



# Evidence Review of Remote Treatment Intervention & Support for Gambling Harm

Prepared by

**RG Plus**

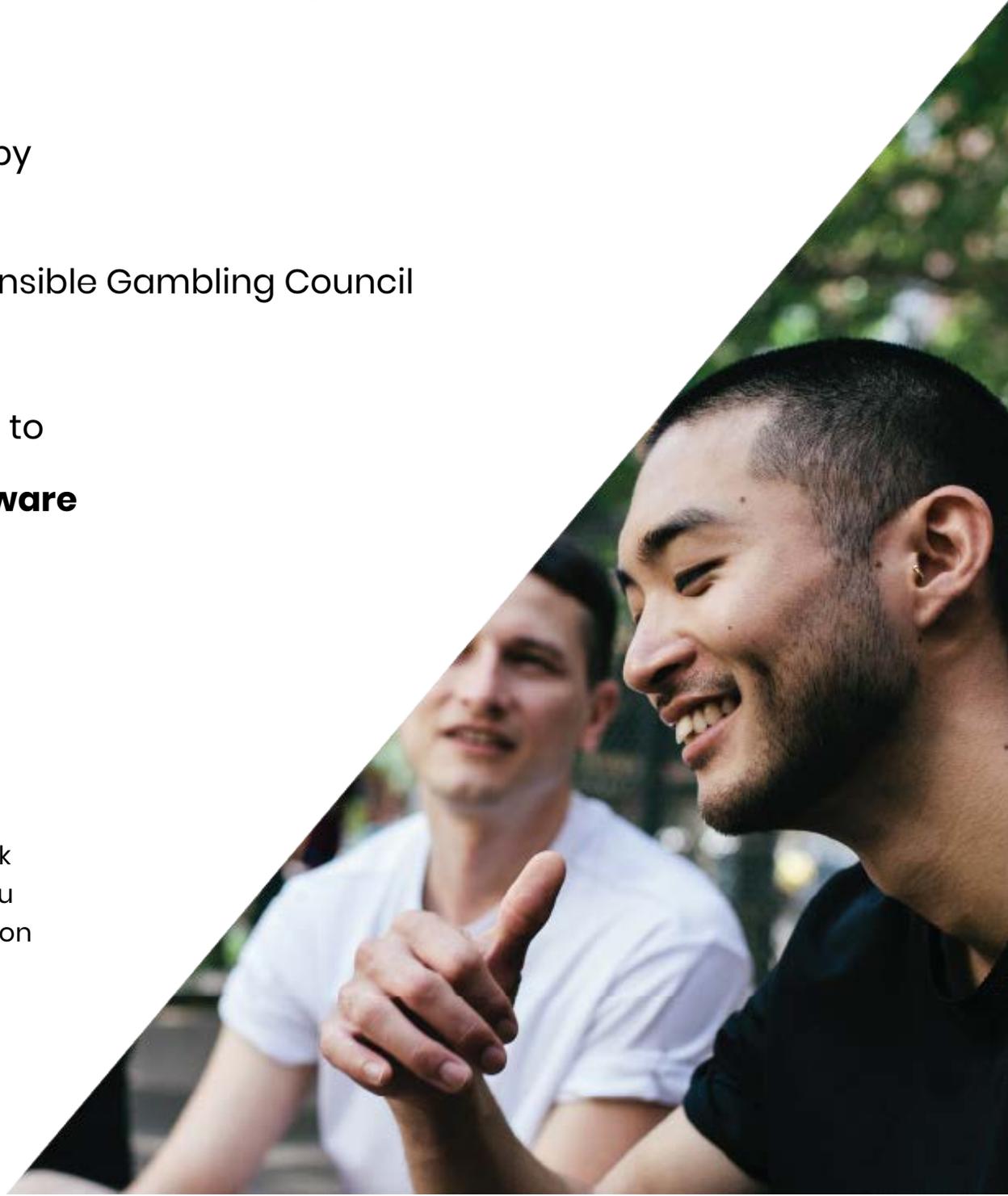
The Responsible Gambling Council

Submitted to

**GambleAware**

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## Executive Summary

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### Introduction

The aim of this systematic literature review is to provide a critical assessment of our current understanding of the effectiveness of treatment interventions and support for gambling harm, delivered remotely online, by mobile applications, or by telephone. This review is unique in that it considers multiple available mediums of remote interventions and support (excluding helplines). It explores international research on remote treatment interventions and support for gambling harm in order to identify areas of consensus and best practice, and as well as gaps and opportunities for improvement in intervention and support provision, evaluation, and research.

### Methods

This systematic literature review included existing research on remote treatment intervention and support for gambling harms. The studies included were primary and secondary literature such as empirical research and review articles written in English. All included studies were published between 2000 and 2020. Cooper's (2010) seven-step process for research synthesis was followed for this review.

### Results

Out of the 16 articles used for this review, 9 of the studies were empirical ones that discussed remote formal therapist-guided interventions – approaches led by clinicians and employing treatment focused methods such as Cognitive Behavioural Therapy (CBT) and Behavioural Couples Therapy (BCT). The most common remote treatments for problem gambling in the articles reviewed included CBT (8 articles) and BCT (1 article). These studies were all delivered online (4) or online and by telephone (6) (one of the articles employed both self-guided and therapist-guided measures which was double counted).

### Discussion

All studies that were reviewed demonstrated positive outcomes for remote interventions and support. This is in line with other reviews that conclude online approaches are effective and that positive behavioural change can be achieved, namely the reduction of problematic behaviours leading to harmful effects (Chebli, Blaszczynski, & Gainsbury, 2016). Although self-guided (versus guided) interventions and support is a newer field of research, the available evidence shows online self-guided interventions are efficacious and important for those experiencing gambling

harms (Gainsbury & Blaszczynski, 2011). Despite these various positive findings, it remains unclear which remote interventions (i.e. with guidance or without) are most suitable for which populations (i.e. non-treatment seeking, different game types; Carlbring et al, 2016; Luqiens et al, 2016).

Several advantages of remote versus in person interventions and support are reported, such as cost-effectiveness, flexibility, customisable, accessible, convenient, and most importantly anonymous and confidential (Edgerton, Biegun & Roberts, 2016; Gainsbury & Blaszczynski, 2011). However, limited research has compared whether remote interventions and support are more effective than face-to-face options, and the particular groups that may experience greater impacts from which approach.

Many of the studies reviewed were dated, with over half published 5 or more years ago, highlighting the need for more recent research on the preferences for and impacts of remote treatment in the current more internet savvy and reliant context.

### **Promising Practices for Remote Intervention and Support for Gambling Harm**

- **Cognitive Behavioural Therapy:** Several studies reported positive results for CBT-based online interventions (Carlbring, 2012; Carlbring & Smit, 2008, Nilsson et al, 2019).
- **Workbooks/E-books:** The inclusion of workbooks and e-books were highly rated in the two evaluations reviewed (Boughton, Jindani, & Turner, 2016; Ladouceur et al, 2015).
- **Personalised Normative Feedback:** Individualised health messages are more likely to be read and remembered and can reduce gambling related harm scores (Luqiens et al, 2016).
- **Promotion:** Interventions and support should be promoted through appropriate mediums to ensure the target population will be reached.

### **Promising Practices for Research & Evaluation of Remote Intervention and Support for Gambling Harm**

- **Include Baseline Assessments and Follow Ups:** Evaluations should include assessments at baseline (formal diagnostic screening), pre-treatment, post-treatment, and at short and longer-term follow-up(s) (i.e. 6+ months) in order to effectively assess initial and sustained impacts (Carlbring et al, 2008; Carlbring et al, 2012; Hodgins et al, 2019; and Ladouceur et al, 2015).

- **Reduce Attrition:** Approaches should be taken to reduce attrition to improve the impacts and assessments of the interventions and support, such as increasing sample size and following up with participants (Boughton, Jindani, & Turner, 2016).
- **Use a Control Group:** Almost all studies reviewed included a control waitlist group to compare with the intervention group, which allows for the accurate capturing of impacts for participants.
- **Ensure Independent Assessments:** Evaluations of online interventions that are clinician-led can be biased so assessments by independent parties or blind studies are preferred (Ladouceur et al, 2015).
- **Assess Various Outcomes:** Impacts for consideration can be gambling specific – triggers, number of gambling sessions, time and money spent – and also extend more broadly into mental health and life satisfaction – stress, anxiety, depression, and quality of life.
- **Consider How Treatment Outcomes Vary for Different Populations and Over Time:** It is necessary to identify which interventions and support options are most suitable for which audiences and whether impacts vary or are maintained over the long term, for example up to 36 months (Carlbring et al, 2012; Lugiens et al, 2016).
- **Examine Processes alongside Outcomes:** Evaluations should consider participant opinions of the delivery of the intervention, such as the level of information in and duration of the modules (Boughton, Jindani, & Turner, 2016), alongside assessments of impacts.

### Recommendations for Future Research

- **Treatment of Comorbid Conditions:** Research suggests that gambling harms are comorbid with mental health concerns and alcohol/substance use (Petry, 2005; Hodgins et al., 2011; Shaffer & Martin, 2011), which require interventions in addition to or alongside problematic gambling. More research needs to be conducted on whether remote interventions are appropriate for these groups.
- **Guided vs. Self-Guided:** It remains unclear when and for whom guided versus self-guided interventions or support is most appropriate and effective. More research is also needed on self-guided programmes specifically, to understand the effectiveness of different online interventions with no guidance (Hodgins et al, 2019). Further research should also confirm and consider why guided interventions have been found to increase attrition (Lugiens et al, 2016).

- **Remote vs. In-Person:** Limited research has considered when and for whom remote versus in-person intervention or support is the most appropriate and effective (Rodda & Lubman, 2014).
- **Informal Support:** Limited empirical research has considered the impact and efficacy of certain remote services such as informal support from family, friends, and or peers. The appropriateness or benefits of these lower tech and more informal sources of remote support is unclear.
- **Therapists' Perspectives:** Additional research should be conducted to explore how guided interventions are viewed and experienced by the therapists to complement participant perspectives.

## Background

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In the digital age, therapeutic support for difficulties such as gambling harm has become more widely accessible through mobile apps, online, and by phone. In the context of the COVID-19 pandemic, the potential need for and benefits of these remote support options has arguably increased. Many gambling operators have either moved to digital platforms or expanded their online gambling offerings in response to lockdowns and other COVID-19-related restrictions, precipitating changes in how gamblers play (Concordia, 2020). Research is finding those with moderate/high gambling harms are more likely than those experiencing low gambling harms to report being influenced to gamble online during COVID-19 and increased gambling frequency and spend during the lockdown (Gainsbury & Blaszczynski, 2020; Håkansson, 2020; Price, 2020). Social distancing has also meant that most support services, including those for gambling harm, are providing their resources largely or exclusively through digital means. In this context, a clear understanding of the best practices and areas of improvement for remote intervention and support options for gambling harm is needed.

## Introduction

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Online therapeutic interventions, such as self-help guides and materials, first appeared in the 90's (Childress & Asamen, 1998). In the decades since its introduction, digital access to intervention and support for those experiencing psychological distress such as gambling harm has greatly increased through mobile apps, online, and by phone. This mode of delivery can be particularly important for many people with gambling problems, as a minority of them access traditional face-to-face treatment (Gainsbury & Blaszczynski, 2011). Remote options can be an attractive alternative to face-to-face interventions, particularly among new treatment seekers (Rodda & Lubman, 2014). With the opportunity to increase uptake and access to intervention and support, remote options may broaden the reach and impacts of these programmes and reduce harms in a broader population of those experiencing gambling problems.

To provide a critical assessment of our current understanding of the effectiveness of remote interventions and support for gambling harm, the current systematic literature review examines existing studies of interventions and support delivered online, by mobile applications, and by telephone. This review is unique in that it considers all available mediums of remote interventions. It explores international

research on remote interventions and support for gambling harm in order to identify areas of consensus and best practice, as well as gaps and opportunities for improvement in intervention and support provision, evaluation, and research.

The following terms are used throughout the report.

**Remote Intervention:** This is the umbrella term that will be used for all treatments (self-guided and guided) delivered remotely.

**Treatment/Therapy:** This term is used for interventions that employ treatment-focused methods such as Cognitive Behavioural Therapy (CBT) and Behavioural Couples Therapy (BCT).

**Support:** Any additional help resources that are not therapy based such as emails, phone calls, or peer support.

## Method

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### Inclusion & Exclusion Criteria

This systematic literature review included existing research on remote intervention and support for gambling harms – both formal and informal forms of therapy, counselling, information, and emotional support provided to those experiencing gambling harms and affected others. The studies included were primary and secondary literature such as empirical research and review articles written in English. All included studies were published between 2000 and 2020.

### Search Strategy

Cooper's (2010) 7-step process for research synthesis was followed for this review. The literature search was conducted through Google Scholar and the University of Sydney (USyd) library database. Articles were collected by using the following search terms on both databases: *gambli\* AND (treatment OR support OR help OR therapy) AND (remote OR online OR phone OR mobile)*. Research on helplines was out of scope for this review. The literature was scanned in 3 phases: 1) the first scan consisted of collecting articles deemed within scope based on the abstracts of each article, 2) the second scan consisted of filtering out out-of-scope articles based on reviewing the

full text, and 3) the third scan included identifying articles by reviewing the reference lists of included articles from the second phase.

## Results

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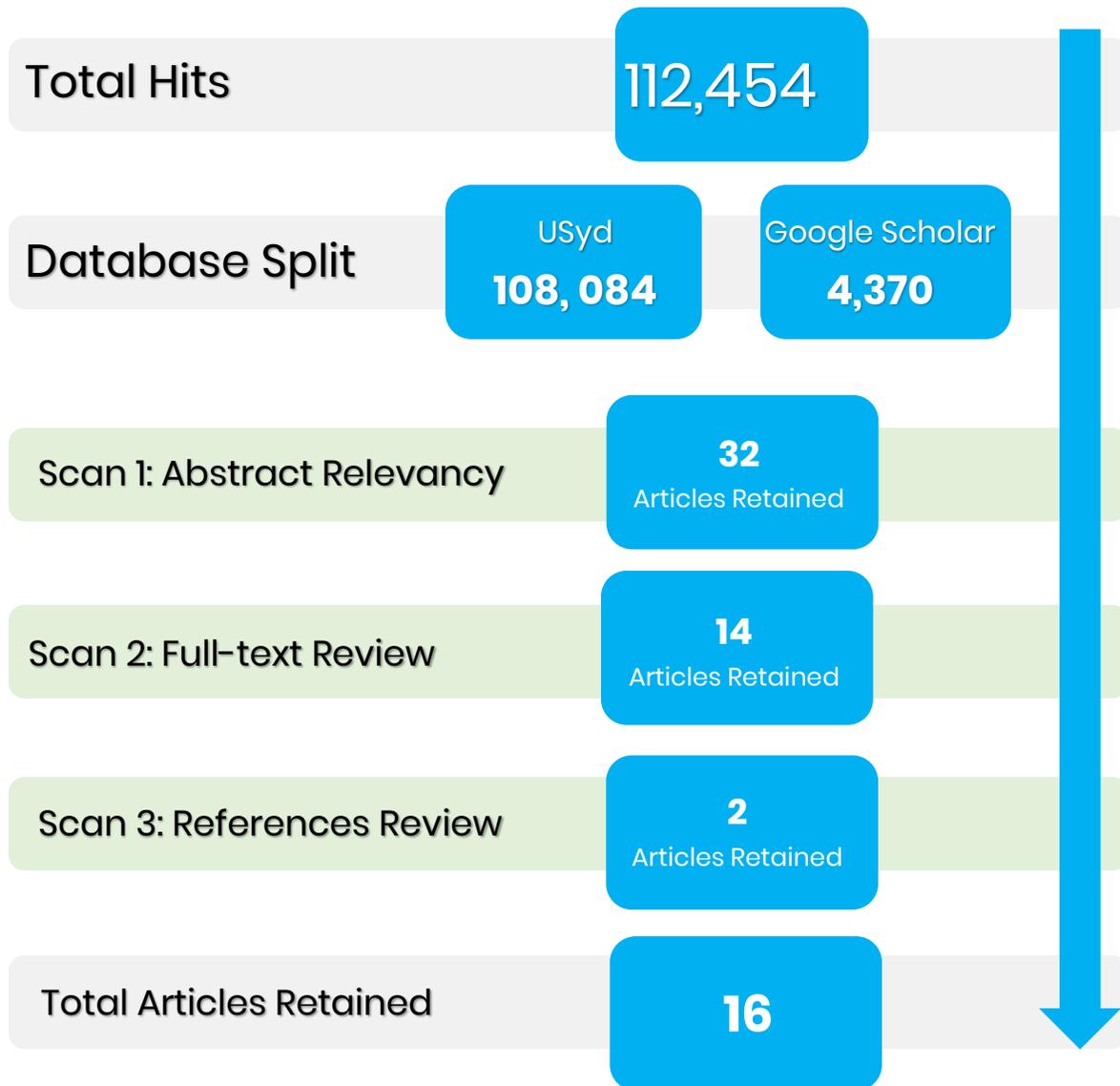
After excluding all studies that did not fall within the inclusion criteria, a total of 16 articles were included in the review and are summarised in Table 2.

### Sample characteristics

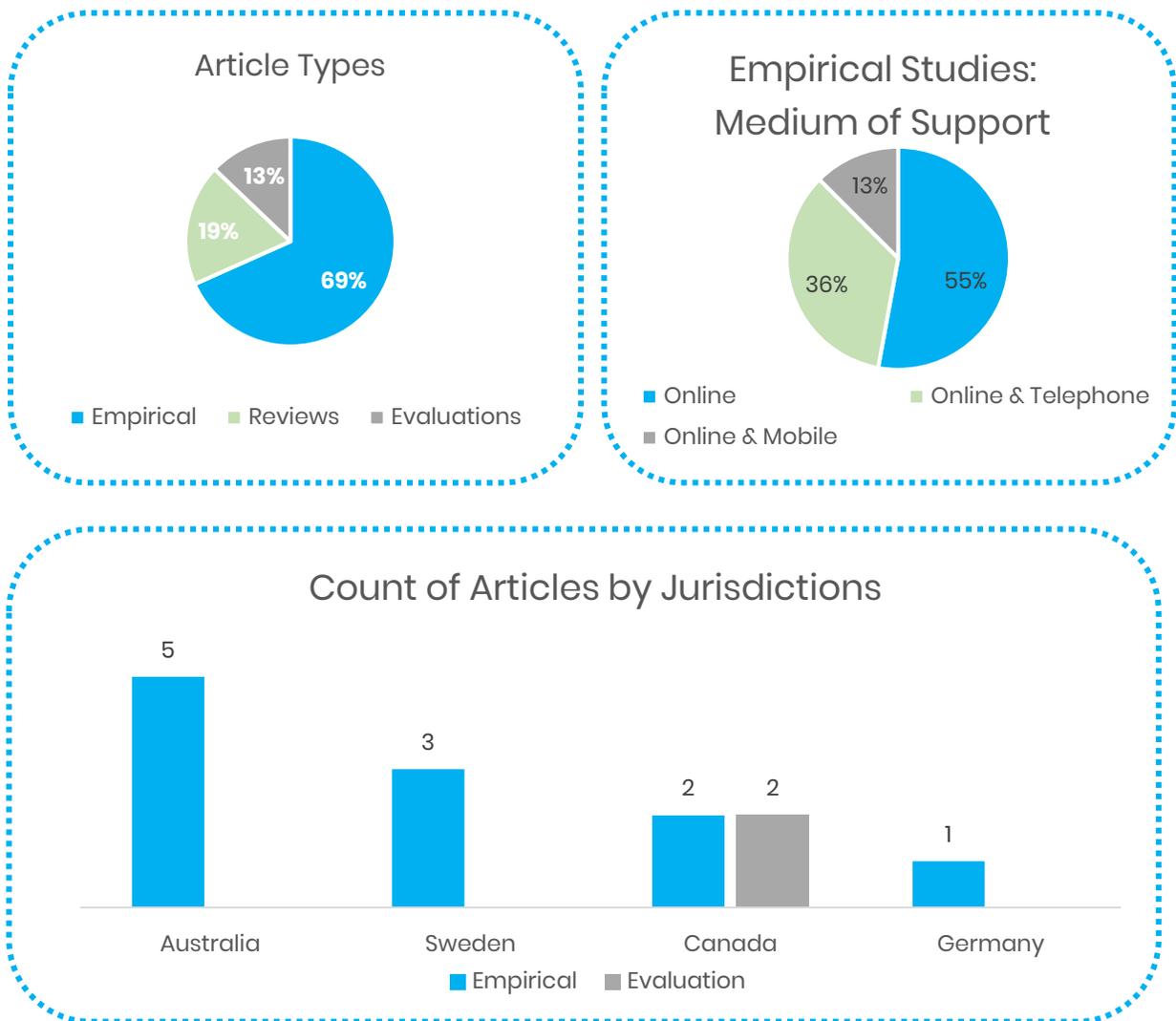
There were a total of 112,454 search hits on both databases combined; 4,370 on Google Scholar and 108,084 on the USyd Library database. After scanning for relevancy based on the title, abstracts were reviewed and 32 articles were retained for full text review. A total of 16 articles were included in the final review after full text review (14 articles) and reference list scans (2 articles; see Figure 1).

Of the 16 included articles, 11 are empirical studies, 3 are literature reviews/reviews, and 2 are evaluations (see Figure 2). Six were published in the last 5 years and another 6 beyond the last 5 years, with 4 published in the last 2 years. Target populations mostly consisted of adults with gambling problems (determined through self-report, Diagnostic and Statistical Manual (DSM), or Problem Gambling Severity Index (PGSI)). The empirical studies were conducted in Australia, Sweden, Canada, Germany, and one on an online poker website (Winamax; see Figure 2). The evaluations looked at studies conducted in Canada (Ontario and Quebec). In terms of types of remote interventions, 6 of the empirical studies focused on online interventions, 4 focused on online and telephone, and one focused on online and mobile (see Figure 2; Glossary of terms included on page 29). The majority of the empirical studies were randomised control trials, with between 47 and 2,869 participants.

**Figure 1: Literature Search Methodology**



**Figure 2: Sample Characteristics**



## The Benefits & Features of Remote Interventions and Support for Gambling Harm

Utilisation rates for traditional face-to-face interventions for gambling harm are quite low, due in part to various factors such as location/accessibility and time (Gainsbury & Blaszczynski, 2011; Rockloff & Schofield, 2004; Clarke, 2007; Priester et al, 2016) as well as shame, denial, and privacy/confidentiality concerns (Gainsbury & Blaszczynski, 2011; Suurvali et al, 2009; Priester et al, 2016). Internet based interventions can overcome many of these issues and can be equally or more effective than face-to-face therapy for health and mental health problems (Barak et al, 2008; Bennett & Glasglow, 2009; Cuijpers, van Straten, & Andersson, 2008). Benefits of internet based interventions include anonymity, privacy, cost-effectiveness, convenience, accessibility, visual demonstrations of probabilities correcting erroneous beliefs, increased knowledge, improved perceived social support, and the capacity to provide a systematic delivery of cognitive-behavioural therapies (Gainsbury & Blaszczynski, 2011; Murray et al., 2005).

Remote provision of treatment and support is an effective medium for delivering self-help guides, modules, counselling, self-assessments, and therapeutic interventions as an alternative means to in-person treatment. Back in 2009, Griffiths (2009) asserted that the delivery and acceptance of internet-based interventions for those experiencing gambling harms are crucial. Internet-based interventions can have a disinhibiting effect on those who choose this route and these types of interventions enable participants to be honest during their sessions (Ibid.).

### Treatment Types

The remote treatment interventions available for gambling harm can be divided into two main types: *guided* interventions that include professional oversight and *self-guided* interventions that do not include professional oversight. Table 1 summarises the different types of remote treatment considered in this review.

**Table 1: Types of Remote Treatment**

|                  | Guided                                                                                                                                                      |           | Self-Guided                                                                                        |           |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------------------------------------------------------------------------------------------|-----------|
| Description      | Therapist-guided approaches led by clinicians and employing treatment-focused methods such as Cognitive Behavioural Therapy or Behavioural Couples Therapy. |           | Approaches that are not led by a therapist, such as self-help, personalised feedback, and modules. |           |
| Treatment Method | Cognitive Behavioural Therapy                                                                                                                               | 78% (n=7) | Self-guided modules                                                                                | 67% (n=3) |
|                  | Behavioural Couples Therapy                                                                                                                                 | 11% (n=1) | Self-assessment tools                                                                              | 33% (n=1) |
|                  | Counselling                                                                                                                                                 | 11% (n=1) |                                                                                                    |           |

### Guided Interventions

Out of the 16 articles used for this review, 9 were empirical studies that discussed remote formal therapist-guided interventions – approaches led by clinicians and employing treatment focused methods such as Cognitive Behavioural Therapy (CBT; 7 articles), Behavioural Couples Therapy (BCT; 1 article) and counselling (1 article). These studies were all based on online (4) or online and telephone treatment (6) (one of the articles employed both self-guided and therapist-guided measures which was double counted).

### **Cognitive Behavioural Therapy**

I-CBT is an internet based delivery of CBT that is typically used to treat mental health concerns. These remote treatments typically range from 3 weeks (Canale et al, 2016) to 3 months (Myrseth et al, 2013; Boughton, Jindani and Turner, 2016). A majority of the CBT interventions for gambling reviewed included direction from a counsellor or medical professional, such as emails or phone calls (Carlbring & Smit, 2008; Carlbring et al, 2012; 2007; Ladouceur et al, 2015; Rodda, Dowling, & Lubman, 2018;). One study included fully guided modules led by therapists (Nilsson et al, 2019). The treatment modules for CBT ranged from 6 to 10 sessions over a short-term period of 6-12 weeks (Carlbring and Smit, 2012; Nilsson et al, 2019).

Carlbring and colleagues (2012) designed a single group study (N=284) in Sweden that included an 8 week CBT programme with minimal therapist contact through email and weekly phone calls. The intervention also included an 8 chapter e-book that used CBT methods and provided information on gambling harms and related activities. A total of 4 criteria were used to assess the effect of the intervention, assessed at 3, 6, 18, and 36 months across gambling types (poker, video lottery terminal (VLT), casino, betting and bingo). These included gambling related harm (NORC DSM-IV), the Hospital Anxiety and Depression Scale, and the Quality of Life Inventory. At the end of the intervention, participants saw significant reductions in their gambling problems, anxiety, and depression which were maintained at the 6, 18, and 36 month follow-ups.

Gambling related harm decreased significantly from 8.1 at pre-intervention (likely pathological gambling) to 2.0 post 36 months (unlikely pathological gambling; Ibid.). The impact was larger for VLTs than betting and bingo. Pre-intervention anxiety was 11.0 (abnormal) while post 36 months measured at 6.5 (normal). Depression measured at 9.3 pre-intervention (borderline abnormal) and 5.0 at post 36 months (normal). The impact for depression was significantly larger for casino than poker, VLT, and bingo. Lastly, life satisfaction measured at 0.3 at pre-intervention and 1.4 at post 36 months, which showed an increase in the quality of life of the participants. Previously, Carlbring & Smit (2008) conducted a similar study which was a randomised trial of internet delivered CBT modules with telephone support that yielded similar results, namely decreased anxiety, depression, gambling harms.

Luqians and colleagues (2016) conducted a unique study that looked at non-treatment seeking poker gamblers who were experiencing harms. The aim of the study was to assess the efficacy of online interventions with and without guidance. Due to the low treatment-seeking status of those experiencing gambling related harms, the authors targeted this group in the gambling environment. The study recruited participants (N=1,122) who were users on the Winamax poker website and 18 years of age and older. During the inclusion period, players who started a poker session were sent an email that contained a survey link, the details of the study, and an invitation to complete the PGSI. If their scores were higher than 5, they were informed by mail that their score could mean they are experiencing harms from gambling. They were then invited to participate in the randomised control trial. There were a total of 4 groups in the study: Group 1 was a control group who were on the waitlist for study participation, group 2 received personalised normalised feedback

emails that were pre-programmed (these included their PGSI score, an explanation of the gambling category they fell into, and prevalence information corresponding to this category), group 3 received a self-help e-book based on CBT by email (no guidance group), and lastly, group 4 received the same CBT program emailed weekly by a trained psychologist with personalised guidance.

PGSI scores significantly decreased between baseline and post treatment in all groups except for group 4 (with guidance; *Ibid.*). There were no differences in PGSI scores at 6 and 12 week follow ups between the groups. The authors note that findings for group 4 (with guidance) may be explained by the time consuming or intrusive nature of receiving personalised guidance versus no guidance, and the participants being non-treatment seeking to begin with. Guidance was also found to cause a higher attrition rate when compared to unguided approaches. The authors suggest asking participants to choose the level of guidance they would prefer to help avoid the aversive effect of guidance led interventions.

Rodda and colleagues (2019) took a unique approach by examining therapists' rather than client perspectives of guided versus self-guided online CBT in Australia.

*GAMBLINGLESS* is the first CBT programme with email guidance in Australia. The aim of this study was to evaluate the effectiveness of CBT with and without guidance. People who self-identified as experiencing gambling related harms were assigned to randomised groups: CBT with guidance (n=101) and CBT with no guidance (n=105). The guided CBT interventions included trained therapists who provided weekly email guidance. The completion rate for the unguided (31%) and guided intervention (35%) groups were very similar.

Using semi-structured telephone interviews, 5 themes were identified from the therapists' (N=7) perspectives who were involved in the guided intervention. The interview covered topics such as the acceptability of the programme, views on being a guide, and thoughts on the feasibility of integrating the programme into existing services. The themes uncovered were as follows:

- **Participant suitability and screening:** internet literacy, access, technical competence, and confidence using device were all important;
- **Program content and modality acceptability:** the programme was acceptable to people experiencing gambling harms;

- **Participant information and management:** therapists would prefer an easier way for themselves to access the system, such as a single system that collates all participant and therapist activity;
- **Email communication:** should be more personalised rather than following a template; and,
- **On-going service integration:** blended treatments with online and face-to-face would be preferred to increase engagement.

Moreover, therapists preferred to integrate guided CBT to their existing treatments, as an adjunct to other therapy rather than offering it alone (Ibid.). With a small sample size, further research is needed to confirm how guided interventions are viewed and experienced by the therapists.

### **Behavioural Couples Therapy**

BCT is an additional therapy technique that is based on CBT and includes elements of couples therapy, involving those who are experiencing gambling harms as well as their concerned significant others (CSOs). A study carried out in Sweden by Nilsson and colleagues (2019) explored the impact of CSO involvement in the CBT and BCT online interventions on people who are experiencing gambling harms (n=136) and their CSOs (n=136). The intervention involved online therapist guided modules, weekly telephone calls, and email support from a therapist. The primary outcome measures for gambling were the Time-Line Follow-Back for Gambling (TLFB-G; a measure of gambling behaviour) and the NORC Diagnostic Screen for Gambling Problems (NODS). Secondary outcome measures were the Patient Health Questionnaire-9 (PHQ-9), the Generalized Anxiety Disorder Seven-Item Scale (GAD-7), the Relation Assessment Scale Generic (RAS-G), the Alcohol Use Disorders Identification Test (AUDIT), and lastly the Inventory of Consequences of Gambling (ICS) for the Gambler and CSO. There were no statistically significant changes amongst these secondary measures for the gamblers or the CSOs – except for ICS for CSO. The CSOs in the BCT group showed a significant reduction in ICS at 12 month follow up. The CSOs also gave the BCT intervention a significantly higher ranking when compared to the CBT group (mean score of 4.4 vs. 3.5).

Results indicated that gamblers in both the CBT and BCT interventions saw a reduction in gambling problems, most abstained from gambling during the span of the intervention, and they rated the interventions as highly satisfactory (Ibid.). However, there were no significant changes found between the two interventions. The authors explain that including a CSO in treatment with gamblers does not

appear to have a substantial impact, but it may increase adherence to the treatment (mean number of modules completed: BCT= 6.8 vs, CBT= 6.0).

## **Counselling**

Online counselling is another remote intervention that is available to those experiencing gambling harms. Rodda and colleagues (2013) conducted a study to explore the reasons why people choose web-based counselling over telephone or face-to-face services. The study included 233 Australians experiencing gambling harms who completed an online counselling session for gambling related harm. The analysis revealed 4 main themes on why online counselling is preferred to face-to-face or telephone services: 27% reported confidentiality, 51% reported convenience of mode of delivery, 34% reported suitable (initial) access to treatment system, and 27% reported preference for online interventions. Embarrassment and being judged were some reasons why confidentiality was important to over a quarter of participants. Over half of those who indicated convenience and accessibility, stated that online interventions were easy, simple, and flexible and the 24 hour access made it an attractive option. Others noted that online counseling is low-cost compared to the charges to call a helpline via mobile phone. Almost half (43%) of the respondents recommended online counseling because of the access to remote professional help and support. The presence of a professional was emphasised, as it enabled improving mood, resisting urges, the awareness of triggers, and addressing gambling cognitions.

## **Self-Guided Interventions**

Self-guided or unguided interventions are those that are not led by a therapist, such as self-help, personalised feedback (e.g. emails that include a person's PGSI score; Luqians et al, 2016; Hodgins et al, 2019), peer support, modules/webinars, newsletters, or non-expert advice. A total of 3 studies were classified as empirical studies of self-guided interventions.

A study in Germany conducted by Bucker and colleagues (2018) examined the acceptance and efficacy of Deprexis, an online intervention for depression, in a sample of 140 slot machine gamblers experiencing harm. Participants were randomly placed in an intervention group or a control group. A baseline and 8 week follow up was conducted using a psychopathology questionnaire. The intervention consisted of 10 interactive online modules ranging from 10 to 60 minutes on behavioural activation, cognitive modification, interpersonal and problem solving skills, relaxation methods, acceptance and mindfulness techniques, and positive psychology.

Although the intervention was specifically for treating depression, it did have positive impacts on gambling-related harms. There was a significant decrease in gambling-related harms (South Oaks Gambling Screen; 5+ = probable pathological gambler, pre= 8.43 and post=5.35;  $p \leq .001$ ) and depression (Patient Health Questionnaire; mild depression = 5-9, pre=9.39 and post=5.74;  $p \leq .005$ ) in the Deprexis group when compared to the control group. However changes were not observed in anxiety or the pathological gambling adaptation of the Yale-Brown Obsessive-Compulsive Scale.

A study of two self-guided interventions conducted by Hodgins and colleagues (2019) in Canada also yielded positive results in a sample of 181 participants who were experiencing gambling harms and not interested in formal treatment. Participants were randomly allocated to either the brief *Check Your Gambling* (CYG) intervention or the extended self-change tools intervention. CYG was a quick assessment which once completed would send a normative feedback report that gives the person a glimpse of their gambling behaviours compared to those of Canadians as a whole, alongside information on how to reduce gambling. The self-change tools included a set of online self-assessment activities and behavioural/cognitive strategies to reduce gambling. The findings revealed that there were no significant differences between the 2 groups – both revealed a significant decrease in days gambled and a decrease in harms being experienced. It was identified that there were improvements in the days of gambling and problem severity at 3, 6, and 12 months. The authors suggested the need to further explore the effectiveness of different online interventions with no guidance, including examining results against a control group. A control group was not included in this study because 1) a previous study with a telephone workbook had shown to be superior to waitlist controls (Hodgins et al, 2001, 2004a), and 2) the main hypothesis was that an extended version of the intervention would yield better outcomes.

Casey and colleagues (2017) conducted a study in Australia that explored 3 different treatment conditions to test the effect of online self-guided CBT and Monitoring, Feedback and Support (MFS) for gambling related harm with no active therapist support (N=174). In the first condition, the CBT programme *Improving the Odds* was used which was developed to help participants control their gambling or abstain from gambling altogether. Participants were required to complete an online session once a week for 6 weeks. The sessions included topics such as increasing awareness of factors that play a role in gambling behaviour, identifying thinking errors, imaginal exposure, problem solving, setting goals, and dealing with negative emotions and

relapse prevention. In the second condition, MFS participants were required to complete online sessions that were 5-10 minutes in length and included portions from the weekly sessions that were provided to the CBT group (less material coverage and shorter sessions). The third condition was a waitlist control group. The findings indicated that when compared to the MFS groups, participants in the CBT group reported significantly greater reductions in gambling urges, gambling related thoughts, and stress, and higher satisfaction with the program. No difference in program completion was found and the CBT condition yielded similar treatment effects to MFS. The authors concluded that online CBT was equally effective in treating gambling related harms as face-to-face, although there were more participants who dropped out of the remote CBT programme when compared to face-to-face CBT.

Cooper (2000, 2001a, b) outlines the importance of informal peer support through web chat forums. A lot of people aren't comfortable talking about the gambling-related harms they're experiencing with their significant others, due to fear of consequences and the feeling of shame and isolation. Web chat forums give a sense of security and safety, since confidentiality and anonymity are established. Boughton, Jindani, & Turner (2016) also note that if people read through comments on a gambling forum without contributing, this may help them move through the Stages of Change (Prochaska et al, 1994).

### **Tool Evaluations: Case Studies**

Evaluations of remote interventions and support for gambling-related harm that examine participant opinions of the interventions and its delivery alongside impact are very limited in the literature. Below we review the 2 evaluations that were located, both conducted in Canada.

#### ***Tutorial Workbook, Ontario***

Boughton, Jindani, and Turner (2016) conducted an evaluation of a web- and phone-based clinician-guided group intervention for help seeking women gamblers in Ontario, Canada. The Tutorial Workbook (TW) is a 12-module book that was mailed to the participants. The TW was designed to address the treatment needs of women with gambling problems by drawing from best practice resources in mental health and gambling treatment. The module topics explored gambling issues, gambling-related goals, relapse prevention, dealing with urges to gamble, how thoughts impact feelings, mindfulness, stress management, relationships, and regulating

emotions. The intervention itself utilised teleconferencing and webinar technology to deliver the 12 clinician-led TW modules over a span of 3 months to 5 groups of 5 women.

Evaluation forms were completed weekly after each module. Overall, positive statements assessing opinions of the modules (i.e. easy to understand, information was relevant) were endorsed by a majority of the participants, while the negative statements were supported by less than 15% (i.e. too much information, very disappointed in this module, *ibid.*). The workbook was highly rated and participants expressed the desire for increased time for discussion. At the end of the 3 month period, over half of the participants wanted to stop all gambling, the majority indicated a decrease in gambling frequency, under half revealed they spent less time gambling, while a third reported no change. Although positive impacts were found, the sample size of the study was quite small (N=18) and the attrition rate was 39%. The authors suggested additional strategies to decrease attrition, such as using commitment strategies, following up with participants, and using motivational interviewing – a counselling approach which is “a collaborative, person-centered form of guiding to elicit and strengthen motivation for change” (Miller & Rollnick, 2009). They also noted the future inclusion of a control group would be beneficial.

### ***JEu me questionne, Quebec***

Ladouceur and colleagues (2015) conducted an evaluation to examine the impact of the online self-help workbook *JEu me questionne* (JMQ) on gambling behaviour among 47 at-risk players and those experiencing gambling harms. This study did not have a control group. During the first week, a motivational interview was conducted and soon after the participants were sent the workbook by mail. During the third week, a second motivational interview was conducted. The workbook was split into 5 phases, each with exercises on gambling. Other tools such as budgeting, relaxation exercises, and problem-solving strategies were also included. The workbook went over topics such as importance of gambling and ambivalence to change, identifying at-risk situations, goal determining, identifying thoughts and the impact on gambling habits, as well as relapse prevention and modifying automatic thoughts. During the motivational interviews, the clinician provided the participants with feedback on their results from the pre-treatment evaluation, which was a 45 minute phone call that discussed the participant’s motives in joining the intervention as well as any obstacles that they’ve encountered.

Evaluation assessments were conducted immediately after the end of the training as well as at 1- and 6-month follow-up. There was a significant decrease in the number of gambling-related harm diagnostic criteria, the number of participants meeting the threshold for gambling-related harm, the amount of money spent on gambling, and the time spent gambling (Ibid). The number of gambling sessions did not significantly decrease. Out of a score of five, participants had rated the workbook and the motivational interviewing very similarly (4.3 vs. 4.7) in terms of the degree of satisfaction with each. The authors note that the treating clinicians conducted the post-treated assessments which may have created bias in the results.

**Table 2: Methodological Characteristics of Selected Studies**

| AUTHORS                                | YEAR | TITLE                                                                                          | OBJECT OF STUDY                                                                                                                               | SAMPLE SIZE & TYPE                                                                               | SAMPLE ORIGIN   | TYPE OF SUPPORT                                   | TYPE OF ARTICLE | RESULTS                                                                                                                                                                                                                                                       |
|----------------------------------------|------|------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-----------------|---------------------------------------------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Boughton, Jindani, &amp; Turner</i> | 2016 | Group Treatment for Women Gamblers Using Web, Teleconference and Workbook: Effectiveness Pilot | Evaluate results suggesting that the group-based teleconference/webinar approach provided a much needed means of treatment support for women. | N=25 women identifying gambling concerns but not currently in formal gambling-specific treatment | Ontario, Canada | Guided (Counselling)<br><br>-Online<br>-Telephone | Evaluation      | Over half of the participants (67%) wanted to stop all gambling, 89% indicated a decrease in gambling frequency, 44% revealed they spent less time gambling, while 33% reported no change                                                                     |
| <i>Bucker et al</i>                    | 2018 | Effects of a depression-focused internet intervention in slot machine                          | Examine the acceptance and efficacy of an online-intervention for depression in a sample of slot-machine gamblers with problems.              | N=140 people with self-reported gambling and mood problems                                       | Germany         | Self-guided<br><br>-Online<br>-Mobile             | Empirical       | Although the intervention was specifically for treating depression, it did have positive impacts on gambling-related harms. There was a significant decrease in problematic gambling and depression in the Deprexis group when compared to the control group. |

**Table 2**  
**Continued**

| AUTHORS                     | YEAR | TITLE                                                                                             | OBJECT OF STUDY                                                                                                                                                                                                                               | SAMPLE SIZE & TYPE                                                         | SAMPLE ORIGIN | TYPE OF SUPPORT                         | TYPE OF ARTICLE | RESULTS                                                                                                                                                    |
|-----------------------------|------|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------|-----------------------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Carlbring &amp; Smit</i> | 2008 | Randomised Trial of Internet-Delivered Self-Help With Telephone Support for Pathological Gamblers | To lower the barriers for help seeking, the authors tested an online alternative in a randomised trial                                                                                                                                        | N=66 gamblers with problems not presenting with severe comorbid depression | Sweden        | Guided CBT<br><br>-Online<br>-Telephone | Empirical       | Participants achieved significant improvement on measures of pathological gambling, general anxiety, depression, and quality of life.                      |
| <i>Carlbring et al</i>      | 2012 | Internet-Based Treatment of Pathological Gambling with a Three-Year Follow-Up                     | This study sought to extend the finding that “CBT is shown to be effective when delivered to non-depressed sample with pathological gambling” to a larger, more representative population, and also test a model to predict responder status. | N=284 people who fulfilled the criteria for pathological gambling          | Sweden        | Guided CBT<br><br>-Online<br>-Telephone | Empirical       | Participants saw significant reductions in their gambling problems and anxiety and depression which were maintained at the 6, 18, and 36 month follow-ups. |

**Table 2**  
**Continued**

| AUTHORS                                     | YEAR | TITLE                                                                                                                                                   | OBJECT OF STUDY                                                                                                                                                                                                                                                    | SAMPLE SIZE & TYPE                                                                                                                        | SAMPLE ORIGIN            | TYPE OF SUPPORT                     | TYPE OF ARTICLE   | RESULTS                                                                                                                                                                                                                                                                              |
|---------------------------------------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Casey et al</i>                          | 2017 | Internet-Based Delivery of Cognitive Behaviour Therapy Compared to Monitoring, Feedback and Support for Problem Gambling: A Randomised Controlled Trial | To investigate the efficacy of an Internet-based cognitive behavioural therapy programme (CBT) for the treatment of problem gambling, when compared to a waitlist control and an active comparison condition consisting of monitoring, feedback, and support (MFS) | N=174 participants over the age of 18 who were required to meet the Diagnostic and Statistical Manual for Mental Disorders Fourth Edition | Australia                | Self-guided CBT<br><br>-Online      | Empirical         | It was found that the CBT condition yielded similar treatment effects as face-to-face CBT. Remote CBT was equally effective in treating gambling related harms, although there were more participants who dropped out of the remote CBT programme when compared to face-to-face CBT. |
| <i>Chebli, Blaszczyński &amp; Gainsbury</i> | 2016 | Internet-based interventions for addictive behaviours: A systematic review                                                                              | To review the effectiveness and treatment outcomes of Internet-based interventions for smoking cessation, problematic alcohol use, substance abuse and gambling                                                                                                    | N=66-471                                                                                                                                  | Sweden, Norway & Finland | Guided<br><br>-Online<br>-Telephone | Literature Review | Internet-based interventions are effective in achieving positive behavioural change through reducing problematic behaviours.                                                                                                                                                         |

**Table 2**  
**Continued**

| AUTHORS                             | YEAR | TITLE                                                                                 | OBJECT OF STUDY                                                                                                                                                            | SAMPLE SIZE & TYPE                                                                      | SAMPLE ORIGIN | TYPE OF SUPPORT        | TYPE OF ARTICLE | RESULTS                                                                                                                                                                                                       |
|-------------------------------------|------|---------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|---------------|------------------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Gainsbury &amp; Blaszczynski</i> | 2011 | Online self-guided interventions for the treatment of problem gambling                | Review the literature to outline the advantages and current status of self-guided online interventions for gambling-related problem.                                       | N/A                                                                                     | N/A           | Self-guided<br>-Online | Review          | Although this is a new field, empirical evidence indicates that online self-guided interventions are efficacious and represent an important treatment adjunct for individuals with gambling-related problems. |
| <i>Hodgins et al</i>                | 2019 | Online Self-Directed Interventions for Gambling Disorder: Randomised Controlled Trial | An online version of a previously evaluated telephone-based intervention package is compared to a brief online normative feedback intervention called Check Your Gambling. | N=181 over the age 18 with perceived gambling harms and scored 3 or greater on the PGSI | Canada        | Self-guided<br>-Online | Empirical       | The findings revealed that there were no significant differences between the two groups – both revealed a significant decrease in days gambled and a decrease in harms being experienced.                     |

**Table 2**  
**Continued**

| AUTHORS                | YEAR | TITLE                                                         | OBJECT OF STUDY                                                                                                                                         | SAMPLE SIZE & TYPE                              | SAMPLE ORIGIN  | TYPE OF SUPPORT                                 | TYPE OF ARTICLE | RESULTS                                                                                                                                                                                                                                 |
|------------------------|------|---------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|----------------|-------------------------------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Ladouceur et al</i> | 2015 | Impacts of a Self-Help Treatment Program for Problem Gamblers | To examine the impact of the self-help treatment JEu me questionnaire (JMQ) on gambling behaviour and severity, and reports participants' satisfaction. | N=47 gamblers at-risk and experiencing problems | Quebec, Canada | Self-guided/Guided<br><br>-Online<br>-Telephone | Evaluation      | There was a significant decrease in the number of diagnostic criteria for gambling problems, the number of participants meeting the threshold for problem gambling, the amount of money spent on gambling, and the time spent gambling. |

**Table 2**  
**Continued**

| AUTHORS               | YEAR | TITLE                                                                                                              | OBJECT OF STUDY                                                                                                                                                 | SAMPLE SIZE & TYPE                               | SAMPLE ORIGIN                        | TYPE OF SUPPORT                                 | TYPE OF ARTICLE | RESULTS                                                                                                                                                                                                                                                     |
|-----------------------|------|--------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------------------|-------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Luquiens et al</i> | 2016 | The Efficacy of Three Modalities of Internet-Based Psychotherapy for Non-Treatment-Seeking Online Problem Gamblers | To assess the efficacy of 3 modalities of Internet-based psychotherapies with or without guidance, among problem gamblers who play online poker.                | N=992 poker gamblers scoring 5+ on PGSI          | All active poker gamblers on Winamax | Guided CBT<br>-Online                           | Empirical       | The findings suggest that PGSI scores significantly decreased between baseline and post treatment in all groups except for group 4 (with guidance). Additionally, guidance was found to cause a higher attrition rate when compared to unguided approaches. |
| <i>Nilsson et al</i>  | 2019 | Behavioral couples therapy versus cognitive behavioral therapy for problem gambling                                | This study compared the efficacy of behavioral couples therapy (BCT) and CBT for both the gambler and their concerned significant others (CSO) delivered online | N= 272 (136 gamblers with problems and 136 CSOs) | Stockholm, Sweden                    | Guided CBT & BCT<br>-Online<br>-Telephone calls | Empirical       | Results indicated that gamblers in the CBT and BCT interventions saw a reduction in gambling, most gamblers abstained from gambling during the span of the intervention, and they rated the interventions as highly satisfactory.                           |

**Table 2**  
**Continued**

| AUTHORS            | YEAR | TITLE                                                                                        | OBJECT OF STUDY                                                                                                               | SAMPLE SIZE & TYPE                       | SAMPLE ORIGIN | TYPE OF SUPPORT                     | TYPE OF ARTICLE | RESULTS                                                                                                                                                                                                                                                                                                                                                       |
|--------------------|------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|---------------|-------------------------------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Rodda et al</i> | 2014 | Characteristics of Gamblers Using a National Online Counselling Service for Problem Gambling | To describe the development and implementation of a national Australian real time chat and email service for problem gambling | N=2,869 (gamblers with problems n= 1961) | Australia     | Guided<br><br>-Online<br>-Telephone | Empirical       | Based on the first 2 years of data, chat is a more popular option than email for accessing counselling support online, with 85 % of the 2021 clients accessing chat rather than email support. These initial findings suggest that online counselling provides an important alternate mode of service delivery, which is attractive to new treatment seekers. |
| <i>Rodda et al</i> | 2013 | Web-Based Counseling for Problem Gambling: Exploring Motivations and Recommendations         | To determine motivations for choosing and recommending web-based counselling over telephone or face-to-face services.         | N=233 gamblers with problems             | Australia     | Guided Counselling<br><br>-Online   | Empirical       | A content analysis revealed 4 themes related to confidentiality/anonymity (reported by 27.0%), convenience (50.9%), suitable access to treatment system (34.2%), and a preference for the online counselling (26.6%).                                                                                                                                         |

**Table 2**  
**Continued**

| AUTHORS                             | YEAR | TITLE                                                                                                       | OBJECT OF STUDY                                                                                                                                                                                                  | SAMPLE SIZE & TYPE                                                                                                                                  | SAMPLE ORIGIN       | TYPE OF SUPPORT                                                     | TYPE OF ARTICLE | RESULTS                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------|------|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Rodda et al</i>                  | 2019 | The therapist experience of internet delivered CBT for problem gambling: Service integration considerations | To explore the perspective of therapists from services providing routine care for problem gambling and their provision of guidance within the context of an CBT programme.                                       | N=101 with self-identified gambling problems (CBT with guidance; n=7 therapists)<br>N= 105 self-identified gambling problems (CBT with no guidance) | Victoria, Australia | Guided CBT<br><br>-Online                                           | Empirical       | The overall experiences and attitudes of therapists towards <i>GAMBLINGLESS</i> and CBT were positive, despite practical problems around assessment of participant suitability and low participant engagement.                                                                                                                                                          |
| <i>Rodda, Dowling, &amp; Lubman</i> | 2018 | Gamblers seeking online help are active help seekers                                                        | To examine the full range of help-seeking options utilised by gamblers, and to determine whether administering a comprehensive list of help options yields higher help-seeking rates than a single item measure. | N=277 gamblers                                                                                                                                      | Australia           | Guided Counselling / Self-guided<br><br>-Online<br>-Telephone calls | Empirical       | This study found significantly higher rate of help-seeking reported by those utilising the broader help-seeking screen (70%) compared to a one item measure (22%). Secondly, the authors found that gamblers were active help seekers, with 55% seeking help from at least one remote or face-to-face service in the 4 weeks following contact with the online service. |

**Table 2**  
**Continued**

| AUTHORS                   | YEAR | TITLE                                                             | OBJECT OF STUDY                                                                                                     | SAMPLE SIZE & TYPE | SAMPLE ORIGIN                           | TYPE OF SUPPORT       | TYPE OF ARTICLE | RESULTS                                                                                                                                                                    |
|---------------------------|------|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|--------------------|-----------------------------------------|-----------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>van der Maas et al</i> | 2019 | Internet-Based Interventions for Problem Gambling: Scoping Review | To give an overview of academic research on internet-based interventions that are used to address problem gambling. | N=27 studies       | Australia, New Zealand, and Scandinavia | Guided CBT<br>-Online | Review          | Internet-based interventions are a promising direction for treatment and prevention of problem gambling, particularly in reducing barriers to accessing professional help. |

## Discussion

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This systematic review aimed to identify and critically assess studies on remote intervention and support for gambling harm in order to outline promising practices and research gaps in the research. This review examined 16 studies (empirical studies, literature reviews, and evaluations) published since 2000 that explored remote treatments and support – delivered online, by mobile, and/or by telephone – for gambling harms.

The majority of the interventions identified were delivered online with the aid of workbooks, self-assessments, modules, webinars, chats, emails, telephone calls, often with the support of a medical professional. The most frequently studied type of support was CBT/I-CBT which incorporates cognitive behavioural therapy in reading materials, modules, and other aids.

All studies that were reviewed demonstrated positive outcomes for remote interventions and support. This is in line with other reviews that conclude online approaches are effective and that positive behavioural change can be achieved, namely the reduction of problematic behaviours leading to harmful effects (Chebli, Blaszczyński, & Gainsbury, 2016). Although self-guided (versus guided) interventions and support is a newer field of research, the available evidence shows online self-guided interventions are efficacious and important for those experiencing gambling harms (Gainsbury & Blaszczyński, 2011). Despite these various positive findings, it remains unclear which remote interventions (i.e. with guidance or without) are most suitable for which populations (i.e. non-treatment seeking, different game types; Carlbring et al, 2016; Luqjens et al, 2016).

Several advantages of remote versus in-person interventions and support are also reported, such as cost-effectiveness, flexibility, customisable, accessible, convenient, and most importantly anonymous and confidential (Edgerton, Biegun & Roberts, 2016; Gainsbury & Blaszczyński, 2011). However, limited research has compared whether remote interventions and support are more effective than face-to-face options, and the particular groups that may experience greater impacts from which approach. Further, attrition is a disadvantage for some of the studies of remote interventions. Casey and colleagues (2017) note that further research is needed to examine the methods for increasing participant engagements and reducing dropout in online interventions.

Much of the research on remote interventions for gambling harm is quite dated, with over half of the studies reviewed having been published 5 or more years ago. Internet use patterns have changed greatly in recent years, with people spending over twice as much time online than 10 years ago and smartphone use almost doubling between 2012 and 2018 (OFCOM, 2018). More recent investigations are required to confirm whether previous findings still hold and identify the most appropriate approaches for remote interventions for gambling harm in this more internet savvy, engaged, and reliant context.

### Promising Practices for Remote Intervention and Support for Gambling Harm

The empirical and evaluation studies reviewed above suggest some promising practices for the delivery of impactful remote interventions and support for gambling harm. Although no gold standard exists currently, there are several frequently used features for remote approaches for those experiencing gambling harms. While research has yet to consider the effectiveness of various combinations of features, those that have been found to have positive impacts include:

- **Cognitive Behavioural Therapy:** Several studies reported positive results for CBT-based online interventions (Carlbring, 2012; Carlbring & Smit, 2008, Nilsson et al, 2019).
- **Workbooks/E-books:** The inclusion of workbooks and e-books were highly rated in the two evaluations reviewed (Boughton, Jindani, & Turner, 2016; Ladouceur et al, 2015).
- **Personalised Normative Feedback:** Individualised health messages are more likely to be read and remembered and can reduce gambling related harm scores (Luqjens et al, 2016).
- **Promotion:** Interventions and support should be promoted through appropriate mediums to ensure the target population will be reached.

### Promising Practices for Research & Evaluation of Remote Intervention and Support for Gambling Harm

Although there are few evaluations of remote interventions and supports and none of mobile apps, promising practices for assessing opinions and impacts were gathered from the empirical and evaluation studies reviewed. These include:

- **Include Baseline Assessments and Follow Ups:** Evaluations should include assessments at baseline (formal diagnostic screening), pre-treatment, post-

treatment, and follow-up(s) to determine whether or not positive behaviour changes are achieved in the short term and maintained in the longer term. Most of the studies reviewed used follow-ups of various lengths – 3, 6, 12, 18, and 36 months – to examine the maintenance of positive behaviour change (Carlbring et al, 2008; Carlbring et al, 2012; Hodgins et al, 2019; and Ladouceur et al, 2015). It is also recommended to use baseline assessments to determine the component(s) in the intervention that will be beneficial (Raylu et al, 2008).

- **Reduce Attrition:** Approaches should be taken to reduce attrition to improve the impacts and assessments of the interventions and support, such as increasing sample size and following up with participants (Boughton, Jindani, & Turner, 2016).
- **Use a Control Group:** Almost all studies reviewed included a (waitlist) control group to compare with the intervention group. This helps to identify the differences between the groups and the impacts the intervention may have on the participants.
- **Ensure Independent Assessments:** Ladouceur and colleagues (2015) noted the issue of bias in evaluations where both the online interventions and assessments are clinician-led. Research assistants may be an alternative for evaluating guided approaches (Hodgins et al, 2019) or a blinded study methodology could be used.
- **Assess Various Treatment Outcomes:** Impacts on factors beyond simple level of gambling problems should be assessed to provide a more holistic view of the intervention and support impacts. Additional impacts for consideration can be gambling specific – triggers, number of sessions, days gambled, urges, thoughts, time and money spent (Casey et al, 2017; Hodgins et al, 2019; Ladouceur et al, 2015) – and also extend more broadly into mental health and life satisfaction – stress, anxiety, depression, and quality of life (Carlbring et al, 2012; Casey et al, 2017). To assist with comparability, standardised measures should be used.
- **Consider How Treatment Outcomes Vary for Different Populations and Over Time:** Beyond assessing treatment outcomes generally, it is necessary to identify which interventions and support options are most suitable for which audiences, such as those who play different games (Carlbring et al, 2012) or are not seeking treatment (Luqiens et al, 2016). Studies should also consider whether impacts vary or are maintained over the long term, for example up to 36 months (Carlbring et al, 2012; Carlbring & Smit, 2008).

- **Examine Processes alongside Outcomes:** In addition to considering the impacts of the interventions and support, evaluations should consider participant opinions of the delivery of the intervention, such as the level of information in the modules, the duration of the modules, and amount of time for discussion (Boughton, Jindani, & Turner, 2016).

## Recommendations for Future Research

Throughout this review, authors have expressed the positive outcomes of remote support interventions for gambling harm. However several gaps in our knowledge remain. These include:

- **Treatment of Comorbid Conditions:** Research suggests that gambling harms are comorbid with mental health concerns or alcohol/substance use (Petry, 2005; Hodgins et al, 2011; Shaffer & Martin, 2011), which require interventions in addition to or alongside problematic gambling. More research needs to be conducted on whether remote interventions are appropriate for this group.
- **Guided vs. Self-Guided:** It remains unclear when and for whom guided versus self-guided treatment is most appropriate and effective. It may be that self-help programmes are better suited for those who are experiencing less severe problems (gambling or comorbidity; Toneatto et al, 2008). More research is also needed on self-guided programmes specifically, to understand the effectiveness of different online interventions with no guidance (Hodgins et al, 2019). Further research should also confirm and consider why guided interventions have been found to increase attrition (Luqiens et al, 2016).
- **Remote vs. In-Person:** Limited research has considered when and for whom remote versus in-person support is the most appropriate and effective. Rodda & Lubman (2014) conducted one of the few studies to explore why people choose web-based counselling over telephone or face-to-face services and found that primary motivations included anonymity, convenience, ease of access, and a preferences for writing over talking. More research is needed on differences in impacts alongside preferences.
- **Informal Support:** Limited empirical research has considered the impact and efficacy of certain remote services such as informal support from family, friends, and or peers (Boughton, Jindani, & Turner, 2016; Cooper, 2001a, b). The appropriateness or benefits of these lower tech and more informal sources of remote support should be identified in future studies.

- **Therapists' Perspectives:** Additional research should explore how guided interventions are viewed and experienced by therapists in addition to participant perspectives (Rodda et al, 2019).

## Glossary

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| Term                     | Definition                                                                                                                                                                                                               |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Therapy/Treatment</b> | Face-to-face or remotely interventions to help those who are experiencing gambling related harms that employ treatment focused methods such as Cognitive Behavioural Therapy (CBT) and Behavioural Couples Therapy (BCT) |
| <b>Mobile</b>            | Mobile phone applications that are geared towards those who are experiencing gambling-related harms                                                                                                                      |
| <b>Telephone</b>         | Telephone calls as an intervention (counseling) or an additional aid to an intervention (weekly check-in calls). This excludes helplines.                                                                                |
| <b>Guided</b>            | Interventions that are guided by a professional such as a psychologist/therapist.                                                                                                                                        |
| <b>Self-Guided</b>       | Interventions that do not involve a professional's help but instead are guided by oneself.                                                                                                                               |

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