), 1167-1173.

Ginley, M. K., Whelan, J. P., Keating, H. A., & Meyers, A. W. (2016). Gambling warning messages: The impact of winning and losing on message reception across a gambling session. *Psychology of Addictive Behaviors, 30*(8), 931-938.

Ginley, M. K., Whelan, J. P., Pfund, R. A., Peter, S. C., & Meyers, A. W. (2017). Warning messages for electronic gambling machines: Evidence for regulatory policies. *Addiction Research & Theory*, *25*(6), 495-504.

Gong, J., Zhang, Y., Yang, Z., Huang, Y., Feng, J., & Zhang, W. (2013). The framing effect in medical decision-making: A review of the literature. *Psychology, Health & Medicine*, *18*(6), 645-653.

Griffiths, M. D., Wood, R. T. A., & Parke, J. (2009). Social responsibility tools in online gambling: A survey of attitudes and behaviour among Internet gamblers. *Cyber Psychology & Behaviour, 12*(4), 413-421.

Hare, S. (2010). A commentary relating to the Productivity Commission recommendations about pre-commitment: Three key challenges. *Gambling Research*, *22*(2), 13.

Harris, A., & Parke, A. (2016). The interaction of gambling outcome and gambling harm-minimisation strategies for electronic gambling: The efficacy of computer generated self-appraisal messaging. *International Journal of Mental Health and Addiction*, *14*(4), 597-617.

Harrison, J. A., Mullen, P. D., & Green, L. W. (1992). A meta-analysis of studies of the health belief model with adults. *Health Education Research*, *7*(1), 107-116.

Head, K. J., Noar, S. M., Iannarino, N. T., & Harrington, N. G. (2013). Efficacy of text messaging-based interventions for health promotion: a meta-analysis. *Social Science & Medicine*, *97*, 41-48.

Heirene, R. M., & Gainsbury, S. M. (2021). Encouraging and evaluating limit-setting among on-line gamblers: a naturalistic randomized controlled trial. *Addiction*. Doi:10.1111/add.15471

Hing, N. (2004). The efficacy of responsible gambling measures in NSW clubs: The gamblers' perspective. *Gambling Research*, *16*(1), 32.

Hing, N., Cherney, L., Gainsbury, S., Lubman, D., Wood, R., & Blaszczynski, A. (2015b). Maintaining and losing control during Internet gambling: A qualitative study of gamblers' experiences. *New Media and Society*, *17*(7) 1075–1095.

Hing, N., Gainsbury, S., Blaszczynski, A., Wood, R., Lubman, D., & Russell, A. M. T. (2014). *Interactive gambling.* Melbourne: Gambling Research Australia.

Hing, N., Nuske, E., & Gainsbury, S. (2012). *Gamblers at-risk and their help-seeking behaviour*. Melbourne: Gambling Research Australia.

Hing, N., Russell, A. M. T., & Hronis, A. (2016). *Behavioural indicators of responsible gambling consumption*. Melbourne: Victorian Responsible Gambling Foundation.

Hing, N., Russell, A. M. T., Rockloff, M. J., Browne, M., Langham, E., Li, E., … & Thorne, H. (2018a). *Effects of wagering marketing on vulnerable adults.*Melbourne: Victorian Responsible Gambling Foundation.

Hing, N., Russell, A. M. T., & Rawat, V. (2018b). *Direct messages received from wagering operators*. Melbourne: Victorian Responsible Gambling Foundation.

Hoek, J., Hoek-Sims, A., & Gendall, P. (2013). A qualitative exploration of young adult smokers' responses to novel tobacco warnings. *BMC Public Health, 13*, 1-10.

International Gaming Research Unit (2007). *The global online gambling report: An exploratory investigation into the attitudes and behaviours of internet casino and poker players.* eCOGRA (e-Commerce and Online Gaming Regulation and Assurance).

Ivanova, E., Magnusson, K., & Carlbring, P. (2019). Deposit limit prompt in online gambling for reducing gambling intensity: A randomized controlled trial. *Frontiers in Psychology*, *10*, 639.

Janz, N. K., & Becker, M. H. (1984). The health belief model: A decade later. *Health Education Quarterly*, *11*, 1–47.

Jenkinson, J., Khokhar, T., Tajin, R., Jatkar, U., & Deblaquiere, J. (2019). *National Consumer Protection Framework for Online Wagering: Baseline study*. Melbourne: Australian Gambling Research Centre, Australian Institute of Family Studies.

Johns, R., Dale, N., Alam, S. L., & Keating, B. (2017). *Impact of gambling warning messages on advertising perceptions*. Melbourne: Victorian Responsible Gambling Foundation.

Kassin, S. M. (1983). Deposition testimony and the surrogate witness: Evidence for a "messenger effect" in persuasion. *Personality and Social Psychology Bulletin, 9*(2), 281–288.

Kim, H. S., Wohl, M. J., Stewart, M. J., Sztainert, T., & Gainsbury, S. M. (2014). Limit your time, gamble responsibly: Setting a time limit (via pop-up message) on an electronic gaming machine reduces time on device. *International Gambling Studies*, *14*(2), 266-278.

LaBrie, J. W., Lewis, M. A., Atkins, D. C., Neighbors, C., Zheng, C., Kenney, S. R., ... & Grossbard, J. (2013). RCT of web-based personalized normative feedback for college drinking prevention: Are typical student norms good enough? *Journal of Consulting and Clinical Psychology*, *81*(6), 1074.

Ladouceur, R., & Sevigny, S. (2003). Interactive messages on video lottery terminals and persistence in gambling. *Gambling Research*, *15*(1), 45.

Ladouceur, R., & Sévigny, S. (2009). Electronic gambling machines: Influence of a clock, a cash display, and a precommitment on gambling time. *Journal of Gambling Issues, 23,* 31-41.

Ladouceur, R., Blaszczynski, A., & Lalande, D. (2012). Pre-commitment in gambling: A review of the empirical evidence. *International Gambling Studies*, *12*(2), 215–230.

Lemarié, L., & Chebat, J.-C. (2013). Resist of comply: Promoting responsible gambling among youth. *Journal of Business Research, 66*, 137–140.

Leventhal, H. (1970). Findings and theory in the study of fear communications. In *Advances in experimental social psychology* (Vol. 5, pp. 119-186). Academic Press.

Lund, I. (2009). Gambling behaviour and the prevalence of gambling problems in adult EGM gamblers when EGMs are banned. A natural experiment. *Journal of Gambling Studies*, *25*(2), 215–225.

Maheswaran, D., & Meyers-Levy, J. (1990). The influence of message framing and issue involvement. *Journal of Marketing Research, 27*, 361–367.

Marchica, L., & Derevensky, J. L. (2016). Examining personalized feedback interventions for gambling disorders: A systematic review. *Journal of Behavioral Addictions*, *5*(1), 1-10.

Marrionneau, V., & Järvinen-Tassopolous, J. (2017). Consumer protection in licensed online gambling markets in France: The role of responsible gambling tools. *Addiction Research & Theory, 25*, 436–443.

McDonnell-Phillips. (2006). *Analysis of gambler precommitment behaviour*. Melbourne: Gambling Research Australia.

Monaghan, S., & Blaszczynski, A. (2010). Electronic gaming machine warning messages: Information versus self-evaluation. *The Journal of Psychology, 144*, 83–96.

Moodie, C., & Reith, G. (2009). Responsible gambling signage on electronic gaming machines, before and after the implementation of the United Kingdom Gambling Act: An observational study. *International Gambling Studies*, *9*(1), 5-17.

Munoz, Y., Chebat, J.-C., & Borges, A. (2013). Graphic gambling warnings: How they affect emotions, cognitive responses and attitude change. *Journal of Gambling Studies, 29*, 507–524.

Munoz, Y., Chebat, J.-C., & Suissa, J. A. (2010). Using fear appeals in warning labels to promote responsible gambling among VLT players: The key role of depth of information processing. *Journal of Gambling Studies, 26*, 593–609.

Nelson, S. E., LaPlante, D. A., Peller, A. J., Schumann, A., LaBrie, R. A., & Shaffer, H. J. (2008). Real limits in the virtual world: Self-limiting behavior of internet gamblers. *Journal of Gambling Studies, 24*(4), 463–477.

Noar, S. M., Francis, D. B., Bridges, C., Sontag, J. M., Brewer, N. T., & Ribisl, K. M. (2017). Effects of strengthening cigarette pack warnings on attention and message processing: A systematic review. *Journalism & Mass Communication Quarterly*, *94*(2), 416-442.

Nower, L., & Blaszczynski, A. (2010). Gambling motivations, money-limiting strategies, and precommitment preferences of problem versus non-problem gamblers. *Journal of Gambling Studies*, *26*(3), 361–372.

O'Keefe, D. J., & Nan, X. (2012). The relative persuasiveness of gain-and loss-framed messages for promoting vaccination: A meta-analytic review. *Health Communication*, *27*(8), 776-783.

Obermayer, J. L., Riley, W. T., Asif, O., and Jean-Mary, J. (2004). College smoking-cessation using cell phone text messaging. *Journal of American College Health,* 53, 71–79.

Omnifacts Bristol Research. (2005). *Nova Scotia player card research project: Stage I research report*. Retrieved from http://nsgc.ca/research/responsible_gaming_device_research_project/

Omnifacts Bristol Research. (2007). *Nova Scotia player card research project: Stage III research report*. Retrieved from http://nsgc.ca/research/responsible_gaming_device_research_project/

Orazi, D. C., Lei, J., & Bove, L. L. (2015). The nature and framing of gambling consequences in advertising. *Journal of Business Research*, *68*(10), 2049-2056.

Parke, A., Harris, A., Parke, J., Rigbye, J., & Blaszczynski, A. (2014). Facilitating awareness and informed choice in gambling. *The Journal of Gambling Business and Economics*, *8*(3), 6-20.

Parke, J., Rigbye, J. & Parke, A. (2008). *Cashless and card-based technologies in gambling: A review of the literature.* Retrieved from: http://www.gamblingcommission.gov.uk/pdf/Cashless%20and%20card%20based%20technologies%20literature%20review%20-%20Dec%202008.pdf

Peter, S. C., Brett, E. I., Suda, M. T., Leavens, E. L., Miller, M. B., Leffingwell, T. R., ... & Meyers, A. W. (2019). A meta-analysis of brief personalized feedback interventions for problematic gambling. *Journal of Gambling Studies*, 1-18.

Pornpitakpan, C. (2004). The persuasiveness of source credibility: A critical review of five decades' evidence. *Journal of Applied Social Psychology, 34*, 243–281.

Prochaska, J.O., & DiClemente, C.C. (1982). *The transtheoretical approach: Crossing traditional boundaries of therapy*. Florida: Kreiger.

Productivity Commission (2010). *Gambling: Report no. 50*. Canberra: Australian Government.

Reid, J. (2005). Player information and on screen messages: Using EGMs as a communication channel. In *Proceedings of the 15th National Association for Gambling Studies Conference* (p. 222). National Association for Gambling Studies.

Responsible Gambling Working Party. (2010). *Supporting customer commitment: Fourth progress report to the Minister for Gambling by the Responsible Gambling Working Party*. Adelaide: Department of Treasury and Finance.

Riley-Smith, B., & Binder, J. (2003). *Testing of harm minimisation messages for gaming machines*. Sydney: NSW Department of Gaming and Racing.

Rimer, B. K., & Kreuter, M. W. (2006). Advancing tailored health communication: A persuasion and message effects perspective. *Journal of Communication, 56*(suppl_1), S184-S201.

Rintoul, A., & Thomas, A. (2017). *Pre-commitment systems for electronic gaming machines*. Melbourne: Australian Gambling Research Centre.

Riper, H., van Straten, A., Keuken, M., Smit, F., Schippers, G., & Cuijpers, P. (2009). Curbing problem drinking with personalized-feedback interventions: A meta-analysis. *American Journal of Preventive Medicine, 36*(3), 247-255.

Rockloff, M., Browne, M., Hing, N., Thorne, H., Russell, A. M. T., Greer, N., … & Sproston, K. (2019). *Victorian population gambling and health study (2018-19)*. Melbourne: Victorian Responsible Gambling Foundation.

Rockloff, M., Greer, N., Armstrong, T., Thorne, H., Langham, E., Browne, M., … Goodwin, B., & Li, E. (2018). *Mobile EGMs apps: The perfect substitute or the perfect storm?* Melbourne: Victorian Responsible Gambling Foundation.

Rockloff, M., Langham, E., Browne, M., Donaldson, P., & Li, E. (2014). *Intelligent messages as part of a pre-commitment scheme*. Canberra: FaHCSIA.

Rossow, I., & Hansen, M. B. (2015). Gambling and gambling policy in Norway: An exceptional case. *Addiction, 111*(4), 593-598.

Salis, S., Wardle, H., Morris, S., & Excell, D. (2015). *ABB Code for Responsible Gambling and Player Protection: Evaluation of early impact among machine gamblers*. London: NatCen Social Research.

Schellinck, T., & Schrans, T. (2007). *Final Report: Assessment of the behavioural impact of responsible gambling device (RGD) features: Analysis of Nova Scotia player-card data—Windsor Trial.* Halifax, Nova Scotia: Focal Research Consultants Ltd.

Schellinck, T., & Schrans, T. (2010). *Evaluating the impact of the "My-Play" system in Nova Scotia Phase 1: Regular VL player benchmark survey. Technical report*. Halifax, Nova Scotia: Focal Research Consultants Ltd.

Schellinck, T., Schrans, T., & Walsh, G. (2002). The role of informal and formal information sources in helping problem gamblers. In *Conference Proceedings,*

The National Association Gambling Studies Conference, Melbourne, Australia.

Schottler Consulting. (2009a). *Major findings of a trial of a card-based gaming product at the Redcliffe RSL*. Retrieved from https://publications.qld.gov.au/storage/f/2014-06-20T02%3A50%3A11.495Z/report-into-card-based-gaming-cbg-trial-redcliffe-rsl.pdf

Schottler Consulting. (2009b). *Major findings of a trial of a card-based gaming product at the Sandgate RSL*. Retrieved from https://publications.qld.gov.au/storage/f/2014-06-20T02%3A52%3A22.890Z/report-into-card-based-gaming-cbg-trial-sandgate-rsl.pdf

Schottler Consulting. (2010a). *Factors that influence gambler adherence to pre-commitment decisions*. Retrieved from http://www.gamblingresearch.org.au/home/research/gra+research+reports/factors+that+influence+a+gambler+pre-commitment+decisions+2010

Schottler Consulting. (2010b). *Major findings and implications: Player tracking and precommitment trial: A program and outcome evaluation of the PlaySmart precommitment system*. Retrieved from www.treasury.sa.gov.au/public/download.jsp?id.3188

South Australian Centre for Economic Studies. (2019). *Evaluation of YourPlay Final report*. Melbourne: Victorian Department of Justice.

Stewart, M. J., & Wohl, M. J. A. (2013). Pop-up messages, dissociation, and craving: How monetary limit reminders facilitate adherence in a session of slot machine gambling. *Psychology of Addictive Behaviors, 27*(1), 268-273.

Stotts, A. L., Groff, J. Y., Velasquez, M. M., Benjamin-Garner, R., Green, C., Carbonari, J. P., …& & DiClemente, C. C. (2009). Ultrasound feedback and motivational interviewing targeting smoking cessation in the second and third trimesters of pregnancy. *Nicotine & Tobacco Research,* 11, 961–968.

Thomas, A., Christensen, D., Deblaquiere, J., Armstrong, A., Moore, S., Carson, R., & Rintoul, A. (2016). *Review of electronic gaming machine pre-commitment features: Limit setting*. Melbourne: Australian Institute of Family Studies.

Tversky, A., & Kahneman, D. (1981). The framing of decisions and the psychology of choice. *Science, 211*(4481), 453-458.

UK Gambling Commission. (2020). *Gambling participation in 2019: Behaviour, awareness and attitudes.* Retrieved from:

http://www.gamblingcommission.gov.uk/PDF/survey-data/Gambling-participation-in-2019-behaviour-awareness-and-attitudes.pdf

Van den Putte, B., Yzer, M., Willemsen, M., and de Bruijn, G. J. (2009). The effects of smoking self-identity and quitting self-identity on attempts to quit smoking. *Health Psychology,* 28, 535–544.

Vandelanotte, C., Duncan, M. J., Maher, C. A., Schoeppe, S., Rebar, A. L., Power, D. A., ... & Alley, S. J. (2018). The effectiveness of a web-based computer-tailored physical activity intervention using fitbit activity trackers: Randomized trial. *Journal of Medical Internet Research*, *20*(12), e11321.

Williams, R. J., West, B. L., & Simpson, R. I. (2012). *Prevention of problem gambling: A comprehensive review of the evidence, and identified best practices*. Toronto: Ontario Problem Gambling Research Centre and the Ontario Ministry of Health and Long Term Care.

Wohl, M. J., Gainsbury, S., Stewart, M. J., & Sztainert, T. (2013). Facilitating responsible gambling: The relative effectiveness of education-based animation and monetary limit setting pop-up messages among electronic gaming machine players. *Journal of Gambling Studies*, *29*(4), 703-717.

Wood, R. T. A., & Griffiths, M. D. (2010). Social responsibility in online gambling: Voluntary limit setting. *World Online Gambling Law Report*, *9*(11), 10-11.

Wynne, H., & Stinchfield, R. D. (2004). *Evaluating VLT responsible gaming features and interventions in Alberta: Phase 1 Final Report*. Prepared for: Alberta Gaming and Liquor Commission.

Yzer, M., Fishbein, M., & Cappella, J. N. (2007). Using behavioral theory to investigate routes to persuasion for segmented groups: A case study of adolescent drug use. In *Freiberger Beitraege zur Interkulturellen und Wirtschaftskommunikation: A Forum for General and Intercultural Business Communication* (pp. 297-320). Frankfurt: Lang.

Appendix A. Survey instrument for the discrete choice experiment

Consent

A national study of pre-commitment (limit-setting) for online wagering

Thanks for your interest in this important national study. By participating, you can help to inform future enhancements to the voluntary opt-out pre-commitment measure under the National Consumer Protection Framework for online wagering (National Framework).

Under the National Framework, individual wagering providers must at least offer customers the ability to voluntarily set deposit limits on their online wagering activity with other types of limits optional (for example: spend limits).

To participate you must:

- Bet on sports or races at least once a month on average
- Reside in Australia
- Be aged 18 years or over, and
- Have at least one active online or telephone wagering account

This questionnaire will take about **20 minutes** to complete. It includes questions about:

- Your attitudes, intentions and behaviours around voluntary limit-setting for online wagering
- Your betting behaviour
- Demographics (age, gender)
- Your preferences for various limit setting features and how they are described

If you wish to read more details about this study, please click the button below. Otherwise, please indicate your consent to proceed with the survey on the next page.

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

Ethical approval for this project has been received from the Central Queensland University Human Research Ethics Committee (0000021883).

Would you like to see more details about this study?

○ Yes – I'd like to see more details before starting the survey
○ No – I'd like to start the survey

A national study of pre-commitment (limit-setting) for online wagering

Project Team: Professor Nerilee Hing, Professor Matthew Rockloff, A/Professor Matthew Browne, Dr Alex Russell, and Mr Vijay Rawat

INFORMATION SHEET

Thanks for your interest in this important national study. It is funded by Gambling Research Australia, which is a partnership established and funded by the Commonwealth, state and territory governments of Australia to initiate and manage a national gambling research program. The study is being conducted by CQUniversity. The research team has engaged the data-analytics firm Qualtrics to assist with recruitment for this study.

The study examines features and messaging that can encourage consumers to voluntarily set limits on their online wagering activity, such as on deposit, bet and loss amounts. By participating, you can help Australian governments to enhance consumer protections for people who wager online.

What you will be asked to do

To participate, you will need to complete this online survey. This should take about **20 minutes**. We will ask you some questions about limit-setting for online wagering, your betting behaviour, your demographics (such as age and gender), and your preferences for various pre-commitment features and their descriptions.

How your confidentiality will be protected

Your survey responses will be completely anonymous. The survey does not ask for your name. We will also remove any references to personal information that might allow someone to guess your identity. 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 3,000 survey participants.

The data will be kept securely by CQUniversity for 5 years. The de-identified data (the data collected without any way of identifying you) will be provided to the Gambling Research Australia secretariat, so that overall results can be compared to those of similar surveys they might conduct in the future.

Participation will not prejudice you in any way

Your participation in this study is completely voluntary. Should you wish to withdraw at any stage you are free to do so without prejudice or penalty.

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/

Where you can get further information

Should you require any further information or have some questions about participation, please contact Vijay Rawat on v.rawat@cqu.edu.au. You are also welcome to contact the Ethics Coordinator at CQUniversity's Office of Research on 07 4923 2603.

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

Taking part
To participate you must currently:

- Bet on sports or races at least once a month on average

- Reside in Australia

- Be aged 18 years or over, and

- Have at least one active online wagering account.

If you would like to participate, please continue. You will be asked to indicate that you have read and understood this information by checking the consent form. You can then complete the online survey.

Thank you very much. We greatly appreciate your input into this important study.

Consent form

I consent to participation 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 project were answered by either the Information Sheet or the researchers.

- I understand I have the right to withdraw from the project at any time without penalty.

- The research findings, which will not identify me, will be included in the researchers' publication(s) on the project which may include conference presentations and research articles as well as any other media described in the Information Sheet.

- To protect my privacy, my name will not be used in publication(s).

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

- I am 18 years of age or over.

I consent to participate in this research project:

◯ Yes
◯ No

Screening

Do you reside in Australia?

○ Yes
○ No

What is your age?

[   ]

How many wagering operators or bookmakers in Australia or overseas do you currently have an active account with (that you have used in the last 12 months)?

[   ]

About how often do you bet on horse or greyhound races for money? (This includes all your race betting, including online, by smartphone, tablet, interactive television, on-course, via telephone calls and through a land-based TAB)

○ Everyday
○ A few times a week
○ Once a week
○ Once a fortnight
○ Once a month
○ A few times a year
○ Once a year
○ Not at all in the last 12 months

About how often do you bet on sports, esports or fantasy sports for money? (This includes all your sports betting,

including online, by smartphone, tablet, interactive television, on-course, via telephone calls and through a land-based TAB)

○ Everyday

○ A few times a week

○ Once a week

○ Once a fortnight

○ Once a month

○ A few times a year

○ Once a year

○ Not at all in the last 12 months

Survey

Welcome to the survey

Introduction: PLEASE READ

The Commonwealth, state and territory governments agreed to a National Consumer Protection Framework for Online Wagering late last year. Ten consumer protection measures are being progressively introduced over an 18 month period. On 26 May 2019, governments introduced a voluntary opt-out pre-commitment scheme for online wagering. Wagering operators are now required to provide consumers with a tool to help them monitor and manage their gambling by setting limits on their wagering accounts. Under this measure:

● A customer must be prompted to set a deposit limit during the account sign-up process.

● Limits must be binding.

● An interactive wagering service provider must at least offer deposit limits, with other types of limits (e.g. spend limit) optional.

- An interactive wagering service provider must not accept further deposits from a customer above the deposit limit set by the customer.

- A request by a customer to decrease their deposit limit must be applied immediately.

- A request by a customer to increase their deposit limit must not be applied until 7 days after the day the request was received.

- All customers must be prompted to set and review their deposit limit yearly at a minimum, including customers who have chosen not to set a limit

Deposit setting offered by online wagering operators

Our first few questions are about which operators you have an account with and whether they have informed you about setting deposit limits on your wagering account/s.

Which of the following Australian-licensed wagering operators or on-course bookmakers do you have an <u>active</u> account with (that is, you have used the account in the last 12 months and haven't closed it)? (Select all that apply)

☐ BestBet	☐ PlayUP
☐ bet365	☐ PointsBet
☐ Betchoice/Unibet	☐ Skrilla
☐ BetEasy	☐ SportChamps
☐ Betfair	☐ Sportsbet
☐ Betstar	☐ Sportsbetting.com.au
☐ BlueBet	☐ Tabcorp ACT
☐ Bookmaker.com.au	☐ Tabcorp VIC
☐ ClassicBet	☐ TAB Limited NSW

Which of these operators have <u>prompted</u> you to set a deposit limit on your account (e.g. when you log into your account, via text message or email)? This is a self-set limit on the amount of money you can deposit into your wagering account during the nominated period. (Select all that apply)

- ☐ » BestBet
- ☐ » bet365
- ☐ » Betchoice/Unibet
- ☐ » BetEasy
- ☐ » Betfair
- ☐ » Betstar
- ☐ » BlueBet
- ☐ » Bookmaker.com.au
- ☐ » ClassicBet
- ☐ » DraftKings
- ☐ » Draftstars
- ☐ » EliteBet
- ☐ » Ladbrokes
- ☐ » Mad Bookie
- ☐ » MoneyBall
- ☐ » Neds.com.au
- ☐ » PalmerBet
- ☐ » PlayON
- ☐ » PlayUP

- ☐ » PointsBet
- ☐ » Skrilla
- ☐ » SportChamps
- ☐ » Sportsbet
- ☐ » Sportsbetting.com.au
- ☐ » Tabcorp ACT
- ☐ » Tabcorp VIC
- ☐ » TAB Limited NSW
- ☐ » TABtouch WA
- ☐ » TopBetta
- ☐ » TopSport
- ☐ » Ubet/TAB NT
- ☐ » Ubet/TAB QLD
- ☐ » Ubet/TAB SA
- ☐ » Ubet/TAB TAS
- ☐ » William Hill
- ☐ » On-course bookmaker
- ☐ None of the above

Which of these operators have provided you with <u>information</u> about setting deposit limits on your account (e.g. when you log into your account, via text message or email)? (Select all that apply)

- » BestBet
- » bet365
- » Betchoice/Unibet
- » BetEasy
- » Betfair
- » Betstar
- » BlueBet
- » Bookmaker.com.au
- » ClassicBet
- » DraftKings
- » Draftstars
- » EliteBet
- » Ladbrokes
- » Mad Bookie
- » MoneyBall
- » Neds.com.au
- » PalmerBet
- » PlayON
- » PlayUP

- » PointsBet
- » Skrilla
- » SportChamps
- » Sportsbet
- » Sportsbetting.com.au
- » Tabcorp ACT
- » Tabcorp VIC
- » TAB Limited NSW
- » TABtouch WA
- » TopBetta
- » TopSport
- » Ubet/TAB NT
- » Ubet/TAB QLD
- » Ubet/TAB SA
- » Ubet/TAB TAS
- » William Hill
- » On-course bookmaker
- None of the above

Overall, how easy is it to find information about setting deposit limits on your wagering account/s? (Select one)

- ○ Extremely easy
- ○ Easy
- ○ Difficult
- ○ Extremely difficult
- ○ I've never tried to find that information

Your current limits

We'd now like to ask you about any current limits you have in place on your wagering account/s.

Have you set any of the following types of limits on ANY of your online wagering account/s that are <u>currently</u> in place?

	No	Yes
Deposit limit (the maximum amount you can deposit into your wagering account during the nominated period, e.g. maximum deposit of $50 per month)	○	○
Maximum or single bet limit (the maximum amount you can place on a single bet using your account, e.g. maximum $50 on any one bet)	○	○
Loss limit (the maximum amount you can lose on betting (after any winnings) during the nominated period, e.g. maximum of $50 net losses per month)	○	○
Spend limit (the maximum amount you can spend on betting during the nominated period regardless of any winnings, e.g. maximum of $50 in bets placed per month)	○	○
Number of bets limit (the maximum number of bets you can place during the nominated period, e.g. maximum of 5 bets per month)	○	○
Bet frequency limit (how often you can place a bet, e.g. maximum of once a week)	○	○
Time limit (maximum amount of time you can keep your betting account active during one session, e.g. maximum of 1 hour per day)	○	○

What is the <u>total</u> amount you can <u>deposit</u> across <u>all your wagering accounts</u>? E.g. if you have a deposit limit of $50 per week on 4 accounts, please enter $200 below and click 'per week'.

Total amount I can deposit:

$ | ${e://Field/%24}

○ A few times a week
○ About once a week
○ About once every few weeks
○ Once every few months
○ Once or twice a year
○ Never in the last 12 months

How helpful do you find your deposit limit/s in managing your betting?

Maximum or single bet limits

The next few questions are about maximum or single bet limits, that is, the maximum amount you can place on a single bet using your account (e.g. maximum $50 on any one bet).

How many wagering accounts do you currently have a maximum or single bet limit for?

Accounts:

```
┌──────────┐
│          │
└──────────┘
```

}

In the last 12 months, how often have you attempted to bet more than your maximum or single bet limit and been stopped from doing so by this limit? (select one response)

○ A few times a week
○ About once a week
○ About once every few weeks
○ Once every few months
○ Once or twice a year
○ Never in the last 12 months

○ Extremely helpful
○ Helpful
○ Unhelpful
○ Extremely unhelpful

What is the <u>total loss</u> limit amount you have currently set across <u>all your wagering accounts</u>? E.g. if you have a loss limit of $50 per week on 4 accounts, please enter $200 below and click 'per week'.

Total amount I can lose:

$ ${e://Field/%24}

ek

○ About once a week

○ About once every few weeks

○ Once every few months

○ Once or twice a year

How helpful do you find your <u>loss limit/s</u> in managing your betting?

○ Extremely helpful

○ Helpful

○ Unhelpful

○ Extremely unhelpful

Spend limits

The next few questions are about spend limits, that is, the maximum amount you can spend on betting during the nominated period regardless of any winnings (e.g. maximum of $50 in bets placed per month).

How many wagering accounts do you currently have a <u>spend limit</u> for?

Accounts:

[ ]

$ [${e://Field/%24}]

What is the total amount that you <u>usually</u> place on bets (not including winnings)
${q://QID41/ChoiceGroup/SelectedChoices} across <u>all of the wagering accounts where you have spend limits</u>?

Total amount I usually place on bets ${q://QID41/ChoiceGroup/SelectedChoices}:

$ | ${e://Field/%24} |

ek
○ About once every few weeks
○ Once every few months
○ Once or twice a year
○ Never in the last 12 months

○ Extremely helpful
○ Helpful
○ Unhelpful
○ Extremely unhelpful

Number of bets limits

The next few questions are about <u>number of bets</u> limits, that is, the maximum number of bets you can place during the nominated period (e.g. 5 bets per month).

How many wagering accounts do you currently have a number of bets limit for?

Accounts:

What is the <u>total number of bets</u> you can place across <u>all your wagering</u> accounts? E.g. if you have a number of bets limit of 5 per month on 4 accounts, please enter 20 below and click 'per month'.

Total number of bets I can place:

[   ]

h

○ per year

place ${q://QID50/ChoiceGroup/SelectedChoices}:

In the last 12 months, how often have you attempted to place a bet and been stopped from doing so by your number of bets limit? (select one response)

e or twice a year

○ Never in the last 12 months

How helpful do you find your number of bets limit/s in managing your betting?

○ Extremely helpful
○ Helpful
○ Unhelpful
○ Extremely unhelpful

Bet frequency limits

The next few questions are about bet frequency limits, that is, a limit on how often you can place a bet (e.g. maximum of once a week).

How many wagering accounts do you currently have a bet frequency limit for?

Accounts:

How <u>often</u> can you bet in total across <u>all your wagering accounts</u>? E.g. if you have a <u>bet frequency</u> limit of once a week on 4 accounts, please enter 4 below and click 'per week'.

How many times I can bet:

[   ]

ew months

○ Once or twice a year

○ Never in the last 12 months

How helpful do you find your <u>bet frequency limit/s</u> in managing your betting?

○ Extremely helpful
○ Helpful
○ Unhelpful
○ Extremely unhelpful

○ per day
○ per week

What is the total <u>time</u> (in hours) that you usually keep your betting account/s active during a session ${q://QID64/ChoiceGroup/SelectedChoices} across <u>all of the wagering accounts where you have time limits</u>?

Total <u>time</u> (In hours) I keep my betting account/s active during a session ${q://QID64/ChoiceGroup/SelectedChoices}:

tremely unhelpful

How easy or difficult was the process involved in setting limits on your online wagering account/s?

○ Extremely easy
○ Easy
○ Difficult
○ Extremely difficult

Reviewing your current limits

In the <u>last 12 months</u>, about how often have you checked or reconsidered your limits on your online wagering account/s to ensure they are still affordable? (select one response)

○ A few times a week
○ About once a week
○ About once every few weeks
○ Once every few months
○ Once or twice a year
○ Never in the last 12 months

In the last 12 months, how many times have you increased any of your limits?

Number of times <u>increased</u> limits past 12 months:

☐

In the last 12 months, how many times have you decreased any of your limits?

Number of times <u>decreased</u> limits past 12 months:

☐

Likelihood of setting other types of limits

Wagering operators must offer <u>deposit limits</u>. This allows you to voluntarily set a maximum amount you can deposit into your wagering account during the nominated period, e.g. maximum deposit of $50 per month

How likely are you to voluntarily set a deposit limit? (select one)

○ Extremely likely
○ Likely
○ Unlikely
○ Extremely unlikely

○ Extremely likely
○ Likely
○ Unlikely
○ Extremely unlikely

○ Extremely likely
○ Likely

Wagering operators have the option of offering spend limits.
This allows you to set a maximum amount you can spend on
betting during the nominated period regardless of any
winnings, e.g. maximum of $50 in bets placed per month.

How likely would you be to set a maximum spend limit if it
was available? (select one)

○ Extremely likely
○ Likely
○ Unlikely
○ Extremely unlikely

Unlikely
○ Extremely unlikely

○ Extremely likely

○ Likely

○ Unlikely

○ Extremely unlikely

Wagering operators have the option of offering <u>time limits</u>. This allows you to set the maximum amount of time you can keep your betting account active during one session (e.g. 1 hour per day).

How likely would you be to set a time limit if it was available? (select one)

○ Extremely likely

○ Likely

○ Unlikely

○ Extremely unlikely

Betting behavior

We'd now like to ask some questions about your wagering account management and your betting behaviour. Please remember that this survey is completely anonymous.

In a <u>typical month</u>, about how much money <u>in total</u> did you deposit into your wagering accounts? Please add these deposits across <u>all</u> of your wagering accounts) If you don't know exactly, please provide your best guess. If none, please enter "0".

$ [${e://Field/%24}]

e,

please enter "0".

d/%24}

About how much money do you typically allow to accumulate in your betting account (from deposits and wins), before you make a withdrawal? If you don't know exactly, please provide your best guess.

$ | ${e://Field/%24} |

When you make a withdrawal, how much do you typically leave in your betting account? If you don't know exactly, please provide your best guess.

$ | ${e://Field/%24} |

What is the largest amount you usually place on any one race bet or sports bet? If you don't know exactly, please provide your best guess.

$ | ${e://Field/%24} |

In a typical month, about how much money do you spend on race betting? This means your net losses over a month after any winnings. If you don't know exactly, please provide your best guess. If none, please enter "0". If you won rather than lost money, please also enter "0".

$ | ${e://Field/%24} |

after any winnings. If you don't know exactly, please provide your best guess. If none, please enter "0". If you won rather than lost money, please also enter "0".

$ [${e://Field/%24}]

Please indicate what percentage of your sports and race betting you do through each of the following channels.

Computer or laptop	0	%
Smartphone	0	%
Tablet or iPad	0	%
Via telephone calls	0	%
Land-based betting outlet (e.g. TAB, in a hotel, club or casino)	0	%
On-course	0	%
Total	0	%

ConjointBlock

*We'd now like to ask you **four** questions about different messages that might be used to encourage people to voluntarily set or review their betting limits.*

(1/4) Which of these messages would be most helpful in getting you to set new limits or to review your existing limits?

# 1	# 2
${e://Field/Group1.1.1}	${e://Field/Group1.1.2}
${e://Field/Group2.1.1}	${e://Field/Group2.1.2}
${e://Field/FirstFeature.1.1}	${e://Field/FirstFeature.1.2}
${e://Field/SecondFeature.1.1}	${e://Field/SecondFeature.1.2}

(2/4) Which of these messages would be most helpful in getting you to set new limits or to review your existing limits?

# 1	# 2
${e://Field/Group1.2.1}	${e://Field/Group1.2.2}
${e://Field/Group2.2.1}	${e://Field/Group2.2.2}
${e://Field/FirstFeature.2.1}	${e://Field/FirstFeature.2.2}
${e://Field/SecondFeature.2.1}	${e://Field/SecondFeature.2.2}

(3/4) Which of these messages would be most helpful in getting you to set new limits or to review your existing limits?

# 1	# 2
${e://Field/Group1.3.1}	${e://Field/Group1.3.2}
${e://Field/Group2.3.1}	${e://Field/Group2.3.2}
${e://Field/FirstFeature.3.1}	${e://Field/FirstFeature.3.2}
${e://Field/SecondFeature.3.1}	${e://Field/SecondFeature.3.2}

(4/4) Which of these messages would be most helpful in getting you to set new limits or to review your existing limits?

# 1	# 2
${e://Field/Group1.4.1}	${e://Field/Group1.4.2}

${e://Field/Group2.4.1}	${e://Field/Group2.4.2}
${e://Field/FirstFeature.4.1}	${e://Field/FirstFeature.4.2}
${e://Field/SecondFeature.4.1}	${e://Field/SecondFeature.4.2}

BettingBehaviorMatrix

The next questions are about your gambling in general. Please consider <u>all types of gambling you do</u> when responding (including pokies, casino games, keno, bingo, lotteries, lotto, instant scratchies, race betting and sports betting).

Thinking about the last <u>12 months</u>, how often….

	Never	Sometimes	Most of the time	Almost always
Have you borrowed money or sold anything to get money to gamble?	◯	◯	◯	◯
Have you bet more than you could really afford to lose	◯	◯	◯	◯
Have you needed to gamble with larger amounts of money to get the same feeling of excitement?	◯	◯	◯	◯
Have you felt that you might have a problem with gambling?	◯	◯	◯	◯
Has your gambling caused any financial problems for you or your household?	◯	◯	◯	◯
Have you felt guilty about the way you gamble or what happens when you gamble?	◯	◯	◯	◯

	Never	Sometimes	Most of the time	Almost always
Have people criticised your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true?	○	○	○	○
Please choose 'most of the time' for this item.	○	○	○	○
Has gambling caused you any health problems, including stress or anxiety?	○	○	○	○
When you gambled, did you go back another day to try to win back the money you lost?	○	○	○	○

Demographics

These questions ask about you so we can group the survey responses.

What is your gender? (select one)

○ Male
○ Female
○ Other

In which state or territory do you mainly reside? (select one)

○ New South Wales
○ Victoria
○ Queensland
○ South Australia
○ Tasmania
○ Northern Territory
○ Australian Capital Territory
○ Western Australia

What is the highest level of education you have achieved? (select one)

○ Year 10 or below
○ Year 11 or equivalent
○ Year 12 or equivalent
○ A trade, technical certificate or diploma
○ A university or college degree
○ Postgraduate qualification

What language do you mainly speak at home? (select one)

○ English
○ [   ] Other (Please specify)

What do you estimate your <u>household</u> annual income was last year, <u>before taxes</u>? (select one)

○ $0 to $19,999
○ $20,000 to $39,999
○ $40,000 to $59,999
○ $60,000 to $79,999
○ $80,000 to $99,999
○ $100,000 to $119,999
○ $120,000 to $139,999
○ $140,000 to $159,999
○ $160,000 to $179,000
○ $180,000 or more

ConjointBlock 2

*We'd now like to ask you the **final four** questions about different messages that might be used to encourage people to voluntarily set or review their betting limits.*

(1/4) Which of these messages would be most helpful in getting you to set new limits or to review your existing limits?

# 1	# 2
${e://Field/Group1.5.1}	${e://Field/Group1.5.2}
${e://Field/Group2.5.1}	${e://Field/Group2.5.2}
${e://Field/FirstFeature.5.1}	${e://Field/FirstFeature.5.2}
${e://Field/SecondFeature.5.1}	${e://Field/SecondFeature.5.2}

(2/4) Which of these messages would be most helpful in getting you to set new limits or to review your existing limits?

# 1	# 2
${e://Field/Group1.6.1}	${e://Field/Group1.6.2}
${e://Field/Group2.6.1}	${e://Field/Group2.6.2}
${e://Field/FirstFeature.6.1}	${e://Field/FirstFeature.6.2}
${e://Field/SecondFeature.6.1}	${e://Field/SecondFeature.6.2}

(3/4) Which of these messages would be most helpful in getting you to set new limits or to review your existing limits?

# 1	# 2
${e://Field/Group1.7.1}	${e://Field/Group1.7.2}
${e://Field/Group2.7.1}	${e://Field/Group2.7.2}
${e://Field/FirstFeature.7.1}	${e://Field/FirstFeature.7.2}

${e://Field/SecondFeature.7.1}	${e://Field/SecondFeature.7.2}

(4/4) Which of these messages would be most helpful in getting you to set new limits or to review your existing limits?

# 1	# 2
${e://Field/Group1.8.1}	${e://Field/Group1.8.2}
${e://Field/Group2.8.1}	${e://Field/Group2.8.2}
${e://Field/FirstFeature.8.1}	${e://Field/FirstFeature.8.2}
${e://Field/SecondFeature.8.1}	${e://Field/SecondFeature.8.2}

Invitation for follow-up survey

We will be conducting a follow-up study on voluntary limit-setting on wagering accounts early next year. This will involve one survey in March 2020 and another survey in April 2020. We will also send you some text messages about limit-setting in between these two surveys. We will pay participants $25 to complete each of the two surveys, for a total compensation of $50 paid in shopping vouchers.

Would you like to be invited to participate in this follow-up study?

O Yes
O No

Thank you for your interest in being invited to a follow-up study on voluntary limit-setting on wagering accounts.

We will keep your personal details confidential, however so we can contact you early next year, please provide:

Your Email Address

Appendix B. RCT survey instruments

Baseline SURVEY

A national study of pre-commitment (limit-setting) for online wagering: randomised controlled trial

Thanks for your interest in this important national Australian study. By participating, you can help to inform future enhancements to the voluntary opt-out pre-commitment tool. At present, online wagering providers must at least offer customers the ability to voluntarily set deposit limits on their online betting activity with other types of limits optional (for example: spend limits).

To participate you must:
- Bet on sports, races, esports or fantasy sports at least once a month on average
- Reside in Australia
- Be aged 18 years or over
- Have at least one active online or telephone betting account, and
- Provide your mobile phone number and email address.

What the study involves
This study involves 3 stages:
1. Complete an initial survey (this survey)
2. Be randomly assigned to a group that, during the next 4 weeks, receives a text message about limit-setting once a week OR once a fortnight OR not at all
3. Complete a follow-up survey soon after the 4 week trial.

This initial survey
This initial survey will take about **15 minutes** to complete. It includes questions about:
- Your attitudes, intentions and behaviours around voluntary limit-setting for online betting
- Your betting behaviour
- Demographics (e.g. age, gender)

If you wish to read more details about this study, please click the button below. Otherwise, please indicate your consent to proceed with the survey on the next page.

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

Ethical approval for this project has been received from the Central Queensland University Human Research Ethics Committee (22193).

Would you like to see more details about the study?
- Yes – I'd like to see more details before starting the survey (goes to next page)
- No – I'd like to start the survey (skipped to consent form)

A national study of pre-commitment (limit-setting) for online wagering: randomised control trial

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

ADDITIONAL INFORMATION
This study is funded by Gambling Research Australia, which consists of gambling regulatory departments in all Australian states and territories, and the Commonwealth. The study is being conducted by CQUniversity.

The study examines messaging that might encourage consumers to voluntarily set deposit limits on their online wagering activity. By participating, you can help Australian governments to enhance consumer protections for people who bet online.

How your confidentiality will be protected
Participating in this study involves completing this survey, possibly receiving some text messages over the next four weeks and completing a final survey. To take part, we will need your mobile phone number to send you text messages. Your mobile phone number will not be stored with your data. We will not use your mobile phone number for any other purpose except to send you messages for this study. We will also not share your mobile number with any other parties.

The survey does not ask for your name. We will also remove any references to personal information that might allow someone to guess your identity. 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.

The data will be kept securely and indefinitely by CQUniversity. The de-identified data (the data collected without any way of identifying you) will be provided to the Gambling Research Australia secretariat, so that overall results can be compared to those of similar surveys they might conduct in the future.

Your participation in this study 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. If you receive SMS messages as part of this trial and no longer wish to do so, you can email: n.hing@cqu.edu.au to opt out of receiving messages and continuing in the trial.

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/

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 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 will be asked to indicate that you have read and understood this information by checking the consent form. You can then complete the online survey.

Consent form

I consent to participation 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 project were answered by either the Information Sheet or the researchers.
- I understand I have the right to withdraw from the project at any time without penalty.
- The research findings, which will not identify me, will be included in the researchers' publication(s) on the project which may include conference presentations and research articles as well as any other media described in the Information Sheet.
- To protect my privacy, my name will not be used in publication(s).
- I am providing informed consent to participate in this project.
- I am 18 years of age or over.

I consent to participate in this research project:

- Yes
- No (screen out)

Screening

S1. Do you reside in Australia?
- Yes
- No (screen out with message: Thank you for your interest in this study. However, we are surveying Australian residents only.)

S2. What is your age?

_____ years (validate numeric)

*if under 18 years, screen out with message: Thank you for your interest in this study. However, we are surveying only people who meet a particular profile.

S3. How many wagering operators or bookmakers in Australia or overseas do you <u>currently</u> have an active account with, and that you have used in the last 12 months? (validate numeric value, set minimum to 0) _____

*If response = 0 then screen out with message: Thank you for your interest in this study. However, we are surveying only people who meet a particular profile.

S4. About how often do you bet on **horse or greyhound races** for money? (This includes ALL your race betting, including online, by smartphone, tablet, interactive television, on-course, via telephone calls and through a land-based TAB)
- Every day
- A few times a week
- Once a week
- Once a fortnight
- Once a month
- A few times a year
- Once a year
- Not at all in the last 12 months

S5. About how often do you bet on **sports, esports or fantasy sports** for money? (This includes ALL your sports betting, including online, by smartphone, tablet, interactive television, on-course, via telephone calls and through a land-based TAB)
- Every day
- A few times a week
- Once a week
- Once a fortnight
- Once a month
- A few times a year
- Once a year
- Not at all in the last 12 months

*If the responses to S4 AND S5 includes any of the following: 'a few times a year' or 'once a year' or 'not at all in the last 12 months' then Screen-out with message: Thank you for your interest in this study. However, we are surveying only people who meet a particular profile.

* We require them to have selected 'once a month' or 'once a fortnight' or 'once a week' or 'a few times a week' or 'every day' at S4 OR S5 (or both)

CONTACT DETAILS
(Note for ethics: participant sent to new survey, linked with unique identifier, so that mobile number is not stored with responses)

Participating in this study involves completing this survey, possibly receiving some text messages over the next four weeks and completing a final survey.
To take part, we will need your mobile phone number to send you text messages. You will be able to withdraw at any time, but if you do not provide your mobile number now, you'll be unable to participate in this study.
Your mobile phone number will not be stored with your data. We will not use your mobile phone number for any other purpose except to send you messages for this study. We will also not share your mobile number with any other parties.

M1. Please enter your mobile number:
(Text box, numeric)
M1a. Please confirm your mobile number
(Text box, numeric, must be the same as previous text box)
M2. I do not want to provide my mobile number (Check box, Screen out if selected).

Welcome to the survey

Deposit setting offered by online wagering operators
Our first few questions are about which operators you have an account with and whether they have informed you about setting deposit limits on your wagering account/s.

1. Which of the following Australian-licensed wagering operators or on-course bookmakers do you have an <u>active</u> account with (that is, you have used the account in the last 12 months and haven't closed it)? (Select all that apply)
   - bet365
   - BetEasy
   - Betfair
   - Betstar
   - BlueBet
   - Bookmaker.com.au
   - ClassicBet
   - DraftKings
   - Draftstars
   - EliteBet
   - Ladbrokes
   - Mad Bookie
   - MoneyBall
   - Neds.com.au
   - PalmerBet
   - PlayON
   - PlayUP
   - PointsBet
   - Skrilla
   - SportChamps
   - Sportsbet
   - Sportsbetting.com.au
   - Tabcorp ACT
   - Tabcorp VIC
   - TAB Limited NSW
   - TABtouch WA
   - TopBetta
   - TopSport
   - Ubet/TAB NT
   - Ubet/TAB QLD
   - Ubet/TAB SA
   - Ubet/TAB TAS
   - Unibet (Formerly Betchoice)
   - On-course bookmaker
   - None of the above (exclusive)

2. Which of these operators have <u>prompted</u> you to set a **deposit limit** on your account (e.g. when you log into your account, via text message or email)? This is a self-set limit on the amount of money you can deposit into your wagering account during the nominated period. (Pipe through selections from Q1, select all that apply).

3. Which of these operators have provided you with <u>information</u> about setting **deposit limits** on your account (e.g. when you log into your account, via text message or email)? (Pipe through selections from Q1, select all that apply).

4. Overall, how easy is it to find information about setting **deposit limits** on your wagering account/s?
   Response options: Extremely easy, easy, difficult, extremely difficult, I've never tried to find that information (select one)

Deposit limits

The next few questions are about <u>deposit limits</u>, that is, the maximum amount you can deposit into your wagering account during the nominated period (e.g. you set a maximum deposit of $50 per month).

5a Have you set a <u>deposit limit</u> on ANY of your online wagering account/s that are <u>currently</u> in place?
- No
- Yes

5b (Display only if yes to Q5a) How many wagering accounts do you currently have a <u>deposit limit </u>for?

    _____ accounts (validate numeric value, set minimum to 0)

5c (Display only if 5b = a value of 1 or higher, if Q5b = 0 go to Q5j) What is the <u>total </u>amount you can <u>deposit</u> across <u>all your wagering accounts</u>? E.g. if you have a deposit limit of $50 per week on each of 4 accounts, please enter $200 below and click 'per week'. If you have different limit times on different accounts, please standardise these to estimate a total amount per day, week, fortnight, month or year.

    Total amount you can deposit $ _____ (validate numeric value, set minimum to 0)

    (select one of the below options)
    Per day
    Per week
    Per fortnight
    Per month
    Per year

5d (Display only if 5b = a value of 1 or higher) <u>DURING THE LAST 4 WEEKS</u>, what was the total amount that you deposited across <u>all of the wagering accounts where you have deposit limits</u>?

    Total amount you deposited DURING THE LAST 4 WEEKS $ _____ (validate numeric value, set minimum to 0)

5e (Display only if 5b = a value of 1 or higher) DURING THE LAST 4 WEEKS, how often have you attempted to deposit more than your limit and been stopped from doing so due to your <u>deposit limit</u>? (select one response)
    A few times a week
    About once a week
    About once every few weeks
    About once in the last month
    Never in the last month

5f (Display only if 5b = a value of 1 or higher) <u>DURING THE LAST 4 WEEKS</u>, how helpful did you find your <u>deposit limit/s</u> to be in managing your betting?
    4 point scale: Not at all helpful, A little helpful, Moderately helpful, Extremely helpful

5g (If yes to Q5a)

DURING THE LAST 4 WEEKS, about how often did you check or reconsider your deposit limits on your online wagering account/s to ensure they are still affordable? (select one response)
A few times a week
About once a week
About once every few weeks
About once in the last month
Never in the last month

5h (If yes to Q5a) DURING THE LAST 4 WEEKS, how many times did you increase any of your deposit limits?
Text box entry. Validated numeric. Range 0 – 100.

5i (If yes to Q5a) DURING THE LAST 4 WEEKS, how many times did you decrease any of your deposit limits?
Text box entry. Validated numeric. Range 0 – 100.

5j (If no to Q5a) DURING THE LAST 4 WEEKS, have you seen a feature for setting a deposit limit on any of your wagering accounts?

● No
● Yes

5k (If no to Q5a) How do you feel about setting a deposit limit on one or more of your wagering accounts?
● Extremely negative
● Negative
● Positive
● Extremely positive

5l (If no to Q5a) How likely are you to set a deposit limit on any of your wagering accounts?
4 point scale: Extremely likely, likely, unlikely, extremely unlikely (select one)

Maximum or single bet limits

The next few questions are about <u>maximum or single bet limits</u>, that is, the maximum amount you can place on a single bet using your account (e.g. you set a maximum $50 on any one bet)

6a   Have you set a <u>maximum or single bet limit</u> on ANY of your online wagering account/s that are <u>currently</u> in place? maximum $50 on any one bet)

- ● No
- ● Yes

6b   (Display only if yes to Q6a) How many wagering accounts do you currently have a <u>maximum or single bet limit</u> for?
_____ accounts (validate numeric value, set minimum to 0)

6c   (Display only if Q6b = a value of 1 or higher, if Q6b = 0 go to Q6j) What is the <u>highest maximum or single bet</u> limit you have currently set for <u>any of your wagering accounts</u>?

Highest maximum or single bet limit set $ _____ (validate numeric value, set minimum to 0)

6g   (If yes to Q6a) <u>DURING THE LAST 4 WEEKS</u>, about how often did you check or reconsider your <u>maximum or single bet limits</u> on your online wagering account/s to ensure they are still affordable? (select one response)
A few times a week
About once a week
About once every few weeks
About once in the last month
Never in the last month

6k   (If no to Q6a) How do you feel about setting a <u>maximum or single bet limit</u> on one or more of your wagering accounts if it was available?
- ● Extremely negative
- ● Negative
- ● Positive
- ● Extremely positive

6l   (If no to 6a) How likely would you be to set a <u>maximum or single bet limit</u> on any of your wagering accounts if it was available?
4 point scale: Extremely likely, likely, unlikely, extremely unlikely (select one)

Loss limits

The next few questions are about <u>loss limits</u>, that is, the maximum amount you can lose on betting (after any winnings) during the nominated period (e.g. you set a maximum of $50 net losses per month).

7a Have you set a <u>loss limit</u> on ANY of your online wagering account/s that are <u>currently</u> in place?
- No
- Yes

7b (Display only if yes to Q7a) How many wagering accounts do you currently have a <u>loss limit</u> for?

_____ accounts (validate numeric value, set minimum to 0)

7c (Display only if Q7b = a value of 1 or higher, if Q7b = 0 go to Q7j) What is the <u>total loss</u> limit amount you have currently set across <u>all your wagering accounts</u>? E.g. if you have a loss limit of $50 per week on 4 accounts, please enter $200 below and click 'per week'. If you have different limit times on different accounts, please standardise these to estimate a total amount per day, week, fortnight, month or year.

Total amount you can lose $ _____ (validate numeric value, set minimum to 0)

(select one of the below options)
Per day
Per week
Per fortnight
Per month
Per year

7g (If yes to Q7a) <u>DURING THE LAST 4 WEEKS</u>, about how often did you check or reconsider your <u>loss limits</u> on your online wagering account/s to ensure they are still affordable? (select one response)
A few times a week
About once a week
About once every few weeks
About once in the last month
Never in the last month

7k (If no to Q7a) How do you feel about setting a <u>loss limit</u> on one or more of your wagering accounts if it was available?
- Extremely negative
- Negative
- Positive
- Extremely positive

7l (If no to Q7a) How likely would you be to set a <u>loss limit</u> on any of your wagering accounts if it was available?
4 point scale: Extremely likely, likely, unlikely, extremely unlikely (select one)

Spend limits

The next few questions are about <u>spend limits</u>, that is, the maximum amount you can spend on betting during the nominated period regardless of any winnings (e.g. you set a maximum of $50 in bets <u>placed</u> per month).

8a   Have you set a <u>spend limit</u> on ANY of your online wagering account/s that are <u>currently</u> in place?

8b   (Display only if yes to Q8a) How many wagering accounts do you currently have a <u>spend limit</u> for?

　　　　_____ accounts (validate numeric value, set minimum to 0)

8c   (Display only if Q8b = a value of 1 or higher, if Q8b = 0 go to Q8j) What is the <u>total </u>amount you can place on bets across <u>all your wagering accounts</u>? E.g. if you have a spend limit of $50 per week on 4 accounts, please enter $200 below and click 'per week'. If you have different limit times on different accounts, please standardise these to estimate a total amount per day, week, fortnight, month or year.

　　　　Total amount you can place on bets $ _____ (validate numeric value, set minimum to 0)

(select one of the below options)
Per day
Per week
Per fortnight
Per month
Per year

8g   (If yes to Q8a) <u>DURING THE LAST 4 WEEKS</u>, about how often did you check or reconsider your <u>spend limits</u> on your online wagering account/s to ensure they are still affordable? (select one response)
A few times a week
About once a week
About once every few weeks
About once in the last month
Never in the last month

8k   (If no to Q8a) How do you feel about setting a<u> spend limit</u> on one or more of your wagering accounts if it was available?
●   Extremely negative
●   Negative
●   Positive
●   Extremely positive

8l   (If no to Q8a) How likely would you be to set a <u>spend limit</u> on any of your wagering accounts if it was available?
4 point scale: Extremely likely, likely, unlikely, extremely unlikely (select one)

Number of bets limits

The next few questions are about <u>number of bets</u> limits, that is, the maximum number of bets you can place during the nominated period (e.g. 5 bets per month).

9a Have you set a <u>number of bets limit</u> on ANY of your online wagering account/s that are <u>currently</u> in place?

9b (Display only if yes to Q9a) How many wagering accounts do you currently have a <u>number of bets limit</u> for?
_____ accounts (validate numeric value, set minimum to 0)

9c (Display only if Q9b = a value of 1 or higher, if Q9b = 0 go to Q9j) What is the <u>total number of bets</u> you can place across <u>all your wagering accounts</u>? E.g. if you have a number of bets limit of 5 per month on 4 accounts, please enter 20 below and click 'per month'. If you have different limit times on different accounts, please standardise these to estimate a total amount per day, week, fortnight, month or year.

Total number of bets you can place _____ (validate numeric value, set minimum to 0)

(select one of the below options)
Per day
Per week
Per fortnight
Per month
Per year

9g (If yes to Q9a) <u>DURING THE LAST 4 WEEKS</u>, about how often did you check or reconsider your <u>number of bets limits</u> on your online wagering account/s to ensure they are still affordable? (select one response)
A few times a week
About once a week
About once every few weeks
About once in the last month
Never in the last month

9k (If no to Q9a) How do you feel about setting a <u>number of bets limit</u> on one or more of your wagering accounts if it was available?
● Extremely negative
● Negative
● Positive
● Extremely positive

9l (If no to Q9a) How likely would you be to set a <u>number of bets limit</u> on any of your wagering accounts if it was available?
4 point scale: Extremely likely, likely, unlikely, extremely unlikely (select one)

Bet frequency limits

The next few questions are about <u>bet frequency</u> limits, that is, a limit on how often you can place a bet (e.g. maximum of once a week)

10a Have you set a <u>bet frequency limit</u> on ANY of your online wagering account/s that are <u>currently</u> in place?

10b (Display only if yes to Q10a) How many wagering accounts do you currently have a <u>bet frequency limit</u> for?

_____ accounts (validate numeric value, set minimum to 0)

10c (Display only if Q10b = a value of 1 or higher, if Q10b = 0 go to Q10j) How <u>often</u> can you bet in total across <u>all your wagering accounts</u>? E.g. if you have a <u>bet frequency</u> limit of once a week on 4 accounts, please enter 4 below and click 'per week'. If you have different limit times on different accounts, please standardise these to estimate a total bet frequency per day, week, fortnight, month or year.

How <u>often</u> you can bet _____ times (validate numeric value, set minimum to 0)

(select one of the below options)
Per day
Per week
Per fortnight
Per month
Per year

10g (If yes to Q10a) <u>DURING THE LAST 4 WEEKS</u>, about how often did you check or reconsider your <u>bet frequency limits</u> on your online wagering account/s to ensure they are still affordable? (select one response)
A few times a week
About once a week
About once every few weeks
About once in the last month
Never in the last month

10k (If no to Q10a) How do you feel about setting a <u>bet frequency limit</u> on one or more of your wagering accounts if it was available?
● Extremely negative
● Negative
● Positive
● Extremely positive

10l (If no to Q10a) How likely would you be to set a <u>bet frequency limit</u> on any of your wagering accounts if it was available?
4 point scale: Extremely likely, likely, unlikely, extremely unlikely (select one)

Time limits

The next few questions are about <u>time limits</u>, that is, the maximum amount of time you can keep your betting account active during one session (e.g. maximum of 1 hour per day).

11a Have you set a <u>time limit</u> on ANY of your online wagering account/s that are <u>currently</u> in place?

11b (Display only if yes to Q11a) How many wagering accounts do you currently have a <u>time limit</u> set for?

_____ accounts (validate numeric value, set minimum to 0)

11c (Display only if Q11b = a value of 1 or higher, if Q11b = 0 go to Q11j) What is the <u>total time</u> (in hours) you can spend betting across <u>all your wagering accounts</u>? E.g. if you have a <u>time</u> limit of 1 hour per day on 4 accounts, please enter 4 below and click 'per day'. If you have different limit times on different accounts, please standardise these to estimate a total time per day, week, fortnight, month or year.

Total time limit _____ hour/s (validate numeric value, set minimum to 0)

(select one of the below options)
Per day
Per week
Per fortnight
Per month
Per year

11g (If yes to Q11a) <u>DURING THE LAST 4 WEEKS</u>, about how often did you check or reconsider your <u>time limits</u> on your online wagering account/s to ensure they are still affordable? (select one response)
A few times a week
About once a week
About once every few weeks
About once in the last month
Never in the last month

11k (If no to Q11a) How do you feel about setting a <u>time limit</u> on one or more of your wagering accounts if it was available?
● Extremely negative
● Negative
● Positive
● Extremely positive

11l (If no to Q11a) How likely would you be to set a <u>time limit</u> on any of your wagering accounts if it was available?
4 point scale: Extremely likely, likely, unlikely, extremely unlikely (select one)

Account-based vs cash betting (ask all)

We'd now like to ask some questions about your account-based betting (online and by telephone) and any cash-based betting (at a TAB, venue, on-course) on races, sports, esports and fantasy sports. Please remember that this survey is completely anonymous.

12. <u>In a typical month</u>, about what percentage of your total betting on races, sports, esports and fantasy sports do you do through each of the following channels. (validate to add up to 100%)
    a. Computer or laptop
    b. Smartphone
    c. Tablet or iPad
    d. Via telephone calls
    e. Cash-based betting outlet (e.g. TAB, in a hotel, club or casino, on-course, at a live event)

13. <u>In a typical month</u>, what is the total amount that you usually <u>place</u> when betting using your account/s and in cash? (This means what you outlay on bets on races, sports, esports and fantasy sports – regardless of any winnings.) If you don't know exactly, please provide your best guess. If none, please enter "0". (validate numeric value, set minimum to 0)

    Account-based betting $ _____ placed per month
    Cash-based betting $ _____ placed per month

14. <u>In a typical month</u>, what is the total amount that you usually <u>win</u> when betting using your account/s and in cash? (This means how much you come out ahead on bets on races, sports, esports and fantasy sports). If you don't know exactly, please provide your best guess. If none, please enter "0". (validate numeric value, set minimum to 0)

    Account-based betting $ _____ in winnings per month
    Cash-based betting $ _____ in winnings per month

15. <u>In a typical month</u>, what is the <u>total</u> amount that you usually <u>deposit</u> across all your betting accounts? (Please add these deposits across <u>all</u> of your betting accounts) If you don't know exactly, please provide your best guess. If none, please enter "0". (validate numeric value, set minimum to 0)

    $ _____ deposited across all of my betting accounts per month

Your main betting account (ask all)

16. Which operator do you have your <u>main</u> betting account with (the account you use the most)?

    [text box] _____

17. <u>In a typical month</u>, what is the total amount that you usually <u>place</u> when betting with <u>this operator</u>? (This means what you outlay on bets on races, sports, esports and fantasy sports – regardless of any winnings.) If you don't know exactly, please provide your best guess. If none, please enter "0". (validate numeric value, set minimum to 0)

    $ _____ per month

18. <u>In a typical month</u>, what is the total amount that you usually <u>win</u> when betting with <u>this operator</u>? (This means how much you come out ahead) If you don't know exactly, please provide your best guess. If none, please enter "0". (validate numeric value, set minimum to 0)

$ _____ per month

19 In a typical month, what is the total amount that you usually deposit into your betting account with this operator? If you don't know exactly, please provide your best guess. If none, please enter "0". (validate numeric value, set minimum to 0)

$ _____ per month

20 About how often do you spend money on…

	Not at all in the last 12 months	Once a year	A few times a year	Once a month	Once a fortnight	Once a week	A few times a week	Every day
Race betting								
Sports betting								
Instant scratch tickets								
Lottery, lotto or pools tickets								
Betting on non-sporting events, such as who will win an Academy Award, a political election, or a reality TV show								
Bingo								
Keno								
Poker								
Casino games, not including poker (e.g. blackjack, roulette)								
Gaming machines, such as pokies								

21 <u>In a typical month</u>, about how much money do you spend on each form of gambling? This means your net losses over a month after any winnings. If you don't know exactly, please provide your best guess. If none, please enter "0". If you won rather than lost money, please also enter "0". (validate numeric value, set minimum to 0)

(Pipe through forms that they said they have done once a month or more often at Q20)
(Text entry, validate 1+, $ symbol before the box, 'per month' after the box)

(Text entry, validate 1+, $ symbol before the box, 'per month' after the box)

Race betting

Sports betting

Instant scratch tickets

Lottery, lotto or pools tickets

Betting on non-sporting events, such as who will win an Academy

Award, a political election, or a reality TV show

Bingo

Keno

Poker

Casino games, not including poker (e.g. blackjack, roulette)

Gaming machines, such as pokies

Problem Gambling Severity Index (ask all)

22 The next questions are about your gambling in general. Please consider <u>all types of gambling you do</u> when responding (including pokies, casino games, keno, bingo, lotteries, lotto, instant scratchies, race betting and sports betting).

Thinking about the last <u>12 months</u>, how often…. (select one option for each row)

	Never	Sometimes	Most of the time	Almost always
Have you bet more than you could really afford to lose	0	1	2	3
Have you needed to gamble with larger amounts of money to get the same feeling of excitement?	0	1	2	3
When you gambled, did you go back another day to try to win back the money you lost?	0	1	2	3
Have you borrowed money or sold anything to get money to gamble?	0	1	2	3
Have you felt that you might have a problem with gambling?	0	1	2	3
Has gambling caused you any health problems, including stress or anxiety?	0	1	2	3
Have people criticised your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true?	0	1	2	3
Has your gambling caused any financial problems for you or your household?	0	1	2	3

Have you felt guilty about the way you gamble or what happens when you gamble?	0	1	2	3

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.

Short term harms (ask all)

23 During the **last 4 weeks**, did you experience any of the following as a result of your <u>betting on races, sports, esports or fantasy sports</u>?

	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 I care about		

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 (ask all)

These questions ask about you so we can group the survey responses.

24 What is your gender? (select one)
Male
Female
Other

25 In which state or territory do you mainly reside? (select one)
New South Wales
Victoria
Queensland
South Australia
Tasmania
Northern Territory
Australian Capital Territory
Western Australia

26 What is your current marital status? (select one)
Married
Living with partner/de facto
Single/never married
Separated or divorced
Widowed

27 What is the highest level of education you have achieved? (select one)
Year 10 or below
Year 11 or equivalent
Year 12 or equivalent
A trade, technical certificate or diploma
A university or college degree
Postgraduate qualification

28 Which of the following best describes what you currently do?
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)

29 What language do you mainly speak at home? (select one)
English
Other (please specify) _____

30 DURING THE LAST MONTH, about how much was your household income before taxes? (select one)
Drop down list:
- $0 to $1,667 per month ($0 to $19,999 per year)
- $1,668 to $3,333 per month ($20,000 to $39,999 per year)
- $3,334 to $4,999 per month ($40,000 to $59,999 per year)

- $5,000 to $6,667 per month ($60,000 to $79,999 per year)
- $6,667 to $8,333 per month ($80,000 to $99,999 per year)
- $8,334 to $9,999 per month ($100,000 to $119,999 per year)
- $10,000 to $11,666 per month ($120,000 to $139,999 per year)
- $11,667 to $13,333 per month ($140,000 to $159,999 per year)
- $13,334 to $14,999 per month ($160,000 to $179,000 per year)
- $15,000 or more per month ($180,000 or more per year)

End of survey message
Thank you for taking part in this study!

Next steps
You have agreed to take part in a trial of gambling-related messaging. People taking part will be randomly allocated to different groups. Some of you will receive messages, and some may not. Do not worry if you do not receive any messages.
After the messaging stage is complete, we will invite you to a follow-up survey. You will be asked to take part in the follow-up survey whether or not you received messages.

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

Thank you again for taking part.

Nerilee Hing and the team in the Experimental Gambling Research Laboratory at CQUniversity.

Follow-up survey

A national study of pre-commitment (limit-setting) for online wagering: randomised controlled trial

Thanks for participating in the earlier stages of this important national Australian study that will help to inform future enhancements to the voluntary opt-out pre-commitment measure under the National Consumer Protection Framework for online wagering (National Framework).
Under the National Framework, individual wagering providers must at least offer customers the ability to voluntarily set deposit limits on their online wagering activity with other types of limits optional (for example: spend limits).

Follow-up study

You previously completed the initial survey for this study and may also have received some text messages from us about limit-setting. This is the follow-up and final survey for the study.

This follow-up will take about **15 minutes** to complete. It includes questions about:
- Your attitudes, intentions and behaviours around voluntary limit-setting for online wagering
- Barriers and enablers to limit-setting
- Your betting behaviour

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

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

Ethical approval for this project has been received from the Central Queensland University Human Research Ethics Committee (22193).

Would you like to see more details about the study?

- Yes – I'd like to see more details before starting the survey (goes to next page)
- No – I'd like to start the survey and consent to participating (skipped to start of survey)

A national study of pre-commitment (limit-setting) for online wagering: randomised control trial

Project Team: Professor Nerilee Hing, Professor Matthew Rockloff, Professor Matthew Browne, Dr Alex Russell, and Ms Kristie-Lee Alfrey

Qualtrics is assisting with recruiting participants for this study.

ADDITIONAL INFORMATION

This study is funded by Gambling Research Australia, which consists of gambling regulatory departments in all Australian states and territories, and the Commonwealth. The study is being conducted by CQUniversity.

The study examines messaging that might encourage consumers to voluntarily set limits on their online wagering activity, such as on deposit, spend and loss amounts. By participating, you can help Australian governments to enhance consumer protections for people who bet online.

How your confidentiality will be protected

To take part in this study, we needed your mobile phone number to send you text messages. Your mobile phone number will not be stored with your data. We will not use your mobile phone number for any other purpose. We will also not share your mobile number with any other parties.

The survey does not ask for your name. We will also remove any references to personal information that might allow someone to guess your identity. 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.

The data will be kept securely and indefinitely by CQUniversity. The de-identified data (the data collected without any way of identifying you) will be provided to the Gambling Research Australia secretariat, so that overall results can be compared to those of similar surveys they might conduct in the future.

Your participation in this study 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.

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/

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 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

To start the survey, please click here. By doing so you are consenting to participate.

Welcome to the survey

IMPORTANT

Please note that most of the questions in this survey refer to **DURING THE LAST 4 WEEKS**. That is, since you completed the previous (initial) survey.

S3. How many wagering operators or bookmakers in Australia or overseas do you <u>currently</u> have an active account with (that you have used in the last 12 months)? (validate numeric value, set minimum to 0) _____

S4. **DURING THE LAST 4 WEEKS,** about how often did you bet on **horse or greyhound races** for money? (This includes all your race betting, including online, by smartphone, tablet, interactive television, on-course, via telephone calls and through a land-based TAB)
- Everyday
- A few times a week
- Once a week
- Once a fortnight
- Once a month
- Not at all in the last month

S5. **DURING THE LAST 4 WEEKS**, about how often did you bet on **sports, esports or fantasy sports** for money? (This includes all your sports betting, including online, by smartphone, tablet, interactive television, on-course, via telephone calls and through a land-based TAB)
- Everyday
- A few times a week
- Once a week
- Once a fortnight
- Once a month
- Not at all in the last month

Deposit setting offered by online wagering operators

Our first few questions are about which operators you have an account with and whether they have informed you about setting deposit limits on your wagering account/s.

5. Which of the following Australian-licensed wagering operators or on-course bookmakers do you have an <u>active</u> account with (that is, you have used the account in the last 12 months and haven't closed it)? (Select all that apply)
   - bet365
   - BetEasy
   - Betfair
   - Betstar
   - BlueBet
   - Bookmaker.com.au
   - ClassicBet
   - DraftKings
   - Draftstars
   - EliteBet
   - Ladbrokes
   - Mad Bookie
   - MoneyBall
   - Neds.com.au
   - PalmerBet
   - PlayON
   - PlayUP
   - PointsBet
   - Skrilla
   - SportChamps
   - Sportsbet
   - Sportsbetting.com.au
   - Tabcorp ACT
   - Tabcorp VIC
   - TAB Limited NSW
   - TABtouch WA
   - TopBetta
   - TopSport
   - Ubet/TAB NT
   - Ubet/TAB QLD
   - Ubet/TAB SA
   - Ubet/TAB TAS
   - Unibet (Formerly Betchoice)
   - On-course bookmaker
   - None of the above (exclusive response)

6. <u>DURING THE LAST 4 WEEKS</u>, which of these operators have <u>prompted</u> you to set a **deposit limit** on your account (e.g. when you log into your account, via text message or email)? This is a self-set limit on the amount of money you can deposit into your wagering account during the nominated period. (Pipe through selections from Q1, select all that apply).

7. <u>DURING THE LAST 4 WEEKS</u>, which of these operators have provided you with <u>information</u> about setting **deposit limits** on your account (e.g. when you log into your account, via text message or email)? (Pipe through selections from Q1, select all that apply).

Deposit limits

The next few questions are about <u>deposit limits</u>, that is, the maximum amount you can deposit into your wagering account during the nominated period (e.g. you set a maximum deposit of $50 per month).

5a Have you set a <u>deposit limit</u> on ANY of your online wagering account/s that are <u>currently</u> in place?
- No
- Yes

5b (Display only if yes to Q5a) How many wagering accounts do you currently have a <u>deposit limit </u>for?
_____ accounts (validate numeric value, set minimum to 0)

5c (Display only if 5b = a value of 1 or higher, if Q5b = 0 go to Q5j) What is the <u>total </u>amount you can <u>deposit</u> across <u>all your wagering accounts</u>? E.g. if you have a deposit limit of $50 per week on each of 4 accounts, please enter $200 below and click 'per week'. If you have different limit times on different accounts, please standardise these to estimate a total amount per day, week, fortnight, month or year.

Total amount you can deposit $ _____ (validate numeric value, set minimum to 0)

(select one of the below options)
Per day
Per week
Per fortnight
Per month
Per year

5d (Display only if 5b = a value of 1 or higher) <u>DURING THE LAST 4 WEEKS</u>, what was the total amount that you deposited across <u>all of the wagering accounts where you have deposit limits</u>?

Total amount you deposited DURING THE LAST 4 WEEKS $ _____ (validate numeric value, set minimum to 0)

5e (Display only if 5b = a value of 1 or higher) <u>DURING THE LAST 4 WEEKS</u>, how often did you attempt to deposit more than your limit and were stopped from doing so due to your <u>deposit limit</u>? (select one response)
A few times a week
About once a week
About once every few weeks
About once in the last month
Never in the last month

5f (Display only if 5b = a value of 1 or higher) <u>DURING THE LAST 4 WEEKS</u>, how helpful did you find your <u>deposit limit/s</u> to be in managing your betting?
4 point scale:
Not at all helpful, A little helpful, Moderately helpful, Extremely helpful

5g (If yes to Q5a) <u>DURING THE LAST 4 WEEKS</u>, about how often did you check or reconsider your <u>deposit limits</u> on your online wagering account/s to ensure they are still affordable? (select one response)
A few times a week
About once a week
About once every few weeks
About once in the last month
Never in the last month

5h (If yes to Q5a) <u>DURING THE LAST 4 WEEKS</u>, how many times did you increase any of your <u>deposit limits</u>?
    Text box entry. Validated numeric. Range 0 – 100.

5i (If yes to Q5a) <u>DURING THE LAST 4 WEEKS</u>, how many times did you decrease any of your <u>deposit limits</u>?
    Text box entry. Validated numeric. Range 0 – 100.

5j (If no to Q5a) <u>DURING THE LAST 4 WEEKS</u>, have you seen a feature for setting a <u>deposit limit</u> on any of your wagering accounts?

- No
- Yes

5k (If no to Q5a) How do you feel about setting a <u>deposit limit</u> on one or more of your wagering accounts?
- Extremely negative
- Negative
- Positive
- Extremely positive

5l (If no to Q5a) How likely are you to set a <u>deposit limit</u> on any of your wagering accounts?
4 point scale: Extremely likely, likely, unlikely, extremely unlikely (select one)

Maximum or single bet limits

The next few questions are about <u>maximum or single bet limits</u>, that is, the maximum amount you can place on a single bet using your account (e.g. you set a maximum $50 on any one bet)

6a Have you set a <u>maximum or single bet limit</u> on ANY of your online wagering account/s that are <u>currently</u> in place? Maximum $50 on any one bet)

- No
- Yes

6b (Display only if yes to Q6a) How many wagering accounts do you currently have a <u>maximum or single bet limit</u> for?

_____ accounts (validate numeric value, set minimum to 0)

6c (Display only if Q6b = a value of 1 or higher, if Q6b = 0 go to Q6j) What is the <u>highest maximum or single bet </u>limit you have currently set for <u>any of your wagering accounts</u>?

Highest maximum or single bet limit set $ _____ (validate numeric value, set minimum to 0)

6d (Display only if Q6b= a value of 1 or higher) <u>DURING THE LAST 4 WEEKS</u>, what was the highest amount that you placed on a single bet using <u>any of the wagering accounts where you have maximum bet limits</u>?

Highest amount you placed on a single bet <u>DURING THE LAST 4 WEEKS</u> $ _____ (validate numeric value, set minimum to 0)

6e (Display only if Q6b = a value of 1 or higher) <u>DURING THE LAST 4 WEEKS</u>, how often did you attempt to bet more than your <u>maximum or single bet limit</u> and were stopped from doing so by this limit? (select one response)
A few times a week
About once a week
About once every few weeks
About once in the last month
Never in the last month

6f (Display only if Q6b = a value of 1 or higher) <u>DURING THE LAST 4 WEEKS</u>, how helpful did you find your <u>maximum or single bet limit/s</u> to be in managing your betting?
4 point scale: Not at all helpful, A little helpful, Moderately helpful, Extremely helpful

6g (If yes to Q6a) <u>DURING THE LAST 4 WEEKS</u>, about how often did you check or reconsider your <u>maximum or single bet limits</u> on your online wagering account/s to ensure they are still affordable? (select one response)
A few times a week
About once a week
About once every few weeks
About once in the last month
Never in the last month

6h (If yes to Q6a) <u>DURING THE LAST 4 WEEKS</u>, how many times did you increase any of your <u>maximum or single bet limits</u>?
Text box entry. Validated numeric. Range 0 – 100.

6i (If yes to Q6a) <u>DURING THE LAST 4 WEEKS</u>, how many times did you decrease any of your <u>maximum or single bet limits</u>?
Text box entry. Validated numeric. Range 0 – 100.

6j (If no to Q6a) DURING THE LAST 4 WEEKS, have you seen a feature for setting a <u>maximum or single bet limit</u> on any of your wagering accounts?

- No
- Yes

6k (If no to Q6a) How do you feel about setting a <u>maximum or single bet limit</u> on one or more of your wagering accounts if it was available?
- Extremely negative
- Negative
- Positive
- Extremely positive

6l (If no to 6a) How likely would you be to set a <u>maximum or single bet limit</u> on any of your wagering accounts if it was available?
4 point scale: Extremely likely, likely, unlikely, extremely unlikely (select one)

Loss limits

The next few questions are about <u>loss limits</u>, that is, the maximum amount you can lose on betting (after any winnings) during the nominated period (e.g. you set a maximum of $50 net losses per month).

7a Have you set a <u>loss limit</u> on ANY of your online wagering account/s that are <u>currently</u> in place?
- No
- Yes

7b (Display only if yes to Q7a) How many wagering accounts do you currently have a <u>loss limit</u> for?

_____ accounts (validate numeric value, set minimum to 0)

7c (Display only if Q7b = a value of 1 or higher, if Q7b = 0 go to Q7j) What is the <u>total loss</u> limit amount you have currently set across <u>all your wagering accounts</u>? E.g. if you have a loss limit of $50 per week on 4 accounts, please enter $200 below and click 'per week'. If you have different limit times on different accounts, please standardise these to estimate a total amount per day, week, fortnight, month or year.

Total amount you can lose $ _____ (validate numeric value, set minimum to 0)

(select one of the below options)
Per day
Per week
Per fortnight
Per month
Per year

7d (Display only if Q7b = a value of 1 or higher) <u>DURING THE LAST 4 WEEKS</u>, what was the total amount that you lost across <u>all of the wagering accounts where you have loss limits</u>? If none, please put "0".

Total amount you lost <u>DURING THE LAST 4 WEEKS</u> $ _____ (validate numeric value, set minimum to 0)

7e (Display only if Q7b = a value of 1 or higher) <u>DURING THE LAST 4 WEEKS</u>, how often did you attempt to place a bet and were stopped from doing so by your <u>loss limit</u>? (select one response)
A few times a week
About once a week
About once every few weeks
About once in the last month
Never in the last month

7f (Display only if Q7b = a value of 1 or higher) <u>DURING THE LAST 4 WEEKS</u>, how helpful did you find your <u>loss limit/s to be</u> in managing your betting?
4 point scale:
Not at all helpful, A little helpful, Moderately helpful, Extremely helpful

7g (If yes to Q7a) <u>DURING THE LAST 4 WEEKS</u>, about how often did you check or reconsider your <u>loss limits</u> on your online wagering account/s to ensure they are still affordable? (select one response)
A few times a week
About once a week
About once every few weeks
About once in the last month
Never in the last month

7h (If yes to Q7a) <u>DURING THE LAST 4 WEEKS</u>, how many times did you increase any of your <u>loss limits</u>?
Text box entry. Validated numeric. Range 0 – 100.

7i (If yes to Q7a) <u>DURING THE LAST 4 WEEKS</u>, how many times did you decrease any of your <u>loss limits</u>?
Text box entry. Validated numeric. Range 0 – 100.

7j (If no to Q7a) <u>DURING THE LAST 4 WEEKS</u>, have you seen a feature for setting a <u>loss limit</u> on any of your wagering accounts?
● No
● Yes

7k (If no to Q7a) How do you feel about setting a <u>loss limit</u> on one or more of your wagering accounts if it was available?
● Extremely negative
● Negative
● Positive
● Extremely positive

7l (If no to Q7a) How likely would you be to set a <u>loss limit</u> on any of your wagering accounts if it was available?
4 point scale: Extremely likely, likely, unlikely, extremely unlikely (select one)

Spend limits

The next few questions are about <u>spend limits</u>, that is, the maximum amount you can spend on betting during the nominated period regardless of any winnings (e.g. you set a maximum of $50 in bets <u>placed</u> per month).

8a Have you set a <u>spend limit</u> on ANY of your online wagering account/s that are <u>currently</u> in place?
- No
- Yes

8b (Display only if yes to Q8a) How many wagering accounts do you currently have a <u>spend limit</u> for?

_____ accounts (validate numeric value, set minimum to 0)

8c (Display only if Q8b = a value of 1 or higher, if Q8b = 0 go to Q8j) What is the <u>total</u> amount you can place on bets across <u>all your wagering accounts</u>? E.g. if you have a spend limit of $50 per week on 4 accounts, please enter $200 below and click 'per week'. If you have different limit times on different accounts, please standardise these to estimate a total amount per day, week, fortnight, month or year.

Total amount you can place on bets $ _____ (validate numeric value, set minimum to 0)

(select one of the below options)
Per day
Per week
Per fortnight
Per month
Per year

8d (Display only if Q8b = a value of 1 or higher) <u>DURING THE LAST 4 WEEKS</u>, what was the total amount that you placed on bets (not including winnings) across <u>all of the wagering accounts where you have spend limits</u>?

Total amount you placed on bets <u>DURING THE LAST 4 WEEKS</u> $ _____ (validate numeric value, set minimum to 0)

8e (Display only if Q8b = a value of 1 or higher) <u>DURING THE LAST 4 WEEKS,</u>, how often did you attempt to place a bet and were stopped from doing so by your <u>spend limit</u>? (select one response)
A few times a week
About once a week
About once every few weeks
About once in the last month
Never in the last month

8f (Display only if Q8b = a value of 1 or higher) <u>DURING THE LAST 4 WEEKS</u>, how helpful did you find your <u>spend limit/s</u> in managing your betting?
4 point scale:
Not at all helpful, A little helpful, Moderately helpful, Extremely helpful

8g (If yes to Q8a) <u>DURING THE LAST 4 WEEKS</u>, about how often did you check or reconsider your <u>spend limits</u> on your online wagering account/s to ensure they are still affordable? (select one response)
A few times a week
About once a week
About once every few weeks
About once in the last month
Never in the last month

8h (If yes to Q8a) <u>DURING THE LAST 4 WEEKS</u>, how many times did you increase any of your <u>spend limits</u>?
Text box entry. Validated numeric. Range 0 – 100.

8i (If yes to Q8a) <u>DURING THE LAST 4 WEEKS</u>, how many times did you decrease any of your <u>spend limits</u>?
Text box entry. Validated numeric. Range 0 – 100.

8j (If no to Q8a) <u>DURING THE LAST 4 WEEKS</u>, have you seen a feature for setting a <u>spend limit</u> on any of your wagering accounts?
● No
● Yes

8k (If no to Q8a) How do you feel about setting a <u>spend limit</u> on one or more of your wagering accounts if it was available?
● Extremely negative
● Negative
● Positive
● Extremely positive

8l (If no to Q8a) How likely would you be to set a <u>spend limit</u> on any of your wagering accounts if it was available?
4 point scale: Extremely likely, likely, unlikely, extremely unlikely (select one)

Number of bets limits
The next few questions are about <u>number of bets</u> limits, that is, the maximum number of bets you can place during the nominated period (e.g. 5 bets per month).

9a Have you set a <u>number of bets limit</u> on ANY of your online wagering account/s that are <u>currently</u> in place?
- No
- Yes

9b (Display only if yes to Q9a) How many wagering accounts do you currently have a <u>number of bets limit</u> for?
_____ accounts (validate numeric value, set minimum to 0)

9c (Display only if Q9b = a value of 1 or higher, if Q9b = 0 go to Q9j) What is the <u>total number of bets</u> you can place across <u>all your wagering accounts</u>? E.g. if you have a number of bets limit of 5 per month on 4 accounts, please enter 20 below and click 'per month'. If you have different limit times on different accounts, please standardise these to estimate a total amount per day, week, fortnight, month or year.

Total number of bets you can place _____ (validate numeric value, set minimum to 0)

(select one of the below options)
Per day
Per week
Per fortnight
Per month
Per year

9d (Display only if Q9b = a value of 1 or higher) <u>DURING THE LAST 4 WEEKS</u>, what was the total number of bets that you placed across <u>all of the wagering accounts where you have number of bets limits</u>?

Total number of bets you placed <u>DURING THE LAST 4 WEEKS</u> _____ (validate numeric value, set minimum to 0)

9e (Display only if Q9b = a value of 1 or higher) <u>DURING THE LAST 4 WEEKS</u>, how often did you attempt to place a bet and were stopped from doing so by your <u>number of bets limit</u>? (select one response)
A few times a week
About once a week
About once every few weeks
About once in the last month
Never in the last month

9f (Display only if Q9b = a value of 1 or higher) <u>DURING THE LAST 4 WEEKS</u>, how helpful did you find your <u>number of bets limit/s to be</u> in managing your betting?
4 point scale:
Not at all helpful, A little helpful, Moderately helpful, Extremely helpful

9g (If yes to Q9a) <u>DURING THE LAST 4 WEEKS</u>, about how often did you check or reconsider your <u>number of bets limits</u> on your online wagering account/s to ensure they are still affordable? (select one response)

A few times a week
About once a week
About once every few weeks
About once in the last month
Never in the last month

9h (If yes to Q9a) <u>DURING THE LAST 4 WEEKS</u>, how many times did you increase any of your <u>number of bets limits</u>?
> Text box entry. Validated numeric. Range 0 – 100.

9i (If yes to Q9a) <u>DURING THE LAST 4 WEEKS</u>, how many times did you decrease any of your <u>number of bets limits</u>?
> Text box entry. Validated numeric. Range 0 – 100.

9j (If no to Q9a) <u>DURING THE LAST 4 WEEKS</u>, did you see a feature for setting a <u>number of bets limit</u> on any of your wagering accounts?
- No
- Yes

9k (If no to Q9a) How do you feel about setting a <u>number of bets limit</u> on one or more of your wagering accounts if it was available?
- Extremely negative
- Negative
- Positive
- Extremely positive

9l (If no to Q9a) How likely would you be to set a <u>number of bets limit</u> on any of your wagering accounts if it was available?
4 point scale: Extremely likely, likely, unlikely, extremely unlikely (select one)

Bet frequency limits

The next few questions are about <u>bet frequency</u> limits, that is, a limit on how often you can place a bet (e.g. maximum of once a week).

10a Have you set a <u>bet frequency limit</u> on ANY of your online wagering account/s that are <u>currently</u> in place?
- No
- Yes

10b (Display only if yes to Q10a) How many wagering accounts do you currently have a <u>bet frequency limit</u> for?

_____ accounts (validate numeric value, set minimum to 0)

10c (Display only if Q10b = a value of 1 or higher, if Q10b = 0 go to Q10j) How <u>often</u> can you bet in total across <u>all your wagering accounts</u>? E.g. if you have a <u>bet frequency</u> limit of once a week on 4 accounts, please enter 4 below and click 'per week'. If you have different limit times on different accounts, please standardise these to estimate a total bet frequency per day, week, fortnight, month or year.

How <u>often</u> you can bet _____ times (validate numeric value, set minimum to 0)

(select one of the below options)
Per day
Per week
Per fortnight
Per month
Per year

10d (Display only Q10b = a value of 1 or higher) <u>DURING THE LAST 4 WEEKS</u>, how often did you place bets (pipe Per day/Per week/Per fortnight/Per month/Per year from previous question) across <u>all of the wagering accounts where you have bet frequency limits</u>?

How many times you placed bets <u>DURING THE LAST 4 WEEKS</u> _____ times (validate numeric value, set minimum to 0)

10e (Display only if Q10b = a value of 1 or higher) <u>DURING THE LAST 4 WEEKS</u>, how often did you attempt to place a bet and were stopped from doing so by your <u>bet frequency limit</u>? (select one response)
A few times a week
About once a week
About once every few weeks
About once in the last month
Never in the last month

10f (Display only if Q10b = a value of 1 or higher) <u>DURING THE LAST 4 WEEKS</u>, how helpful did you find your <u>bet frequency limit/s</u> to be in managing your betting?
4 point scale:
Not at all helpful, A little helpful, Moderately helpful, Extremely helpful

10g (If yes to Q10a) <u>DURING THE LAST 4 WEEKS</u>, about how often did you check or reconsider your <u>bet frequency limits</u> on your online wagering account/s to ensure they are still affordable? (select one response)

A few times a week
About once a week
About once every few weeks
About once in the last month
Never in the last month

10h (If yes to Q10a) <u>DURING THE LAST 4 WEEKS</u>, how many times did you increase any of your <u>bet frequency limits</u>?
 Text box entry. Validated numeric. Range 0 – 100.

10i (If yes to Q10a) <u>DURING THE LAST 4 WEEKS</u>, how many times did you decrease any of your <u>bet frequency limits</u>?
 Text box entry. Validated numeric. Range 0 – 100.

10j (If no to Q10a) <u>DURING THE LAST 4 WEEKS</u>, did you see a feature for setting a <u>bet frequency limit</u> on any of your wagering accounts?
- No
- Yes

10k (If no to Q10a) How do you feel about setting a <u>bet frequency limit</u> on one or more of your wagering accounts if it was available?
- Extremely negative
- Negative
- Positive
- Extremely positive

10l (If no to Q10a) How likely would you be to set a <u>bet frequency limit</u> on any of your wagering accounts if it was available?
4 point scale: Extremely likely, likely, unlikely, extremely unlikely (select one)

Time limits

The next few questions are about <u>time limits</u>, that is, the maximum amount of time you can keep your betting account active during one session (e.g. maximum of 1 hour per day).

11a Have you set a <u>time limit</u> on ANY of your online wagering account/s that are <u>currently</u> in place?
- No
- Yes

11b (Display only if yes to Q11a) How many wagering accounts do you currently have a <u>time limit</u> set for?

_____ accounts (validate numeric value, set minimum to 0)

11c (Display only if Q11b = a value of 1 or higher, if Q11b = 0 go to Q11j) What is the <u>total time</u> (in hours) you can spend betting across <u>all your wagering accounts</u>? E.g. if you have a <u>time</u> limit of 1 hour per day on 4 accounts, please enter 4 below and click 'per day'. If you have different limit times on different accounts, please standardise these to estimate a total time per day, week, fortnight, month or year.

Total time limit _____ hour/s (validate numeric value, set minimum to 0)

(select one of the below options)
Per day
Per week
Per fortnight
Per month
Per year

11d (Display only if Q11b = a value of 1 or higher) <u>DURING THE LAST 4 WEEKS</u>, what was the total <u>time</u> (in hours) that you usually kept your betting account/s active during a session across <u>all of the wagering accounts where you have time limits</u>?

Total <u>time</u> you kept your betting account/s active during a session <u>DURING THE LAST 4 WEEKS</u> _____ hours (validate numeric value, set minimum to 0)

11e (Display only if Q11b = a value of 1 or higher) <u>DURING THE LAST 4 WEEKS</u>, how often did you attempt to place a bet and were stopped from doing so by your <u>time limit</u>? (select one response)
A few times a week
About once a week
About once every few weeks
About once in the last month
Never in the last month

11f (Display only if Q11b = a value of 1 or higher) <u>DURING THE LAST 4 WEEKS</u>, how helpful did you find your <u>time limit/s</u> to be in managing your betting?
4 point scale:
Not at all helpful, A little helpful, Moderately helpful, Extremely helpful

11g (If yes to Q11a) <u>DURING THE LAST 4 WEEKS</u>, about how often did you check or reconsider your <u>time limits</u> on your online wagering account/s to ensure they are still affordable? (select one response)

A few times a week
About once a week
About once every few weeks
About once in the last month
Never in the last month

11h (If yes to Q11a) <u>DURING THE LAST 4 WEEKS</u>, how many times did you increase any of your <u>time limits</u>?
Text box entry. Validated numeric. Range 0 – 100.

11i (If yes to Q11a) <u>DURING THE LAST 4 WEEKS</u>, how many times did you decrease any of your <u>time limits</u>?
Text box entry. Validated numeric. Range 0 – 100.

11j (If no to Q11a) <u>DURING THE LAST 4 WEEKS</u>, did you see a feature for setting a <u>time limit</u> on any of your wagering accounts?
● No
● Yes

11k (If no to Q11a) How do you feel about setting a <u>time limit</u> on one or more of your wagering accounts if it was available?
● Extremely negative
● Negative
● Positive
● Extremely positive

11l (If no to Q11a) How likely would you be to set a <u>time limit</u> on any of your wagering accounts if it was available?
4 point scale: Extremely likely, likely, unlikely, extremely unlikely (select one)

Account-based vs cash betting (ask all)
We'd now like to ask some questions about your account-based betting (online and by telephone) and any cash-based betting (at a TAB, venue, on-course) on races, sports, esports and fantasy sports. Please remember that this survey is completely anonymous.

12. <u>DURING THE LAST 4 WEEKS</u>, about what percentage of your total betting on races, sports, esports and fantasy sports did you do through each of the following channels? (validate to add up to 100%)
    a. Computer or laptop
    b. Smartphone
    c. Tablet or iPad
    d. Via telephone calls
    e. Cash-based betting outlet (e.g. TAB, in a hotel, club or casino, on-course, at a live event)

13. <u>DURING THE LAST 4 WEEKS</u>, what was the total amount that you <u>placed</u> when betting using your account/s and in cash? (This means what you outlayed on bets on races, sports, esports and fantasy sports – regardless of any winnings.) If you don't know exactly, please provide your best guess. If none, please enter "0". (validate numeric value, set minimum to 0)

    Account-based betting $ _____ placed during the last 4 weeks
    Cash-based betting $ _____ placed during the last 4 weeks

14. <u>DURING THE LAST 4 WEEKS</u>, what was the total amount that you <u>won</u> when betting using your account/s and in cash? (This means how much you came out ahead on bets on races, sports, esports and fantasy sports). If you don't know exactly, please provide your best guess. If none, please enter "0". (validate numeric value, set minimum to 0)

    Account-based betting $ _____ in winnings during the last 4 weeks
    Cash-based betting $ _____ in winnings during the last 4 weeks

15. <u>DURING THE LAST 4 WEEKS</u>, what was the <u>total</u> amount that you <u>deposited</u> across all your betting accounts? (Please add these deposits across <u>all</u> of your betting accounts) If you don't know exactly, please provide your best guess. If none, please enter "0". (validate numeric value, set minimum to 0)

    $ _____ deposited across all of my betting accounts during the last 4 weeks

Your main betting account (ask all)

16. Which operator do you have your <u>main</u> betting account with (the account you use the most)?

    [text box] _____

17. <u>DURING THE LAST 4 WEEKS</u>, what was the total amount that you <u>placed</u> when betting with <u>this operator</u>? (This means what you outlayed on bets on races, sports, esports and fantasy sports – regardless of any winnings.) If you don't know exactly, please provide your best guess. If none, please enter "0". (validate numeric value, set minimum to 0)

    $ _____ during the last 4 weeks

18 DURING THE LAST 4 WEEKS, what was the total amount that you <u>won</u> when betting with <u>this operator</u>? (This means how much you came out ahead on bets on races, sports, esports and fantasy sports). If you don't know exactly, please provide your best guess. If none, please enter "0". (validate numeric value, set minimum to 0)

     $ _____ during the last 4 weeks

19 DURING THE LAST 4 WEEKS, what was the <u>total</u> amount that you <u>deposited</u> into your betting account with <u>this operator</u>? If you don't know exactly, please provide your best guess. If none, please enter "0". (validate numeric value, set minimum to 0)

     $ _____ during the last 4 weeks

20 DURING THE LAST 4 WEEKS, about how often did you spend money on…

	Not at all in the last month	Once in the last month	Once a fortnight	Once a week	A few times a week	Every day
Race betting						
Sportsbetting						
Instant scratch tickets						
Lottery, lotto or pools tickets						
Betting on non-sporting events, such as who will win an Academy Award, a political election, or a reality TV show						
Bingo						
Keno						
Poker						
Casino games, not including poker (e.g. blackjack, roulette)						
Gaming machines, such as pokies						

21 <u>DURING THE LAST 4 WEEKS</u>, about how much money did you spend on each form of gambling? This means your net losses over the month after any winnings. If you don't know exactly, please provide your best guess. If none, please enter "0". If you won rather than lost money, please also enter "0". (validate numeric value, set minimum to 0)

(Pipe through forms that they said they have done once a month or more often at Q20)
(Text entry, validate 1+, $ symbol before the box, 'during the last month' after the box)

(Text entry, validate 1+, $ symbol before the box, 'during the last month' after the box)

Race betting

Sports betting

Instant scratch tickets

Lottery, lotto or pools tickets

Betting on non-sporting events, such as who will win an Academy

Award, a political election, or a reality TV show

Bingo

Keno

Poker

Casino games, not including poker (e.g. blackjack, roulette)

Gaming machines, such as pokies

Short term harms (ask all)
23a <u>DURING THE LAST 4 WEEKS</u>, did you experience any of the following as a result of your <u>betting on races, sports, esports or fantasy sports</u>?

	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 I care about		

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

24. Which of the following best describes what you currently do?
   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)

25 DURING THE LAST MONTH, about how much was your <u>household</u> income <u>before taxes</u>?
   (select one)
   Drop down list:
- $0 to $1,667 per month ($0 to $19,999 per year)
- $1,668 to $3,333 per month ($20,000 to $39,999 per year)
- $3,334 to $4,999 per month ($40,000 to $59,999 per year)
- $5,000 to $6,667 per month ($60,000 to $79,999 per year)
- $6,667 to $8,333 per month ($80,000 to $99,999 per year)
- $8,334 to $9,999 per month ($100,000 to $119,999 per year)
- $10,000 to $11,666 per month ($120,000 to $139,999 per year)
- $11,667 to $13,333 per month ($140,000 to $159,999 per year)
- $13,334 to $14,999 per month ($160,000 to $179,000 per year)
- $15,000 or more per month ($180,000 or more per year)

End of survey message

Thank you for taking part in this study!

If you have any questions about this project, please contact us at n.hing@cqu.edu.au

Nerilee Hing and the team in the Experimental Gambling Research Laboratory at CQUniversity.

Appendix C. Detailed descriptive results from the discrete choice experiment survey

C.1. Sample characteristics

A total of 15,642 potential respondents started the survey. Of these, 9,858 were screened out for not meeting the inclusion criteria, specifically: not having an account with a wagering operator (n=6,221), betting less than once a month (n=1,813), not consenting to take part (n=1,813), not living in Australia (n= 53) and being under 18 (n=123). Two series of data quality checks were conducted. In the survey, an attention check was employed, with n=1,224 failing this check. A further 15 respondents were removed for speeding through the survey (defined as completing the survey in less than one-third the median response time from the soft launch). Data quality checks on the final data identified another 27 for removal due to straightlining or low-quality open-ended responses. Of the remaining 4,518, 1,377 started but did not complete the survey, for a completion rate of 69.5%.

C.1.1. Demographics

Of the 3,141 respondents, 1,907 (60.7%) identified as male, 1,224 (39.0%) identified as female, and 10 (0.3%) identified as a gender other than male or female (Table C.1). Reported age ranged from 18-99 years with a mean age of 38.78 years (*SD*=14.94, median=35), which is reasonably consistent with the mean age of online gamblers in an Australian representative survey of 37 years (Hing et al., 2014). The sample mostly consisted of respondents from NSW, Victoria and Queensland, in line with the population distribution. Almost half of the sample (47.9%) had completed a university degree or postgraduate qualifications, and 97.0% spoke English as their main language at home. The sample reported a median household income of $80,000-$99,999.

Table C.1 - Demographic statistics in the total sample (N=3,141)

Variable	n	%
Gender		
Male	1,907	60.7
Female	1,224	39.0
Other	10	0.3
State or territory of residence		
New South Wales	1,103	35.1
Victoria	821	26.1
Queensland	635	20.2
South Australia	259	8.2
Tasmania	81	2.6
Northern Territory	16	0.5
Australian Capital Territory	35	1.1
Western Australia	191	6.1
Highest level of education		
Year 10 or below	199	6.3
Year 11 or equivalent	99	3.2
Year 12 or equivalent	543	17.3
A trade, technical certificate or diploma	797	25.4
A university or college degree	1,114	35.5
Postgraduate qualifications	389	12.4
Main language spoken at home		
English	3,046	97.0
A language other than English	95	3.0
Annual household pre-tax income		
$0 to $19,999	120	3.8
$20,000 to $39,999	358	11.4
$40,000 to $59,999	385	12.3
$60,000 to $79,999	443	14.1
$80,000 to $99,999	479	15.2
$100,000 to $119,999	444	14.1
$120,000 to $139,999	294	9.4
$140,000 to $159,999	246	7.8
$160,000 to $179,000	100	3.2
$180,000 or more	272	8.7

Note: Most common 'LOTE' responses - Hindi (10), Cantonese (9), Mandarin (7), Telugu (5)

C.1.2. Betting behaviour and PGSI

Consistent with a nationally representative sample of online gamblers (Hing et al., 2014), most respondents had one (45.0%) or two (30.1%) accounts with different operators, with the median number of accounts being 2 (Table C.2). Approximately half of the sample bet on sports and/or races at least weekly (Table C.3). This high betting frequency reflects the survey inclusion criteria of betting at least once a month. As expected, given this betting frequency, most of the sample were at some risk of gambling-related problems: 21.4% were non-problem gamblers, 19.8% low risk gamblers, 24.4% moderate risk gamblers and 34.4% problem gamblers (Table C.4). The mean PGSI score was 6.33 (SD=6.60), median = 4. Reflecting the sampling of at-least monthly bettors, problem and at-risk gambling was much more prevalent compared to those found in a nationally representative survey of Australian online gamblers (Hing et al. 2014) where 58.9% were non-problem gamblers, 24.8% low risk gamblers, 13.6% moderate risk gamblers and 2.7% problem gamblers.

Table C.2 - Number of accounts statistics in the total sample (N=3,141)

Number of accounts	n	%
1	1,415	45.0
2	947	30.1
3	342	10.9
4	165	5.3
5	98	3.1
6 or more	174	5.6

Note: For calculation of these summary statistics, values above 35 were trimmed to 35. Mean number of accounts: 2.48 (SD=3.65), median = 2.

Table C.3 - Frequency of race and sports betting statistics in the total sample (N=3,141)

Frequency	Race betting		Sports betting	
	n	%	n	%
Not at all in the last 12 months*	103	3.3	266	8.5
Once a year	48	1.5	44	1.4
A few times a year	134	4.3	174	5.5
Once a month	534	17.0	474	15.1
Once a fortnight	436	13.9	401	12.8
Once a week	746	23.8	792	25.2
A few times a week	850	27.1	757	24.1
Everyday	290	9.2	233	7.4

*All respondents bet on *either* sports or races at-least monthly, but they may have not gambled on one of these forms at all in the last 12 months.

Table C.4 - PGSI group statistics in the total sample (N=3,141)

PGSI group	n	%
Non-problem gambler	672	21.4
Low risk gambler	622	19.8
Moderate risk gambler	765	24.4
Problem gambler	1,082	34.4

Note: PGSI scores ranged from 0-27, mean = 6.33 (*SD*=6.60), median = 4.

C.2. Limit-setting

C.2.1. Deposit limits set per operator

Table C.5 shows the number of participants with an account with each operator. This table also shows the proportion of participants who have an account with each operator who have been: a) prompted by the operator to set a deposit limit and b) provided information by the operator about setting a deposit limit. These relative percentages should be interpreted with caution for the operators with a small number of account-holders amongst respondents (i.e., less than 100). Of those with accounts with the top 10 operators in the sample, between 42.7% and 64.3% had been prompted to set a deposit limit, and between 49.1% and 68.4% had been provided with information about setting a deposit limit. Most participants (81.4%) reported that they had tried to find information on setting deposit limits, and 87.2% of those who had tried reported that it was easy or extremely easy to find this information (Table C.6).

Table C.5 - Accounts, deposit limit prompts and deposit limit information provision by operators in the total sample (N=3,141).

Operator	Participants with an account		Participants prompted to set deposit limit		Participants provided with information about setting deposit limit	
	n	% total sample	n	% with account	n	% with account
Sportsbet	1582	50.4	906	57.3	1003	63.4
bet365	678	21.6	436	64.3	459	67.7
BetEasy	648	20.6	277	42.7	333	51.4
Ladbrokes	575	18.3	250	43.5	299	52.0
TAB Limited NSW	502	16.0	260	51.8	302	60.2
BestBet	310	9.9	202	65.2	212	68.4
Tabcorp VIC	286	9.1	132	46.2	157	54.9
Ubet/TAB QLD	250	8.0	124	49.6	144	57.6
PointsBet	222	7.1	95	42.8	109	49.1
Betfair	190	6.0	83	43.7	93	48.9
Neds.com.au	189	6.0	63	33.3	74	39.2
Sportsbetting.com.au	136	4.3	57	41.9	64	47.1
TABtouch WA	132	4.2	64	48.5	69	52.3
Betchoice/Unibet	126	4.0	71	56.3	63	50.0
William Hill	122	3.9	57	46.7	53	43.4
SportChamps	115	3.7	45	39.1	52	45.2
Betstar	103	3.3	42	40.8	41	39.8
Ubet/TAB SA	102	3.2	55	53.9	64	62.7
PlayUP	97	3.1	40	41.2	35	36.1
Skrilla	97	3.1	55	56.7	51	52.6
BlueBet	88	2.8	36	40.9	40	45.5
Bookmaker.com.au	88	2.8	41	46.6	43	48.9
MoneyBall	83	2.6	30	36.1	28	33.7
Ubet/TAB TAS	69	2.2	32	46.4	37	53.6
TopSport	61	1.9	26	42.6	26	42.6
Tabcorp ACT	59	1.9	31	52.5	28	47.5
ClassicBet	57	1.8	18	31.6	18	31.6
Ubet/TAB NT	55	1.8	21	38.2	20	36.4
Draftstars	52	1.7	14	26.9	10	19.2
TopBetta	48	1.5	14	29.2	15	31.3
Mad Bookie	47	1.5	13	27.7	17	36.2
PalmerBet	47	1.5	10	21.3	7	14.9
DraftKings	43	1.4	12	27.9	9	20.9
EliteBet	39	1.2	11	28.2	16	41.0
PlayON	38	1.2	17	44.7	16	42.1
On-course bookmaker	37	1.2	13	35.1	12	32.4
None of the above			937		765	

Note: Because most respondents had accounts with multiple operators, percentages can sum to greater than 100%.

Table C.6 - Ease of finding information about setting deposit limits on your wagering account (N=3,141).

How easy it is to find information about setting deposit limits on your wagering account/s?	n	%	% of those who have tried to find this information
Extremely easy	668	21.3	26.1
Easy	1,562	49.7	61.1
Difficult	296	9.4	11.6
Extremely difficult	32	1.0	1.3
I've never tried to find that information	583	18.6	-

C.2.2. Types of limits set

Respondents were asked which of the seven types of limits they had set; however not all types of limits are available from all wagering operators which may explain the low take-up of some types of limits. Most participants (58.8%) had set at least one type of limit. The most commonly set were deposit limits (40.8%), spend limits (36.4%), and maximum or single bet limits (36.0%), followed by loss limits (28.9%), bet frequency limits (24.2%), number of bets limits (24.1%), and time limits (22.4%; Table C.7). The mean number of different types of limits set was 2.13 (SD=2.34), median = 1.

Of those who had set limits, the vast majority found it easy (59.8%) or extremely easy (31.9%) to set these limits (Table C.8).

Table C.7 - Types of limits that participants have currently set on wagering accounts (N=3,141).

Types of limits that are currently set on wagering account/s	n	% of total sample	% of those who have set limits
Deposit limit	1,281	40.8	69.3
Maximum or single bet limit	1,131	36.0	61.2
Loss limit	908	28.9	49.1
Spend limit	1,143	36.4	61.9
Number of bets limit	757	24.1	41.0
Bet frequency limit	761	24.2	41.2
Time limit	703	22.4	38.0
None of the above	*1,293*	*41.2*	

Note: Mean number of different types of limits set was 2.13 (SD = 2.34), median = 1. A total of 1,848 participants (58.8%) had set at least one type of limit.

Table C.8 - Ease or difficulty of setting limits on online wagering accounts (N=1,848).

How easy or difficult was the process involved in setting limits on your online wagering? (Asked of limit setters only)	n	%
Extremely easy	590	31.9
Easy	1,106	59.8
Difficult	134	7.3
Extremely difficult	18	1.0

C.2.3. Reviewing, increasing and decreasing limits

Slightly under half of the participants reported checking or reconsidering their limits once every few weeks or more often, while 23.4% reported never checking or reconsidering these limits within the last 12 months (Table C.9). Around half reported never increasing or decreasing their limits, and most of those who reported increasing or decreasing their limits did so only one or two times within the last 12 months (Tables C.10 and C.11).

Table C.9 - Frequency of checking or reconsidering limits on online wagering accounts to ensure they are still affordable (N=1,848).

In the last 12 months, about how often have you checked or reconsidered your limits on your online wagering account/s to ensure they are still affordable? (Asked of limit setters only)	n	%
1 A few times a week	186	10.1
2 About once a week	386	20.9
3 About once every few weeks	323	17.5
4 Once every few months	307	16.6
5 Once or twice a year	213	11.5
6 Never in the last 12 months	433	23.4

Table C.10 - Frequency of increasing any limits (N=1,848).

In the last 12 months, how many times have you increased any of your limits? (Asked of limit setters only)	n	%
0	911	49.3
1	259	14.0
2	230	12.4
3	144	7.8
4	77	4.2
5	71	3.8
6	35	1.9
7	12	0.6
8	7	0.4
9	2	0.1
10	7	0.4
11	2	0.1
12 or more	91	5.9

Table C.11 - Frequency of decreasing any limits (N=1,848).

In the last 12 months, how many times have you decreased any of your limits? (Asked of limit setters only)	n	%
0	1037	56.1
1	288	15.6
2	180	9.7
3	86	4.7
4	53	2.9
5	63	3.4
6	32	1.7
7	13	0.7
8	9	0.5
9	5	0.3
10	10	0.5
11	2	0.1
12 or more	70	3.8

C.2.4. Likelihood of setting different types of limits

If a participant had not set a particular type of limit, they were asked how likely they were to set that type of limit if it was available. More than half of those who had not set each type of limit indicated that they were unlikely or extremely unlikely to do so (Figure C.1).[3]
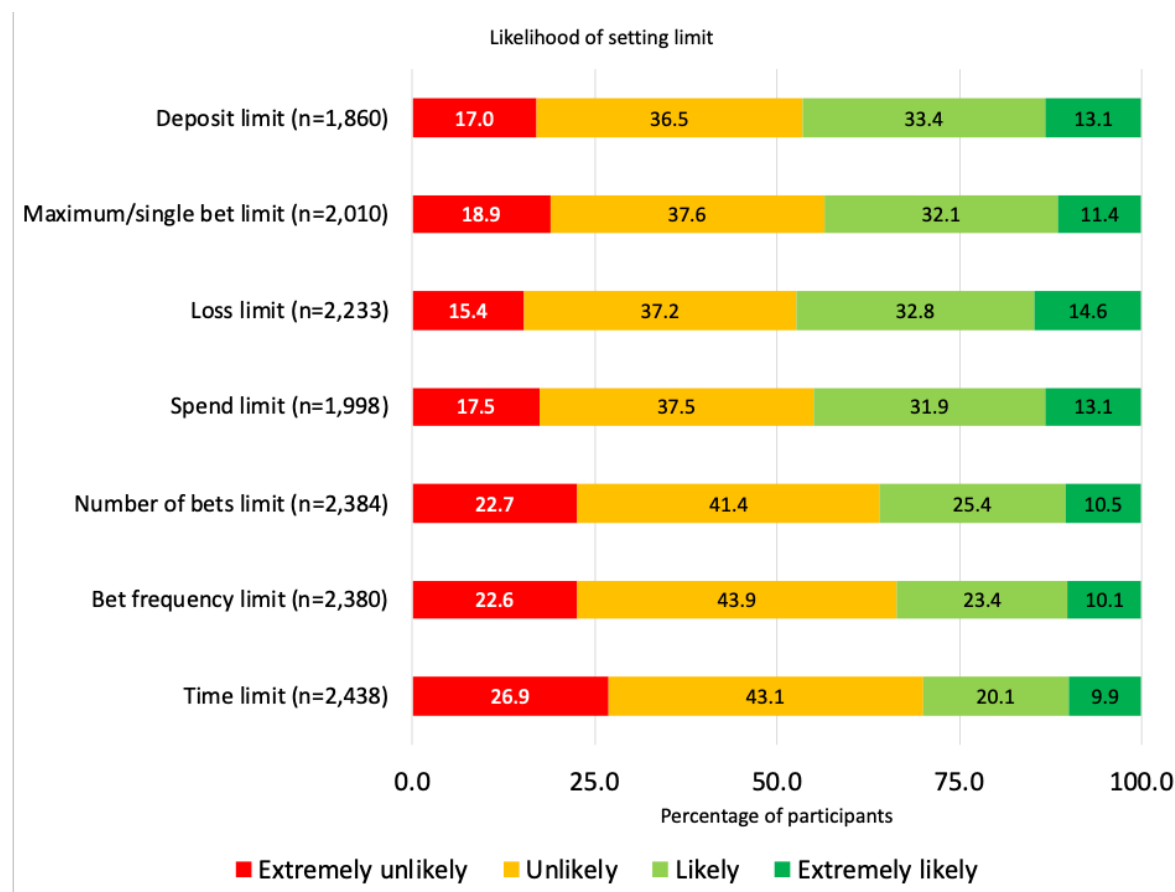
Figure C.1 - Likelihood of setting each type of limit, amongst those who had not set that particular type of limit.

C.2.5. Size of limits compared to actual expenditure

Respondents who had set each type of limit were asked the amount which they had set, and this was compared to the amount they usually deposited or bet as relevant to each type of limit. For example, respondents who had set deposit limits were asked the total size of their deposit limits (in total across all accounts where they had set deposit limits), and how much they usually deposited across all accounts where

---

[3] Note: Numbers across questions may not sum to the entire sample size, because of a small number of inconsistent responses. While data screening checked for inconsistent responses, and any major issues resulted in that person's data being removed from analyses, the inconsistencies here were based on a small amount of data so they did not warrant removal from all analyses.

they had set deposit limits. This allowed for a comparison of the size of limits compared to their usual behaviour.

As shown in Figure C.2, between 22.9% and 44.7% of those with each type of limit usually bet to up to the level of their limit (yellow portion of each bar). However, many respondents had set limits that were higher than their usual betting amount (green portions of each bar). Between 10.5% and 17.9% had set limits that were 1-1.99 times higher than their usual betting amount; between 17.1% and 40.8% had set limits that were 2-9.99 times higher than their usual betting amount; and between 2.7% and 7.8% had set limits that were at least 10 times higher than their usual betting amount. These results indicate that some respondents set limits that were so much higher than their usual betting that they essentially do not function as limits. As also seen in Figure C.2, between 11.7% and 25.7% reported usually betting at a higher level higher than the limit they had set (red portion of each bar), with the highest discrepancy being for time limits. Reasons for reporting amounts higher than their limits are unclear. Possible explanations include non-enforcement of some limits (e.g., by some Australian or offshore operators), respondents setting their limits or changing their limits recently in a way that does not reflect their usual betting behaviour, or misreporting their limits or their betting behaviour in the survey.
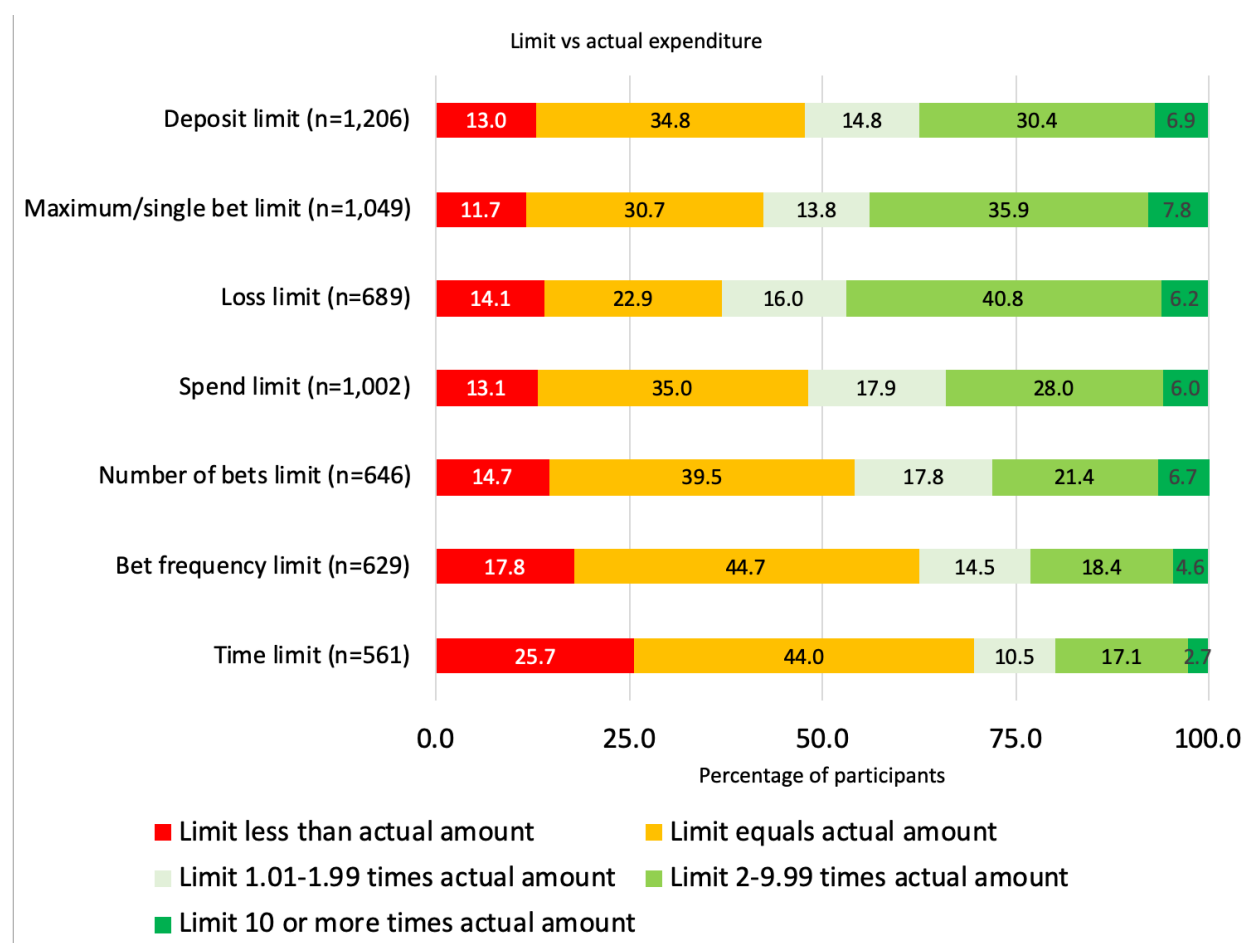
Figure C.2 - Limits vs actual behaviour by limit type, amongst those who had set each limit.

C.2.6. How frequently participants have tried to bet more than their limit

Respondents who had set each type of limit were asked how often each limit had stopped their deposit or betting behaviour during the last 12 months, i.e., the respondent had attempted to deposit or bet over their limit but had been stopped from doing so by the system. Between 16.8% and 37.2% reported that each limit type had never stopped their deposit or betting behaviour in the last 12 months. However, between 37.4% and 66.3% of those with each type of limit reported that the limit had stopped their betting or deposit behaviour at least once every few weeks (Figure C.3).
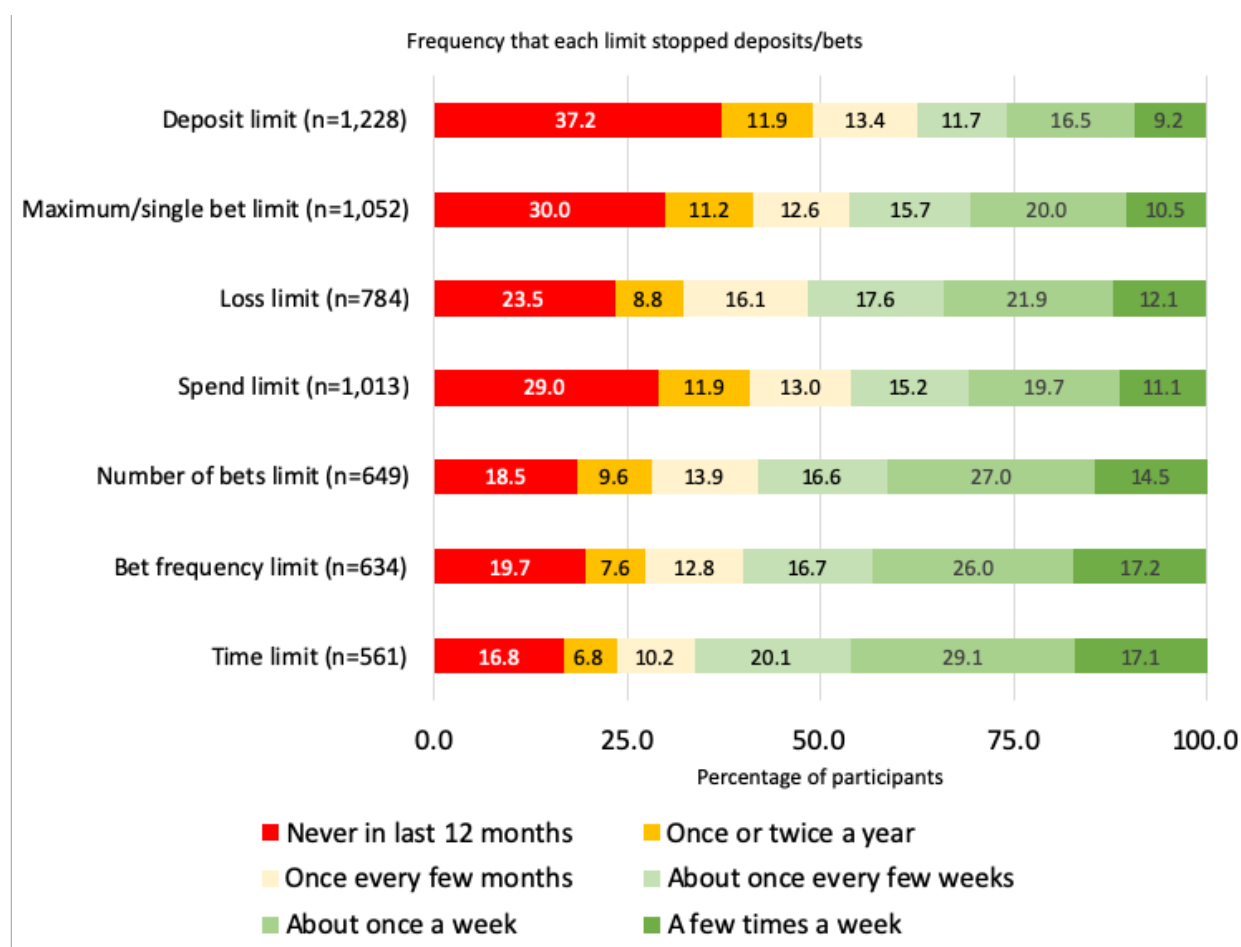
Figure C.3 - Frequency that each limit stopped behaviour during the last 12 months, amongst those who have set each limit type.

C.2.7. Perceived helpfulness of each type of limit

At least 90% of participants with each type of limit reported that they found the limits helpful or extremely helpful, as indicated in Figure C.4.
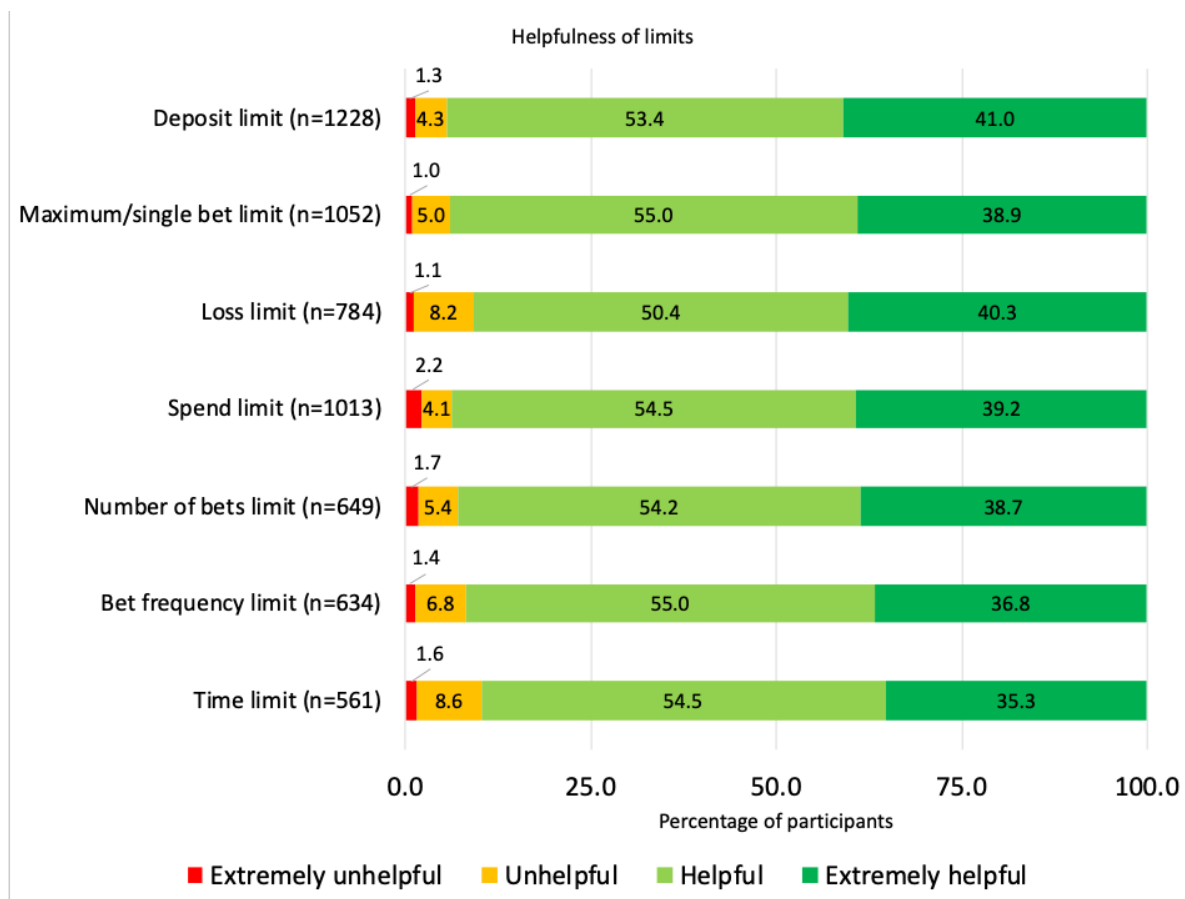
Figure C.4 - Rated helpfulness of each limit type, amongst those who had set each limit.

C.3. Comparisons between participants who have and have not set limits

Higher proportions of participants who were female, younger, had a university qualification, and mainly spoke a language other than English at home were more likely to set limits. Those who were more frequent race and sports bettors were also more likely to set limits (Mann-Whitney U = 1,100,098, Z = -3.865, p < .001 and Mann-Whitney U = 1,003,717.5, Z = -7.781, p < .001 respectively). Participants who set limits were also significantly more likely to be classified as a problem gambler (Table C.12).

Conversely, participants who were male, had a lower level of education, spoke English as their main language at home, bet less frequently, and were classified as a non-problem or low risk gambler were less likely to set limits.

No significant differences were observed by state or territory (χ^2(7)=13.78, p=.055) or by income (Mann-Whitney U = 1,166,026.5, Z = -1.156, p = .248).

Table C.12 - Comparisons between those who have and have not set limits in terms of demographics and PGSI (N=3,141).

Variable	Have not set limits (n=1,293)		Have set at least one limit (n=1,848)	
	n	%	n	%
Gender ($\chi^2(2)$=10.46, p=.005,ϕ=.058)				
Male	821	63.5*	1,086	58.8
Female	471	36.4	753	40.7*
Other	1	0.1	9	0.5*
Age (Welch t(2558.74)=16.47, p<.001)				
Age Mean (SD)	43.91 (15.32)		35.19 (13.56)	
Education ($\chi^2(5)$=61.75, p<.001,ϕ=.140)				
Year 10 or below	108	8.4*	91	4.9
Year 11 or equivalent	42	3.2	57	3.1
Year 12 or equivalent	247	19.1*	296	16.0
A trade, technical certificate or diploma	380	29.4*	417	22.6
A university or college degree	388	30.0	726	39.3*
Postgraduate qualification	128	9.9	261	14.1*
Language ($\chi^2(1)$=13.12, p<.001,ϕ=.065)				
English	1,271	98.3*	1,775	96.0
A language other than English	22	1.7	73	4.0*
PGSI ($\chi^2(3)$=314.27, p<.001,ϕ=.316)				
Non-problem gambler	412	31.9*	260	14.1
Low risk gambler	334	25.8*	288	15.6
Moderate risk gambler	307	23.7	458	24.8
Problem gambler	240	18.6	842	45.6*

Appendix D. Detailed descriptive results from the RCT baseline and follow-up surveys

BASELINE SURVEY

D.1. Sample characteristics

A total of 14,421 potential respondents started the baseline survey. Of these, 9,111 were screened out for not meeting the inclusion criteria, specifically: not having an account with a wagering operator (n=5,730), not consenting to take part (n=1,961), not betting frequently enough (n=1,276), not being in Australia (n=121) and being under the age of 18 (n=23). A further 1,344 tried to start or continue the survey after the required sample size was met and were screened out. Respondents were informed at the start of the survey that they would be required to provide their mobile phone number to continue with the study, since this was required to send them messages. Despite this, 1,951 exited the survey when asked for their mobile number. A further 60 were removed due to data quality checks after they completed the survey for issues such as speeding, straightlining or other poor-quality responses. Of the remaining 1,955, 706 started but did not complete the survey (with 511 of those dropping out before being asked to provide their mobile phone number), leaving a total of 1,249 respondents from 1,444 eligible respondents (completion rate = 86.5%).

D.1.1. Demographics

Of the 1,249 respondents, 778 (62.3%) identified as male, 470 (37.6%) identified as female, and 1 (0.1%) identified as a gender other than male or female (Table D.1). Reported age ranged from 18-70 years, with a mean age of 40.6 years (*SD*=14.7, median=37). The sample mostly consisted of respondents from New South Wales, Victoria and Queensland, in line with the population distribution. The majority (66.1%) of respondents were married or living with a partner. Almost half of the sample (48.9%) had completed a university or postgraduate qualification, and 95.9% spoke English as their main language at home. Most of the sample had full-time employment (56.9%), and the sample reported a median income of $80,000-$99.999. The demographic characteristics largely align with representative Australian figures indicating that race and sports bettors tend to be younger adult males, in full-time employment, with higher-than-average income (Armstrong & Carroll, 2017a, 2017b).

Table D.1 - Demographic statistics in the total sample (N=1,249)

Variable	n	%
Gender		
Male	778	62.3
Female	470	37.6
Other	1	0.1
State or territory of residence		
New South Wales	428	34.3
Victoria	385	30.8
Queensland	170	13.6
South Australia	104	8.3
Tasmania	19	1.5
Northern Territory	7	0.6
Australian Capital Territory	25	2.0
Western Australia	111	8.9
Marital status		
Married	584	46.8
Living with partner/de-facto	241	19.3
Single/never married	327	26.2
Separated or divorced	84	6.7
Widowed	13	1.0
Highest level of education		
Year 10 or below	82	6.6
Year 11 or equivalent	26	2.1
Year 12 or equivalent	197	15.8
A trade, technical certificate or diploma	333	26.7
A university or college degree	431	34.5
Postgraduate qualifications	180	14.4
Employment		
Work full-time	711	56.9
Work part-time or casual	188	15.1
Self-employed	68	5.4
Unemployed and looking for work	56	4.5
Full-time student	30	2.4
Full-time home duties	45	3.6
Retired	110	8.8
Sick or disability pension	28	2.2
Other	13	1.0
Main language spoken at home		
English	1,198	95.9
A language other than English	51	4.1

Annual household pre-tax income		
$0 to $19,999	56	4.5
$20,000 to $39,999	145	11.6
$40,000 to $59,999	205	16.4
$60,000 to $79,999	190	15.2
$80,000 to $99,999	189	15.1
$100,000 to $119,999	145	11.6
$120,000 to $139,999	101	8.1
$140,000 to $159,999	67	5.4
$160,000 to $179,000	42	3.4
$180,000 or more	109	8.7

Note: Most common 'LOTE' responses - Mandarin (8), Cantonese (5), Vietnamese (3), Nepali (3)
Questions: Baseline Survey (IS) S2, 24-30

D.1.2. Betting behaviour and spend

Most respondents had one (44.4%) or two (30.3%) accounts with different operators, with the median number of accounts being 2 (Table D.2). Almost half of the sample bet on sports (44.8%) and/or races (47.7%) on at least a weekly basis (Figure D.1). This high betting frequency reflects the survey inclusion criteria of betting at least once a month. The typical average reported monthly spend was highest across sports ($106.54) and race ($101.32) betting (Table D.3).

Table D.2 - Number of accounts statistics in the total sample (N=1,249)

Number of accounts	n	%
1	555	44.4
2	379	30.3
3	159	12.7
4	67	5.4
5	44	3.5
6 or more	45	3.7

Note: mean number of accounts: 2.19 (SD=2.39), median = 2.
Question: BS S3

Figure D.1 - Frequency of betting across gambling types (N=1,249)

Question: BS 20

Table D.3 – Typical monthly spend on each gambling form

	N	$ Median	M *(SD)*	Percentage of total mean spend
Race betting	1,123	25.00	101.32 (431.81)	19.0%
Sports betting	1,108	20.00	106.54 (490.76)	20.0%
Instant scratch tickets	827	10.00	31.87 (185.19)	6.0%
Lottery, lotto or pools tickets	996	20.00	43.31 (174.51)	8.1%
Betting on non-sporting events	459	2.00	29.37 (77.89)	5.5%
Bingo	384	5.00	31.10 (72.39)	5.8%
Keno	542	5.00	27.63 (80.31)	5.2%
Poker	405	10.00	41.98 (101.58)	7.9%
Casino games, excluding poker	544	9.00	61.04 (210.31)	11.5%
Gaming machines	722	10.00	59.12 (165.22)	11.1%

Question: BS 21

D.1.3. Account-based versus cash betting

Respondents were asked about their account-based and cash betting behaviours. In a typical month, most respondents used a smartphone (54.0%) or computer/laptop (30.5%) to place their race, sports, esports or fantasy sports bets (Table D.4). Around three-quarters of the money spent (77.2%) and won (73.7%) in a typical month, was via account-based betting rather than cash-based betting (Table D.5). Table D.6 details the financial behaviours associated with online betting accounts. The mean amount deposited across all betting accounts in a typical month was $366.64, with a mean of $300 deposited into the participants main betting account. Note that the SD for spend often exceeds the mean, reflecting the high positive skew for this variable.

Table D.4 - Percentage of total race, sports, esports and fantasy sports betting per channel (N=1,249)

Channel	M	SD
Smartphone	54.0%	40.71
Computer or laptop	30.5%	37.89
Tablet or iPad	7.0%	18.38
Cash-based betting outlet (e.g. TAB, in a hotel, club or casino, on-course, at a live event)	6.3%	15.21
Via telephone calls	2.2%	8.35

Question: BS 12

Table D.5 - Amount spent and won across account- and cash-based betting (N=1,249)

	Account-based Median M (*SD*)	% of total	Cash-based Median M (*SD*)	% of total
Total amount placed (outlay on races, sports, esports and fantasy sports betting) in a typical month	$100.00 $280.04 (940.22)	77.2	$0.00 $82.42 (336.60)	22.8
The total amount won (amount ahead on races, sports, esports and fantasy sports betting) in a typical month	$70.00 $256.20 (760.22)	73.7	$0.00 $91.86 (523.18)	26.3

Questions: BS 13-14

Table D.6 - Amount spent and won across the main betting account (N=1,249)

	$ Amount Median	$ Amount M (*SD*)
Total amount deposited across all betting accounts in a typical month	100.00	366.64 (1,821.62)
Total amount placed via main betting account (outlay on races, sports, esports and fantasy sports betting) in a typical month	100.00	300.00 (905.82)
Total amount won via main betting account (amount ahead) in a typical month	60.00	253.41 (982.37)
Total amount deposited into main betting account in a typical month	60.00	244.25 (1,047.31)

Questions: BS 15, 17-19

D.1.4. PGSI and gambling-related harms

Most of the sample were at some level of risk of gambling problems (low risk, moderate risk or problem gamblers) with 29.7% non-problem gamblers, 18.7% low risk gamblers, 22.3% moderate risk gamblers and 29.2% problem gamblers (Table D.7). The mean PGSI score was 5.27 (*SD*=6.18), median = 3. Using the Short Gambling Harm Screen (SGHS) over half of the participants (51.6%) experienced at least one harm from gambling on races, sports, esports or fantasy sports during the previous 4 weeks. Over one-quarter (26.4%) experienced four or more harms. The most common harms reported were the reduction of available savings (29%), recreational expenses (26.6%) and spending money (23.8%), as well as having regrets about gambling (25.8%; Table D.8).

Table D.7 - PGSI group statistics in the total sample (N=1,249)

PGSI group	n	%
Non-problem gambler	371	29.7
Low risk gambler	234	18.7
Moderate risk gambler	279	22.3
Problem gambler	365	29.2

Note: PGSI scores ranged from 0-27, mean = 5.27 (SD=6.18), median = 3.
Question: BS 22

Table D.8 - Gambling-related harms reported in the total sample (N=1,249)

Harm	n	%
Reduction of your savings	362	29.0
Less spending on recreational expenses such as eating out, going to the movies, or other entertainment	332	26.6
Had regrets that made you feel sorry about your gambling	322	25.8
Reduction of your available spending money	297	23.8
Felt ashamed of your gambling	256	20.5
Felt like a failure	254	20.3
Spent less time with people I care about	237	19.0
Felt distress about your gambling	229	18.3
Increased credit card debt	161	12.9
Sold personal items	146	11.7

Question: BS 23

D.2. Limit-setting behaviour

D.2.1. Types of limits set

Respondents were asked which of the seven types of limits they had set across any of their accounts; note, not all types of limits are available from all wagering operators. Just under half of the participants (48.4%, n=604) had set at least one type of limit. Amongst those who had set limits, the most commonly set were deposit limits (66.1%), maximum or single bet limits (44.0%), and spend limits (36.6%). The least commonly set were time limits (16.1%), bet frequency limits (19.4%), number of bets limits (23.2%), and loss limits (28.1%; Table D.9). Overall, the mean number of different types of limits set was 1.13 (*SD* = 1.63), median = 0. Amongst those who had set limits, the mean number of different types of limits set was 2.33 (*SD* = 1.63), median = 2.

Table D.9 - Types of limits that participants have currently set on wagering accounts (N=1,249)

Types of limits that are currently set on wagering account/s	n	% of total sample	% of those who have set limits	Of those who have set limits, number of wagering accounts with this limit M (*SD*)
Deposit limit	399	31.9	66.1	1.9 (3.5)
Maximum or single bet limit	266	21.3	44.0	2.7 (8.1)
Spend limit	221	17.7	36.6	4.2 (11.6)
Loss limit	170	13.6	28.1	2.4 (4.7)
Number of bets limit	140	11.2	23.2	2.3 (3.6)
Bet frequency limit	117	9.4	19.4	2.5 (5.0)
Time limit	97	7.8	16.1	4.3 (20.7)
None of the above	*645*	*51.6*		

Note: Mean number of different types of limits set was 1.13 (SD = 1.63), median = 0.
Questions: BS 5a-11a

D.2.2. Frequency and value of limits set

Respondents were asked about the limits that they had set. Across all limit types, most participants set weekly limits (Table D.10). Table D.11 describes the average limits set for each frequency across all limit types. The highest maximum or single bet limit (N=266) ranged from $1 to $9,999, with the mean limit being $246.66 (*SD*=830.98, median=50).

Table D.10 - Frequency of betting limits in place

Frequency	Deposit Limit	Loss limit	Spend limit	Number of bets limit	Bet frequency limit	Time limit
	N=399	N=170	N=221	N=140	N=117	N=97
	(% of those with limit in place)					
Per day	12.6	14.2	13.5	20.9	23.0	33.3
Per week	49.2	46.3	42.3	37.3	39.8	34.4
Per fortnight	15.5	16.0	20.7	20.1	23.9	21.5
Per month	21.3	21.0	23.1	20.1	12.4	10.8
Per year	1.3	2.5	0.5	1.5	0.9	0

Questions: BS 5c-11c

Table D.11 - Average limits set per frequency across all limit types

Frequency	Deposit Limit	Loss limit	Spend limit	Number of bets limit	Bet frequency limit	Time limit
	N=399	N=170	N=221	N=140	N=117	N=97
	$ M (SD)	$ M (SD)	$ M (SD)	No. M (SD)	No. M (SD)	Hours M (SD)
Per day	242.27 (593.53)	49.59 (60.32)	141.31 (358.41)	26.29 (284.51)	7.99 (22.80)	6.3 (23.12)
Per week	137.56 (797.62)	129.87 (271.76)	96.39 (225.04)	28.14 (150.55)	39.57 (144.82)	14.7 (141.60)
Per fortnight	152.36 (213.34)	130.60 (137.75)	135.49 (317.88)	26.36 (71.76)	11.35 (42.15)	9.05 (26.99)
Per month	180.84 (801.60)	98.68 (84.25)	171.05 (731.36)	26.33 (104.79)	100.10 (182.61)	116.83 (188.53)
Per year	838.33 (1,712)	383.33 (408.25)	-	32.00 (39.60)	-	-

Note: 5% trimmed means used.
Questions: BS 5c-11c

D.2.3. Attitudes towards setting different types of limits

Respondents who had not previously set a particular limit were asked how they felt about setting that limit (Figure D.2). Respondents felt most positively about setting deposit limits, with 81.4% of the sub-sample feeling positive or extremely positive about setting a deposit limit; followed by loss limits (78.3%) and spend limits (75.3%). The limit respondents felt most negatively towards setting were time limits. Almost half of the sample (46.7%) had negative feelings towards setting time limits, followed by the bet frequency limits (39.1%) and number of bets limits (37.8%).
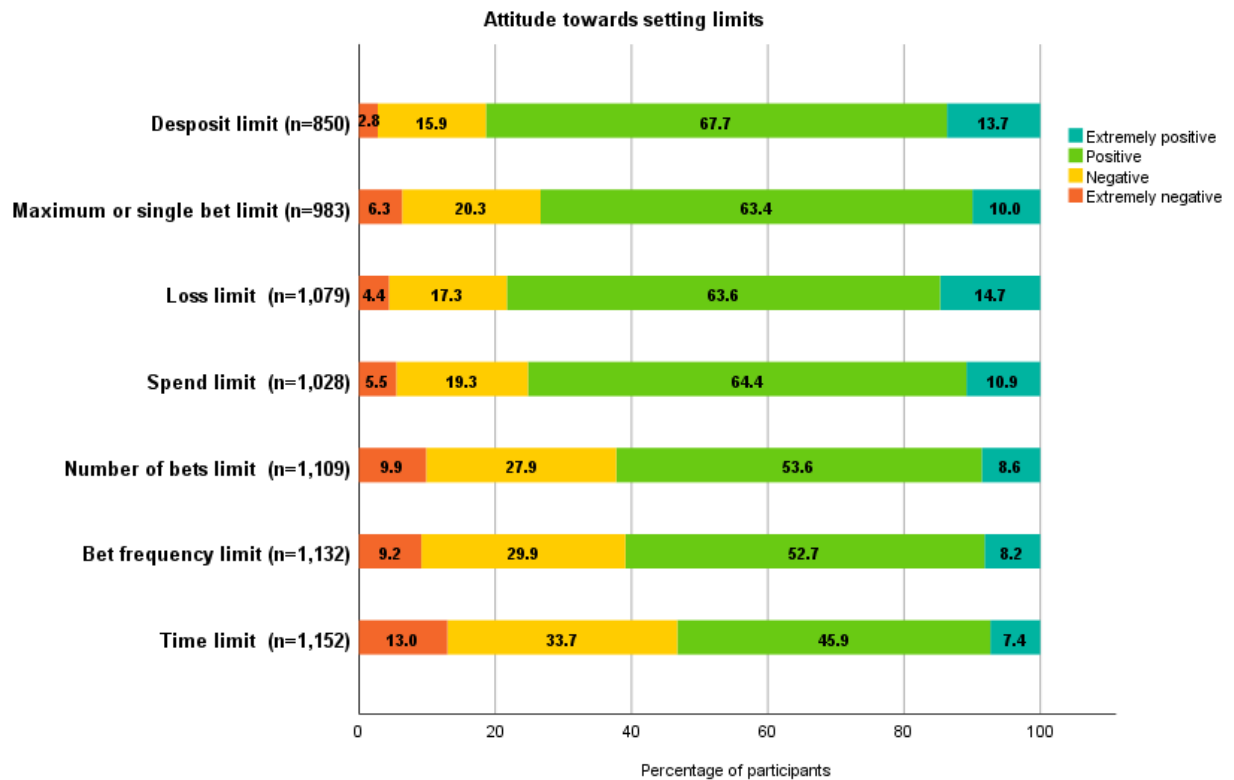
Figure D.2 - Attitudes towards setting each type of limit, amongst those who had not set one

Questions: BS 5k-11k

D.2.4. Likelihood of setting different types of limits

Participants who had not previously set a particular type of limit (n=983 to n=1,152 for these sub-samples) were asked how likely they were to set that type of limit if it was available. More than half indicated that they were unlikely or extremely unlikely to set each type of limit (Figure D.3). Participants reported being least likely to set time limits, with 71.5% reporting being unlikely or extremely unlikely to set a time limit. This was followed by bet frequency limits (66.3%) and number of bets limits (64.9%). Participants were most likely to set loss limits and spend limits, with around half (50.3%) reporting being likely to extremely likely to set loss limits and 45.5% likely or extremely likely to set a spend limit.
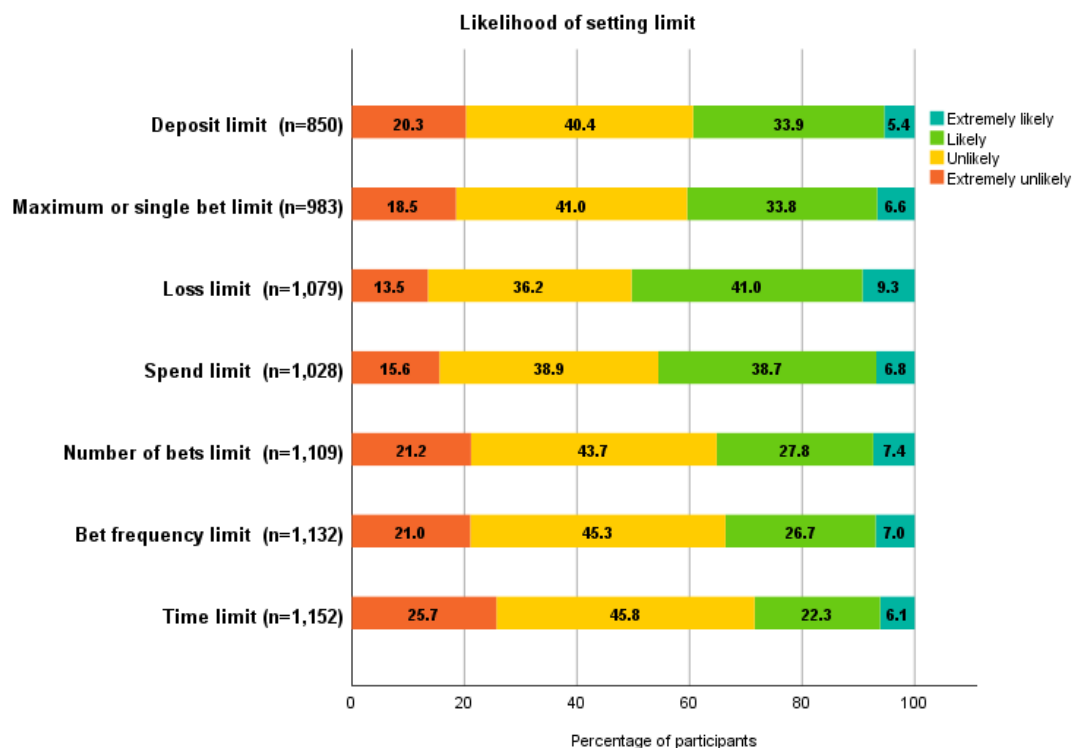
Figure D.3 - Likelihood of setting each type of limit, amongst those who had not set that limit

Questions: BS 5l-11l

D.2.5. Reviewing limits

Of the participants who had set limits, over half reported checking or considering these limits at least once every few weeks (Figure D.4). Those who had deposit limits reported checking or reconsidering their limit least often, with 51.8% reviewing them at least every few weeks. Those with time limits reviewed their limit most frequently, with 92.5% reported checking or reconsidering these limits at least once every few weeks.
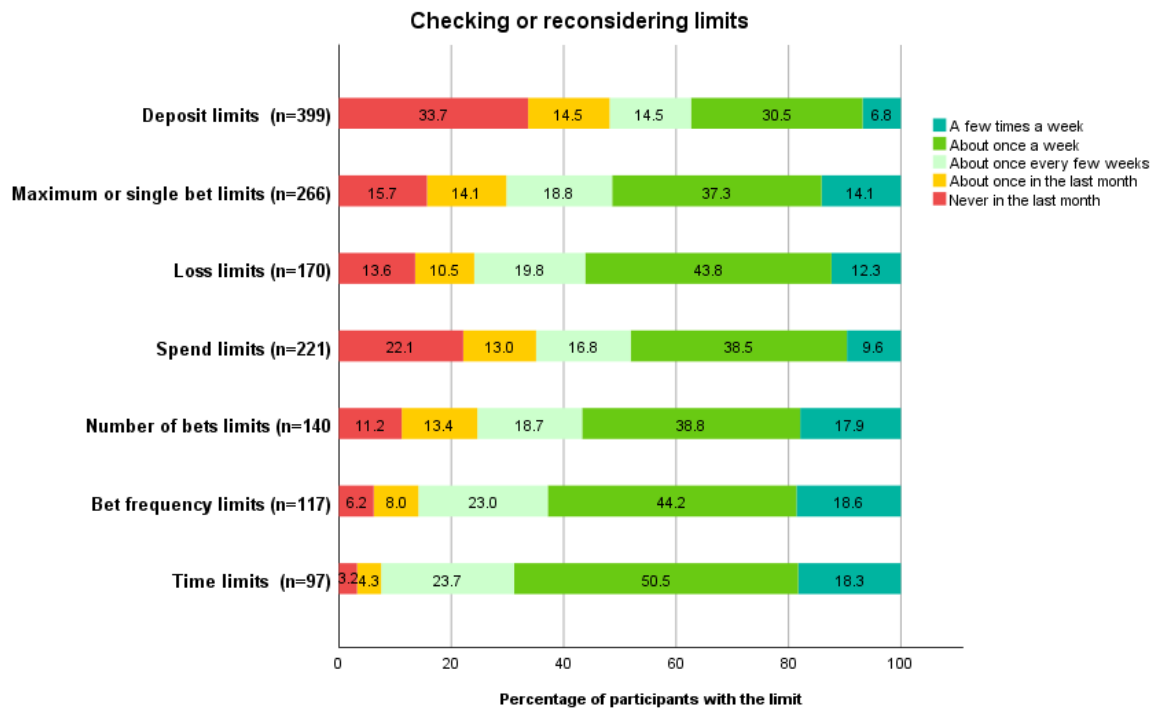
Figure D.4 - Amongst participants who had the limit set, the number of times they checked or reconsidered their limit within the last four weeks

Questions: BS 5g-11g

D.3. Deposit limit behaviour

D.3.1. Information provided by operators about deposit limits

Table D.12 shows the number and percentage of participants with an account with each operator, alongside those who have been prompted by the operator to set a deposit limit and provided information by the operator about setting a deposit limit. Of participants with accounts with the top 10 operators in the sample (n=61 to n=671 for these sub-samples), between 43.5% and 80.3% had been prompted to set a deposit limit, and between 51.3% and 82.4% had been provided with information about setting a deposit limit. Of the participants who tried to find information about setting deposit limits, 90.9% (n=1,057) reported that it was easy or extremely easy to find this information (Table D.13). For participants who had not set a deposit limit, 272 (31.3%) recalled seeing a feature for setting a deposit limit in the previous 4 weeks.

Table D.12 - Accounts, deposit limit prompts and deposit limit information provision by operators in the total sample (N=1,249)

Operator	Participants with an account		Participants prompted to set deposit limit		Participants provided with information about setting deposit limit	
	n	% total sample	n	% with account	n	% with account
Sportsbet	671	53.7	539	80.3	553	82.4
Bet365	310	24.8	229	73.9	228	73.5
BetEasy	304	24.3	194	63.8	196	64.5
Ladbrokes	304	24.3	170	55.9	192	63.2
TAB Limited NSW	206	16.5	155	75.2	161	78.2
Tabcorp VIC	140	11.2	104	74.3	100	71.4
Neds.com.au	119	9.5	62	52.1	67	56.3
Betfair	115	9.2	55	47.8	59	51.3
PointsBet	92	7.4	40	43.5	48	52.2
TABtouch WA	61	4.9	45	73.8	44	72.1
Ubet/TAB QLD	57	4.6	40	70.2	38	66.7
Betstar	56	4.5	28	50.0	32	57.1
Bookmaler.com.au	43	3.4	18	41.9	20	46.5
Ubet (Formerly Betchoice)	42	3.4	16	38.1	22	52.4
BlueBet	39	3.1	18	46.2	20	51.3
Sportsbetting.com.au	38	3.0	15	39.5	15	39.5
Ubet/TAB SA	30	2.4	21	70.0	22	73.3
ClassicBet*	29	2.3	11	37.9	9	31.0
EliteBet*	29	2.3	14	48.3	14	48.3
PlayUP*	28	2.2	8	28.6	12	42.9
PalmerBet*	27	2.2	13	48.1	14	51.9
MoneyBall*	26	2.1	11	42.3	13	50.0
Draftstars*	22	1.8	12	54.5	7	31.8
Ubet/TAB TAS*	20	1.6	14	70.0	11	55.0
SportChamps*	19	1.5	10	52.6	8	42.1
TopSport*	19	1.5	5	26.3	3	15.8
PlayOn*	17	1.4	6	35.3	6	35.3
DraftKings*	16	1.3	5	31.3	7	43.8
Tabcorp ACT*	16	1.3	9	56.3	10	62.5
Picklebet*	15	1.2	8	53.3	7	46.7
Ubet/TAB NT*	15	1.2	6	40.0	4	26.7
Mad Bookie*	14	1.1	6	42.9	6	42.9
TopBetta*	9	0.7	4	44.4	5	55.6
Skrilla*	8	0.6	2	25.0	1	12.5
On-course bookmaker*	6	0.5	2	33.3	1	16.7
None of the above*	24		13		13	

Note: Because most respondents had accounts with multiple operators, percentages can sum to greater than 100%. * We caution that these results are based on small numbers.
Questions: BS 1-3

Table D.13 - Ease of finding information about setting deposit limits on your wagering account (N=1,249)

How easy is it to find information about setting deposit limits on your wagering account/s?	n	%
Extremely easy	289	23.1
Easy	672	53.8
Difficult	87	7.0
Extremely difficult	9	0.7
I've never tried to find that information	192	15.4

Question: BS 4

D.3.2. Increasing and decreasing deposit limits

Of participants with deposit limits (n=380), around two thirds (66.3%) reported checking or reconsidering their limits in the previous 4 weeks. However, a smaller proportion increased (35.8%) or decreased (27.6%) their deposit limits (Tables D.14 and D.15). Most people who reported increasing or decreasing their limits did so only one or two times within the last 4 weeks.

Table D.14 - Frequency of increasing deposit limits (N=380)

In the last 4 weeks, how many times have you increased any of your deposit limits? (Asked of limit setters only)	n	%
0	244	64.2
1	62	16.3
2	38	10.0
3	12	3.2
4	7	1.8
5	5	1.3
6	2	0.5
7	1	0.3
8 or more	9	2.4

Question: BS 5h

Table D.15 - Frequency of decreasing deposit limits (N=380)

In the last 4 weeks, how many times have you decreased any of your deposit limits? (Asked of limit setters only)	n	%
0	22	72.4
1	51	13.4
2	29	7.6
3	8	2.1
4	5	1.3
5	5	1.3
6	1	0.3
7	1	0.3
8 or more	5	1.3

Question: BS 5i

D.3.3. Usefulness of deposit limits

Over the previous month, around one-third (32.9%) of the participants with a deposit limit reported being stopped for attempting to deposit more into their account than their limit at least once week (Table D.16). Less than half, 41.3% did not attempt to deposit more than their set limit. Only 6.6% of participants found the deposit limits to be not at all helpful in managing their betting, while 70.3% found deposit limits to be moderately or extremely helpful (Table D.17).

Table D.16 - Frequency of participants with a deposit limit who have attempted to deposit more than the limit over the past 4 weeks (N=380)

During the last 4 weeks, how often have you attempted to deposit more than your limit and been stopped from doing so due to your deposit limit? (Asked of deposit limit setters only)	n	%
A few times a week	35	9.2
About once a week	90	23.7
About once every few weeks	58	15.3
About once in the last month	40	10.5
Never in the last month	157	41.3

Question: BS 5e

During the last 4 weeks, how helpful did you find your deposit/s limit to be in managing your betting? (Asked of deposit limit setters only)	n	%
Not at all helpful	25	6.6
A little helpful	88	23.2
Moderately helpful	158	41.6
Extremely helpful	109	28.7

Question: BS 5f

D.3.4. Size of deposit limit compared to actual expenditure

Respondents who had set a deposit limit (n=380) were asked the amount which they had set across all their wagering accounts, and this was compared to the amount they had deposited during the previous 4 weeks. This allowed for a comparison of the size of limits compared to their usual behaviour. As shown in Figure D.5, most participants with deposit limits (82.2%) deposited less than their limit in the previous 4 weeks, 8.9% deposited the amount of their limit, and 9.4% reported depositing amounts in excess of their limit. For over half of the participants their deposit limit was set at more than twice the amount they actually deposited, including around 15% who had limits which were over 10 times the amount spent. This may mean that some people set limits that are much higher than their monthly betting amount, effectively negating the use of a limit.

Deposit limit vs actual deposit

Percentage of participants with deposit limit
- Limit less than actual amount
- Limit equals actual amount
- Limit 1.01 - 1.99 times actual amount
- Limit 2 - 9.99 times actual amount
- Limit 10+ times actual amount

9.4%
8.9%
14.2%
39.4%
28.1%
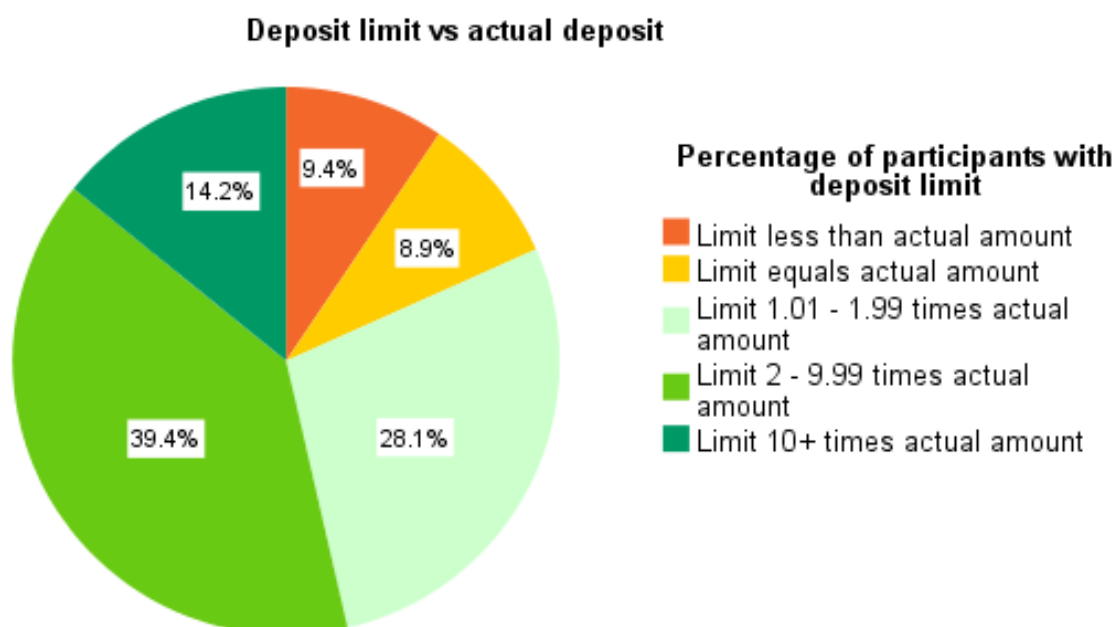
Figure D.5 - Deposit limits vs actual deposits, amongst those who had set a deposit limit (n=380)

Question: BS 5c-5d

D.3.5. Deposit limits by PGSI group

Table D.18 shows the proportion of each PGSI group who had a deposit limit in place when surveyed at baseline. Problem gamblers had a significant higher proportion than all other groups ($\chi^2(3)=44.51$, p<.001). Nearly four-in-ten problem gamblers had a deposit limit at baseline.

Table D.18 - PGSI categories of participants who had a deposit limit at the time of the initial survey (N=380)

PGSI group	n	%
Non-problem gambler	70	18.4
Low risk gambler	72	18.9
Moderate risk gambler	88	23.2
Problem gambler	150	39.5*

D.4. Comparisons between participants who had and had not set limits

Participants who had set at least one limit (n=604) were significantly more likely to be younger, have a university qualification, and be classified as a problem gambler (Table D.19). Participants who set limits were significantly more likely to have a larger number of wagering accounts (Welch $t(1120.63)=31.83$, $p<.001$). Conversely, participants who had not set any of the seven limits examined (n=645) were significantly more likely to be older, have a trade, technical certificate or diploma, have fewer wagering accounts, and be classified as a non-problem or low risk gambler. No significant differences were observed by gender, language, state of residence ($\chi^2(7)=13.00$, p=.073), or income ($\chi^2(9)=8.04$, p=.530).

Table D.19 - Comparisons between those who had and had not set limits in terms of demographics and PGSI (N=1,249)

Variable	Had not set limits (n=645)		Had set at least one limit (n=604)	
	n	%	n	%
Gender (χ^2(2)=2.74, p=.255)				
Male	390	60.5	388	64.2
Female	254	39.4	216	35.8
Other	1	0.2	0	0
Age (Welch *t*(1228.38)=79.95, *p*<.001)				
Age Mean (SD)	44.07* (15.51)		36.88 (12.83)	
Education (χ^2(5)=28.77, p<.001)				
Year 10 or below	48	7.4	34	5.6
Year 11 or equivalent	17	2.6	9	1.5
Year 12 or equivalent	114	17.7	83	13.7
A trade, technical certificate or diploma	197	30.5*	136	22.5
A university or college degree	186	28.8	245	40.6*
Postgraduate qualification	83	12.9	97	16.1
Language (χ^2(1)=.912, p=.340)				
English	622	96.4	576	95.4
A language other than English	23	3.6	28	4.6
PGSI (χ^2(3)=138.88, p<.001)				
Non-problem gambler	260	40.3*	111	18.4
Low risk gambler	140	21.7*	94	15.6
Moderate risk gambler	143	22.2	136	22.5
Problem gambler	102	15.8	263	43.5*

Questions: BS S2, 22, 24-30

FOLLOW-UP SURVEY

D.5. Sample characteristics

A total of 14,421 potential respondents started the baseline survey. Of these, 9,111 were screened out for not meeting the inclusion criteria, specifically: not having an account with a wagering operator (n=5,730), not consenting to take part (n=1,961), not gambling frequently enough (n=1,276), not being in Australia (n=121) and being under the age of 18 (n=23). A further 1,344 started the survey once the required sample size had been filled and were screened out.

D.5.1. Demographics

Of the 1,249 participants who completed the baseline survey, 660 (52.8%) completed the follow-up survey. Table D.20 describes the demographic statistics of this group alongside those who did not complete the follow up survey. Of the respondents who completed both surveys, 398 (60.3%) identified as male and 262 (39.7%) identified as female. Reported age ranged from 18-70 years, with a mean age of 43.71 years (SD=15.52, median=39.5). State and territory distribution remained similar to the baseline sample, which mostly consisted of respondents from New South Wales, Victoria and Queensland, in line with the population distribution. The majority (67.7%) of respondents were married or living with a partner. Almost half of the sample (48%) had completed a university degree or postgraduate qualifications, and 96.4% spoke English as their main language at home. The most popular languages, other than English, were Cantonese, Mandarin, and Nepali. Most of the sample had full-time employment (55.3%), and the sample reported a median income of $80,000-$99.999. Those who did not complete the follow-up survey were significantly more likely to be younger, single, and less likely to be retired. There were no significant differences across gender, state or territory of residence, education, language, or income.

Table D.20 - Demographic statistics

Variable	Completed baseline survey only (N=589)		Completed both surveys(N=660)	
	n	%	n	%
Gender (χ^2(2)=3.60, p=.166)				
Male	380	64.5	398	60.3
Female	208	35.3	262	39.7
Other	1	0.2	-	-
Age (Welch *t*(1240.92)=67.21, p<.001)				
Age Mean (*SD*)	37.11 (12.91)		43.71* (15.52)	

State or territory of residence (χ^2(2)=6.45, p=.19)				
New South Wales	198	33.6	230	34.8
Victoria	184	31.2	201	30.5
Queensland	83	14.1	87	13.2
South Australia	57	9.7	47	7.1
Tasmania	7	1.2	12	1.8
Northern Territory	4	0.7	3	0.5
Australian Capital Territory	12	2.0	13	2.0
Western Australia	44	7.5	67	10.2
Marital status (χ^2(4)=17.26, p=.002)				
Married	255	43.3	329	49.8
Living with partner/de-facto	123	20.9	118	17.9
Single/never married	177	30.1*	150	22.7
Separated or divorced	31	5.3	53	8.0
Widowed	3	0.5	10	1.5
Highest level of education (χ^2(5)=8.99, p=.110)				
Year 10 or below	35	5.9	47	7.1
Year 11 or equivalent	6	1.0	20	3.0
Year 12 or equivalent	104	17.3	95	14.4
A trade, technical certificate or diploma	152	25.8	181	27.4
A university or college degree	206	35.0	225	34.1
Postgraduate qualifications	88	14.9	92	13.9
Employment (χ^2(8)=37.09, p<.001)				
Work full-time	346	58.7	365	55.3
Work part-time or casual	95	16.1	93	14.1
Self-employed	40	6.8	28	4.2
Unemployed and looking for work	26	4.4	30	4.5
Full-time student	18	3.1	12	1.8
Full-time home duties	19	3.2	26	3.9
Retired	24	4.1	86	13.0*
Sick or disability pension	13	2.2	15	2.3
Other	8	1.4	5	0.8
Main language spoken at home (χ^2(1)=0.714, p=.398)				
English	562	95.4	636	96.4
A language other than English	27	4.6	24	3.6
Annual household pre-tax income (χ^2(9)=14.60, p=.102)				
$0 to $19,999	32	5.4	24	3.6
$20,000 to $39,999	62	10.5	83	12.6
$40,000 to $59,999	96	16.3	109	16.5
$60,000 to $79,999	83	14.1	107	16.2
$80,000 to $99,999	76	12.9	113	17.1

$100,000 to $119,999	74	12.6	71	10.8
$120,000 to $139,999	56	9.5	45	6.8
$140,000 to $159,999	29	4.9	38	5.8
$160,000 to $179,000	22	3.7	20	3.0
$180,000 or more	59	10.0	50	7.6

Notes: Most common 'LOTE' responses in follow-up - Cantonese (4), Mandarin (3), Nepali (2).
Statistical tests were conducted between those who did (n=660) and did not (n=589) complete the follow-up survey.
Questions: BS S2, 24-30

D.5.2. PGSI and deposit limits

As seen in the original sample, most of the participants in the follow-up survey were at risk of gambling-related problems with 64.2% of the sample low risk, moderate risk or problem gamblers (Table D.21). Those who completed the follow-up survey (n = 660) were significantly more likely to be non-problem gamblers than those who did not (n = 589; χ^2(3)=26.46, p<.001). The mean PGSI score in those who completed both surveys was 4.72 (*SD* =5.97), median = 2, which was significantly lower than 5.89 (*SD* =6.36), median = 3, in those who completed the baseline survey only (Welch *t*(1208.84)=11.18, *p*=.001). As also shown in D.21, participants who completed both surveys were significantly less to have a deposit limit at baseline (n = 589; χ^2(1)=8.40, p=.004).

Table D.21 - PGSI group and deposit-limit statistics

	Completed baseline survey only (*N*=589)		Completed both surveys (*N*=660)	
	n	%	*n*	%
PGSI group				
Non-problem gambler	134	22.8	237	35.9*
Low risk gambler	118	20.0	116	17.6
Moderate risk gambler	142	24.1	137	20.8
Problem gambler	195	33.1	170	25.8
Deposit limit set at baseline				
Yes	212	34.0	187	27.3
No	377	66.0	473	72.7

Question: BS 22

D.5.3. Gambling-related harm

The follow sections describe only the participants who completed both surveys and identifies any significant changes between surveys. All data pertaining to questions included in the follow-up survey is shaded grey for ease of identification. Using the Short Gambling Harm Screen (SGHS), 45.5% of the participants who completed the

follow-up survey experienced at least one harm from gambling on races, sports, esports or fantasy sports during the previous 4-week period (Table D.22). Just less than a quarter (22.4%) experienced four or more harms. In line with the baseline survey, most common harms reported were the reduction of available savings (24.1%), spending money (22.4%), and recreational expenses (20.3%), as well as having regrets about gambling (21.4%).

Table D.22 - Gambling-related harms reported in the previous four weeks (N=660)

Harm	Baseline survey		Follow-up survey	
	n	%	n	%
Reduction of your savings	180	27.3	159	24.1
Reduction of your available spending money	142	21.5	148	22.4
Had regrets that made you feel sorry about your gambling	155	23.5	141	21.4
Less spending on recreational expenses such as eating out, going to the movies, or other entertainment	162	24.5*	134	20.3
Felt ashamed of your gambling	122	18.5	127	19.2
Felt like a failure	128	19.4	119	18.0
Spent less time with people I care about	112	17.0	108	16.4
Felt distress about your gambling	122	18.5	104	15.8
Increased credit card debt	77	11.7	74	11.2
Sold personal items	68	10.3	66	10.0

Notes: A paired sample t-test showed a significant difference in 'less recreational expenses' $t(659) = 2.34$, $p = .020$. No other significant differences were found.
Question: FUS 23a

D.5.4. Betting behaviour and spend

A seen in the baseline survey, most respondents who completed the follow-up survey, had one (45.2%) or two (29.4%) accounts with different operators, with the median number of accounts being 2 (Table D.23). The mean number of active accounts in the follow up survey was 2.09 (SD=2.02), which was significantly lower ($t(659)$=3.59, p<.001) than a mean reported in the baseline survey of 2.34 (SD=2.24). The most frequent forms of gambling the sample engaged in were race and sports betting, with 48.1% betting on races and 44% betting on sports at least weekly during the 4 weeks prior to the follow-up survey (Figure D.6). Sports betting had the highest mean spend in the previous 4 weeks at 31.5% of total spend, followed by race betting with 18.2% of total spend (Table D.24). Sports betting expenditure was probably elevated as the NRL and ARL finals occurred in the 4 weeks prior to the follow-up survey.

Table D.23 - Number of accounts statistics (N=660)

Number of accounts	Baseline survey		Follow-up survey	
	N	**%**	**N**	**%**
0	-	-	15	2.3
1	316	47.9	298	45.2
2	183	27.7	194	29.4
3	82	12.4	74	11.2
4	27	4.1	32	4.8
5	25	3.8	21	3.2
6 or more	27	4.1	26	3.9

Questions: BS S3, follow-up survey (FUS) S3
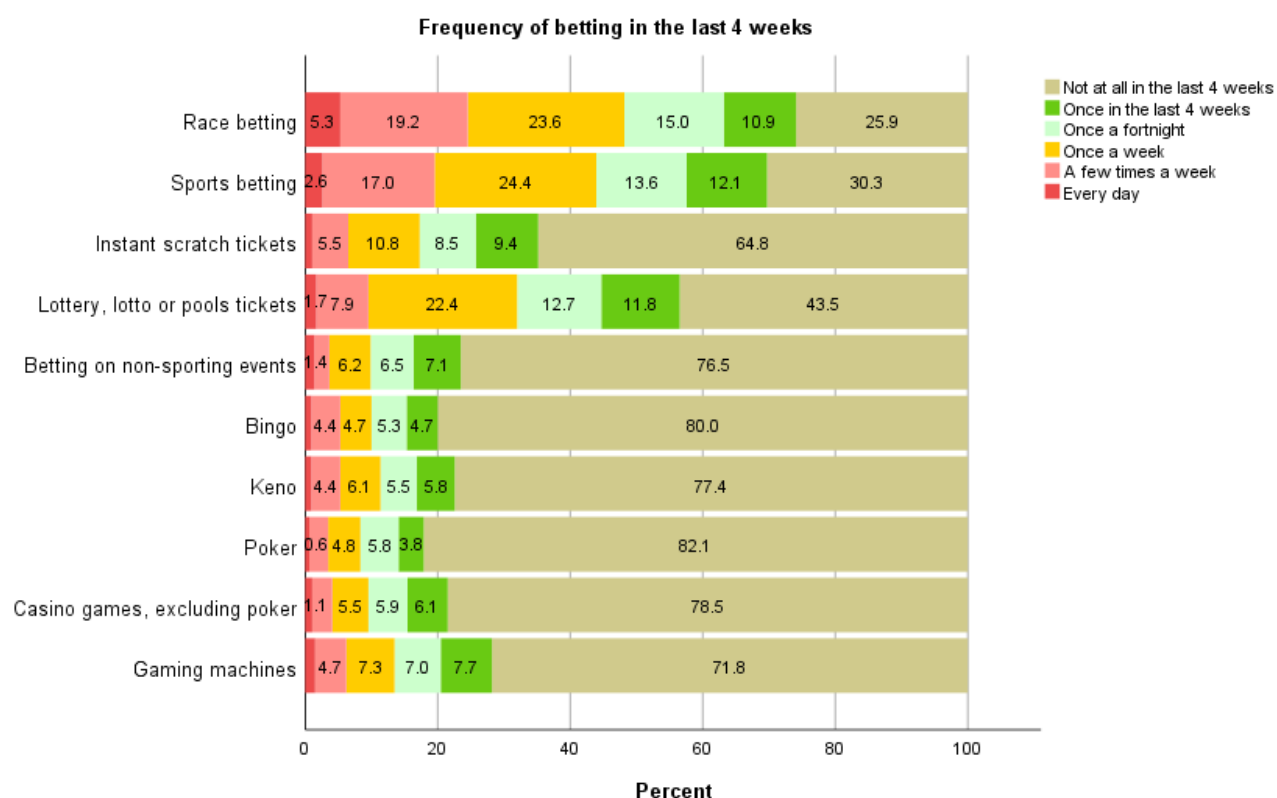
Figure D.6 - Frequency of betting in the last 4 weeks

Question: FUS 20

	Baseline survey (typical month spend)			Follow-up survey (previous 4 weeks spend)		
	n	$ Median M(*SD*)	% of total mean spend	n	$ Median M(*SD*)	% of total mean spend
Race betting	592	25.00 100.00 (385.37)	19.9	488	30.00 131.77 (669.20)	18.2
Sports betting	562	20.00 89.92 (338.95)	17.9	460	20.00 227.86 (3,265.29)	31.5
Instant scratch tickets	428	5.00 32.54 (246.67)	6.5	231	10.00 49.84 (199.25)	6.9
Lottery, lotto or pools tickets	524	20.00 45.25 (225.21)	9.0	372	20.00 43.27 (102.26)	6.0
Betting on non-sporting events	217	1.00 24.33 (225.21)	4.8	155	4.00 49.62 (134.09)	6.9
Bingo	175	5.00 26.51 (52.25)	5.3	132	7.00 38.80 (90.98)	5.4
Keno	268	5.00 25.46 (83.35)	5.1	148	6.50 37.89 (137.95)	5.2
Poker	182	10.00 39.97 (101.89)	7.9	118	5.00 34.20 (80.42)	4.7
Casino games, excluding poker	258	8.50 69.69 (245.21)	13.8	142	12.50 45.83 (78.20)	6.3
Gaming machines	352	10.00 49.70 (109.43)	9.9	186	20.00 63.68 (133.59)	8.8

Notes: Paired-sample t-tests found no significant differences between the mean spends reported in the baseline survey and those reported in the follow-up survey across any of the gambling forms. Question: FUS 21

D.5.6. Account-based versus cash betting

Respondents were asked about their account-based and cash betting behaviours over the four weeks of the RCT. In the previous month, most respondents once again used a smartphone (51.2%) or computer/laptop (35.1%) to place their race, sports, esports or fantasy sports bets (Table D.25). Most of the money spent (86.2%) and won (82.4%) in the previous month was via account-based betting (Table D.26). Table D.27 details financial behaviours associated with online betting accounts. The mean amount deposited across all betting accounts in the previous month was $262.41 compared to a typical month of $366.64, with an average of $216.45 deposited into the participant's main betting account.

Table D.25 - Percentage of total race, sports, esports and fantasy sports betting per channel (N=660)

Channel	Baseline survey		Follow-up survey	
	M %	SD	M %	SD
Smartphone	52.6	41.40	51.2	43.1
Computer or laptop	33.1	39.15	35.1*	41.4
Tablet or iPad	6.5	18.01	6.3	18.8
Cash-based betting outlet (e.g. TAB, in a hotel, club or casino, on-course, at a live event)	5.9	14.89	5.3	16.5
Via telephone calls	1.9	8.20	2.2	9.2

Notes: A paired sample t-test showed a significant difference in use of computer or laptop between the baseline and follow up survey $t(659) = 2.04$, $p = .041$. No other significant differences were found.
Questions: BS 12, FUS 12

Table D.26 - Amount spent and won across account- and cash-based betting (N=660)

	Baseline survey				Follow-up survey			
	Account-based Median M (*SD*)	% of total	Cash-based Median M (*SD*)	% of total	Account-based Median M (*SD*)	% of total	Cash-based Median M (*SD*)	% of total
Total amount placed (outlay on races, sports, esports and fantasy sports betting) in a typical month	$100.00 $277.18 (1,078.95)	79.7	$0.00 $70.60 (306.60)	20.3	$100.00 $299.23) (1,172.16)	86.2	$0.00 $47.95 (237.26)	13.8
Total amount won (amount ahead on races, sports, esports and fantasy sports betting) in a typical month	$50.00 $227.11 (613.54)	70.6	$0.00 $94.32 (593.99)	29.4	$50.00 $267.93 (1,071.66)	82.4	$0.00 $57.40 (391.65)	17.6

Notes: Paired-sample t-tests found no significant differences between baseline and follow-up survey.
Questions: BS 13-14, FUS 13-14

Table D.27 - Amount spent and won across main betting account (N=660)

	Baseline survey (typical month)	Follow-up survey (last 4 weeks)
	Amount $ Median M (*SD*)	Amount $ Median M (*SD*)
Total amount deposited across all betting accounts	100.00 404.37 (2,423.37)	85.00 262.41 (759.07)
Total amount placed via main betting account (outlay on races, sports, esports and fantasy sports betting)	100.00 322.51 (1,003.47)	100.00 293.89 (1,018.77)
Total amount won via main betting account (amount ahead)	50.00 233.68 (973.81)	55.00 322.81* (1,426.29)
Total amount deposited into main betting account	50.00 267.29 (1,319.77)	50.00 216.46 (758.19)

Notes: A paired sample t-test showed a significant difference in total amount won via the main betting account $t(658) = 2.29$, $p = .022$. No other significant differences were found.
Questions: BS 15, 17-19, FUS 15, 17-19

D.6. Limit-setting behaviour

D.6.1. Types of limits set

Of participants who completed both surveys (n=660), 214participants (32.4%) set limits throughout the RCT. Most of these people set one or two new limits (Table D.28). Table D.29 shows the types of limits that participants set during the RCT. For example, of the 473 participants who did not have a deposit set at the time of the baseline survey, 87 people (18.4%) set deposit limits during the RCT. Deposit limits were most commonly set, with 40.6% of participants who set limits setting a deposit limit, followed by 34.1% of participants setting a maximum or single bet limit. The least set limit was a time limit (9.3%).

Table D.28 - Number of different limits set during the RCT (N=660)

Number of limits set	n	% of sample	% of those who set limits
0	446	67.6	-
1	130	19.7	61.7
2	55	8.3	25.7
3	19	2.9	8.9
4	6	0.9	2.8
5	3	0.5	1.4
6	1	0.2	0.5

Note: number of limits set during RCT: mean = 0.52 (*SD*=0.91), median = 0.
Questions: BS 5a-11a, FUS 5a-11a

Table D.29 - Types of limits set during the RCT (N=660)

Types of limits	Participants completing both surveys who had the limit set at baseline survey		Participants who set limits during the RCT		
	n	% of sample	n	% of sample without limit set at the baseline survey	% of those who have set limits (n = 214)
Deposit limit	187	28.3	87	18.4	40.6
Maximum or single bet limit	121	18.3	73	13.5	34.1
Loss limit	73	11.1	44	7.5	20.6
Spend limit	99	15.1	56	10.0	26.2
Number of bets limit	62	9.4	32	5.4	15.0
Bet frequency limit	51	7.7	30	4.9	14.0
Time limit	43	6.5	20	3.2	9.3

Questions: BS 5a-11a, FUS 5a-11a

D.7. Deposit limit behaviour

D.7.1. Deposit limits set during the RCT

Of the 473 participants who had not set a deposit limit at the time of the baseline survey, 87 (18.4%) reported setting a deposit limit during the RCT. Table D.30 shows participants who did and did not set deposit limits during the RCT by message group. Of the 386 participants who did not set a deposit limit during the RCT, 148 (38.3%) did recall seeing the limit setting feature during that time.

Table D.30 - Deposit limits set during the RCT by message group (N = 473)

Message Groups (χ^2(4)=2.36, p=.670)	Participants who set a deposit limit		Participant who did not set a deposit limit	
	n	%	n	%
Control	22	23.7	71	76.3
Fortnightly/Non-personalised	14	15.9	74	84.1
Fortnightly/Personalised	18	17.0	88	83.0
Weekly/Non-personalised	18	18.6	79	81.4
Weekly/Personalised	15	16.9	74	83.1

Questions: BS 5a, FUS 5a

D.7.2. Participants who set deposit limits during the RCT

This section focuses on participants who set deposit limits during the period of the RCT. As reported above, 87 participants reported setting a deposit limit during this time. However, when subsequently asked about the number of wagering accounts deposit limits were set on, 10 of these people indicated that they had no accounts with current deposit limits. Therefore, this section focuses on the 77 participants who were able to indicate they still had deposit limits in place.

Most participants who set deposit limits had set them across one (55.2%) or two (19.5%) accounts. Deposit limits were set mostly frequently as weekly limits (33.8% of those who set limits), followed by monthly limits (26%; Table D.31). During the previous four weeks, the average deposit made across all wagering accounts by those who set deposit limits during the period was $235 (*SD* = 513.13), median $100.

Table D.31 - Frequency and average limit of deposit betting limits set during RCT (n = 77)

	Limit frequency		Average dollar limits set during RCT			Limits set at baseline survey (n=399)
	n	%	M	(*SD*)	Median	Median
Per day	14	18.2	172.14	280.83	50	100
Per week	26	33.8	89.81	72.40	65	100
Per fortnight	16	20.8	267.81	608.62	50	100
Per month	20	26.0	252.50	265.52	150	100
Per year	1	1.3	2000.00	0	2000	200

Question: FUS 5c

Tables D.32 and D.33 compare participants who had deposit limit/s in place at the time of the baseline survey (n=380), and those who set deposit limit/s throughout the RCT (n=77). Over the previous four weeks, 72.8% of participants with a newly set deposit limit reported being stopped for attempting to deposit more into their account than their limit (Table D.32). This is slightly higher than those who had already had deposit limits in place at the time of the baseline survey. Only 3.9% of participants found the deposit limits to be not at all helpful in managing their betting, while 63.7% found deposit limits to be moderately or extremely helpful (Table D.33).

Table D.32 - Frequency of participants who set a deposit limit who attempted to deposit more than the limit over the past 4 weeks

During the last 4 weeks, how often have you attempted to deposit more than your limit and been stopped from doing so due to your deposit limit? (Asked of deposit limit setters only)	Baseline survey (N = 380)		Follow-up survey (N = 77)	
	n	%	n	%
A few times a week	35	9.2	8	10.4
About once a week	90	23.7	26	33.8
About once every few weeks	58	15.3	13	16.9
About once in the last month	40	10.5	9	11.7
Never in the last month	157	41.3	21	27.3

Question: FUS 5e

Table D.33 - Perceived helpfulness of having deposit limits

During the last 4 weeks, how helpful did you find your deposit/s limit to be in managing your betting? (Asked of deposit limit setters only)	Baseline survey (N = 380)		Follow-up survey (N = 77)	
	n	%	n	%
Not at all helpful	25	6.6	3	3.9
A little helpful	88	23.2	25	32.5
Moderately helpful	158	41.6	30	39.0
Extremely helpful	109	28.7	19	24.7

Question: FUS 5f

Of participants who set deposit limits during the RCT (n=77), over three quarters (76.6%) reported checking or reconsidering their limits during that time. During the previous 4 weeks, 40.3% of participants reported increasing their limit (Table D.34) and 27.3% decreasing their deposit limit (Table D.35). Most of those who reported increasing or decreasing their limits did so only one or two times within the last four weeks.

Table D.34 - Frequency of increasing deposit limits (N=77)

In the last 4 weeks, how many times have you increased any of your deposit limits? (Asked of limit setters only)	n	%
0	46	59.7
1	13	16.9
2	10	13.0
3	2	2.6
4 or more	6	7.8

Question: FUS 5h

Table D.35 - Frequency of decreasing deposit limits (N=77)

In the last 4 weeks, how many times have you decreased any of your deposit limits? (Asked of limit setters only)	n	%
0	56	72.7
1	11	14.3
2	1	1.3
3	3	3.9
4 or more	6	7.8

Question: FUS 5i

As shown in Table D.36, problem gamblers were significantly more likely to set deposit limits during the RCT, compared to the other PGSI groups ($\chi^2(3)=24.14$, p<.001).

Table D.36 - PGSI categories of participants who set a deposit limit during the experiment (N=77)

PGSI group	n	%
Non-problem gambler	17	22.1
Low risk gambler	8	10.4
Moderate risk gambler	15	19.5
Problem gambler	37	48.0*

D.7.3. Participants who did not set deposit limits during the RCT

This section focuses on participants who had no deposit limit in place during the baseline survey (n=473) and did not set one during the RCT (n=386).

These respondents (n=386) were asked how they feel about setting a deposit limit on one or more of their wagering accounts. Overall, of those who had not set a limit, 63.9% reported positive or 9.6% extremely positive feelings towards setting a deposit limit. Across all RCT groups, respondents reported overall positive feelings associated with setting deposit limits (Figure D.7). This ranged from 70.3% to 75.5% of participant reporting positive or extremely positive feelings about setting deposit limits. Respondents were subsequently asked how likely they would be to set a deposit limit on any of their wagering accounts (Figure D.8). Overall, around one-quarter (26%) of those who had not set a limit reported that they were likely to do so. However, most participants reported being unlikely (43.4%) or extremely unlikely (28.5%) to set a deposit limit. This is reflected in all groups, with the unlikelihood of setting a deposit limit ranging from 66.3% to 76.6%
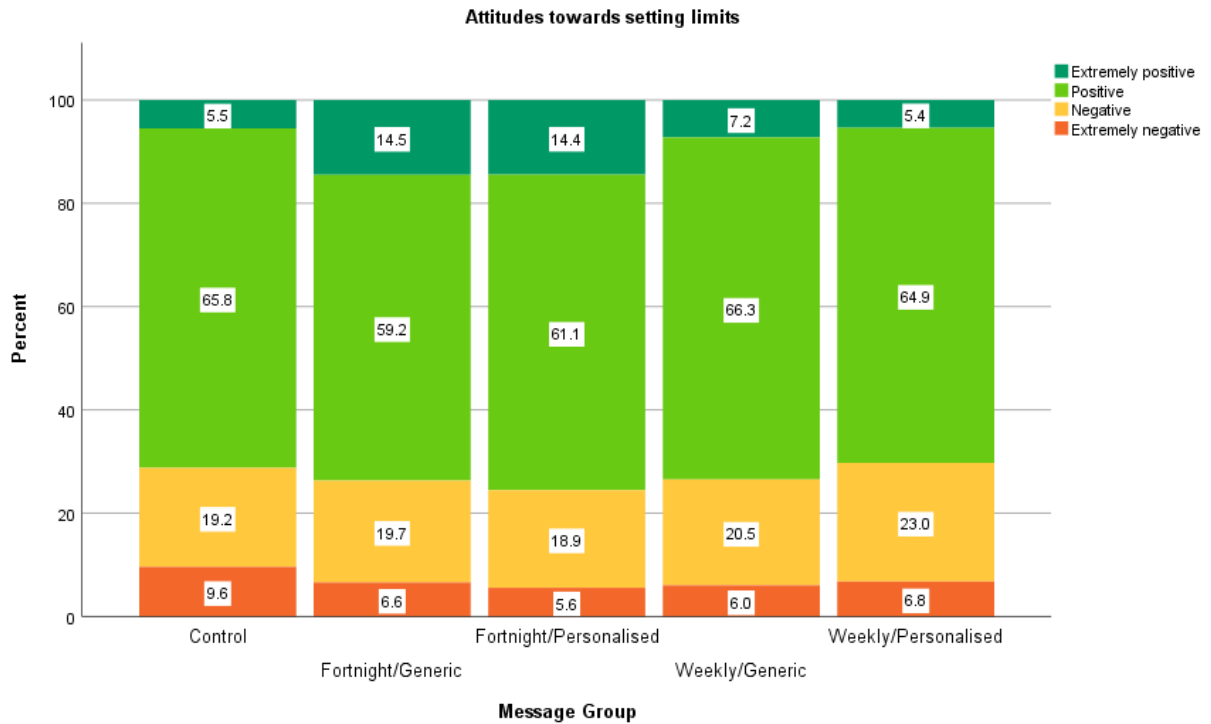
Figure D.7 - Attitudes towards setting a deposit limit, amongst those who had not set one

Question: FUS 5k
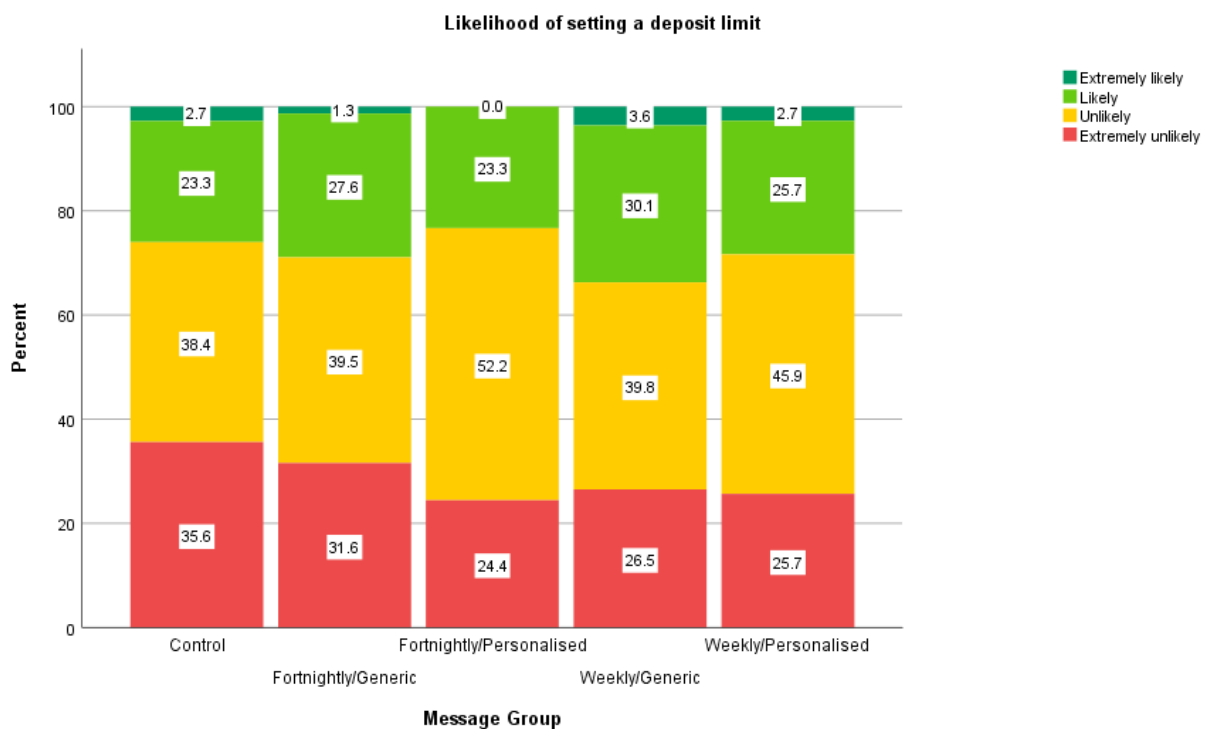
Figure D.8 - Likelihood of setting a deposit limit, amongst those who had not set one

Question: FUS 5l

D.7.4. Participants with deposit limits in place at the time of the baseline survey

This section reviews the behaviours of 187 respondents (18.4%) who both had deposit limits in place at the time of the baseline survey and completed the follow-up survey. At the time of the follow-up survey, 72 of these participants failed to confirm that they still had a deposit limit in place.[4] Therefore, subsequent analyses will report on the 115 participants who had a deposit limit in place at the time of the baseline survey and were able to confirm having a deposit limit in place at follow-up. Of these participants, 69.6% reported checking or reconsidering their limits during the previous 4 weeks. During the RCT, nearly one-third of participants (31.3%) reported increasing their deposit limits (Table D.37), and 21.7% of participants reported decreasing their deposit limit (Table D.38).

Table D.37 - Frequency of increasing deposit limits (N =115)

In the last 4 weeks, how many times have you increased any of your deposit limits? (Asked of limit setters only)	n	%
0	79	68.7
1	14	12.2
2	10	8.7
3	3	2.6
4 or more	9	7.8

Question: FUS 5h

Table D.38 - Frequency of decreasing deposit limits (N =115)

In the last 4 weeks, how many times have you decreased any of your deposit limits? (Asked of limit setters only)	n	%
0	90	78.3
1	9	7.8
2	7	6.1
3	2	1.7
4 or more	7	6.1

Question: FUS 5i

---

[4] These 72 respondents may have removed their deposit limit/s between the baseline and follow-up surveys, or closed accounts with limits and opened new ones without setting a limit. However, the large number of these respondents may indicate that some *may* have misinterpreted the question.

D.8. Other limit-setting behaviour

D.8.1. Limit-setting during the RCT

Respondents were asked about setting different types of limits. Those people who did not have a particular limit in place at the time of the baseline survey were asked if they had it in place at follow-up. Table D.39 identifies each of the limits set during the RCT, broken down by experimental message group. In total, deposit limits were most set, with 87 people setting a deposit limit during the RCT, followed by maximum or single bet limits (n=73) and spend limits (n=56). Chi-square tests showed statistically significant differences across message groups for spend limits, time limits and maximum or single bet limits.

Table D.39 - Limits set during the RCT by message group

Message Group		Limit Type						
		Deposit limit	Maximum or single bet limit	Loss limit	Spend limit	Number of bets limit	Bet frequency limit	Time limit
		Limits set during the RCT n (%)						
No deposit limit set at baseline survey	Control	22 (25.3)	11 (15.1)	6 (13.6)	4 (7.1)	3 (9.4)	5 (16.7)	2 (10.0)
	Fortnightly Non-personalised	14 (16.1)	6 (8.2)	8 (18.2)	5 (8.9)	3 (9.4)	6 (20.0)	1 (5.0%)
	Fortnightly Personalised	18 (20.7)	11 (15.1)	3 (6.8)	11 (19.6)	4 (12.5)	4 (13.3)	7 (35.0)
	Weekly Non-personalised	18 (20.7)	7 (9.6)	7 (15.9)	7 (12.5)	4 (12.5)	3 (10.0)	2 (10.0)
	Weekly Personalised	15 (17.2)	7 (9.6)	4 (9.1)	3 (5.4)	5 (15.6)	3 (10.0)	0 (0)
Deposit limit set at baseline survey	Control	-	6 (8.2)	3 (6.8)	3 (5.4)	2 (6.3)	1 (3.3)	1 (5.0)
	Fortnightly Non-personalised	-	6 (8.2)	5 (11.4)	8 (14.3)	2. (6.3)	1 (3.3)	2 (10.0)
	Fortnightly Personalised	-	8 (11.0)	3 (6.8)	5 (8.9)	3 (9.4)	2 (6.7)	0 (0)
	Weekly Non-personalised	-	2 (2.7)	2 (4.5)	2 (3.6)	1 (3.1)	3 (10.0)	0
	Weekly Personalised	-	9 (12.3)	3 (6.8)	8 (14.3)	5 (15.6)	2 (6.7)	5 (25)
N		87	73	44	56	32	30	20
Chi-square		(χ^2(9)=2.36, p=.670)	(χ^2(9)=21.15, p=.012)	(χ^2(9)=7.62, p=.573)	(χ^2(9)=29.62, p=.001)	(χ^2(9)=8.36, p=.499)	(χ^2(9)=4.94, p=.840)	(χ^2(9)=24.51, p=.003)
Median number of accounts with this limit		1	2	1	1	2	2	2

Note: includes only participants who did not have the limit in place at the baseline survey.
Questions: FUS 5a-11a

D.8.2. Participants who set limits during the RCT

This section focuses on participants who set limits during the period of the RCT (n=214). Table D.40 reports on participants who indicated that they set a particular limit during the RCT. However, when subsequently asked about the number of wagering accounts these limits were set on, several people across each of the limits

indicated that they had no accounts with that limit. Therefore, the following tables report only on participants who were able to indicate they still had that limit in place.

Respondents were asked about the limits that they had set. Across all limit types, most participants had set the limits per week (Table D.40). Table D.41 details the average limits set for each frequency. The highest maximum or single bet limit set during the RCT ranged from $1 to $600 and with the mean limit of $71.65 (SD=104.08, median=50).

Table D.40 - Frequency of betting limits set during the RCT

Frequency	Loss limit	Spend limit	Number of bets limit	Bet frequency limit	Time limit
	N=35	N=52	N=29	N=25	N=18
	(% of those with limit in place)				
Per day	14.3	11.5	27.6	28.0	22.2
Per week	54.3	48.1	44.8	48.0	44.4
Per fortnight	17.1	11.5	20.7	20.0	16.7
Per month	14.3	26.9	6.9	4.0	16.7
Per year	-	1.9	-	-	-

Questions: FUS 6c–11c

Table D.41 - Average limits set per frequency across all limit types

Frequency	Loss limit	Spend limit	Number of bets limit	Bet frequency limit	Time limit
	N=35	N=52	N=29	N=25	N=18
	$ M (*SD*)	$ M (*SD*)	No M (*SD*)	No M (*SD*)	Hours M (*SD*)
Per day	96.11 (115.20)	121.67 (182.07)	11.75 (34.14)	3.36 (3.15)	2.00 (.82)
Per week	68.14 (75.92)	89.00 (100.66)	7.33 (13.88)	30.96 (59.34	14.39 (12.98)
Per fortnight	84.26 (58.02)	174.91 (177.55)	14.94 (19.91)	10.11 (16.14)	2.00 (1.00)*
Per month	165.00 (127.95)	213.17 (506.43)	3.50 (0.71)	-	333.66* (350.71)
Per year	-	-	-	-	-

Note: 5% trimmed means used. * mean used due to small sample.
Questions: FUS 6c–11c

Tables D.42 and D.43 continue to examine the behaviour of participants who set each of the limits during the RCT. Participants were asked how often over the previous four weeks they had attempted to exceed their set limit and were stopped (Table D.42). For example, over the last four weeks, the majority of participants

(59.6%) with a newly set maximum or single bet limit, reported being stopped for attempting to exceed this limit at least once. Similar results were found across all limits, in that most participants had been stopped from attempting to exceed their limit/s. The respondents were then asked about how helpful they found the respective limits in managing their betting. Across all limit types, most respondents felt the newly set limits were moderately or extremely helpful (Table D.43).

Table D.42 - Frequency of participants who set a limit being stopped by that limit over the past 4 weeks

	Limit Type					
	Maximum or single bet limit	Loss limit	Spend limit	Number of bets limit	Bet frequency limit	Time limit
	N=62	N=35	N=52	N=29	N=25	N=18
A few times a week	7 (11.3)	2 (5.7)	8 (15.4)	5 (17.2)	3 (12.0)	2 (11.1)
About once a week	17 (27.4)	14 (40.0)	14 (26.9)	12 (41.4)	12 (48.0)	9 (50.0)
About once every few weeks	7 (11.3)	8 (22.9)	4 (7.7)	4 (13.8)	6 (24.0)	4 (22.2)
About once in the last month	6 (9.7)	2 (5.7)	7 (13.5)	3 (10.3)	2 (8.0)	2 (11.1)
Never in the last month	25 (40.3)	9 (25.7)	19 (36.5)	5 (17.2)	2 (8.0)	1 (5.6)

Questions: FUS 6e–11e

Table D.43 - Perceived helpfulness of having limits

	Limit Type					
	Maximum or single bet limit	Loss limit	Spend limit	Number of bets limit	Bet frequency limit	Time limit
	N=62	N=35	N=52	N=29	N=25	N=18
Not at all helpful	0	0	0	1 (3.4)	0	0
A little helpful	17 (37.4)	10 (28.6)	20 (38.5)	4 (13.8)	8 (32.0)	9 (50.0)
Moderately helpful	24 (38.7)	19 (54.3)	23 (44.2)	18 (62.1)	15 (60.0)	7 (38.9)
Extremely helpful	21 (33.9)	6 (17.1)	9 (17.3)	6 (20.7)	2 (8.0)	2 (11.1)

Questions: FUS 6f–11f

Amongst participants who set limits during the RCT (n=214), the majority reported checking or reconsidering those limits during that time (Table D.44). Participants who set spend limits were least likely to check or reconsider the limit, with 32.7% of respondents not considering a change, followed by maximum or single bet limits (29.0%) and loss limits (20%). Most people who reported increasing or decreasing

their limits did so only one or two times within the last four weeks (Tables D.45 and D.46).

Table D.44 - Time checking or reconsidering limit

	Limit Type					
	Maximum or single bet limit	Loss limit	Spend limit	Number of bets limit	Bet frequency limit	Time limit
	N=62	N=35	N=52	N=29	N=25	N=18
A few times a week	6 (9.7)	2 (5.7)	4 (7.7)	2 (6.9)	-	2 (11.1)
About once a week	16 (25.8)	11 (31.4)	12 (23.1)	7 (24.1)	9 (36.0)	13 (72.2)
About once every few weeks	13 (21.0)	10 (28.6)	11 (21.2)	12 (41.4)	9 (36.0)	1 (5.6)
About once in the last month	9 (14.5)	5 (14.3)	8 (15.4)	5 (17.2)	5 (20.0)	1 (5.6)
Never in the last month	18 (29.0)	7 (20.0)	17 (32.7)	3 (10.3)	2 (8.0)	1 (5.6)

Questions: FUS 6g–11g

Table D.45 - Frequency of increasing limits

	Limit Type					
	Maximum or single bet limit	Loss limit	Spend limit	Number of bets limit	Bet frequency limit	Time limit
	N=62	N=35	N=52	N=29	N=25	N=18
0	36 (58.1)	17 (48.6)	35 (67.3)	14 (48.3)	11 (44.0)	6 (33.3)
1	13 (21.0)	6 (17.1)	7 (13.5)	7 (24.1)	5 (20.0)	5 (27.8)
2	36 (9.7)	5 (14.3)	6 (11.5)	4 (13.8)	2 (8.0)	0
3	1 (1.6)	1 (2.9)	1 (1.9)	1 (3.1)	3 (12.0)	2 (11.1)
4 or more	6 (9.6)	6 (17.1)	3 (5.8)	3 (10.7)	4 (16.0)	5 (27.8)

Questions: FUS 6h–11h

Table D.46 - Frequency of decreasing limits

	Limit Type					
	Maximum or single bet limit	Loss limit	Spend limit	Number of bets limit	Bet frequency limit	Time limit
	N=62	N=35	N=52	N=29	N=25	N=18
0	38 (61.3)	18 (51.4)	37 (71.2)	15 (51.7)	12 (48.0)	7 (38.9)
1	8 (12.9)	5 (14.3)	8 (15.4)	7 (24.1)	5 (20.0)	6 (33.3)
2	7 (11.3)	7 (20.0)	2 (3.8)	5 (17.2)	4 (16.0)	0
3	3 (4.8)	1 (2.9)	2 (3.8)	0	0	2 (11.1)
4 or more	6 (9.7)	4 (11.4)	3 (5.8)	2 (7.0)	4 (16.0)	3 (16.7)

Questions: FUS 6i–11i

D.8.3. Participants who did not set limits during the RCT

This section focuses on participants who did not have a particular limit in place during the baseline survey, nor did they set one during the course of the RCT (n=467 to n=625 depending on the type of limit).

Across all limits, most participants did not recall seeing features for setting the limit. This ranged from 75.1% of respondents not seeing a feature for setting a maximum or single bet limit during the previous four weeks, through spend limit (81.1%), loss limit (87.4%), number of bets limit (89.1%), bet frequency limit (90.5%) and time limit (91.5%). However, it should be noted that not all types of limits are available from all wagering operators. Respondents were asked how they feel about setting limits on one or more of their wagering accounts (Table D.47). Overall, of those who had not set a limit, the majority reported positive or extremely positive feelings towards setting these limits, across all limit types. These ranged from 73.5% of respondents feeling positively or extremely positive about setting a maximum or single bet limit, to 55.2% for time limits. Respondents were also asked how likely they would be to set each limit on any of their wagering accounts (Table D.48). Participants reported being most likely/extremely likely to set the number of bets limit (43.7%), followed by loss limit (42.9%), spend limit (39.3%), bet frequency limit (33.6), maximum or single bet limit (36.5%), and time limit (29.8%).

Table D.47 - Attitudes towards setting limits, amongst those who had not set one

	Limit Type					
	Maximum or single bet limit	**Loss limit**	**Spend limit**	**Number of bets limit**	**Bet frequency limit**	**Time limit**
	N=526	N=586	N=467	N=604	N=613	N=625
Extremely negative	43 (8.2)	50 (8.5)	43 (7.6)	66 (10.9)	70 (11.4)	86 (13.8)
Negative	96 (18.3)	96 (16.4)	108 (19.0)	151 (25.0)	151 (24.6)	194 (31.0)
Positive	339 (64.4)	357 (60.9)	254 (62.4)	332 (55.0)	338 (55.1)	293 (46.9)
Extremely positive	48 (9.1)	83 (14.2)	62 (10.9)	55 (9.1)	54 (8.8)	52 (8.3)

Questions: FUS 6k–11k

Table D.48 - Likelihood of setting a limit, amongst those who had not set one

	Limit Type					
	Maximum or single bet limit	**Loss limit**	**Spend limit**	**Number of bets limit**	**Bet frequency limit**	**Time limit**
	N=526	N=586	N=467	N=604	N=613	N=625
Extremely unlikely	119 (22.6)	114 (19.5)	112 (19.8)	149 (24.7)	145 (23.7)	177 (28.3)
Unlikely	215 (40.9)	221 (37.7)	232 (40.9)	251 (41.6)	262 (42.7)	262 (41.9)
Likely	168 (31.9)	206 (35.2)	182 (32.1)	167 (37.6)	166 (27.1)	153 (24.5)
Extremely likely	24 (4.6)	45 (7.7)	41 (7.2)	37 (6.1)	40 (6.5)	33 (5.3)

Questions: FUS 6I–11I

D.9. Comparisons between participants who did and did not set limits during the study

Participants who had set limits during the study were significantly more likely to be younger and be classified as a problem gambler (Table D.49). No significant differences were found by gender, location, main language spoken at home, education, income, marital status, or number of wagering accounts. Conversely, participants who had not set any of the seven limits examined were significantly more likely to be older and be classified as a non-problem gambler.

Table D.49 - Comparisons between those without any limits at baseline, who did and did not set limits during the RCT in terms of demographics and PGSI (N=365)

Variable	Did not set limits (n=286)		Did set at least one limit (n=79)	
	n	%	n	%
Gender (χ^2(1)=01.30, p=.254)				
Male	176	61.5	43	54.4
Female	110	38.5	36	45.6
Age (*t*(1,363)=6.16, *p*=.013)				
Age Mean (SD)	48.42* (15.82)		43.46 (15.42)	
Location (χ^2(4)=6.31, p=.177)				
New South Wales	88	30.8	28	35.4
Victoria	79	27.6	27	34.2
Queensland	45	15.7	6	7.6
South Australia	24	8.4	9	11.4
Other	50	17.5	9	11.4
Education (χ^2(5)=3.40, p=.638)				
Year 10 or below	22	7.7	3	3.8
Year 11 or equivalent	11	3.8	2	2.5
Year 12 or equivalent	51	17.8	11	13.9
A trade, technical certificate or diploma	92	32.2	26	32.9
A university or college degree	77	26.9	25	31.6
Postgraduate qualification	33	11.5	12	15.2
Language (χ^2(1)=.212, p=.645)				
English	278	97.2	76	96.2
A language other than English	8	2.8	3	3.8
Annual household pre-tax income (χ^2(9)=4.35, p=.887)				
$0 to $19,999	13	4.5	5	6.3
$20,000 to $39,999	43	15.0	9	11.4
$40,000 to $59,999	49	17.1	12	15.2
$60,000 to $79,999	43	15.0	18	22.8
$80,000 to $99,999	29	10.1	8	10.1
$100,000 to $119,999	35	12.2	7	8.9
$120,000 to $139,999	16	5.6	5	6.3
$140,000 to $159,999	19	6.6	6	7.6
$160,000 to $179,000	12	4.2	3	3.8
$180,000 or more	27	9.4	6	7.6
PGSI (χ^2(3)=15.41, p=.001)				
Non-problem gambler	148	51.7*	28	35.4
Low risk gambler	61	21.3	12	15.2
Moderate risk gambler	48	16.8	21	26.6
Problem gambler	29	10.1	18	22.8*

Questions: Baseline Survey (IS) S2, 24-30