



MONASH University

Problem Gambling Research and Treatment Centre

**DRAFT GUIDELINE FOR SCREENING,
ASSESSMENT AND TREATMENT IN PROBLEM
AND PATHOLOGICAL GAMBLING**

**DRAFT FOR PURPOSE OF PUBLIC CONSULTATION ONLY
NOT TO BE CITED BEFORE PUBLICATION**

**The Problem Gambling Research and Treatment Centre is a joint initiative of
the Victorian Government, the University of Melbourne and Monash University**

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A3.1	Body of evidence matrices
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LIST OF ABBREVIATIONS

ADHD	Attention deficit hyperactivity disorder
AGREE	Appraisal of Guideline for Research and Evaluation
APA	American Psychiatric Association
AUDADIS-IV	Alcohol Use Disorder and Associated Disabilities Interview Schedule IV
BBS	Brief Bio-Social Gambling Screen
CAGI	Canadian Adolescent Gambling Inventory
CALD	Culturally and Linguistically Diverse
CBT	Cognitive-behavioural therapy
CPGI	Canadian Problem Gambling Index
DIGS	Diagnostic Interview for Gambling Severity
DSM	Diagnostic and Statistical Manual of Mental Disorders
DSM-IV-J	Diagnostic and Statistical Manual-IV-Adapted for Juveniles
DSM-IV-MR-J	Diagnostic and Statistical Manual - IV- Multiple Response - Adapted for Juveniles
EGMs	Electronic Gaming Machines
EIGHT	Early Intervention Gambling Health Test
FLAGS	Focal Adult Gambling Screen
GA	Gamblers Anonymous
GA20	Gambler Anonymous Twenty Questions
GDG	Guideline Development Group
GP	General Practitioner
GPSS	Gambling Problem Severity Subscale
MAGS	Massachusetts Adolescent Gambling Screen
MET	Motivational Enhancement Therapy
MI	Motivational Interviewing
NATSISS	National Aboriginal and Torres Strait Islander Social Survey
NESARC	National Epidemiological Survey on Alcohol and Related Conditions
NHMRC	National Health and Medical Research Council
NICE	National Institute for Health and Clinical Excellence
NODS	NORC DSM Screen for Gambling Problems
PGRTC	Problem Gambling Research and Treatment Centre
PGSI	Problem Gambling Severity Index
PICO	Participants, Intervention, Comparison and Outcomes
PPGM	Problem and Pathological Gambling Measure
RCT	Randomised Control Trial
RDD	Random-digit-dial
ROC	Receiver Operator Curve
SCIP	Structured Clinical Interview for Pathological Gambling
SES	Socioeconomic status
SOGS	South Oaks Gambling Screen
SOGS-R	South Oaks Gambling Screen – Revised
SOGS-RA	South Oaks Gambling Screen – Revised for adolescents
SSRIs	Selective Serotonin Reuptake Inhibitors
TGA	Therapeutic Goods Administration
VGS	Victorian Gambling Screen

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SUMMARY OF RECOMMENDATIONS

There are four categories of recommendations used in this guideline as outlined in Table 1:

1. **Evidence-based recommendations** – Evidence-based recommendations were assigned a grade (See Table 1) based on the strength of the evidence, the consistency of the evidence across studies, the likely clinical impact, and the degree to which the evidence can be generalised and applied to the Australian context.

Full details of this process can be found in Appendix A1. Categories have been assigned according to the National Health and Medical Research Council (NHMRC) (1). Where appropriate, these recommendations are accompanied by practice points.

2. **Consensus-based recommendations** – In the absence of sufficient evidence, and where appropriate, consensus-based recommendations were formulated based on clinical opinion and expertise.
3. **Practice points** – Practice points may stand alone or accompany evidence- or consensus-based recommendations. They were formulated to provide relevant practical advice and information.
4. **Research recommendations** – Research recommendations were formulated where gaps in knowledge were identified.

Table 1. Categories of recommendations

Recommendation category	Description	
Evidence-based	A	Body of evidence can be trusted to guide practice
	B	Body of evidence can be trusted to guide practice in most situations
	C	Body of evidence provides some support for recommendation(s) but care should be taken in its application
	D	Body of evidence is weak and recommendation must be applied with caution
Consensus-based	Recommendation based on expert opinion as insufficient evidence available	
Practice Point	Practical advice and information based on expert opinion	
Research Recommendation	Recommendation for further research, often provided when there is a gap in the evidence	

Screening and assessment

CONSENSUS-BASED RECOMMENDATION

Those who screen positive for problem gambling using an initial brief (i.e. 1-3 items) screening tool (e.g. the one item screening tool: “Have you ever had an issue with your gambling?”) should be referred for further assessment and treatment by appropriately trained specialist practitioners in problem gambling.

The screen should be used in primary care settings where at risk clients may be presenting for services. These may include:

- People who nominate gambling as an issue for themselves and/ or who are otherwise suspected of having problem gambling
- People who present for other mental health problems
- People who come from groups with relatively high rates of problem gambling (i.e. young men with low SES)

CONSENSUS-BASED RECOMMENDATION

Adults with high risk of mental health problems including those who are presenting for treatment or for assessment for mental health problems should be **screened and assessed** for problem/ pathological gambling using a validated measurement tool or tools.

The recommended tools are:

Brief (1-3 items)

- Brief Bio-Social Gambling Screen (BBGS)*
- Lie-Bet Questionnaire*
- NODS-CLiP*

Medium (4-12 items)

- Problem Gambling Severity Index (PGSI) of the Canadian Problem Gambling Index (CPGI)

Long (>13 items)

- South Oaks Gambling Screen (SOGS)
- Victorian Gambling Screen (VGS)
- Problem and Pathological Gambling Measure (PPGM)*

**Validation study information only*

CONSENSUS-BASED RECOMMENDATION

Adolescents and children with high risk of mental health problems including those who are presenting for treatment or for assessment for mental health problems should be **screened and assessed** for problem/pathological gambling using a validated measurement tool or tools. The recommended tools are:

- DSM-IV-MR-J
- CAGI Gambling Problem Severity Subscale (GPSS)*

**Validation study information only*

PRACTICE POINT

The original and validated versions and scoring protocols of all tools should be utilised in epidemiological and clinical settings.

PRACTICE POINT

A structured clinical interview is required for a full assessment (e.g. DIGS, SCIP).

PRACTICE POINT

People with high risk of gambling problems including those who are presenting for treatment or for assessment for gambling problems should be screened for other mental health problems including:

- Anxiety disorders
- Depression*
- Personality Disorders
- Alcohol dependence
- Drug dependence
- Other impulse control disorders
- Family Violence

** If depression is evident then suicide risk screening protocols ought be considered*

Treatment

EVIDENCE-BASED RECOMMENDATION	
Individual or group Cognitive-Behavioural Therapy should be used to reduce gambling behaviour, gambling severity and psychological distress in people with gambling problems.	B
CLINICAL PRACTICE POINT	
Where Cognitive-Behavioural Therapy is to be prescribed, the following should be considered:	
<ul style="list-style-type: none">• Practitioners should have appropriate qualifications and training• Manualised delivery of the intervention should be considered	

EVIDENCE-BASED RECOMMENDATION	
Motivational Interviewing and Motivational Enhancement Therapy should be used to reduce gambling behaviour and gambling severity in people with gambling problems.	B
CLINICAL PRACTICE POINT	
<ul style="list-style-type: none">• Practitioners should have appropriate qualifications and training• Manualised delivery of Motivational Enhancement Therapy should be considered	

EVIDENCE-BASED RECOMMENDATION	
Practitioner delivered psychological interventions should be used to reduce gambling severity and gambling behaviour in people with gambling problems.	B
CLINICAL PRACTICE POINT	
Where practitioner delivered psychological interventions are to be prescribed, the following should be considered:	
<ul style="list-style-type: none">• Availability of services• Practitioners should have appropriate qualifications and training• Manualised delivery of the intervention should be considered	

EVIDENCE-BASED RECOMMENDATION	
Practitioner delivered psychological interventions should be used over self-help psychological interventions to reduce gambling severity and gambling behaviour in people with gambling problems.	B
CLINICAL PRACTICE POINT	
Where practitioner delivered psychological interventions are to be prescribed, the following should be considered: <ul style="list-style-type: none">• Client preferences and availability of services need to be taken into consideration• Practitioners should have appropriate qualifications and training• Manualised delivery of the intervention should be considered	

EVIDENCE-BASED RECOMMENDATION	
Group psychological interventions could be used to reduce gambling behaviour and gambling severity in people with gambling problems.	C
CLINICAL PRACTICE POINT	
Where group psychological interventions are to be prescribed, the following should be considered: <ul style="list-style-type: none">• Client preferences and availability of services need to be taken into consideration• Practitioners should have appropriate qualifications and training• Manualised delivery of the intervention should be considered	

EVIDENCE-BASED RECOMMENDATION	
Antidepressant medications should not be used to reduce gambling severity in people with gambling problems alone.	B
CLINICAL PRACTICE POINT	
<ul style="list-style-type: none">• This recommendation is applicable to those with gambling problems only, and not to those who may have other comorbidities, such as depression and anxiety	

EVIDENCE-BASED RECOMMENDATION

Opioid antagonists could be used to reduce gambling severity in people with gambling problems.

C

CLINICAL PRACTICE POINT

Where opioid antagonists are to be prescribed, the following should be considered:

- That the drug proposed should have problem gambling as a registered indication by the Therapeutic Goods Administration
- That the prescribing practitioner has the appropriate skills and training
- Recommended contraindications are carefully studied before prescription

Research recommendations for screening and for assessment

RESEARCH RECOMMENDATION

Tools should be developed with a clearly stated purpose for their use including triage/ screening, diagnostic, classification, acuity, intervention design/selection purposes, and population group.

RESEARCH RECOMMENDATION

Performance of screening and assessment tools should be further researched with large representative community samples (and compared with treatment seeking samples), using contemporary gold standard clinician-administered DSM based criteria measures to identify the best performing tools for the whole population and key sub-groups. Performance indicators should include:

- sensitivity
- specificity
- area under ROC
- validity (construct, content and criterion)

RESEARCH RECOMMENDATION

Current measures of self-reported pathological/ problem gambling activities against objective measures that do not rely upon self-report measures alone for adults, adolescents and children should be validated.

RESEARCH RECOMMENDATION

Adapt existing or create new screening and assessment tools for pathological/ problem gambling that are validated across different cultural groups and specifically for Indigenous peoples.

RESEARCH RECOMMENDATION

Randomised Controlled Trials are required to assess whether both screening and assessment lead to better outcomes and/or higher rates of engagement with services for adults, adolescents and children.

Research recommendations for treatment

RESEARCH RECOMMENDATION

Randomised Controlled Trials, where feasible, should be conducted into the effectiveness of self-exclusion in treating problem gambling compared with no intervention.

RESEARCH RECOMMENDATION

Randomised Controlled Trials, where feasible, should be conducted into the effectiveness of practitioner delivered interventions in treating problem gambling compared with non-practitioner delivered interventions.

RESEARCH RECOMMENDATION

Randomised Controlled Trials, where feasible, should be conducted into the effectiveness of non-practitioner-delivered psychological interventions compared with self-help psychological interventions.

RESEARCH RECOMMENDATION

Randomised Controlled Trials, where feasible, should be conducted into the effectiveness of non-practitioner-delivered psychological interventions compared with no intervention.

RESEARCH RECOMMENDATION

Randomised Controlled Trials, where feasible, should be conducted into the effectiveness of self-help psychological interventions compared with no intervention.

RESEARCH RECOMMENDATION

Randomised Controlled Trials, where feasible, should be conducted into the effectiveness of prolonged practitioner-delivered psychological interventions compared with briefer interventions.

RESEARCH RECOMMENDATION

Randomised Controlled Trials, where feasible, should be conducted into the effectiveness of individual psychological interventions compared with group psychological interventions.

RESEARCH RECOMMENDATION

Randomised Controlled Trials, where feasible, should be conducted into the effectiveness of in-patient psychological interventions compared with psychological interventions delivered in community settings.

RESEARCH RECOMMENDATION

Randomised Controlled Trials, where feasible, should be conducted into the effectiveness of psychological interventions with a goal of abstinence compared with psychological interventions with a non-abstinence goal and no intervention.

RESEARCH RECOMMENDATION

Randomised Controlled Trials, where feasible, should be conducted into the effectiveness of opioid antagonist medications compared with other pharmacological interventions.

RESEARCH RECOMMENDATION

Randomised Controlled Trials, where feasible, should be conducted into the effectiveness of mood stabiliser/anticonvulsant medications compared with no intervention and other pharmacological interventions.

RESEARCH RECOMMENDATION

Randomised Controlled Trials, where feasible, should be conducted into the effectiveness of pharmacological interventions other than antidepressant, opioid antagonist, and mood stabiliser/anticonvulsant compared with no intervention and other pharmacological interventions.

RESEARCH RECOMMENDATION

Randomised Controlled Trials, where feasible, should be conducted into the effectiveness of pharmacological interventions compared with psychological interventions.

RESEARCH RECOMMENDATION

Randomised Controlled Trials, where feasible, should be conducted into the effectiveness of combined psychological and pharmacological interventions compared with no intervention and either pharmacological or psychological interventions alone.

RESEARCH RECOMMENDATION

Randomised Controlled Trials, where feasible, should be conducted in order to provide more valid effectiveness data. These studies should make provision for studying potential differences in outcomes for key groups including:

- People with gambling problems with and without co-occurring psychiatric symptoms
- Males and females with gambling problems
- Younger and older people with gambling problems
- People with gambling problems on Electronic Gaming Machines or gambling activities other than EGMs
- People with gambling problems from different cultural backgrounds

WHAT IS THIS DOCUMENT AND WHAT IS ITS PURPOSE?

This document is the first guideline to address problem gambling in Australia and provides recommendations to guide practice, patient and policy decisions for the screening, assessment and treatment of problem and pathological gambling.

A summary of the recommendations has been presented at the beginning of this document. The research evidence and/or expert opinion underpinning these recommendations can be found in the full text and accompanying appendices.

There are four categories of recommendation:

- 1) Evidence-based;
- 2) Consensus-based;
- 3) Practice points; and
- 4) Recommendations for research.

Given the current immaturity of the research literature in the problem gambling field, only a few evidence-based recommendations could be formulated in this guideline. This outcome was not unexpected, and by conducting this review it was our intention to formally identify the gaps in knowledge in order to assist the strategic advancement of the field through targeted research and development and to guide practitioners as to what evidence was available to inform their practice.

Following a background section to problem and pathological gambling, and a summary of the methods employed in this review, the evidence relating to this guideline is divided into two parts:

- Part 1 relates to the **screening** and the **assessment** of people who may have gambling problems; and
- Part 2 relates to the **treatment** of people that are known to have gambling problems.

The comprehensive process employed to review and appraise the evidence for this guideline is summarised in this document, with further details provided in the accompanying Appendices. Information about how this guideline will be evaluated and implemented is also provided at the end of the guideline document.

This guideline is proposed for submission to the NHMRC for approval under section 14A of the National Health and Medical Research Act 1992.

WHEN WILL THIS GUIDELINE BE UPDATED?

This guideline is based on research evidence available up to March 2010. It follows that as new evidence emerges, guidelines require updating to ensure that the recommendations reflect contemporary evidence. To that end, the GDG who has conducted this project has committed to a 3-year update cycle, which is in accordance with NHMRC standards and procedures for externally developed guidelines (2).

In conjunction with the development of this guideline, the same group at the Problem Gambling Research and Treatment Centre (PGRTC) is currently in the final stages of completion of two Cochrane reviews on the treatment of problem gambling (3-4). These reviews will be formally incorporated into the next iteration of this guideline. The development of the protocols for the Cochrane reviews and their conduct has certainly been assisted by this guideline development process.

BACKGROUND

Conceptualising and defining problem and pathological gambling

A range of terms have been used to describe problematic gambling, including: compulsive, pathological, disordered, level 2 and level 3, neurotic, at-risk, problem, excessive, addicted (5-10). Many of these terms are consistent with their conceptual origins (addictions, behavioural, cognitive, psychodynamic etc.) although they all attempt in some way to distinguish between behaviour that represents controlled, social or recreational gambling and behaviour which causes significant problems to the gambler and others (7).

The term 'pathological gambling', regardless of the specific conceptual model underpinning the term, is associated with dichotomous classification systems such as the Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV) (5) and South Oaks Gambling Screen (SOGS) (11-13) which establish whether the person has the condition of pathological gambling through comparing their score on an inventory against a standard cut-off score.

The term 'problem gambling' has been used in the literature in two main ways. One use is as a description of behaviour that is classified as "subclinical" using the SOGS and the DSM-IV measures. A wider and more recent use has been to propose the term 'problem gambling' as denoting the more severe state of problematic gambling based on a continuum of gambling-related harm from non-problem gambler through at-risk gambler to problem gambler (14). Notwithstanding criticism that actual measurement capacity may differ from conceptual intent in relation to the key measure of problem gambling, the Canadian Problem Gambling Index (CPGI) (15), the term has been adopted as the standard definition of problematic gambling in Australia (16):

Problem gambling is characterised by difficulties in limiting money and/or time spent on gambling which leads to adverse consequences for the gambler, others or for the community.

While the term 'problem gambling' has been used to inform a *harm-based* continuum approach to naming severity levels, there have been other attempts to identify hierarchies of problematic gamblers using a primary dichotomous classification system (DSM-IV). These include the 'Levels' approach (8, 10) that comprises the following levels: Level 0 gamblers (never gambled); Level 1 (social or recreational); Level 2 (wagering to the extent of causing some problems and referred to as at-risk, in-transition, problem); Level 3 (significant problems such that DSM-IV criteria are met). They also include the hierarchical framework developed by Toce Gerstein et al based on symptom severity using the DSM-IV criteria (17).

Please note: For the purpose of this guideline, the term 'problem gambling' is used to refer to the full continuum of gambling-related harm, which is in accordance with the Australian context. The term 'pathological gambling' is only used in the context of the DSM classification.

Prevalence of problem and pathological gambling

The prevalence of problem gambling behaviour has been studied extensively at the provincial or state level and at the national level in the US, UK, Canada, China, Scandinavia and Southern Europe, South Africa and Australasia, beginning in the mid 1970s to the present day (9-10, 18-21). Observed twelve-month prevalence rates for pathological/problem gambling vary across countries from a low of 0.15 to 0.2 percent in Norway (22-23) to a high of 5.3 percent of the adult population in Hong Kong (24). The 2007 British Gambling Prevalence Survey found that 0.5 percent of the adult population had a gambling problem in the previous 12 months (20). In Australia, the Productivity Commission's (25) national study of gambling found that the prevalence of problem gambling approximated to 2.1 percent of the community (25). Provinces in Canada have rates that vary between 0.4 percent (26) and 1.4 percent (27-28), and in Australia, state variations in 12 month prevalence have been found to vary from 0.4 percent (29) to 1.4 percent (30).

The variations in observed prevalence rates may be attributable to true variability in jurisdictions associated with factors such as differential levels of gambling opportunity; the effectiveness of prevention and education initiatives; and the maturity of gambling markets and the effects of novelty and accommodation. The variations may also be artefactual due to differences in measurement protocols including the use of different instruments such as the SOGS and SOGS-R, DSM-IV based instruments, diagnostic interview schedule, Problem Gambling Severity Index (PGSI), Victorian Gambling Screen (VGS); whether lifetime or 12 month prevalence is measured; whether the measures are administered to whole adult community samples or regular gamblers only; whether face to face or telephone interviews are used; and the modification of scoring protocols.

Although there are periodic studies in a range of jurisdictions that give information about prevalence rates over time, longitudinal studies that follow a single cohort are rare. Abbott's seven-year follow up study illustrates the usefulness of cohort studies by demonstrating that while the overall prevalence of problem gambling is reasonably stable, there is a high level of 'churn' with substantial movement in and out of problem gambling status over time (31).

Gambling modalities

Gambling is the placing of a wager or bet in the form of money or something of value on the outcome of an uncertain event that may involve the elements of skill and chance. The 2006 California Problem Gambling Survey (32) reported 83 percent of respondents with lifetime gambling participation, while the 2007 British Gambling Prevalence Survey (20) reported 68 percent of adults having participated in some form of gambling activity within the past 12 months. In Victoria, participation rates are relatively stable, averaging about 75 percent from 2003 to 2008 (33-34) although in 2008, only 21 percent of Victorian adults played electronic gaming machines (EGMs) (34) compared with around 30 percent in the 2003 to 2007 period (30).

Gambling includes *gaming*, where the outcome is decided largely by chance, such as in EGM and lottery play and *betting or wagering* on the outcome of a future event such as in horse racing or sports betting. Traditionally, gambling has been divided into continuous and non-continuous forms. Continuous forms are those in which the time between wagering and knowing the outcome is short, which permits instant gratification and this includes EGMs, bingo, horse racing, casino betting and scratchies. The most common form of non-continuous gambling is lotteries, however, the increasing availability of rapid-play lottery products is blurring this distinction.

In many jurisdictions, help-seeking problem gamblers are most likely to nominate EGMs as their preferred gambling mode (35-37) with this being the case for over 80 percent of female clients in an Australian study (38) although problem gamblers are also more likely to report multi-modal gambling (20). The Productivity Commission has noted that playing gaming machines (at all frequencies) has between a 7 and 17 fold higher risk of problem gambling (as measured by using the PGSI 8+ cutoff score) than lotteries and that problem gamblers account for an average of 41 percent of EGM expenditure across all Australian jurisdictions (39). Reasons for the strong association between EGM play and problem gambling may include structural characteristics (i.e., characteristics that are inherent in the gambling activity such as rapid playing speeds and payout intervals, multi-credit and multi-line machines, and credited wins), situational characteristics (i.e., characteristics that are primarily features of the environment, such as the availability and accessibility in terms of location, saturation, venue type, and opening hours), loss of control, and erroneous beliefs (40-41).

The world gaming machine market comprises a range of different types of EGMs in terms of technology, winnings, payout rates and the range of bets (25). These machines can be classified as pachinko machines, amusement machines with prizes and high-intensity gaming machines (25). While pachinko machines and amusement machines have a low maximum spending per game and a slow speed of play, high-intensity gaming machines are characterised by high maximum spending per game and speed of play. These machines include slot machines, video poker machines, video lottery terminals and 'poker machines'.

Although there is not definitive evidence from the empirical literature, there is a general belief that electronic gaming is the most 'addictive' form of gambling, in that it contributes more to causing problem gambling than any other form of gambling (40). In many jurisdictions, EGMs are among the most popular gambling activities (25) and it seems that they are associated with a rapid onset of problem gambling relative to other forms of gambling (40, 42). There is also increasing evidence to suggest that EGM gambling is the predominant form of gambling displayed by problem and pathological gamblers presenting to treatment services in countries across the world.

It has been argued that by exploiting the psychological principles of learning, the situational and structural characteristics of EGMs contribute to the development and maintenance of problem gambling behaviour (25, 41, 43). Situational characteristics are primarily features of the environment that are external to the gambling activity. Situational characteristics generally associated with EGMs include the availability and accessibility in terms of location, saturation, venue type, opening hours and membership requirements; the use of advertising; consumer incentives; the degree to which they are

associated with other interests and facilities; the facilitation of a surreal environment characterised by the absence of clocks and windows; the availability of cash withdrawal facilities; and the availability of alcohol. In contrast, structural characteristics are those inherent in the gambling activity. Structural characteristics of EGMs include rapid playing speeds and payout intervals, multiplier potential in terms of multi-credit and multi-line machines, a range of machine denominations, multiple coin and note acceptors, credited wins, reinforcing payout schedules and advanced audiovisual effects.

Problem gamblers classified on the basis of their nominated gambling preference differ on various dimensions such as demographic characteristics, gambling behaviour, severity of gambling problems, gambling motivations, biochemistry, consequences of problem gambling behaviour, personality characteristics, comorbid diagnoses and psychiatric difficulties, psychiatric treatment histories, substance use, substance use treatment histories, childhood histories, and family background (44-47). It has been argued that EGM gamblers begin to gamble to escape from life problems and the high levels of arousal associated with stress are reinterpreted as excitement within the gambling environment (48). In contrast, horse race and/or casino gamblers gamble to replace the low levels of arousal associated with boredom with an optimal level of arousal in the form of excitement (48).

The treatment of problem gambling is complicated by substantial heterogeneity in the clinical presentation of problem gamblers, which is due, in part, to a high comorbidity with other psychiatric disorders.

GAMBLING ISSUES FOR DIFFERENT SUB-POPULATIONS

The screening, assessment, and treatment of problem gambling are complicated by substantial heterogeneity in the clinical presentation of problem gamblers. There is emerging evidence that problem gambling represents a heterogeneous disorder, whereby there is substantial diversity in the clinical presentation of problem gamblers (49). Problem gamblers differ with respect to type and intensity of gambling behaviour, psychiatric comorbidity, family history, age of onset, gender, age, Indigenous status, and cultural identity (49). This heterogeneity is not surprising, given that the disorder is described by predominantly behavioural symptoms rather than psychological symptoms. The recognition of clinical problem gambling sub-populations (e.g. (7, 49)) may eventually have implications for more refined screening and assessment protocols and individually tailored intervention approaches. Such a matching procedure could serve to maximise treatment response, enhance client satisfaction, reduce attrition, and lower treatment costs (50).

While the clinical questions and inclusion/exclusion criteria developed for this guideline ensured that all the relevant evidence would be retrieved with respect to different sub-populations (with respect to co-occurring psychiatric symptoms, gender, age, socioeconomic status, ethnic and cultural background), the lack of evidence available means that the final recommendations must be applied with caution with respect to these specific groups. Please note that this limitation in the evidence base has been acknowledged and accounted for in the formulation and grading of the

recommendations. While there is a lack of good quality evidence, specific gambling issues relevant to these groups are nevertheless discussed below.

By drawing attention to the specific populations, we are not intimating that all women, cultural groups and adolescents, for example, are vulnerable to elevated risks of problem gambling, but that in the presence of a number of other risk factors, there are particular vulnerabilities associated with these population groups (51).

People with gambling problems and co-occurring psychiatric symptoms

As stated previously the screening, assessment and treatment of problem gambling is complicated by substantial heterogeneity in the clinical presentation of problem gamblers, which is due, in part, to a high comorbidity with other psychiatric disorders. There is a large and burgeoning body of research that has investigated the association between problem gambling and comorbid conditions. There is now evidence from several major population studies with high quality standardised measurement tools and sound methodologies that problem gambling is associated with depression and mood disorders, anxiety disorders, alcohol use problems, substance use problems, and personality disorders (20, 52-53). For example, in a North American survey of 43,093 respondents, Petry, Stinson, and Grant (53) found that problem gamblers were more likely than non-problem gamblers to report a lifetime major depressive disorder (37%, odds ratio = 3.0), anxiety disorder (41%, odd ratio = 3.4), alcohol use disorder (73%, odd ratio = 6.3), drug use (38%, odd ratio = 5.4), nicotine dependence (60%, odds ratio = 7.2), and personality disorder (61%, odds ratio = 9.1). A recent systematic review and meta-analysis of the prevalence of common comorbid disorders in population representative samples of problem and pathological gamblers (54) revealed that the highest mean prevalence was for nicotine dependence (60.1%), followed by substance use disorder (57.5%), any type of mood disorder (37.9%), and any type of anxiety disorder (37.5%) (See Table 2). The findings of this review revealed moderate heterogeneity across the eleven included studies, suggesting that these weighted means should be interpreted with caution.

There is a general consensus that understanding the functional relationship between problem gambling and any comorbidity is critical for effective treatment as the presence of a comorbid disorder may influence the selection of treatment and impact on the effectiveness of treatment, even when multiple disorders within the one individual are etiologically independent (55-56). There is also growing evidence that problem gamblers with comorbid psychiatric conditions have more severe problems than problem gamblers without comorbid conditions (57-58). However, the presence of comorbid psychiatric disorders and their implications for problem gambling screening, assessment and treatment has received little attention.

Table 2. Prevalence of comorbid mental health disorders in problem and pathological gambling

<i>Study</i>	<i>Alcohol use disorder</i>	<i>Major depression</i>	<i>Bipolar disorder / Manic episodes</i>	<i>Substance use disorders^a</i>	<i>Illicit drug abuse / dependence</i>	<i>Nicotine dependence</i>	<i>Any anxiety disorder^b</i>	<i>Generalised anxiety disorder</i>	<i>Any mood disorder^c</i>	<i>Antisocial personality disorder</i>
Afifi <i>et al.</i> 2010 (59)			4.0% ^d		1.6% ^d					
Bondolfi <i>et al.</i> 2000 (60)	36.0%									
Bondolfi <i>et al.</i> 2008 (61)	13.5%									
Cunningham <i>et al.</i> 1998 (62)	44.5%	8.8%	3.1%		39.9%	76.3%		7.7%		35.0%
Fiegelman <i>et al.</i> 1998 (63)				26.0%						
Gerstein <i>et al.</i> 1999 (64)	9.9%	29.1% ^e	32.5%							
Kessler <i>et al.</i> 2008 (52)		38.6%	17.0%	76.3%		63.0%	60.3% ^f	16.6%	55.6%	
Marshall & Wynne, 2004 (65)	15.0%	24.0% ^g								
Park <i>et al.</i> 2010 (66)	30.2% ^h	11.6%	0.0%	69.8%		34.9%	14.0%		11.6%	
Petry <i>et al.</i> 2005 (53)	73.2%	37.0%	22.8%		38.1%	60.4%	41.3%	11.5%	49.7%	23.3%
Welte <i>et al.</i> 2001 (67)	18.0%									
Summary Effect (%)	28.1	23.1	9.8	57.5	17.2	60.1	37.4	11.1	37.9	28.8
I ² (%)	48.9	46.9	47.7	49.1	49.2	46.9	47.2	29.8	47.1	45.3

Note: ^a: Includes alcohol abuse/dependence and/or drug abuse/dependence and/or nicotine dependence, ^b: includes panic disorder (with and without agoraphobia), phobia (social and specific) and generalised anxiety disorder, ^c: includes major depressive disorder, dysthymia and bipolar disorder/manic episodes, ^d: refers to only women, ^e: refers to depressive episode, ^f: also includes post-traumatic stress disorder, ^g: authors suggest to use with caution, ^h: refers to alcohol dependence.

Gender and gambling

Historically, the prevailing view of gambling has been that of a predominantly masculine activity. Although the introduction of EGMs in many jurisdictions has significantly altered this male dominated culture, male gender remains a significant risk factor for the development of frequent gambling and gambling problems (68-69). Moreover, studies indicate that the heritability of problem gambling is stronger for male offspring (70). Recent international epidemiological prevalence surveys have generally indicated that males still comprise approximately two-thirds to three-quarters of pathological gamblers (25). The California Problem Gambling Prevalence Survey found a 2.3 percent lifetime prevalence rate of pathological gambling and a 3.1 percent rate for problem gambling, in men, and for women a much lower 0.7 percent lifetime prevalence rate of pathological gambling and a 1.3 percent rate for problem gambling (32). Recent Australian statewide gambling surveys reveal that women comprised 24 to 45 percent of moderate risk gamblers and 27 to 53 percent of problem gamblers (29, 71-74).

Men tend to participate in a broader range of gambling activities than women, with preferences for “games of skill”, such as racing and casino games. Stereotypically, it is argued that men are attracted to these activities because they are more likely to gamble for reasons such as excitement, social reasons, and financial reasons; while women may prefer “games of chance”, such as lottery, bingo, and EGMs, because they are more likely to gamble to escape aversive emotions, life problems, trauma, and abuse. It is on this basis that men have traditionally been referred to as “action” gamblers, while women have been referred to as “escape” gamblers. There is growing empirical evidence to suggest that gender influences the meaning of gambling and motivations to gamble. Stewart and Zack (75) found that problem gambling women scored significantly higher than problem gambling men on both coping and social motives and that gender interacted with gambling motives in predicting gambling problem severity, whereby coping motives predicted gambling problems more strongly in women and enhancement motives predicted gambling problems more strongly in men.

There is some evidence that although men and women are as likely to develop interpersonal and leisure use problems, men are more likely to experience financial losses and legal problems consequent to gambling problems. Although gender uniquely contributes to gambling patterns, it is important to note that gambler profiles based on demographic, economic, and health-related factors may be more important in understanding these patterns (76-77). Male problem gamblers also report comparable or higher rates of alcohol/substance abuse and dependence and personality disorders, but comparable or lower rates of mood and anxiety disorders, than their female counterparts (78). There may also be gender differences in the degree of psychiatric symptomatology at different levels of problem gambling severity.

Age and gambling

Young people

Age restrictions prohibiting children and adolescents from engaging in government regulated gambling activities have been implemented in most jurisdictions. However, large-scale prevalence studies conducted in many jurisdictions nevertheless reveal high prevalence rates of illicit gambling participation among adolescents (79). Meta-analytic studies of adolescent gambling participation have revealed that adolescent gambling rates during the past year range from 52 to 89 percent, with a median of 73 percent (80).

Despite high variability reported for adolescent prevalence rates of problem gambling (81), there is consensus that adolescents constitute a high risk population for gambling problems compared to adults (82). Adolescent prevalence rates of pathological gambling generally range from 4 to 8 percent, which represents approximately two to four times the prevalence rates generally found in the adult population (e.g. (81)). Moreover, an additional 10–15 percent of adolescents are described as ‘at risk’, ‘problem’ or ‘potential problem’ gamblers (81-82). In many of the Australian statewide gambling surveys, individuals classified within the youngest age grouping (e.g., 18 to 24 years) report the highest rate of problem gambling (rates from 0.29 to 2.28%) (29, 72, 74).

An emerging literature has evaluated the factors associated with youth problem gambling. Youth problem gambling has been associated with personality factors such as impulsivity (83), excitability (84), disinhibition (84), intensity-seeking (83), and risk-propensity (85). There is also substantial evidence that problem gambling behaviour amongst adolescents, particularly males, seems to be part of a constellation of other antisocial, risk-taking, and delinquent behaviours (83-87). These behaviours include alcohol or substance use, physical violence, vandalism, shoplifting, illegal activities, truancy, poor academic achievement, school problems, and problems with the police, conduct problems, and lower school connectedness.

Another important finding from this emerging area of research is that adolescents with gambling-related problems, particularly females, report higher rates of a range of mental health issues such as anxiety, depression, and suicidal ideation and attempts (84-86), and unhelpful coping styles, such as emotion-based, avoidant, and distraction oriented coping styles (83, 85). Several studies have also found that youth problem gambling is associated with familial factors, such as parental attachment, parental monitoring, sibling risk behaviours, poor perceived familial social support, family problems, and low family connectedness (85).

Seniors

Gambling is a common social activity among seniors, a trend that appears to cut across many cultures (88-89). An Australian survey revealed that most seniors (86%) participated in gambling to some degree during the previous 12 months, a rate similar to the general community (87% in 1996) (90). Using the PGSI of the CPGI, another Australian study found that the rate of problem gambling in seniors was 0.18 percent and the rate of moderate risk gambling in seniors was 0.53 percent, compared to 0.55

percent and 1.97 percent for the general population respectively (91). The California Problem Gambling Prevalence Study found that the rate of problem gambling in seniors was 2.0 percent and the rate of pathological gambling was 0.5 percent (32). Current gambling assessment tools, however, may have questionable validity when used with seniors. Moreover, seniors are often either under-represented in prevalence studies, or findings related to them are amalgamated with the rest of the adult population (92). Our current understanding of seniors and problem gambling behaviours may therefore be somewhat superficial.

Some senior gamblers are simply formerly middle-aged gamblers who have aged, whereas others should be considered as 'late-uptake' gamblers. Seniors who grew up in an environment where gambling was part of the family or cultural tradition may re-engage in this activity, or augment their involvement in this activity, in late-life when they experience a need to reconnect with their familial/cultural roots (such as late-life relocation of residence), or where there is a desire to preserve certain special memories (88, 93).

Indigenous communities and gambling

Early anthropological studies of gambling in Indigenous communities in Australia focussed on family and communal unregulated gambling, particularly card games, and noted the redistributive function of these games, with winnings most often remaining within the community and recycled into subsequent games (94-96). More recent analyses and reviews (97-98), however, describe the increasing shift in Indigenous communities to participation in regulated or commercial gambling, particularly EGM play and off-course track betting (TAB). With these changes, winning becomes individualised although losses are experienced at familial and communal levels as well (97, 99-101).

Examination of databases such as the National Aboriginal and Torres Strait Islander Social Survey (NATSISS) reveals that Indigenous problem gambling rates are significantly higher than in the general community. An Australian statewide gambling survey revealed that Australian born Aboriginal or Torres Strait Islanders report higher problem gambling rates (1.2%) than Australian born non-Aboriginal and Torres Strait Islanders (0.4%) (29). These rates increase with the degree of remoteness of place of residence, and are associated with multiple family households or overcrowding, lower levels of individual health and exposure to higher levels of drug and alcohol abuse (102-103). Although it has been suggested that Indigenous problem gambling rates may be up to twenty times those of the general community (104), methodological difficulties associated with such measurement in Indigenous communities have been acknowledged as possibly compromising accurate data collection (97-99, 102, 105).

Although it seems that Indigenous people with gambling problems are often reluctant to seek help due to stigma, shame and the absence of Indigenous counsellors in most services (98-99, 106), it is suggested that where counsellors are available, they should be capable of dealing with trauma, high levels of comorbidity such as alcohol and mental health issues and grief and loss; case conferencing and other family or kinship group

interventions and high level financial counselling and financial literacy training; as well as community capacity and resilience building (99, 107).

As intervention level and focus should be informed by accurate measurement of problem incidence and acuity (107), it is important to note that detailed examination of the performance of existing gambling screens (CPGI and SOGS) in the Northern Territory reveals differential patterns of association of items with male and female gamblers and differential association with a range of demographic variables such as remoteness (108). These are seen to be to some extent, artefacts of the cultural construction of items, and specific screening tool development for use in Indigenous communities has been recommended (98-99, 108). Of note, however, is that this differential pattern with regard to gender and remoteness is not specific to Indigenous communities alone.

Culturally and Linguistically Diverse (CALD) communities and gambling

As noted by Raylu and Oei (109-110), there is rather limited empirical research evidence concerning the role of culture in gambling. The work that is available suggests that there may be important cultural variations, particularly related to lower participation rates but higher rates of problem gambling.

Blaszczynski, Huynh, Dumlao and Farrell (111), in a Chinese Speaking community study in Australia, found a gambling participation rate of 40 percent. Moreover, a Chinese version of the SOGS yielded an overall prevalence estimate of 2.9 percent for pathological gambling (4.3% for males; 1.6% for females) compared with about one percent for the general community. Similarly, a study of gambling behaviour in four cultural groups (Arabic, Chinese, Greek and Vietnamese) using native language interviews and SOGS, showed much higher rates of problem gambling in the non-English language groups than for those in the general Australian community. However, the percentage of respondents who participated in playing poker machines *outside* of a casino environment, for example, was much lower than for the general community (3.1–13.7% compared with 28.8%) (112).

Lai's (88) study of gambling in older Chinese people in Canada found that only 26.6 percent of them reported that they gambled, and that being male, having lived in Canada longer, having a higher level of social support, having more service barriers, and having a stronger level of Chinese ethnic identity significantly increased the probability for older Chinese to participate in gambling.

In the United States, Petry, Armentano, Kuoch, Norinth, and Smith's study of gambling participation and problems among South East Asian refugees (113) found that the lifetime prevalence of pathological gambling was a very high 59 percent with no significant differences between ethnic groups. Male gender, being divorced or separated, and being younger were found to be significant predictors of problem gambling. Duong and Ohtsuka (114) and Au and Yu (115) have argued that gambling can be understood in the context of migration adjustment problems, such as unemployment, underemployment, and threats to self esteem, as well as the primary and secondary trauma associated with a refugee experience.

Thus gender, age and cultural background have all been found to influence participation in gambling activity as well as the rates of problem gambling. However, the evidence base is not strong.

We now turn to discussion of the guideline and the guideline development process.

OBJECTIVES

The purpose of this guideline is to inform practice and policy decisions with respect to: (1) screening and assessment of people who may have gambling problems; and (2) treatment of people with gambling problems. The recommendations have been formulated by identifying, appraising and summarising the best available evidence.

SCOPE

This guideline has been developed to provide information to assist health care professionals in the management of people with gambling problems, or at risk of problem gambling.

This guideline is intended to determine:

- whether screening or assessment for gambling problems leads to higher rates of engagement with services;
- whether screening or assessment for problem gambling leads to better outcomes;
- the best screening or assessment method for use in different settings for different populations;
- the best pharmacological and psychological treatments for people with gambling problems; and
- the best pharmacological and psychological treatments for different sub-populations of people with gambling problems (with respect to co-occurring psychiatric symptoms, gender, age, socioeconomic status, ethnic and cultural background, form of problem gambling).

Specific clinical questions can be found in the respective evidence sections of this report.

TARGET AUDIENCE

This guideline has been developed for use by health and welfare professionals who assist people with, or at risk of developing, gambling problems including general practitioners, mental health practitioners and counselors. This guideline may also be of use to researchers and policy makers in the field of problem gambling.

FOCUS OF THE GUIDELINE

Individual clinical questions relating to **screening and assessment** (Part 1) are inclusive of people of all ages with gambling problems and different settings (primary health care, general population, university/college, primary health care).

Individual clinical questions relating to **treatment** (Part 2) are inclusive of people of all ages with gambling problems. These people may have been assessed via diagnostic tools as having a problem with gambling or have self-referred to counseling, welfare or health practitioners.

All individual clinical questions address different population groups according to age, sex, comorbidity and type of gambling.

METHODS

The comprehensive process used to develop this guideline is outlined in full in Appendix A1, and was conducted according to NHMRC guidance (2).

Multidisciplinary contribution to guideline development

The GDG identified and invited relevant experts from a range of disciplinary backgrounds, in accordance with the NHMRC protocol, to be members of the expert advisory panel. The expert advisory panel, which has overseen the development of the guideline, comprised 17 people. The membership of the panel included clinicians with specialist and general expertise, other relevant professionals, consumer representatives, specialists in guideline development, a health economist, an Indigenous consultant and representatives from government and industry.

All members of the panel fully disclosed their affiliations and declared any conflicts of interest. If any members of the panel had a direct or financial interest in any aspect of the guideline, they declared their interest to the Chair and they did not take part in any vote or discussion concerning that matter.

Identification of clinical questions

The clinical questions on which this guideline is based were devised by the GDG in consultation with and based upon input from the expert advisory panel. We deliberately chose a broad range of questions, and anticipated that for many of the questions we may not find suitable evidence. However, it was important to pose the questions nevertheless as this would enable us to formally identify any gaps in the evidence base. For a list of the clinical questions see the respective sections in this report.

For the screening and assessment part of the guideline six clinical questions were developed and 22 clinical questions were developed for the treatment part. Detailed inclusion and exclusion criteria regarding the participants, interventions, comparisons and outcomes (PICO) were identified and entered into tables for each clinical question (see Appendix A2.6 and A3.5 for each PICO table).

Identification and review of existing relevant gambling guidelines

We identified two existing guidelines on the treatment of people with gambling problems (116-117). In order to assess the adequacy of the existing guidelines, four independent reviewers used the Appraisal of Guideline for Research and Evaluation (AGREE) instrument to appraise the quality of the guidelines and determine whether they could be used to inform the current project.

On the basis of this AGREE assessment, the GDG determined that these two guidelines were not suitable for adaptation and commenced the evidence identification process according to the clinical questions. See Appendix A1 for full details of the AGREE appraisal process and results.

Search methods

A broad ranging systematic search was used to identify all available literature. The search strategy was limited to peer-reviewed journal articles with an English abstract published from 1st January 1980 to 2nd February 2010. Several electronic databases were searched including, the Cumulative Index to Nursing and Health (CINAHL), The Cochrane Library, Excerpta Medical Database (EMBASE), Evidence Based Medicine Reviews (EBM Reviews), Medline, PsycInfo and ProQuest. Relevant journals that were not indexed in any of the included databases were hand-searched along with the reference lists of included articles and key gambling e-resources known to the GDG. For a more comprehensive description of the search methods, please see Appendix A1.

Evidence review

Screening of the evidence

A reviewer initially scanned the titles, abstracts and keywords of every record retrieved by the search strategy, deleting duplicates and irrelevant records. Two independent people reviewed each remaining record against the inclusion and exclusion criteria. Literature relating to screening and assessment of problem gambling was limited to Level I-III. Literature relating to treatment of people with gambling problems was limited to Level I and II evidence, according to the NHMRC levels of evidence. See Appendix A1 for a description of each Level of evidence as well as an explanation as to why we have opted for higher levels of evidence in the treatment review. Also listed in the Appendices are the total number of studies retrieved and included (A1), as well as a list of excluded studies and why (A2.5).

Assessment of methodological quality

For each included study, data were extracted and the methodological quality was assessed using Critical Appraisal Templates (118). An overall rating of low, moderate or high risk of bias was given to each included study, reflecting the respective risk of

overestimating or underestimating the true effect of the intervention due to methodological flaws. The studies that were conducted with more methodological rigour were more likely to yield results that are closer to the truth and as such would have a lower risk of bias (119).

How recommendations were formulated

Where evidence existed to answer the clinical questions, **evidence-based recommendations** were made, with the grade of the recommendations reflecting the volume, consistency, clinical impact, generalisability and applicability of the evidence. A body of evidence assessment matrix was created for each recommendation (see Appendix A2.2 and A3.1). Where the evidence identified in the evidence review was insufficient to make a recommendation of grade C or better, clinical questions were addressed by either consensus-based recommendations, practice points or research recommendations, where appropriate. The expert advisory panel then further developed the recommendations to ensure that clinical, consumer, Indigenous and culturally and linguistically diverse (CALD) group perspectives were reflected.

For the screening and for the assessment questions, where there was no or insufficient evidence to make an evidence-based recommendation, where appropriate a **consensus-based recommendation** was made. Consensus-based recommendations were non-evidence-based recommendations that were developed and approved by the GDG and expert advisory panel, based on the expert opinion of that group. The GDG decided that no consensus-based recommendations would be made in the absence of sufficient evidence for the treatment questions. The GDG were concerned that consensus-based recommendations for treatment, if implemented, could pose a risk to the target population.

Where appropriate, **recommendations for research** and **practice points** were made for screening, assessment and treatment.

All recommendations were developed by the GDG and reviewed by the expert advisory panel.

Proposed public consultation process (currently underway)

In accordance with the NHMRC Act 1992 (the Act), the GDG will prepare a draft of the guideline and submit it to the NHMRC Council. A notice will be published, in the format as described in the Act, which will: (1) contain a summary of the draft guideline; (2) state where copies of the draft guideline can be obtained; and (3) invite persons or bodies to make submissions relating to the draft in accordance with the procedures, and within the period, specified in the notice (30 days from the publication of the last notice). A wide range of external groups will be targeted by the expert advisory panel including: practicing clinicians, allied health and professional organisations, consumer groups, Commonwealth, State and Territory and Local Government, health authorities, industry groups and other specific subgroups (e.g. Indigenous, CALD and low socioeconomic communities). Media releases, newspaper advertisements and announcements on various websites will be used to publicise the public consultation phase. A summary table of the submissions received, together with the justification as to

why each submission comment was or was not included in the document will be provided to the NHMRC at the time of lodging the final draft. These submissions will be available on request by the NHMRC.

LIMITATIONS OF THIS GUIDELINE

Generalisability and applicability of the studies reviewed to support the guideline

It should be noted that many of the studies reviewed to support this guideline were conducted in different countries with widely varying funding and service delivery arrangements. Thus while the interventions may be codified and comparable, the contexts into which they are delivered are variable. The impact of these variations in delivery system arrangements upon study outcomes is not known.

A second issue that potentially affects the generalisability and applicability of study findings is whether the participants were help seeking prior to their recruitment. We know that people who seek assistance for their gambling are different from those who do not and these differences may in turn lead to different responses to treatment. Depending upon the rigour and intensity of the recruitment methodology it is possible that in different studies people with varying propensities to seek treatment under natural conditions will be recruited. This may affect the generalisability of the study's results.

Medical information

The pharmacological interventions described in this guideline should be applied with caution and with careful consideration to individual patient's needs. Specific information regarding drug dosage, adverse effects, method and route of administration, contraindications is available in the product disclosure documentation for each drug. This documentation should be studied and followed carefully. In Australia the use of therapeutic drugs is tightly regulated by the Therapeutic Goods Administration (TGA). We are advised that, as yet, no drugs have been approved by the Australian TGA for treatment of problem gambling in the form of a registered indication or approved use for treatment of problem gambling. This does not preclude the use of drugs for non-registered indications or "off-label" prescribing, but this is not a recommended action. Registered indications ensure that the appropriate research and approval processes have been followed to ensure effectiveness and patient safety in use of the drug.

Lack of evidence

There is insufficient evidence for many potentially effective screening and assessment tools and treatment therapies at this stage. We freely acknowledge that lack of evidence for a measurement tool or intervention does not suggest that it is ineffective or of poor quality. All it suggests is that there is insufficient evidence to determine at the current state of knowledge about whether it is effective or not. Subsequent evidence may indeed

suggest that the tool or intervention is effective. We can only consider what exists at the time of this review.

Cost effectiveness

Whilst some important issues regarding the implementation of the recommendations were considered (e.g. potential changes to usual care or organisation of care, resource implications, barriers to implementation), it was not feasible to undertake a detailed cost analysis. Furthermore, it should be noted that none of the included treatment studies incorporated cost effective evaluations.

PART 1 SCREENING AND ASSESSMENT

This section will begin with some background information about the conceptualisation and purposes of screening and assessment. Following presentation of the list of clinical questions that guided our review of the evidence in this area, we provide an overview of our findings. While there was a lack of evidence to make any evidence-based recommendations in relation to the questions, we present some key considerations for practitioners and recommendations for further research. This is supported by a review of the key measurement tools.

Conceptualising screening and assessment

In our ensuing discussion we have assumed the following definitions:

The purpose of screening is to identify potential cases (for more detailed assessment)

The purposes of assessment are to provide a definitive diagnosis and to assess the therapeutic needs of the cases

Bonita, Beaglehole, Kjellström (120) have discussed the main types of screening and we have used their typology in our deliberations.

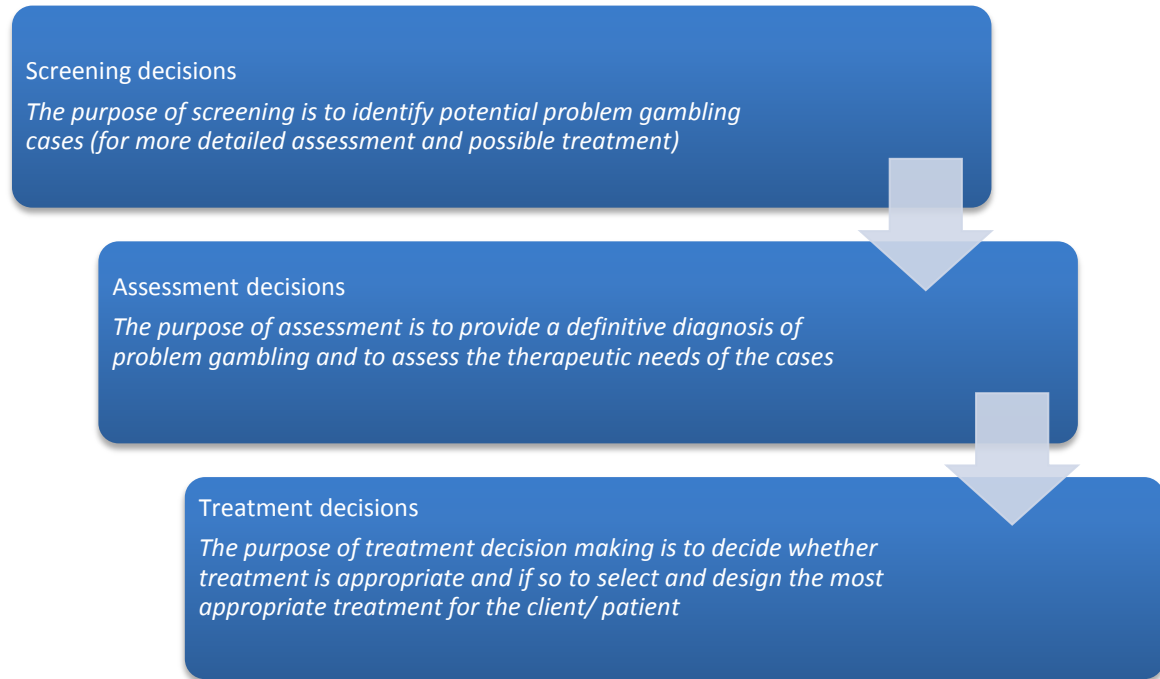
The main types of screening they have identified include:

1. Mass screening (screen the whole population for problem gambling)
2. Multiple screening (screen for multiple problems including problem gambling)
3. Targeted screening (screen people with known higher risks of having problem gambling)
4. Opportunistic screening (screen people opportunistically for problem gambling who present for another service/ condition)

In our previous work in problem gambling screening in the primary care sector, we have recommended targeted and opportunistic screening. The reason for this recommendation has been the relative rarity of problem gambling cases in the general population combined with the high costs of mass screening (121).

In the problem gambling field, many measurement tools are mis-labelled and in program documentation the purposes of different types of measures are commonly confused.

The following diagram summarises what we consider to be the relationship between screening, assessment and treatment decisions. We have used this framework in formulating the guideline.



The diagram reflects the usual sequencing of the decisions i.e. screening then assessment then treatment decisions.

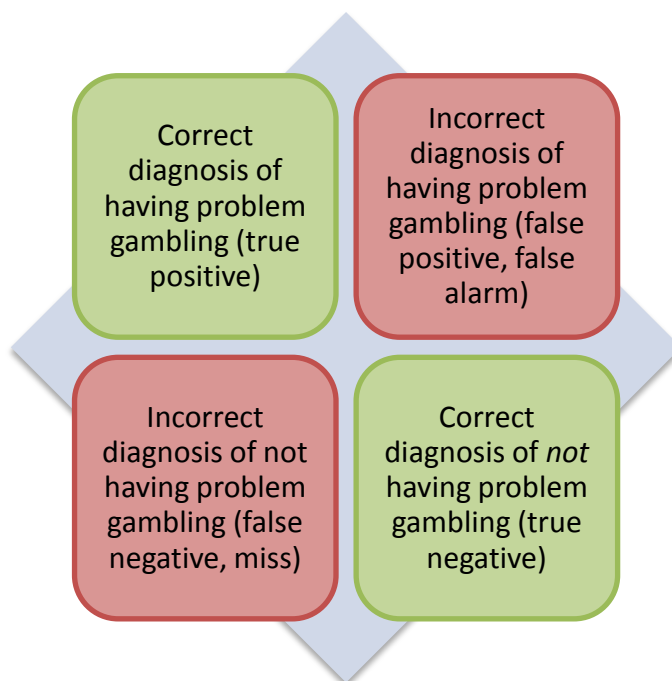
Potential benefits of screening and assessment

In the diagnostic decision making process informed by screening and assessment there are four possible outcomes:

The person presenting:

- Really has problem gambling and this is correctly detected (true positive)
- Really does not have problem gambling and this is correctly detected (true negative)
- Really has problem gambling but this is missed (false negative)
- Really does not have problem gambling but they are incorrectly diagnosed as having it (false positive)

These four possible outcomes are shown in the diagram below:



Most screening methods in problem gambling involve diagnostic decision-making based on a scoring system. So, for example, with the DSM prescriptions for problem gambling diagnosis, diagnosis requires that the person being screened scores positively for five or more of the listed symptoms. Similarly with the SOGS, a score of five or more in the SOGS scoring system achieves the categorisation of “probable Pathological Gambler”. In the PGSI, a score of 8 or more in the PGSI scoring system achieves the categorisation of “Problem Gambler”. In score based decision tools, one can adjust the relative rates of misses versus false alarms by adjusting the cutoff score. A more stringent cutoff will result in a reduction of false alarms and an increase in misses. A less stringent cutoff will result in a reduction of misses but more false alarms.

The adjustment of cutoff scores in part depends upon the relative consequences (costs and benefits) of misses and false alarms. In problem gambling, the consequence of a miss is that the person with problem gambling will most likely not receive effective treatment. This in turn may lead to further losses and entrenchment of the condition, lengthy delays in or complete absence of subsequent treatment and possible serious self-harm and harms to others. The consequence of a false alarm is that the person who really does not have problem gambling may receive potentially costly wasted assessment and/or treatment effort. In a situation of therapeutic service shortage, they may receive treatment and a person who really needs it may not. The person who is incorrectly diagnosed may also experience distress as a result of their concern about the false diagnosis.

The relative costs and benefits of false alarms and misses are a matter of judgment without good costing studies. From the clinician’s perspective a higher rate of false alarms versus misses may be favoured as the costs of missing a person who would benefit from treatment may be seen as very high.

Clinical questions for screening and for assessment

The following clinical questions were posed:

- 1a. Does screening of gambling problems in adults lead to higher rates of engagement with services compared to no screening?
- 1b. Does assessment of gambling problems in adults lead to higher rates of engagement with services compared to no assessment?
- 2a. Does screening of gambling problems in children and adolescents lead to higher rates of engagement with services compared to no screening?
- 2b. Does assessment of gambling problems in children and adolescents lead to higher rates of engagement with services compared to no assessment?
- 3a. Does screening of gambling problems in adults lead to better outcomes than no screening?
- 3b. Does assessment of gambling problems in adults lead to better outcomes than no assessment?
- 4a. Does screening for gambling problems in children and adolescents lead to better outcomes than no screening?
- 4b. Does assessment for gambling problems in children and adolescents lead to better outcomes than no assessment?
- 5a. Are there sensitive and specific screening measurement tools to identify adults with gambling problems in different settings (primary health care, general population, university/college, primary mental health care, other settings)?
- 5b. Are there sensitive and specific assessment measurement tools to identify adults with gambling problems in different settings (primary health care, general population, university/college, primary mental health care, other settings)?
- 6a. Are there sensitive and specific screening measurement tools to identify children and adolescents with gambling problems in different settings (primary health care/school, primary mental health care, other settings)?
- 6b. Are there sensitive and specific assessment measurement tools to identify children and adolescents with gambling problems in different settings (primary health care/school, primary mental health care, other settings)?

Please note that these questions exclusively address issues relating to the measurement of the diagnosis of problem and pathological gambling (i.e., gambling severity). There are of course numerous tools that measure other concepts, such as gambling beliefs, motivations, participation and self-efficacy, but these are not considered as they fall outside the purpose of this guideline.

Outcomes for screening and for assessment

The outcomes varied depending on the clinical question that was posed.

For questions 1a-2b possible outcomes included engagement with services, such as, assessment, referral and/or service usage.

For questions 3a-4b possible outcomes included:

- Gambling behaviour – any measure of expenditure, frequency or duration.
- Gambling severity – any standardised and validated measure of problem gambling severity.
- Psychological distress - any standardised and validated measure of psychological distress, such as, depression, mood disturbance, negative affect or anxiety symptoms.
- Alcohol and substance use – any standardised and validated measure of alcohol and substance use (use, abuse, dependence)
- Quality of life - any standardised and validated measure of quality of life.

For questions 5a-6b possible outcomes included sensitivity, specificity and area under the receiver operator curve (AUC) data.

Evidence-based recommendations for screening and for assessment

Due to a lack of evidence, **no evidence-based recommendations** could be made regarding the **screening** and for the **assessment** of people who may have gambling problems.

Only four studies (122-125) met the inclusion criteria for screening and assessment; all of which were related to the question about whether there are sensitive or specific screening measurement tools to identify adults with gambling problems (Question 5a). In identifying research evidence to address this clinical question, we adopted the position that the gold standard tool against which other tools should be assessed is the trained clinician administered DSM-IV criteria (as opposed to other self-administered measures of problem gambling). These four studies evaluated different measurement tools and therefore we concluded this to be insufficient evidence to recommend the use of any specific tool. Please see the accompanying Appendices for more details about the included (A2.3) and excluded studies (A2.5).

The remaining discussion provides some context and supplementary information regarding the clinical questions. We finish by proposing some consensus-based recommendations, practice points and recommendations for further research.

Important background issues to consider for screening and for assessment

Measurement tools used for screening, assessment and diagnosis in problem and pathological gambling

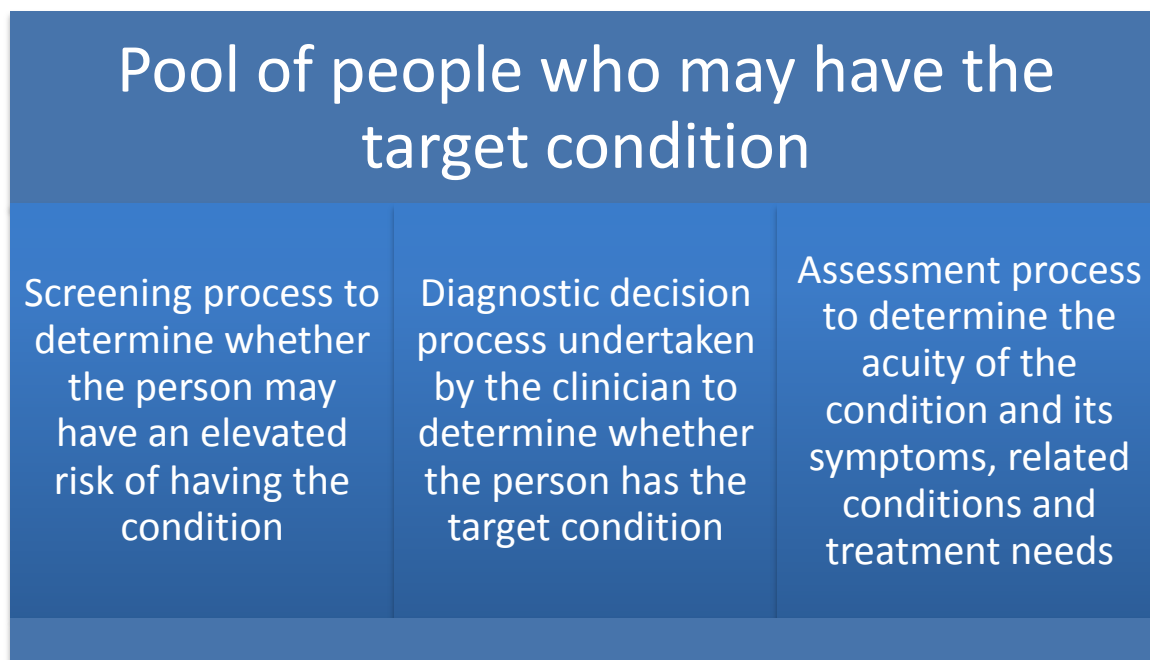
The DSM-IV sponsored by the American Psychiatric Association (APA) (5) defines pathological gambling using the following diagnostic criteria:

- A. Persistent and recurrent maladaptive gambling behavior as indicated by five (or more) of the following:
 1. is preoccupied with gambling (e.g., preoccupied with reliving past gambling experiences, handicapping or planning the next venture, or thinking of ways to get money with which to gamble)
 2. needs to gamble with increasing amounts of money in order to achieve the desired excitement
 3. has repeated unsuccessful efforts to control, cut back, or stop gambling
 4. is restless or irritable when attempting to cut down or stop gambling
 5. gambles as a way of escaping from problems or of relieving a dysphoric mood (e.g., feelings of helplessness, guilt, anxiety, depression)
 6. after losing money gambling, often returns another day to get even (“chasing” one’s losses)
 7. lies to family members, therapist, or others to conceal the extent of involvement with gambling
 8. has committed illegal acts such as forgery, fraud theft, or embezzlement to finance gambling
 9. has jeopardized or lost a significant relationship, job, or educational or career opportunity because of gambling
 10. relies on other to provide money to relieve a desperate financial situation caused by gambling
- B. The gambling behavior is not better accounted for by a Manic Episode.

In the DSM-V to be released by the APA in May 2013, it is currently proposed that this diagnosis be reclassified from *Impulse-Control Disorders Not Elsewhere Classified* to *Substance-Related Disorders* which will be renamed Addiction and Related Disorders. The criterion “has committed illegal acts” will be dropped and the condition is to be given the sub-label of “disordered gambling”.

It is important to understand that the DSM criteria are clinical diagnostic criteria not a measurement tool per se. The application of the DSM criteria by a trained clinician results in a binary diagnostic decision as to whether a person being diagnosed has the condition or not. Although the separation of diagnostic criteria from diagnostic tools is widely understood in the clinical sciences, there seems to be some confusion in the pathological gambling field as to the status of the DSM criteria. This is evidenced by labelling the criteria in the definition as “items” as if the criteria are components of a measurement scale. Similarly some of the tools that are used to screen or assess pathological gambling are described as if they are diagnostic tools. This adds to the confused discussion in some of the problem gambling literature.

The relationships between the screening process, assessment process and the diagnostic decision process are shown in the following diagram.



Typically these processes are conducted in sequence where the pool of people who may have the target condition are formally or informally screened, then subjected to a diagnostic decision process and assessed for treatment needs. The diagnostic decision process may be conducted contemporaneously with the assessment process.

Hodgins and Stinchfield (126) in their review of assessment for gambling disorders make the distinction between assessment tools used for “diagnosis” and “assessment tools for case conceptualisation and treatment planning”. Interestingly, in their classification there is a high degree of overlap between the measurement instruments they review under each heading. This is an unusual and somewhat unique feature of the problem gambling field. There is a significant degree of confusion about the appropriate use of the measurement tools for screening, diagnostic decision-making and/ or assessment of treatment needs and acuity. As reflected in the Hodgins and Stinchfield review, the same tools are frequently used interchangeably for the different purposes.

Who should be screened and what type of screening should be used?

It is our assertion that detection of people with problem or pathological gambling is the first vital step in engaging with prospective clients in the provision of therapeutic interventions. Therefore we are inclined to recommend that screening and assessment ought be undertaken with people who may have gambling problems. The issue is with whom and what type of screening should be used. There are different types of screening strategy that may be used to identify people with gambling problems/ pathological gambling. The most common strategies, used in other conditions, are population screening, targeted screening and opportunistic screening.

Population screening involves the screening of all members of the community for the target condition. It has the advantage of potentially identifying all cases, but it has the major disadvantage of high cost for the screening effort. While there are significant variations in the estimated prevalence rates of people with problem/ pathological gambling in the community, most estimates fall in the range of 0.5 to 1.5 percent of the community.

The underlying prevalence of pathological gambling in the community is a key strategic consideration in the design of screening protocols. In the case of problem/pathological gambling if population screening were employed this has the potential of screening a group for whom potentially 99.5 percent of those screened do not have the target condition. Thus, it would seem that population screening would potentially provide a low yield given the current knowledge of prevalence of the condition. In the longer term this may also lead to low compliance with the screening regimen because it is unrewarding in yield terms.

Targeted screening involves the screening of groups who are known to have an elevated risk of the target condition. In the case of problem/ pathological gambling there are groups with known risks of problem gambling. We have recently conducted a systematic review of the mental health comorbidities of problem/ pathological gambling that reveals that rates of mental health comorbidities are highly elevated amongst people with the target condition (127). Table 2 shows these inter-relationships.

Given the much higher yield of problem gamblers amongst people with other mental health problems, it would seem reasonable that targeted screening of people at high risk of mental problems (and people currently receiving or seeking treatment for such problems) is worthy of consideration.

Opportunistic screening occurs when a group of people who are presenting for one purpose is then screened for another condition. So if a GP has a patient who is presenting for depression but is then screened for problem gambling then this is an example of opportunistic screening. Opportunistic screening is inexpensive because you already have the patient presenting for something else but it is ad hoc. Obviously it relies upon the person presenting for the other treatment. If they do not then they will not be screened under an opportunistic screening methodology. A benefit of opportunistic screening is that if people are reluctant to seek assistance for a condition but are more likely to seek treatment for another then opportunistic screening of this treatment seeking sub-population is an effective way of finding the other “hidden” population. We believe this situation applies to problem gambling where the rates of help seeking for gambling problems is very low. Many gamblers never seek professional treatment, with a recent survey reporting that only 7–12 percent of pathological gamblers have ever sought treatment (128).

However, we know from a recent review (54) that there is a high rate of co-occurrence of problem gambling with a range of various mental health problems. So under these circumstances, screening of people who are presenting for mental health services for

problem gambling (and vice versa) is sensible. This may deliver more of the “hidden” non treatment-seeking problem gamblers.

We may also be able to refine the targeting of screening for problem gambling. In problem gambling, we know that young males with low socio-economic status (SES) are over represented compared to other groups (20, 32). It should be noted that such groups are also over-represented in the prevalence of mental health disorders within the general community. So by screening people for problem gambling with high risk of mental health problems (which includes a high representation of young males with low SES) one would also opportunistically screen this demographic group as a matter of course.

We suggest that based on these considerations the following groups should be screened for problem gambling.



Which tools should be used to screen and assess potential problem/ pathological gamblers?

The gold standard for determining whether a person has pathological gambling is the clinician administered DSM-IV criteria approved by the APA. The DSM is not a measurement tool, it is an advisory to clinicians about how they should assess whether a person has the target condition of pathological gambling. So we used this criterion in evaluating studies for this guideline.

As one would expect with a gold standard, the requirement for the use of trained clinician administered DSM-IV criteria in validation studies is an expensive option that has been used infrequently. Much of the screening and assessment literature (to which members of the GDG have personally contributed) does not use the gold standard. Rather, the norm is for tool “validation” to not involve comparison with a criterion group at all, a treatment-seeking group only or to attempt concurrent validation with other non- gold standard tools.

There are significant problems with all of these approaches. Studies that examine the internal psychometric qualities of a tool using statistical measures of internal structure such as factor analysis, while providing useful information do not cut to the issue of whether the tool is able to effectively identify people who have and do not have the target condition. So the car may look shiny but it may not work.

In terms of the study of treatment seeking populations to validate tools, there is a statistical validity problem. This is problematic because most problem/ pathological gamblers never actually seek treatment for their condition. A recent study (128) based on two national US prevalence surveys reported that only 7-12 percent of pathological gamblers have ever sought formal treatment or attended a Gamblers Anonymous (GA) meeting over the lifetime of their condition. Further, those who seek treatment generally have much more severe gambling symptoms and are more likely to present with comorbid conditions. These findings therefore suggest that treatment-seeking problem/ pathological gamblers may have systematically and markedly different characteristics from those who do not seek treatment. Thus studies based on this group should not be used to infer characteristics of the wider pathological gambling population. In these studies the suggested rates of comorbidities for pathological gamblers are based upon studies of biased samples in which potentially between 93 percent and 88 percent of the pathological/ problem gamblers have been excluded from the studies. This is a serious bias issue that affects the utility of the studies that have used this approach.

There are many concurrent validation studies where multiple tools have been administered to the same research participants and the results of one tool compared with the other. In many cases this type of study has been conducted with treatment seeking groups, which, as outlined above, creates its own set of statistical shortcomings. While these studies are useful and informative, they do not utilise the gold standard criterion to establish criterion validity for the tools under study. Thus, demonstration that one tool correlates with another is only useful if one of the tools is the gold standard criterion. High inter-correlation with another potentially questionable tool is not acceptable.

Lifetime and past year gambling

In discussion of the prevalence of problem gambling, there is sometimes imprecision as to what is meant by ‘prevalence’ and the type of prevalence being described. In standard epidemiological terminology (129), the incidence of a condition within a population is defined as the number of new cases occurring within a specified time interval. Point prevalence is the number of cases that have the condition within the population at a specified point in time. Period prevalence is the number of cases that have the condition

over a specified period of time. Lifetime prevalence is the number of cases within a population that will have the condition over the lifetimes of the individuals comprising the population. These prevalence definitions and their associated values within populations are quite different.

In the context of tools designed to measure the prevalence of problem gambling, the use of terminology such as 'Have you ever' performed the target behaviour is assessing a period prevalence over the person's lifetime to date. The use of terminology such as 'Have you in the last six months' performed the target behaviour is attempting to assess the period prevalence over six months. The use of terminology such as 'Are you currently' or 'have you recently' is assessing point prevalence for the particular moment at which the question is being asked. Of course, these different terminologies may yield widely different prevalence results. The SOGS-M where the respondent is quizzed about target behaviours over a 12-month period should yield quite different results from the standard SOGS where lifetime 'Have you ever' questions are asked. If however, problem and pathological gambling is a lifelong affliction, that when obtained is never shaken, then the questions may well yield the same results for point, period and life time prevalences, except where a young population, in which lifetime rates would be lower, is sampled.

Knowing the point prevalence or the 12-month period prevalence of problem and pathological gambling is very important for problem gambling service planning and for assessing the true impact of problem gambling upon the community. Problem and pathological gambling services based on the assumption that lifetime rates of problem and pathological gambling somehow represent the numbers of people that currently require services may have vast over capacity. This is because lifetime prevalences are or could be generally substantially greater than point or period prevalences.

There may be substantial measurement error in these self-reports induced through, for example, incentive to conceal problems. Walker (130) and more latterly Svetieva and Walker (15) have issued warnings about the use of instruments such as the SOGS and the CPGI to measure the prevalence of problem and pathological gambling based on concerns about the accuracy of self-report data and the conceptual basis of the tools. However, it must be noted that the implementation of 'objective' measures is difficult to implement in practice.

Compared to other addictions and the measurement of health status in general there has been little investigation in the problem/ pathological gambling literature of the impact of different recording approaches. In the general health measurement literature, for example, health diaries have been found to have superior accuracy compared to general self-report measures (131) and contextual factors for the reporting impact significantly upon accuracy.

What should be assessed in addition to gambling measures for people who potentially have problem/ pathological gambling?

Obviously with the elevated comorbidity rates for other mental health problems evidenced in a wide range of studies it is prudent to screen people who present with gambling problems for other mental health problems. There is sound research evidence that problem/ pathological gambling is associated with elevated risks of:

- a. Anxiety disorders
- b. Depression*
- c. Personality Disorders
- d. Alcohol dependence
- e. Drug dependence
- f. Other impulse control disorders
- g. Family Violence

** If depression is evident then suicide risk screening protocols ought be considered*

The elevation of risk of depression and suicide creates duty of care obligations that must be met. In terms of treatment, although we do not have data about this issue, it seems obvious that treatments need to address the full range of presenting problems, not just problem gambling or depression in isolation. A significant proportion of problem gamblers are complex with a range of significant problems and the treatment strategies need to reflect this reality. As yet, the aetiology and sequencing of these links is currently unknown and requires further research.

What is the role of GPs in screening and assessment?

In 1999, the Australian Medical Association released its pioneering position statement, *Health effects of problem gambling* (132). The statement noted that medical practitioners need to be aware of “the adverse impacts of problem gambling” and its comorbidities. It recommended that practitioners include gambling as part of lifestyle risk assessment. Despite this recommendation, research by Tolchard, Thomas and Battersby (133) suggests that many Australian general practitioners are not screening for gambling problems in their patients. This may be because they lack the requisite knowledge and tools to deal effectively with problem gambling when it is identified. Tolchard et al identify tools and training that may be able to address this situation.

In a recent Medical Journal of Australia paper (121), authored by members of the GDG, the following observation was made:

The first step must be effective screening. But how should patients be screened, and who should be screened? The most popular diagnostic tools for problem gambling are the Canadian Problem Gambling Index, the DSM-IV criteria for pathological

gambling, and the South Oaks Gambling Screen. However, these tools are too time consuming for routine use in primary care practice.

In consideration of the limited time available to General Practitioners (GPs), Thomas and colleagues (134) therefore proposed the use of a one-item screening tool which they found to have sound psychometric qualities as established from a large representative Victorian survey.

CONSENSUS-BASED RECOMMENDATION

Those who screen positive for problem gambling using an initial brief (i.e. 1-3 items) screening tool (e.g. the one item screening tool: "Have you ever had an issue with your gambling?") should be referred for further assessment and treatment by appropriately trained specialist practitioners in problem gambling.

The screen should be used in primary care settings where at risk clients may be presenting for services. These may include:

- People who nominate gambling as an issue for themselves and/ or who are otherwise suspected of having problem gambling
- People who present for other mental health problems
- People who come from groups with relatively high rates of problem gambling (i.e. young men with low SES)

Review of potential screening and assessment tools

The following problem gambling screening and assessment tools were evaluated.

Brief Bio-Social Gambling Screen (BBGS)

The Brief Bio-Social Gambling Screen (BBGS) (135) is a very recently released three-item screen for pathological gambling. The BBGS was developed using past year DSM-IV pathological gambling items from the Alcohol Use Disorder and Associated Disabilities Interview Schedule IV (AUDADIS-IV) (136) that was included within the National Epidemiological Survey on Alcohol and Related Conditions (NESARC) (137). The NESARC survey collected information from a United States nationally representative random sample of individuals (N=43,093) from the general household population. Gebauer et al. targeted participants who endorsed five or more DSM-IV symptoms or signs and distinguished this group of pathological gamblers from participants who failed to meet these criteria. As outlined above, the problem with this approach is that it is a self-completion of DSM criteria not a clinician-administered arrangement as required by our search criteria. The researchers used data analytic procedures, including step-wise entry, step-wise elimination, and combinations of minimal sets of DSM-IV criteria, to identify the subset of DSM-IV criteria to create a 3-item screen (BBGS).

The Canadian Adolescent Gambling Inventory (CAGI)

Recently, Tremblay, Stinchfield, Wiebe and Wynne (138) released a technical report on their development and validation of a new adolescent gambling assessment tool; the Canadian Adolescent Gambling Inventory (CAGI). The CAGI is a survey developed for use with teenagers aged from 13 to 17 years to identify and assess risky and problematic gambling behaviours. The CAGI was developed in response to the perceived absence of reliable measures for use with youth populations by the same organisations as those involved in the Canadian Problem Gambling Index. The CAGI was developed to provide all Canadian jurisdictions with a common tool to collect information in order to provide a reliable and accurate estimate of the prevalence of adolescent gambling in Canada. The CAGI was developed in both French and English simultaneously to ensure its reliability with both French- and English-speaking adolescent populations. The CAGI tool was developed in three phases. In phase one, the research team created the instrument based on an extensive review of the literature and consultation with clinicians, experts and youth. This process resulted in the development of a conceptual framework, an operational definition of adolescent problem gambling, and a draft pool of 51 candidate items for measuring gambling risk and problems among adolescents. In phase two, the survey was tested with 2,400 students in secondary schools in Manitoba and Quebec and clinical validation interviews with students who initially participated in the general survey to determine which items should be included in the final instrument. In phase three, the survey was further tested against high-risk youth populations to improve the way in which answers are measured and classified. Specifically, the phase was designed to assess the classification accuracy of the CAGI (sensitivity, specificity, positive and negative predictive values) for detecting problem gambling behaviours against a clinical assessment, and to compare the CAGI with existing instruments for youth problem

gambling (convergent validity). The CAGI measures five areas: types of gambling activities, frequency of participation for each gambling activity, time spent on each gambling activity, total money spent gambling, and 24 items related to gambling consequences and severity. The 24 items comprise five different subscales: Psychological Consequences (6 items), Social Consequences (5 items), Financial Consequences (6 items), Loss of control (4 items), and the Gambling Problem Severity Subscale (GPSS: 9 items). Prevalence estimates are derived from the GPSS, scores from which can be classified within three levels: no problem ('green light' cases), low-to-moderate severity ('yellow light' cases), and high severity ('red light' cases).

The Canadian Problem Gambling Index (CPGI) and Problem Gambling Severity Index (PGSI)

In 1997, an inter-provincial group of government agencies with responsibility to mitigate problem gambling commissioned the Canadian Centre on Substance Abuse (CCSA) to conduct a three-year research project to measure problem gambling in Canada. The main outcome of that project was the development of a new measurement instrument, the CPGI (14) and its scored sub instrument the PGSI. The full CPGI comprises 31 items: gambling involvement questions (4 items), problem gambling assessment (12 items), and problem gambling correlates (15 items). Indicators of gambling involvement include types of gambling activity, frequency of play, duration of play, and spending on gambling. The problem gambling assessment section consists of twelve items, nine of which are scored to comprise the PGSI. In developing the PGSI, the research and development team critically analysed existing instruments such as the SOGS and the DSM-IV criteria for pathological gambling. The domains and variables that each instrument purported to measure were then examined for the purpose of incorporating the best of these into the first draft of the PGSI. This draft was scrutinised by an international panel of experts, modified and tested through a large general population survey of a national and regional sample of 3,120 Canadian adults, a reliability retest with a sub-sample of 417, and clinical validation interviews with another subsample of 148 (139). The PGSI evaluates two domains over a 12-month time frame: problem gambling behaviours (5 scored items), and adverse consequences (4 scored items) (14, 139). Unlike the dichotomous classification of several other measures, there are four classification categories in the PGSI: 0 = non-problem gambler or non-gambler; 1-2 = a low risk gambler; 3-7 = a moderate risk gambler; and 8+ = a problem gambler.

The PGSI was developed to better measure gambling problems in the general population in comparison to the more commonly used SOGS. Compared to the SOGS, the PGSI was seen as more theory-based, designed specifically to measure prevalence of problem gambling in the community, and better able to distinguish between sub-types of problem gamblers in general population surveys. The PGSI is also short, clear, easy to administer, requires no training, and is cost effective (140).

However, there is ongoing debate about a number of aspects of the PGSI. The main criticism has been that there is much overlap in content between the PGSI, DSM and SOGS and that it does not meet the need for a harm-based measure of problem gambling. Svetieva and Walker (15), for example, have questioned the apparent disparity of the PGSI items, which they suggest are derived from an addictions conceptualisation of

'pathological' gambling, and not necessarily reflective of the harms-oriented concept of 'problem' gambling which was the stated underpinning for the construction of the instrument. Similarly, Abbott and Volberg (18) also suggested that the PGSI may not reflect as clear a distinction from SOGS as may be suggested by its stated location within a public health paradigm. As may be expected given the widespread use of the PGSI, there have been some suggestions for revision (141), such as weighting the items.

The PGSI seems to be emerging as the successor to the SOGS and has been adopted as the preferred measurement tool for population-level research in both Canada and Australia. To date, in Canada, it has been employed in a general non gambling-specific survey, the Canadian Community Health Survey Cycle 1.2— Mental Health and Well-being, a large, nationwide, household interview survey with a random sample of more than 30,000 Canadian residents (142) and in many Canadian provinces, including Manitoba, Ontario, Saskatchewan, Alberta, British Columbia, New Brunswick, Newfoundland and Labrador, Nova Scotia, and Prince Edward Island. In Australia, the PGSI has been used in recent population surveys in a number of states and Territories including Queensland, Victoria, Northern Territory, South Australia, New South Wales, and Tasmania. It has also been employed in prevalence studies elsewhere, such as in the UK (20) and the US.

It is interesting to note that there have been some variations in the structure and scoring of the PGSI in Australia that complicates the interpretation of CPGI scores (143). These variations from standard practice in the scoring of the PGSI appear to be unique to some Australian jurisdictions. The main variation from recommended practice has been in the changes to the scoring of the item response categories of the PGSI. The standard scoring of the PGSI item is 'never' (scored 0), 'sometimes' (scored 1); 'most of the time' (scored 2), and 'almost always' (scored 3). This change, which has not been justified conceptually or with an empirical basis in any of the studies in which it has been used, has also been criticised in the Productivity Commission's (39) final report. However, in some Australian surveys, the PGSI was administered using the non-standard response form of 'never' (scored 0); 'rarely' (scored 1); 'sometimes' (scored 1); 'often' (scored 2), and 'always' (scored 3). Fortunately these community survey variations have typically not found their way into clinical practice but some clinicians may have used the non-standard form without realising they were doing so.

Diagnostic and Statistical Manual-IV-Adapted for Juveniles (DSM-IV-J) / Diagnostic and Statistical Manual - IV- Multiple Response - Adapted for Juveniles (DSM-IV-MR-J)

The 12-item DSM-IV-J was designed to define and count pathological gambling with pre-adult gamblers (144). On this scale a score of four or more indicates probable pathological gambling and a score of less than four indicates social gambling. In 2000, Fisher (145) presented a revised version of DSM-IV-J criteria that addressed the appropriateness of using dichotomous (yes/no) responses in non-clinical situations. The 12-item DSM-IV-MR-J comprises nine dimensions of pathological gambling: preoccupation, tolerance, loss of control, withdrawal, escape, chasing, lies, unsocial/illegal acts, falling out with family/truancy. Most of the questions in the instrument have four response options: *Never*, *Once or twice*, *Sometimes*, or *Often*. According to Fisher (145), the items on the scale are scored as follows, based on the responses provided: A 'yes' answer to DSM-IV-MR-J items 1 and 3 is represented by the

response *often*. A 'yes' answer to item 2 is represented by the response *yes*. A 'yes' answer to items 4 and 5 is represented by the responses of *sometimes* or *often*. A 'yes' answer to question 6 is represented by the response of *more than half the time* or *every time*. A 'yes' answer to questions 7, 8, and 9 is represented by the responses of *once or twice*, *sometimes*, or *often*. Fisher (145) employed a cut-off score of 4 or above to indicate problem gambling. Several studies have also employed scores of 2-3 on the DSM-IV-MR-J to indicate at-risk gambling behavior (146-147). The internal consistency reliability is acceptable and it has had adequate construct validity and factor structures (145).

Early Intervention Gambling Health Test (EIGHT screen)

The EIGHT screen was originally designed as a brief problem gambling screen, for use by family doctors in New Zealand (148). It is a self-report instrument that evaluates emotional, behavioural and cognitive dimensions of problem gambling and takes approximately one minute to complete. The screen was administered to approximately 1,000 individuals in primary health settings and to over 200 clients of specialist problem gambling treatment services. It has displayed high sensitivity, high internal reliability, good test-retest reliability and good correlation with SOGS. The cut-off for a positive screen is a score of four or more as determined by a ROC analysis and a Delphi process. The EIGHT is commonly used in clinical practice and as a self-assessment tool across a range of jurisdictions.

Gamblers Anonymous Twenty Questions (GA20)

The GA20 is the oldest instrument designed to help an individual decide if he or she is a compulsive gambler and wants to stop gambling (149). It was designed by GA, a year after its establishment and is the screening tool preferred by GA. The GA20 is a 20-item lifetime measure that identifies particular situations and behaviours that are typical of pathological gamblers. The items evaluate the financial correlates of continued gambling, the personal consequences of excessive gambling (e.g. difficulties sleeping, remorse, decreased ambition), and social correlates associated with excessive gambling (e.g. difficult home life, arguments about gambling). A score of 7 or more indicates compulsive gambling. Although it has continued and widespread use in clinical practice and as a self-assessment tool, this instrument has not received serious research attention until recently. Several studies have now explored the performance and psychometric properties of the GA20, relative to other instruments (150-154).

The Lie-Bet Questionnaire

The Lie-Bet questionnaire (151, 155) is an older screening tool that has been used widely clinically but with limited research evidence. The Lie-Bet's two questions differentiate reasonably well between pathological gambling and non-problem-gambling and are useful in screening to determine whether a longer tool (e.g., SOGS, DSM-IV) should be used in diagnostic decision making.

Massachusetts Adolescent Gambling Screen (MAGS)

The MAGS was developed to provide a brief clinical screening instrument that can yield an index of non-pathological and pathological gambling during a 5-10 minutes survey or interview (156). It measures the biological (e.g. tolerance and withdrawal), psychological (e.g. impulse disorder and guilt) and social problems that are present in excessive gamblers who may or may not be in treatment. A survey of 856 adolescents who were students in suburban Boston high schools comprised the development data for the MAGS. The 26 item MAGS includes 2 distinct subscales: the 14 item MAGS subscale (based on the Short Michigan Alcoholism Screening Test) and the 12 item DSM-IV subscale. In addition, Shaffer (156) identified a 7-item subscale (MAGS-7) that comprised the 7 items that significantly classified respondents in to either pathological or non-pathological gamblers. The predictive validity of the MAGS-7 is evidenced by its ability to classify 96% of the high school students who had reported lifetime gambling. The MAGS-7 is scored using a total discriminant function score derived from the discriminant function coefficient for each item. This total discriminant score classifies respondents as non-pathological gamblers, transitional gamblers or pathological gamblers. The total discriminant score correlates significantly with the total DSM-IV score. Several studies have validated the MAGS DSM-IV subscale in adult samples (156-157).

National Opinion Research Centre DSM Screen for Gambling Problems (NODS)

The development of the NODS came about because the National Gambling Impact Study Commission specified that DSM-IV criteria were mandatory in its commissioned epidemiological research in order to identify problem and pathological gamblers in community studies (158). Therefore, the SOGS could not be used because it employed DSM-III criteria and hence could not meet this design criterion. The NODS has 17 lifetime items and 17 corresponding past-year items with a maximum score of 10. There are various but limited studies of the psychometric properties of the NODS. To date the evidence is positive but the NODS studies are a very small fraction of those that have used the SOGS or PGSI. Because of the design of the item and scoring structure, it is claimed that the rates of problem/ pathological gambling seem to be lower than for other tools, i.e. it appears to be more stringent than the source DSM criteria. This is potentially problematic and requires a large-scale validation study for resolution of this issue.

NODS-CLiP

Toce-Gerstein, Gerstein and Volberg (159) (2009) describes the development and performance of the NODS-CLiP. The study sample of 17,180 participants was drawn from eight community studies conducted in the United States between 1999 and 2003, including six state-level random-digit-dial (RDD) telephone surveys, one national RDD survey, and one in-person systematic random sample survey of commercial gambling patrons in eight states. The data from all the experienced gamblers (N = 8,867) were re-analysed to compare diagnostic status derived from the 17-item NODS, a validated DSM-IV-based instrument, with results from all 2- to 4-item subsets of NODS items. It was found that three of the NODS questions (Loss of Control, Lying, and Preoccupation). The

CLiP has excellent sensitivity and specificity for run against the NODS from which it was derived.

Problem and Pathological Gambling Measure (PPGM)

The PPGM is one of the most recently developed instruments designed to assess pathological and problem gambling, over the past 12 months, in clinical and general populations (160). The PPGM has 14-items that are arranged in to 3 sections: problems (7 questions), impaired control (4 questions) and other issues (3 questions). The PPGM acknowledges there to be a continuum of gambling and this is reflected in its 4 scoring categories: recreational gambler, at-risk gambler, problem gambler and pathological gambler. In order to be classified as a pathological gambler one must endorse several indices of impaired control as well as several problems and to be classified as a problem gambler one would endorse one or more items from the problems section and one or more items from the impaired control section. Classification as an at-risk gambler would require endorsing a problem or impaired control problem but not both. Anyone not classified as a pathological, problem or at-risk gambler was classified as a recreation gambler. This measure differs from some of the most common tools in that it addresses all potential harms of problem gambling (e.g. financial, mental/health, legal) and these harm questions are expressed in a way that inquires about harming the individual themselves as well as someone close to them.

South Oaks Gambling Screen (SOGS)

The South Oaks Gambling Screen was developed by Lesieur and Blume in 1987 (13). The 20-item SOGS, which was based on the original diagnostic criteria for pathological gambling, was developed for use in clinical settings (inpatients with alcohol/drug diagnoses). However, the SOGS was quickly adopted for use in epidemiological studies and has been the most widely used measure across a range of contexts. The SOGS has an interpretable cut-off score, has a variety of items that allows for assessment of a broad range of problems, and can be successfully employed to evaluate therapeutic change. There is also substantial evidence that the SOGS has acceptable internal consistency, test-retest reliability, and concurrent validity with other measures of problem gambling and gambling-related harm, particularly in clinical populations (16, 18).

However, the SOGS has received some criticism since its development, particularly in Australia and Canada. The main criticism of the SOGS has been that it was developed and tested in clinical settings without validation with community samples. While there have been attempts to defend the SOGS (e.g., (161)), it has also been criticised on the grounds that it: is not underpinned by a clearly defined theoretical framework or definition; results in high rates of false positives in community samples (particularly in Australia); lacks a clear dimensional structure; contains several items that do not adequately discriminate between regular and problem gamblers; is not supported by established norms; and may be biased insensitive to culturally diverse contexts (e.g., Australian Indigenous populations) (11, 16, 18, 108, 140, 162-163).

While there has been significant criticism of the SOGS, it nevertheless remains the most widely used pathological gambling measurement tool. Hodgins and Stinchfield's (126) review is ambivalent as to its continued recommended use. They note the large number of studies that have used it but also discuss the shortcomings, noting that popularity of

its use appears to be waning because of these issues. A key issue in its declining use is its reliance upon now outdated DSM-III criteria. We are soon to enter the DSM-V, so alignment with these criteria would seem to be an important consideration for the design of problem/ pathological gambling tools.

South Oaks Gambling Screen – Revised for Adolescents (SOGS-RA)

The SOGS-RA is an adolescent adaptation of the SOGS for adults, designed to assess adolescent gambling behaviour and gambling related problems during the past 12 months (164). In this revision items from the original SOGS were reworded to make it more age appropriate and the scoring was adjusted. Specifically the revised screen emphasises the frequency of gambling behaviour and the behavioural indices often associated with problem gambling rather than on money. The scale has 16 items but four are omitted for scoring. There has been some variation in scoring protocols between studies for the SOGS-RA, the most common of which is to classify adolescents as non-problem gamblers (scores of 0 or 1), at risk gamblers (scores of 2 or 3), or problem gamblers (scores of 4 or more). The SOGS-RA has displayed satisfactory reliability and validity and can discriminate between regular and non-regular gamblers.

The Sydney Laval University Gambling Screen (SLUGS)

The SLUGS is a recently developed seven-item brief screen designed to identify impaired control, subjective harm and expressed desire for treatment (165). The stated purpose of the screen is to determine the number of gamblers who report impaired control, problem gamblers gambling more time or money than they can afford, which thereby results in harm requiring intervention and those who express a desire for treatment. Items are scored on a visual analogue scale with anchor points ranging from 0 – never/minimal to 100- always/extreme.

Victorian Gambling Screen (VGS)

The VGS was originally developed as a 21 item instrument that assessed three aspects: enjoyment of gambling, harm to others and harm to self. In a pilot study designed to empirically evaluate these three factors, Ben-Tovim et al. (166) found that only the 15 item harm to self scale was significantly associated with problem gambling. Cut off scores were therefore only established for this scale. Based on video-taped open format interviews and raters assessment of problem gambling cases, a cut-off of 21 or higher was established. The VGS employs a 5-point rating scale from 0- never to 4-always and items are summed to yield an overall score. Subsequent studies employing the VGS have labeled the 15 item harm to self subscale as the VGS (167-168).

The GDG is aware of several other screening and assessment tools with as yet unpublished development information:

One item screening tool

Members of the GDG have trialled a one item screen which has shown adequate psychometric capabilities (134). A random digit dialling telephone-administered

structured survey was administered to an age and sex representative community sample of 2013 Australian adults aged 18 years and above.

The one item problem gambling screening tool (“Have you ever had an issue with your gambling?”) and the PGSI were administered along with a battery of other gambling, health and social measures. The one-item screening tool was found to have a sensitivity of .79 and .71 and a specificity of .96 and .97 with respect to the PGSI problem gambling category. A recently published article on the one-item screening tool found a sensitivity of .21 and .98 with respect to the PGSI (169).

Other tools with as yet unpublished development information include the Problem Gambling Severity Index- Consumption (170) and the Focal Adult Gambling Screen (FLAGS) (171).

Commentary about the available screening and assessment tools

Thomas, Jackson and Blaszczynski’s (163) review in 2003, Abbott and Volberg’s (18) review in 2006 and Hodgins and Stinchfield’s 2008 (126) review have all identified significant shortcomings in the measurement tool kit available to clinicians and researchers in terms of measuring problem/ pathological gambling.

In Thomas, Jackson and Blaszczynski’s (163) review the lack of clarity of purpose for tools i.e. how they should be used, when and with whom was emphasised. It was noted that the first step in the development protocols for measurement tools was to clearly address this question. The authors identified five basic purposes for tools:

- A current diagnostic purpose (who currently has the problem?);
- A current severity classification purpose (how severe is the problem and what is the extent of its harmful consequences?);
- A predictive diagnostic purpose (who is at risk of developing the problem in the future?);
- An intervention design purpose (what is needed to treat the problem and ameliorate it?);
- A triage or screening purpose to refer the person for further assessment or action (what further assessment or action is required?).

They argued that it would be surprising if the same tool could discharge more than one purpose, while noting that the current practice was that the same tools were used freely for all of the different purposes. The same authors argued that an ABC model of tool content ought be adopted. That is, Attitudes to, Behaviour in and Consequences of gambling were key content domains that required consideration in the design of the tools.

Many of the issues raised in this review and the subsequent reviews remain as prominent issues in the current context. So the same tools are routinely used interchangeably in screening, diagnostic decision support and in assessment protocols.

In formulating our recommendations, we are mindful on the one hand that we can only recommend what exists, but that such recommendations may perpetuate what is an unsatisfactory situation.

We consider there is an urgent need for a significant development effort in gambling measurement tools that are specifically oriented towards the different tool purposes. The current one-size-fits-all is impeding development. Further such tools need to be validated against appropriate gold standard measures including where appropriate clinician administered DSM criteria. The changes to the criteria foreshadowed in DSM-V provide new opportunities for a period of high quality tool development.

How to assess which tools should be recommended

The measurement of problem gambling is becoming a quite crowded space. There are many tools that have recently emerged in a relatively short time frame. As we have seen these new developments in part stem from a dissatisfaction with the performance and conceptualisation of the mainstays, the PGSI and the SOGS. From a guideline viewpoint the recency of the development of many of these tools poses particular problems. In order to put the analysis of these tools on some sort of systematic basis we have employed the following evaluation methodology.

For the purposes of this review we considered the following criteria:

Availability of Australian benchmark data through use in pertinent study samples

Being able to compare and adequately interpret study scores depends upon the availability of pertinent study samples against which such comparisons can be made. As this is an Australian guideline, our focus is thus upon tools that have been used and validated in, as a first priority, the Australian context and then as a second priority, in the international context. For the purpose of this document, the Australian benchmark data will be classified according to the following categories:

Extensive = used in multiple studies across jurisdictions

Good = used in multiple studies in Australia

Limited = used in one study in Australia

No = used in no studies in Australia

Brevity

The brevity of a measurement tool in the clinical context is a key property. Lengthy tools are very difficult to implement in the clinical context and also in the research context. For the purpose of this document, brevity will be classified according to the following categories:

Brief = 1-3 items

Medium = 4-12 items

Long = 13+ items

High sensitivity and specificity

Sensitivity and specificity measure actual performance in identifying true cases and rejecting false ones. Sensitivity is the rate of positive test results among those with the disorder and specificity is the rate of negative test results among those without the disorder. These two attributes are both vital to tool performance and the avoidance of wasted screening and assessment effort. For the purpose of this document, sensitivity and specificity will be classified according to the following categories:

Excellent = .95+

Good = .90-.94

Fair = <.90

Limited data = no data available

Psychometric properties

These include high internal consistency, high test-retest reliability, and high validity. Although traditionally these are weighted highly in measurement tool reviews, they are secondary to actual measure performance as shown by sensitivity and specificity. It is generally hoped that good psychometric properties will lead to good performance but this is not necessarily the case in all circumstances. For the purpose of this document, psychometric properties will be classified according to the following categories:

Excellent = .90+

Good = .85-.89

Fair = <.85

Limited data = no data available

Thus we have used these criteria to formulate a short list of recommended tools. The application of these criteria to the tools is a matter of judgment and also reflects some parochial or local concerns. This is an Australian guideline and while recognising that good tool design is an international phenomenon, performance and the availability of validation data within a particular jurisdiction is not. Thus while some tools may have high performance across various jurisdictions unless the development and validation studies have been performed in the context within which they are potentially to be utilised it is difficult to recommend them for use on a completely untried basis. As we have discussed previously, this does not mean they may not perform well, we just simply do not know. A further overarching consideration is that of tool length. In a busy clinical context a very thorough and lengthy tool designed for research purposes does not cut it. There are not the resources available to administer and score such tools. Thus, in our deliberations, tool length was considered to be a very important consideration. When formulating these recommendations another factor that was taken in to consideration were tools with promising results but only limited data was available (i.e. only the validation study data). These tools were recommended but require further research into their psychometric properties and sensitivity and specificity data.

We have constructed two data tables to summarise the tools used in adult and young adult/ adolescent populations. These lengthy tables contain full details of the development and validation studies and appear as an appendix (A2.1) to this report. For the purposes of tool evaluation we have included our panel ratings of the four criteria in

the body of this text that are derived from our data tables. We appreciate that these ratings and the subsequent selection of the currently recommended tools are a matter of expert judgment that reflect our specific criteria. As outlined above, our tool evaluation criteria are weighted towards easy use and high performance in clinical contexts; not solely adherence to purist psychometric principles and properties. We also appreciate that this is such a rapid area of development that it is very likely that the results of such an evaluation exercise will change in a relatively short period as new tools become available and current tools are submitted to more robust and widespread validation studies. Nevertheless we are obligated to make our recommendations now and we do so on the basis of current knowledge and local requirements.

Table 3. Evaluation of adult problem gambling screening and assessment tools

Tool	Australian benchmark data	Brevity	Sensitivity/specificity	Psychometric properties
Brief Bio-Social Gambling Screen (BBGS)	No	Brief	Excellent*	Limited data
Early Intervention Gambling Health Test (EIGHT screen)	No	Medium	Fair	Excellent
Gamblers Anonymous Twenty Questions (GA20)	No	Long	Fair	Good
Lie-Bet Questionnaire	No	Brief	Fair*	Limited data
National Opinion Research Center DSM Screen for Gambling Problems (NODS)	No	Long	Fair	Good
NODS-CLIP	Limited	Brief	Good*	Limited data
Problem and Pathological Gambling Measure (PPGM)	No	Long	Excellent*	Fair*
Problem Gambling Severity Index (PGSI) of the Canadian Problem Gambling Index (CPGI)	Extensive	Medium	Fair	Fair
South Oaks Gambling Screen (SOGS)	Extensive	Long	Fair	Fair
Sydney Laval University Gambling Screen (SLUGS)	No	Medium	Limited data	Good*
Victorian Gambling Screen (VGS)	Extensive	Long	Limited data	Excellent

*Validation study information only.

See in text for description of classifications.

The panel also evaluated tools that were designed for young people or adult tools that been subjected to validation in child and adolescent samples. The results of this assessment appear in the Table 4.

Table 4. Evaluation of children and adolescents problem gambling screening and assessment tools

Tool	Australian benchmark data	Brevity	Sensitivity and specificity	Psychometric properties
CAGI Gambling Problem Severity Subscale (GPSS)	No	Medium	Good*	Limited data
DSM-IV-J/DSM-IV-MR-J	Yes	Medium	Fair	Fair
Massachusetts Adolescent Gambling Screen (MAGS)	No	Medium	Fair	Fair
South Oaks Gambling Screen – Revised for Adolescents (SOGS-RA)	No	Medium	Fair	Fair

*Validation study information only.

See in text for description of classifications.

It is evident from this exercise that notwithstanding the stated dissatisfaction with the SOGS and CPGI by some commentators in the problem gambling measurement literature that there are hardly extensive alternatives with sound local validation and benchmark data currently available right now. This is an area of major current activity and our review and analysis shows that this is an appropriate area of investment for development. Thus, once one has included the CPGI and possibly the SOGS, the other contenders have limited performance data to recommend them. Nevertheless, shorter and higher performance screens are needed now. Thus in formulating our recommendations we have exercised our professional judgment.

Recommendations for screening and for assessment

While there was a lack of evidence to support the formulation of evidence-based recommendations, we have instead proposed the following consensus-based recommendations and practice points. These recommendations were based on other available evidence, and the clinical experience and expertise of the GDG and expert advisory panel.

Practitioners are advised to seek further local advice with respect to which tools are most appropriate for particular populations and settings.

CONSENSUS-BASED RECOMMENDATION

Adults with high risk of mental health problems including those who are presenting for treatment or for assessment for mental health problems should be **screened and assessed** for problem/ pathological gambling using a validated measurement tool or tools.

The recommended tools are:

Brief (1-3 items)

- Brief Bio-Social Gambling Screen (BBGS)*
- Lie-Bet Questionnaire*
- NODS-CLiP*

Medium (4-12 items)

- Problem Gambling Severity Index (PGSI) of the Canadian Problem Gambling Index (CPGI)

Long (>13 items)

- South Oaks Gambling Screen (SOGS)
- Victorian Gambling Screen (VGS)
- Problem and Pathological Gambling Measure (PPGM)*

**Validation study information only*

CONSENSUS-BASED RECOMMENDATION

Adolescents and children with high risk of mental health problems including those who are presenting for treatment or for assessment for mental health problems should be **screened and assessed** for problem/ pathological gambling using a validated measurement tool or tools. The recommended tools are:

- DSM-IV-MR-J
- CAGI Gambling Problem Severity Subscale (GPSS)*

**Validation study information only*

PRACTICE POINT

The original and validated versions and scoring protocols of all tools should be utilised in epidemiological and clinical settings.

PRACTICE POINT

A structured clinical interview is required for a full assessment (e.g. DIGS, SCIP).

PRACTICE POINT

People with high risk of gambling problems including those who are presenting for treatment or for assessment for gambling problems should be screened for other mental health problems including:

- Anxiety disorders
- Depression*
- Personality Disorders
- Alcohol dependence
- Drug dependence
- Other impulse control disorders
- Family Violence

** If depression is evident then suicide risk screening protocols ought be considered*

Research recommendations for screening and for assessment

RESEARCH RECOMMENDATION

Tools should be developed with a clearly stated purpose for their use including triage/ screening, diagnostic, classification, acuity, intervention design/selection purposes, and population group.

RESEARCH RECOMMENDATION

Performance of screening and assessment tools should be further researched with large representative community samples (and compared with treatment seeking samples), using contemporary gold standard clinician-administered DSM based criteria measures to identify the best performing tools for the whole population and key sub-groups. Performance indicators should include:

- sensitivity
- specificity
- area under ROC
- validity (construct, content and criterion)

RESEARCH RECOMMENDATION

Current measures of self-reported pathological/ problem gambling activities against objective measures that do not rely upon self-report measures alone for adults, adolescents and children should be validated.

RESEARCH RECOMMENDATION

Adapt existing or create new screening and assessment tools for pathological/ problem gambling that are validated across different cultural groups and specifically for Indigenous peoples.

RESEARCH RECOMMENDATION

Randomised Controlled Trials are required to assess whether both screening and assessment lead to better outcomes and/or higher rates of engagement with services for adults, adolescents and children.

PART 2 TREATMENT

This section will begin with an overview of the treatment evidence base, followed by a list of the clinical questions that guided our review of the evidence. Where there was sufficient evidence to make an evidence-based recommendation, we present a summary of the evidence, followed by the respective evidence-based recommendation. There were several treatment interventions for which we found no or insufficient evidence. Because there was a small amount of evidence addressing the specific issues relating to different sub-populations, we have provided some background information about these additional areas. We conclude by providing some key recommendations for future research.

Overview of the treatment evidence base

The lack of a uniform theory of the aetiology of problem gambling is reflected in the diversity of treatment approaches that have been employed. Blaszczynski and Nower (7) have attempted to provide some explanation of the aetiology of problem/ pathological gambling, and their 'Pathways model' suggests that there needs to be different treatment approaches as there are various pathways to developing the condition.

The problem gambling intervention literature is characterised by a diversity of treatment approaches and models (e.g. cognitive-behavioural therapy (CBT), motivational enhancement therapy (MET) and pharmacological interventions, such as antidepressants and opioid antagonists) with varying levels of evidence. The purpose of our evidence-based review is to examine the evidence with respect to each clinical question and to make recommendations as to the best treatment methods.

Caution is required in accepting the conclusions drawn by both the psychological and pharmacological treatment outcome literatures as their validity is generally compromised by important methodological limitations (172-174), such as small sample sizes that fail to avoid Type II errors, low numbers of female problem gamblers, high attrition rates, and lack of intention-to-treat analyses. The psychological treatment outcome literature is also characterised by studies that fail to include comparative or control groups, randomly assign to treatment conditions, or evaluate manualised interventions. Moreover, little attention has been paid to the heterogeneity in forms of gambling, the impact of comorbidity on treatment response, or the mechanisms of action underlying psychological interventions for problem gambling. The pharmacological intervention literature is characterised by a robust substantial placebo-response, whereby the response to pharmacological agents is often not statistically different from the placebo. Although they may diminish over time (175-176), high placebo-response rates make it difficult to determine the efficacy of pharmacological interventions in short-term studies or open-label studies that have no placebo condition. The results of studies evaluating pharmacological interventions may also not generalise to the larger population of problem gamblers as many have homogenous and unrepresentative samples resulting from rigorous exclusion criteria (e.g., current comorbid Axis I disorders, such as depression). Many also tend to be confounded by short medication phase durations and lack of double-blinding. Moreover, little is known

about the probability of relapse on medication discontinuation due to a lack of follow-up periods in which treatment effects beyond the treatment period are assessed.

Clinical questions for treatment

The following clinical questions were posed:

Psychological interventions

- 1a. For people with gambling problems, are cognitive-behavioural interventions more effective than no intervention?
- 1b. For people with gambling problems, are cognitive-behavioural interventions more effective than other psychological interventions?
2. For people with gambling problems, are psychological interventions other than cognitive-behavioural interventions more effective than no intervention?
3. For people with gambling problems, is voluntary self-exclusion more effective than no intervention?
- 4a. For people with gambling problems, are practitioner-delivered psychological interventions more effective than non-practitioner delivered psychological interventions?
- 4b. For people with gambling problems, are practitioner-delivered psychological interventions more effective than self-help psychological interventions?
- 4c. For people with gambling problems, are practitioner-delivered psychological interventions more effective than no intervention?
- 4d. For people with gambling problems, are non-practitioner-delivered psychological interventions more effective than self-help psychological interventions?
- 4e. For people with gambling problems, are non-practitioner-delivered psychological interventions more effective than no intervention?
- 4f. For people with gambling problems, are self-help psychological interventions more effective than no intervention?
5. For people with gambling problems, are prolonged practitioner-delivered psychological interventions more effective than brief practitioner-delivered psychological interventions?
- 6a. For people with gambling problems, are individual psychological interventions more effective than group psychological interventions?
- 6b. For people with gambling problems, are group psychological interventions more effective than no intervention?
7. For people with gambling problems, are psychological interventions delivered in inpatient or residential settings more effective than psychological interventions delivered in community settings?
- 8a. For people with gambling problems, are psychological interventions with a goal of abstinence more effective than psychological interventions with a non-abstinence goal?
- 8b. For people with gambling problems, are psychological interventions with a non-abstinence goal more effective than no intervention?

Pharmacological interventions

- 9a. For people with gambling problems, are antidepressant medications more effective than no intervention?
- 9b. For people with gambling problems, are antidepressant medications more effective than other pharmacological interventions?
- 10a. For people with gambling problems, are opioid antagonist medications more effective than no intervention?
- 10b. For people with gambling problems, are opioid antagonist medications more effective than other pharmacological interventions?
- 11a. For people with gambling problems, are mood stabiliser/anticonvulsant medications more effective than no intervention?
- 11b. For people with gambling problems, are mood stabiliser/anticonvulsant medications more effective than other pharmacological interventions?
- 12a. For people with gambling problems, are pharmacological interventions other than antidepressant, opioid antagonist, and mood stabiliser/anticonvulsant medications more effective than no intervention?
- 12b. For people with gambling problems, are pharmacological interventions other than antidepressant, opioid antagonist, and mood stabiliser/anticonvulsant medications more effective than other pharmacological interventions?

Psychological and pharmacological interventions

- 13. For people with gambling problems, are pharmacological interventions more effective than psychological interventions?
- 14a. For people with gambling problems, are combined psychological and pharmacological interventions more effective than no intervention?
- 14b. For people with gambling problems, are combined psychological and pharmacological interventions more effective than either psychological or pharmacological interventions alone?

Targeted interventions

- 15a. For people with gambling problems and co-occurring psychiatric symptoms or disorders, are psychological or pharmacological interventions more effective than no intervention?
- 15b. For people with gambling problems and co-occurring psychiatric symptoms or disorders, are psychological or pharmacological interventions more effective than any other intervention?
- 16a. For people with gambling problems and co-occurring psychiatric symptoms or disorders, are interventions sequenced to treat gambling problems first more effective than interventions sequenced to treat co-occurring psychiatric symptoms or disorders first?

- 16b. For people with gambling problems and co-occurring psychiatric symptoms or disorders, are sequenced interventions more effective than simultaneous interventions?
- 17a. For women with gambling problems, are psychological or pharmacological interventions more effective than no intervention?
- 17b. For women with gambling problems, are psychological or pharmacological interventions more effective than any other intervention?
- 18a. For men with gambling problems, are psychological or pharmacological interventions more effective than no intervention?
- 18b. For men with gambling problems, are psychological or pharmacological interventions more effective than any other intervention?
- 19a. For young people with gambling problems, are psychological or pharmacological interventions more effective than no intervention?
- 19b. For young people with gambling problems, are psychological or pharmacological interventions more effective than any other intervention?
- 20a. For seniors with gambling problems, are psychological or pharmacological interventions more effective than no intervention?
- 20b. For seniors with gambling problems, are psychological or pharmacological interventions more effective than any other intervention?
- 21a. For people with gambling problems on EGMs, are psychological or pharmacological interventions more effective than no intervention?
- 21b. For people with gambling problems on EGMs, are psychological or pharmacological interventions more effective than any other intervention?
- 22a. For people with gambling problems on any gambling activity other than EGMs, are psychological or pharmacological interventions more effective than no intervention?
- 22b. For people with gambling problems on any gambling activity other than EGMs, are psychological or pharmacological interventions more effective than any other intervention?

Outcomes for treatment

Where available, the following outcomes were assessed for each clinical question:

- Gambling behaviour – any measure of expenditure, frequency or duration.
- Gambling severity – any standardised and validated measure of problem gambling severity.
- Psychological distress - any standardised and validated measure of psychological distress, such as, depression, mood disturbance, negative affect or anxiety symptoms.
- Alcohol and substance use – any standardised and validated measure of alcohol and substance use (use, abuse, dependence)
- Quality of life - any standardised and validated measure of quality of life.

Recommendations for treatment

In this section, we present a short background to each broad intervention area (e.g. psychological and pharmacological interventions) followed by the respective clinical questions and a summary of the evidence that was included in the review.

Where there was sufficient evidence, an evidence-based recommendation is provided. Practice points accompany the evidence-based recommendation where appropriate. Detailed information about the evidence can be found in the Appendix A3.1 and A3.2.

For many questions, there was insufficient evidence to make an evidence-based recommendation. This is clearly stated in the text. Not being able to identify high quality evidence relating to certain interventions is important for identifying gaps in our knowledge. Where appropriate, we have provided a brief description of what is known to date, based on other literature and clinical expertise. We anticipate that this information can be used as a resource for use by researchers and practitioners, until such time when good quality evidence does become available. No consensus-based recommendations were made for treatment. Where appropriate, research recommendations were formulated.

Psychological interventions

Cognitive-behavioural therapy (CBT)

The definition of and theoretical antecedents of CBT are discussed in a massive and robust literature. CBT is a generic term referring to therapies that incorporate both behavioural interventions (direct attempts to reduce dysfunctional emotions and behaviour by altering behaviour) and cognitive interventions (attempts to reduce dysfunctional emotions and behaviour by altering individual appraisals and thinking patterns). As Brewin (177) noted, “cognitive-behavior therapy (CBT) involves a highly diverse set of terms and procedures” (p.31). The British Association for Behavioural and Cognitive Psychotherapies notes that CBT is based on the pragmatic combination of principles of behavioural and cognitive theories. Both cognitive and behavioural interventions are based on the assumption that prior learning has maladaptive consequences and that the purpose of intervention is reduce distress or maladaptive behaviour by providing more adaptive learning experiences. However, the integration between cognitive and behavioural approaches has long been debated due to the lack of theoretical overlap between these two approaches (177). The role of conditioning is not explicit in cognitive interventions and the role of cognitive processes is not explicit in behavioural interventions. Brewin (177) argues that this theoretical disunity has been compounded by the theoretical underpinnings of each intervention being shaped by a focus on different clinical conditions and that the development of cognitive interventions were not closely tied to a single recognisable strand of basic research and theory in psychology.

Although this combination leads to substantial and ongoing debates as to what actually constitutes CBT, and whether they should be combined, CBT has developed pragmatically to manage a large range of complex and refractory clinical issues by modifying beliefs and behaviour using many procedures.. Notwithstanding this diversity and pragmatism, we consider that the Association's definition of CBT ([http://www.babcp.com/Public/What is CBT.aspx](http://www.babcp.com/Public/What_is_CBT.aspx)) captures most of the key issues:

Cognitive and/or behavioural psychotherapies are psychological approaches based on scientific principles and which research has shown to be effective for a wide range of problems. Clients and therapists work together, once a therapeutic alliance has been formed, to identify and understand problems in terms of the relationship between thoughts, feelings and behaviour. The approach usually focuses on difficulties in the here and now, and relies on the therapist and client developing a shared view of the individual's problem. This then leads to identification of personalised, usually time-limited therapy goals and strategies which are continually monitored and evaluated. The treatments are inherently empowering in nature, the outcome being to focus on specific psychological and practical skills (e.g. in reflecting on and exploring the meaning attributed to events and situations and re-evaluation of those meanings) aimed at enabling the client to tackle their problems by harnessing their own resources. The acquisition and utilisation of such skills is seen as the main goal, and the active component in promoting change with an emphasis on putting what has been learned into practice between sessions ("homework"). Thus the overall aim is for the individual to attribute improvement in their problems to their own efforts, in collaboration with the psychotherapist. Cognitive and/or behavioural psychotherapists work with individuals, families and groups. The approaches can be used to help anyone irrespective of ability, culture, race, gender or sexual preference. Cognitive and/or behavioural psychotherapies can be used on their own or in conjunction with medication, depending on the severity or nature of each client's problem.

CBT is one of the most established and researched psychological therapies for emotional, psychological and psychiatric dysfunction. The National Institute for Health and Clinical Excellence (NICE) (<http://www.nice.org.uk>) recommends CBT for a wide range of mental health problems. These currently include:

- Depression, (6-20 sessions)
- Anxiety, (7-14 hours)
- Obsessive Compulsive Disorder,
- Body dysmorphic disorder,
- Chronic Fatigue
- Post Traumatic Stress Disorder (8-12 sessions)

Currently there is no evidence-based recommendation from NICE for using CBT to treat problem gambling. The list of disorders that have been found to be effectively treated by CBT is much wider than that provided by the NICE recommendations and guidelines. The UK National Health Service has specified the establishment of CBT services as a national health priority to manage mental health and behavioural problems.

The underlying assumption generally implicit in behavioural explanations of problem gambling is that gambling is a learned maladaptive behaviour that results from a combination of personal reinforcement history and prevailing reinforcement contingencies (178). Positive reinforcement schedules include the variable ratio schedule of “random” financial gain and the fixed interval reinforcement schedule of subjective excitement and physiological arousal. There is also a negative reinforcement schedule that provides escape from emotional pain and aversive stress states. Operant reinforcement allows gambling to be maintained sufficiently long enough for arousal and excitement to be associated with gambling-related external stimuli through classical conditioning (7, 178). These widely generalised conditioned stimuli include external stimuli such as situations, places, and times, or internal stimuli such as mood states, physiological arousal, or cognitions. These operant and classical conditioning schedules can also combine with early exposure to gambling and modelling effects to predispose individuals to initiate participation in gambling behaviour (178).

In accordance with learning principles, behavioural approaches have commonly applied classical and operant conditioning techniques in order to reduce the arousal and excitement associated with gambling. A range of behavioural procedures have been explored in the evaluation of interventions for problem gambling, including aversive techniques, covert sensitisation, positive reinforcement, exposure techniques, stimulus control techniques, systematic desensitisation, behavioural counselling, and cue exposure. Other behavioural procedures include imaginal desensitisation, alternative activity planning, problem solving training, financial planning and limit setting, social skills and communication training, and relapse prevention.

Cognitive explanations propose that gamblers hold invalid beliefs that are based on false assumptions and are maintained by a biased interpretation of the evidence (179). The most frequent cognitive biases include overconfidence in ability to identify systems of winning; believing that winning is imminent; believing that attitudes, beliefs, prayer, specific places, or behaviours can influence gambling outcomes; placing bets based on instinct, omens, hunches, and feelings; viewing luck as personal or fluctuating with environmental circumstances; recollecting wins and ignoring losses; and personalising gaming machines (180). Inadequate conceptualisation of statistical independence and randomness is thought to be the core feature underlying gambling-related cognitive distortions.

Cognitive formulations of the development and maintenance of problem gambling imply that intervention should identify cognitive distortions and biases and correct them through cognitive restructuring techniques. Cognitive misconceptions of the basic notions of randomness (e.g., gamblers’ fallacy, chasing losses, discounting losses, overestimation of skill, and the efficacy of systems or superstitious behaviours) are generally corrected with evidence generally related to the independence of play, the inability of strategies or superstitions to control the outcome, and the negative winning expectancy.

There is increasing evidence of the efficacy of CBT in a range of settings and in combination with other interventions. Although the literature does not provide a strong basis for differentiation of the available treatment options, cognitive-behavioural

therapies have been cautiously recommended as “best practice” for the psychological treatment of problem gambling (181).

Inclusion Criteria

In this guideline cognitive-behavioural interventions were defined as any cognitive, behavioural or cognitive-behavioural intervention, such as:

- Cognitive Behaviour Therapy (CBT)
- Rational Emotive Therapy (RET) or Rational Emotive Behavior Therapy (REBT)
- Cognitive therapy (CT)
- Cognitive restructuring or correction
- Behavior therapy/counselling
- Aversion therapies (e.g., aversion-relief, electrical aversion, faradic shock)
- Exposure and desensitisation procedures (imaginal or in-vivo) (e.g., covert conditioning or sensitisation procedures, cue exposure procedures [brief or prolonged] with or without response prevention; flooding; implosive therapy; relaxation, progressive muscle relaxation, applied relaxation training; stimulus control)
- Reinforcement procedures (e.g., positive reinforcement, contingency contracting, contingency reward, contingency management, self-reinforcement, behaviour modification)
- Behavioural activation (e.g., alternative or pleasant activity scheduling/planning, leisure substitution)
- Skills training (e.g., problem solving training, communication training, social skills training, assertiveness training)
- Relapse prevention
- Acceptance based therapies, such as dialectical behavioural therapy (DBT), acceptance and commitment therapy (ACT), mindfulness based cognitive therapy (MBCT), or mindfulness-based stress reduction (MBSR)

Summary of the evidence for clinical question 1a. For people with gambling problems, are cognitive-behavioural interventions more effective than no intervention?

Eight randomised controlled trials (RCTs) were identified for inclusion. One RCT was found to have a low risk of bias, two were found to have a moderate risk of bias and five were found to have a high risk of bias.

Various comparisons were made by these studies:

- Individual CBT vs. group CBT vs. waitlist control (182)
- Individual CBT vs. Gamblers Anonymous (GA) referral (waitlist control) (183)
- CBT workbook vs. CBT workbook and motivational interview (MI) vs. waitlist control (184)
- CBT workbook and MI vs. CBT workbook and MI and 6 session booster telephone support vs. CBT workbook only vs. waitlist control (185)
- Individual CBT vs. waitlist control (186-187)

- Group CBT vs. waitlist control (172)
- Individual CBT and GA referral vs. CBT workbook and GA referral vs. GA referral (188)

The studies that compared individually administered CBT with a control group found that CBT was superior to the control group in gambling severity, gambling behaviour and psychological distress (182-183, 186-188). The studies that compared group CBT with a control found conflicting results. One study found significant differences between group CBT and a waitlist control in gambling behaviour and some psychological distress measures (182) and one study found significant differences between the groups in gambling severity but no differences were found in gambling behaviour (172). Studies that compared a self-help CBT workbook with a control found fairly similar results. One study found no differences between the groups in gambling behaviour (184), one study found significant differences between the groups in gambling behaviour but only at the follow up assessment (185) and one study that assessed both gambling behaviour and gambling severity found no differences between the self-help CBT workbook group and the waitlist control group (188).

EVIDENCE-BASED RECOMMENDATION	
Individual or group Cognitive-Behavioural Therapy should be used to reduce gambling behaviour, gambling severity and psychological distress in people with gambling problems.	B
CLINICAL PRACTICE POINT	
<p>Where Cognitive-Behavioural Therapy is to be prescribed, the following should be considered:</p> <ul style="list-style-type: none"> • Practitioners should have appropriate qualifications and training • Manualised delivery of the intervention should be considered 	

Summary of the evidence for clinical question 1b. For people with gambling problems, are cognitive-behavioural interventions more effective than other psychological interventions?

Two RCTs were identified for inclusion (189-190). This was insufficient to make an evidence-based recommendation.

Other psychological interventions

In addition to cognitive-behavioural interventions, there are a number of other psychological interventions, including MET, node-link-mapping, minimal or brief practitioner-delivered interventions, self-help programs, and GA.

Motivational Interviewing (MI) is a client-centred, directive counselling style for helping people to explore and resolve ambivalence about behaviour change (191). The goal of this unmanualised intervention style is to quietly clarify ambivalence and elicit change talk using the core skills of informing with choices, listening with a purpose, and asking curious questions. The spirit underpinning this intervention involves collaboration, in which the therapist and client pursue change together; evocation, whereby the client is believed to possess the intrinsic goals and resources for change; and autonomy, whereby the therapist respects the client's right and capacity for self-direction and facilitates informed choice (192). The principles of this intervention are expressing and listening with empathy, understanding client motivation and empathically developing discrepancy between present behaviour and broader goals and values, resisting the righting reflex (i.e., rolling with resistance), and supporting self-efficacy and empowerment (191-192). It has been argued that "at the heart of MI is a quiet curiosity about the motivations of the client, and an ability to use listening to invite reflection and consider the personal value of behaviour change" (191).

A number of specific manualised intervention methods have been derived from motivational interviewing, including **Motivational Enhancement Therapy (MET)**. MET is a four-session intervention that was developed specifically as one of three interventions tested in Project MATCH (193), a multisite clinical trial of treatments for alcohol abuse and dependence. It comprises a two-session checkup that involves a comprehensive assessment of the client's drinking and related behaviours, followed by systematic feedback to the client of findings. These sessions are followed by two follow-up sessions (at weeks 6 and 12). This format was selected to parallel the 12-week (and 12 session) format of two more intensive treatments in the trial. MI is the predominant style used by counsellors throughout MET. It is quite possible, however, to offer motivational interviewing without formal assessment of any kind. It is also possible to provide assessment feedback without any interpersonal interaction such as motivational interviewing.

Node-link mapping was originally developed for use in substance abuse treatments. It is a visual representation technique that is designed to highlight interrelations between thoughts, emotions, actions and environmental influences (194). Node-link mapping allows for clear and easy communication, between a counsellor and a client, as it enables simultaneous representations of multiple relationships, modulating influences and short and long term behavioural outcomes, which can become very complex when using natural language (194).

Self-help interventions are those treatments involving no professional time and/or resources. Like interventions involving minimal therapist contact, these interventions may provide non-threatening, cost-effective, and time-efficient alternatives to

traditional psychological interventions, particularly to those problem gamblers who have earlier onset and less severe gambling problems. Many of these interventions may also be appropriate for problem gamblers unable or unwilling to access local services and increase the accessibility of treatment for problem gamblers located in geographically remote areas. To date, the self-help treatment outcome literature for problem gambling has comprised predominantly of the use of cognitive-behavioural self-help workbooks. Other interventions include personalised feedback and internet-delivered interventions.

Gamblers Anonymous (GA), the parallel organisation for Alcoholics Anonymous, is a voluntary fellowship that employs abstinent gamblers as counsellors. Officially established in Los Angeles in 1957, GA models the principles and structure of Alcoholics Anonymous using a traditional 12-step approach. GA subscribes to a disease or medical model and therefore asserts that problem gambling can only be arrested through the practice of complete abstinence. While GA is a common form of treatment, evaluative research is limited, probably due to the number of obstacles to systematic evaluation posed by the structure of GA (195). Recent studies have employed comparative designs to evaluate the efficacy of referral to GA.

Inclusion criteria

In this guideline, other psychological interventions were defined as any therapy as defined by the trialist that does include therapies previously listed as cognitive and/or behavioural, such as:

- Motivational enhancement therapies (MET, MI, brief motivational treatment, compliance enhancing techniques, compliance-improving interventions)
- Non-practitioner delivered interventions: Includes self-help, minimal, or peer-interventions (self-help workbooks/manuals/audiotapes/videotapes, self-help or support groups, telephone helplines or counselling, GA, internet or online therapies, peer interventions, self-hypnosis, voluntary self-exclusion)
- Brief or single-session interventions
- Solution-focussed therapies
- Client centred therapies
- Psychodynamic interventions
- Supportive counselling or therapy
- Couple and family therapies (adapted couple therapy, congruence couples therapy, family therapy, marital therapy, integrative behavioural couple therapy, marriage counselling, structured family intervention, systemic therapies)
- Group interventions or therapy
- Eye movement desensitisation, hypnosis
- Financial counselling interventions (financial counselling, management, planning, or limit setting)
- Inpatient interventions (residential interventions, residential rehabilitation)
- Outpatient, community-based, non-residential interventions
- Mapping therapies (mapping enhanced counselling, node-link mapping)

Summary of the evidence for clinical question 2. For people with gambling problems, are psychological interventions other than cognitive-behavioural interventions more effective than no intervention?

Nine RCTs were identified for inclusion. Four RCTs were found to have a low risk of bias and five RCTs were found to have a high risk of bias. Various comparisons were made by these studies:

- Personalised feedback vs. waitlist control (196)
- Motivational interview vs. control interview (197)
- Counselling session vs. waitlist control (198)
- Self-help CBT workbook vs. self-help CBT workbook + a motivational interview vs. waitlist control (184)
- Self-help CBT workbook vs. self-help CBT workbook + a motivational interview vs. self-help CBT workbook + a motivational interview + 6 booster telephone supports vs. waitlist control (185)
- Group node-link-enhanced mapping vs. group non-mapping vs. waitlist control (194)
- Group node-link-enhanced mapping vs. waitlist control (194)
- Two studies compared MET + CBT vs. MET vs. brief advice vs. assessment only (199-200)

Significant differences were found between personalised feedback and waitlist control on some gambling behaviour measures, however, no differences were found in gambling severity (196). No significant differences were found between a counselling session and control group in gambling behaviour (198). Significant differences were found in the two RCTs that compared a node-link-mapping enhanced treatment with a control group in gambling severity and psychological distress, however, significant differences were only found for some gambling behaviour measures (194). Significant differences were found between a motivational interview and a control interview in gambling behaviour, however, no differences were found in gambling severity (197). Significant differences were found in the two RCTs that compared a motivational interview combined with a self-help workbook with a waitlist control, in gambling behaviour (184-185). The two RCTs that compared MET, a combined MET and CBT, brief advice and an assessment only control found slightly conflicting results. One RCT found no differences between the MET or the MET + CBT groups when compared with the control group in either gambling behaviour or gambling severity (199). Significant differences were found between the brief advice group and the assessment only control group in gambling behaviour and gambling severity (199). The other RCT found no differences between the two MET interventions and the control group for days gambled, however, the MET only condition showed a significantly greater reduction in dollars wagered over time compared to the control condition (200). All three active conditions (MET, MET + CBT and brief advice) also showed significantly greater reductions in gambling severity, when compared with the control condition (200).

EVIDENCE-BASED RECOMMENDATION	
<p>Motivational Interviewing and Motivational Enhancement Therapy should be used to reduce gambling behaviour and gambling severity in people with gambling problems.</p>	B
CLINICAL PRACTICE POINT	
<ul style="list-style-type: none"> • Practitioners should have appropriate qualifications and training • Manualised delivery of Motivational Enhancement Therapy should be considered 	

Voluntary self-exclusion

Self-exclusion has been defined as a demand reduction strategy within a harm minimisation approach to gambling policy and regulation (201). Self-exclusion programs are industry based programs designed to assist problem gamblers to cease or limit their gambling behaviour by limiting their access to gaming opportunities (202). They require individuals to voluntarily sign an agreement to being refused entry to specified gambling venues or to be asked to leave if identified from specified gambling venues. Self-exclusion periods vary, whereby they can be time limited (e.g., 6 months) or involve lifetime bans (202).

Despite the widespread availability of self-exclusion programs, there is limited research investigating the characteristics of people who use these services and the effectiveness of these programs. Studies suggest that over half of self-excluders are male and the majority are classified as pathological gamblers (203-204). Self-excluders most often hear about self-exclusion programs through their friends or relatives, followed by information available from the gambling venue and the media (204). A number of researchers have found that not everyone who requests self-exclusion also wishes to undertake counselling (203-204). Ladouceur and colleagues (203) found that 49 percent of study participants who had signed self-exclusion agreements had considered seeking counselling but only 10% had actually done so.

It has been suggested that the effectiveness of self-exclusion programs can be measured in a number of ways: utilisation rate, compliance with the self-exclusion requirements, and the impact on gambling behaviour (205). Utilisation rates for self-exclusion are generally low, with estimates suggesting that between 0.4 and 7 percent of problem gamblers utilise self-exclusion programs (205-207). Findings reveal that although many self-excluders report confidence that they can succeed in staying away from gambling venues during the self-exclusion period, between 10 to 50 percent breach the self-exclusion agreement by entering the gambling venue (203-204, 207). Interestingly, Ladouceur and colleagues (204) found that 45 percent of self-excluders intended to return to the gambling venue on completion of their self-exclusion period. Self-excluders

breach an average of 3 to 6 times during their self-exclusion periods and approximately half gamble on other games during their self-exclusion period (203, 207). Findings reveal that approximately 30 percent of self-excluders remain abstinent during their self-exclusion period. Findings also reveal self-exclusion programs are associated with a reduced urge to gamble, increased perception of control, a reduction in intensity of negative consequences, and reduced gambling severity (204). There is a clear need for further research on the gambling behaviour of those who breach, just as there is a need to know more about the subsequent gambling behaviour of those who revoke their self-exclusion bans.

Inclusion Criteria

In this guideline voluntary self-exclusion was defined as voluntary self-exclusion from any gambling venue (e.g. Crown Casino) or gaming organisation (e.g. Australian Hotels Association).

Summary of the evidence for clinical question 3. For people with gambling problems, is voluntary self-exclusion more effective than no intervention?

No studies were identified for inclusion, therefore an evidence-based recommendation could not be made. It was deemed appropriate to develop a research recommendation.

RESEARCH RECOMMENDATION

Randomised Controlled Trials, where feasible, should be conducted into the effectiveness of self-exclusion in treating problem gambling compared with no intervention.

Practitioner involvement in psychological interventions

Please see previous sections for a description of the specific psychological interventions.

Inclusion criteria

In this guideline, practitioner delivered psychological interventions were defined as any psychological intervention delivered by a therapist or clinician. The psychological intervention could be of any theoretical orientation, setting, modality or method of delivery. Non-practitioner delivered psychological interventions, were defined as any psychological intervention delivered by a person other than a therapist or clinician. This included peer workers, support workers and elders. Self-help psychological interventions were defined as any psychological intervention where individuals predominantly help themselves with minimal or no assistance from others. This included self-help workbooks and internet or online therapies not involving contact with a clinician.

Summary of the evidence for clinical question 4a. For people with gambling problems, are practitioner-delivered psychological interventions more effective than non-practitioner delivered psychological interventions?

No studies were identified for inclusion, therefore an evidence-based recommendation could not be made. It was deemed appropriate to develop a research recommendation.

RESEARCH RECOMMENDATION

Randomised Controlled Trials, where feasible, should be conducted into the effectiveness of practitioner delivered interventions in treating problem gambling compared with non-practitioner delivered interventions.

Summary of the evidence for clinical question 4c. For people with gambling problems, are practitioner-delivered psychological interventions more effective than no intervention?

Thirteen RCTs were identified for inclusion. Three RCTs were found to have a low risk of bias, two were found to have a moderate risk of bias and eight were found to have a high risk of bias.

Various comparisons were addressed by these studies:

- Individual CBT vs. group CBT vs. waitlist control (182)
- CBT vs. GA referral (waitlist control) (183)
- CBT workbook vs. CBT workbook and a motivational interview vs. waitlist control (184)
- CBT workbook vs. CBT workbook + a motivational interview vs. CBT workbook + a motivational interview + 6 booster telephone support vs. waitlist control (185)
- Two studies compared CBT vs. waitlist control (186-187)
- Group CBT vs. waitlist control (172)
- Group node-link-enhanced mapping vs. group non-mapping vs. waitlist control (194)
- Group node-link-enhanced mapping vs. waitlist control (194)
- Individual CBT and GA referral vs. CBT workbook and GA referral vs. GA referral only (188)
- Two studies compared MET and CBT vs. MET vs. brief advice vs. assessment only (199-200)
- Counselling session vs. control (198)

CBT: Several studies compared practitioner delivered CBT with some form of control group. The results of these studies were fairly consistent in that practitioner delivered CBT was more effective than a control group in reducing gambling behaviour and gambling severity (182-183, 186-188). The two studies that assessed psychological distress also found that practitioner delivered CBT was more effective in reducing psychological distress than a control group (182-183). Slightly conflicting results were found for practitioner delivered group CBT, where one study found that it was more effective in reducing gambling behaviour and some psychological distress when

compared to a waitlist control (182), while another study found that practitioner delivered group CBT was more effective in reducing gambling severity but not gambling behaviour (172).

MI/MET: In the two RCTs that compared a practitioner delivered MI combined with a self-help CBT workbook with a waitlist control, significant differences were found for both in gambling behaviour (184-185). The two RCTs that compared MET, a combined MET and CBT, brief advice and an assessment only control found slightly conflicting results. One RCT found no differences between the MET or the MET + CBT groups when compared with the control group in either gambling behaviour or gambling severity over the 6 week study period, however, the MET + CBT condition was found to be significantly more effective in reducing gambling severity than the control group over the 9 month follow up period (199). Significant differences were found between the brief advice and assessment only control in gambling behaviour and gambling severity (199). The other RCT found no differences between the two MET interventions and the control group for days gambled, however, the MET condition showed a significantly greater reduction in dollars wagered over time compared to the control condition (200). All three active conditions (MET, MET + CBT and brief advice) also showed significantly greater reductions in gambling severity, when compared with the control condition (200).

OTHER: One RCT that examined the efficacy of a counseling session and control group found no significant differences between the two interventions in gambling behavior (198). The two RCTs that investigated the efficacy of a node-link-mapping enhanced treatment found significant differences between the mapping enhanced treatment and the control group when assessing gambling severity. Both RCTs also found a significant decrease from pre to post treatment in the mapping enhanced group in gambling expenditure, however, only one of the RCTs found a significant difference in gambling bout duration. A significant decrease from pre to post treatment in psychological distress was also found for the node-link-mapping enhanced group (194).

EVIDENCE-BASED RECOMMENDATION	
Practitioner delivered psychological interventions should be used to reduce gambling severity and gambling behaviour in people with gambling problems.	B
CLINICAL PRACTICE POINT	
<p>Where practitioner delivered psychological interventions are to be prescribed, the following should be considered:</p> <ul style="list-style-type: none"> • Availability of services • Practitioners should have appropriate qualifications and training • Manualised delivery of the intervention should be considered 	

Summary of the evidence for clinical question 4b. For people with gambling problems, are practitioner-delivered psychological interventions more effective than self-help psychological interventions?

Three RCTs were identified for inclusion. One RCT was found to have a low risk of bias, one RCT was found to have a moderate risk of bias and one RCT was found to have a high risk of bias.

Various comparisons were addressed by these studies:

- CBT workbook vs. CBT workbook + a motivational interview vs. waitlist control (184)
- CBT workbook vs. CBT workbook + a motivational interview vs. CBT workbook + a motivational interview + 6 booster telephone support vs. waitlist control (185)
- GA referral vs. GA referral + CBT workbook vs. GA referral + individual CBT (188)

Two studies compared a combined self-help CBT workbook and a motivational interview intervention with a self-help CBT workbook only intervention and found significant differences in gambling severity but only some differences in gambling behaviour (184-185). Some significant differences were found in gambling behaviour when comparing a self-help CBT workbook with practitioner delivered CBT (188).

EVIDENCE-BASED RECOMMENDATION	
Practitioner delivered psychological interventions should be used over self-help psychological interventions to reduce gambling severity and gambling behaviour in people with gambling problems.	B
CLINICAL PRACTICE POINT	
Where practitioner delivered psychological interventions are to be prescribed, the following should be considered: <ul style="list-style-type: none">• Client preferences and availability of services need to be taken into consideration• Practitioners should have appropriate qualifications and training• Manualised delivery of the intervention should be considered	

Summary of the evidence for clinical question 4d. For people with gambling problems, are non-practitioner-delivered psychological interventions more effective than self-help psychological interventions?

No studies were identified for inclusion, therefore an evidence-based recommendation could not be made. It was deemed appropriate to develop a research recommendation.

RESEARCH RECOMMENDATION

Randomised Controlled Trials, where feasible, should be conducted into the effectiveness of non-practitioner-delivered psychological interventions compared with self-help psychological interventions.

Summary of the evidence for clinical question 4e. For people with gambling problems, are non-practitioner-delivered psychological interventions more effective than no intervention?

No studies were identified for inclusion, therefore an evidence-based recommendation could not be made. It was deemed appropriate to develop a research recommendation.

RESEARCH RECOMMENDATION

Randomised Controlled Trials, where feasible, should be conducted into the effectiveness of non-practitioner-delivered psychological interventions compared with no intervention.

Summary of the evidence for clinical question 4f. For people with gambling problems, are self-help psychological interventions more effective than no intervention?

Five RCTs were identified for inclusion. Two RCTs were found to have a low risk of bias, one RCT was found to have a moderate risk of bias and two RCTs were found to have a high risk of bias.

Various comparisons were addressed by these studies:

- Internet delivered CBT and MI vs. waitlist control (208)
- Personalised feedback vs. waitlist control (196)
- CBT workbook vs. CBT workbook + a motivational interview vs. waitlist control (184)
- CBT workbook vs. CBT workbook + a motivational interview vs. CBT workbook + a motivational interview + 6 booster telephone support vs. waitlist control (185)
- GA referral vs. GA referral + CBT workbook vs. GA referral + individual CBT (188)

Conflicting results were found in three studies that compared self-help CBT workbooks with a waitlist control. Two studies found no significant differences between the groups

in gambling behaviour (184, 188), and one of these studies also assessed gambling severity and found no significant differences between the groups (188). One study did find significant differences between the groups in gambling behaviour, but only at the follow up assessment (185). Significant differences were found between a personalised feedback intervention and waitlist control in some gambling behaviour measures but no significant differences were found in gambling severity (196). Significant differences were found between a self-help internet delivered intervention and waitlist control in gambling severity (208).

The body of evidence for this question was assessed as a Grade C by the GDG, which was based on having several studies that had low risk of bias. An evidence-based recommendation would usually be formulated for Grade C evidence. However, in this case, no evidence-based recommendation was made due to the diverse and inconsistent findings that indicated no specific direction of effect. Furthermore, most of the studies investigating self-help interventions do not report adherence rates. Presumably, this is due to the difficulty in monitoring the extent to which people actually use the self-help resources.

RESEARCH RECOMMENDATION

Randomised Controlled Trials, where feasible, should be conducted into the effectiveness of self-help psychological interventions compared with no intervention.

Length of psychological interventions

Minimal or brief interventions are those treatments involving less professional time and/or resources than are typical of traditional therapy (209). They have been defined as those that range from 10 minutes to four sessions (199). From a stepped-care perspective, these interventions may provide non-threatening, cost-effective, and time-efficient alternatives to traditional psychological interventions, particularly to those problem gamblers who have earlier onset and less severe gambling problems. Recent literature has successfully employed a range of problem gambling interventions involving minimal therapist contact, including self-help workbooks with booster sessions, brief advice, face-to-face interventions with a small number sessions, brief interventions delivered via telephone and online media, and interventions delivered through audiocassette and videoconferencing. Brief interventions for problem gambling have usually involved a combination of MI and CBT.

Inclusion criteria

In this guideline prolonged psychological interventions were defined as any psychosocial intervention longer than four therapy sessions, that is delivered by a therapist or clinician (210). Brief psychological interventions were defined as any psychological intervention ranging from 5 minutes of simple advice to one to four complete therapy sessions, that is administered by a therapist or clinician (210).

Summary of the evidence for clinical question 5. For people with gambling problems, are prolonged practitioner-delivered psychological interventions more effective than brief practitioner-delivered psychological interventions?

No studies were identified for inclusion, therefore an evidence-based recommendation could not be made. It was deemed appropriate to develop a research recommendation.

RESEARCH RECOMMENDATION

Randomised Controlled Trials, where feasible, should be conducted into the effectiveness of prolonged practitioner-delivered psychological interventions compared with briefer interventions.

Group psychological interventions

It is of interest to determine the differential efficacy of individual and group treatment for people with gambling problems as treatment conducted in a group setting may have several advantages over treatment conducted on an individual basis (172, 211). Group treatment provides a cost-effective form of treatment provision as a function of treating a greater number of pathological gamblers, particularly when demand for treatment exceeds supply. Group therapy may also serve to facilitate a sense of normalisation for pathological gamblers, establish a sense of group cohesiveness and membership, facilitate mutual acceptance and support, reduce the potential for shame and stigma, establish a sense of structure, and reduce the potential for lying or self-deception. It may also serve to promote observational learning, the identification of common problems and solutions, confrontation from other group members, and interpersonal communication skills. Given the potential benefits of group treatment, it is surprising that only a few studies have evaluated the efficacy of group interventions for people with gambling problems. In this literature, the group interventions have generally involved cognitive-behavioural strategies.

Inclusion criteria

In this guideline, individual psychological interventions were defined as any psychological intervention conducted with individuals, couples or families. Group psychological interventions were defined as any psychological intervention conducted with two or more unrelated people (i.e. not couples or family interventions).

Summary of the evidence for clinical question 6a. For people with gambling problems, are individual psychological interventions more effective than group psychological interventions?

One RCT was identified for inclusion (182). This was insufficient to make an evidence-based recommendation. It was deemed appropriate to develop a research recommendation.

RESEARCH RECOMMENDATION

Randomised Controlled Trials, where feasible, should be conducted into the effectiveness of individual psychological interventions compared with group psychological interventions.

Summary of the evidence for clinical question 6b. For people with gambling problems, are group psychological interventions more effective than no intervention?

Four RCTs were identified for inclusion. One RCT was found to have a moderate risk of bias and three RCTs were found to have a high risk of bias.

Various comparisons were addressed by these studies:

- individual CBT vs. group CBT vs. waitlist control (182)
- group CBT vs. waitlist control (172)
- group node-link mapping enhanced treatment vs. group non-node-link mapping enhanced treatment vs. waitlist control (194)
- group node-link mapping enhanced treatment vs. waitlist control (194)

Two studies compared group CBT with a waitlist control. One study found significant differences between the groups in gambling behaviour measures and some psychological distress measures (182) and the other study found significant differences between the groups in gambling severity measures, however, no differences were found in gambling behaviour (172). Two studies compared a node-link-mapping-enhanced group with a waitlist control and both found significant differences between the groups in gambling severity and some gambling behaviour measures (194). One of these studies also found significant differences in psychological distress (194).

EVIDENCE-BASED RECOMMENDATION

Group psychological interventions could be used to reduce gambling behaviour and gambling severity in people with gambling problems.

C

CLINICAL PRACTICE POINT

Where group psychological interventions are to be prescribed, the following should be considered:

- Client preferences and availability of services need to be taken into consideration
- Practitioners should have appropriate qualifications and training
- Manualised delivery of the intervention should be considered

Setting of psychological interventions

In many jurisdictions, people with gambling problems can select psychological interventions delivered in inpatient or residential settings or community or outpatient settings. Inpatient treatment generally involves accommodation for a period of 21 to 28 days while treatment delivered in community settings is generally provided in a clinic that usually does not offer accommodation for 1 or 2 hour weekly sessions lasting several weeks (50). Given that interventions delivered in inpatient or residential settings are more expensive and more resource intensive, the cost-benefit of delivering these interventions requires evaluation.

Ladouceur and colleagues (50) compared the characteristics of 134 pathological gamblers seeking inpatient treatment and 99 pathological gamblers seeking outpatient treatment. The findings revealed that pathological gamblers seeking inpatient treatment reported more severe gambling problems, higher gambling frequency, higher gambling duration, higher expenditure, lower perception of control, greater negative consequences of gambling, higher average amount of money lost, a higher likelihood of lacking the funds to meet their everyday needs, and a higher likelihood to have declared bankruptcy than pathological gamblers receiving outpatient treatment. Compared to outpatient pathological gamblers, inpatient pathological gamblers also reported a higher likelihood of reporting three Axis I disorders, alcohol abuse problems, schizoid-related problems, personality disorders, depression, suicide ideation, attempted suicide, anxiety, alcohol consumption, drug-related problems, and alcohol-related problems, and impulsivity than pathological gamblers receiving outpatient treatment. A greater number of inpatients than outpatients had received help for gambling, but more inpatients than outpatients had dropped out of treatment.

Participants were required to identify their reasons for selecting inpatient or outpatient intervention modalities. Outpatients reported that they selected this modality for the following reasons: to maintain their work (39%), to remain close to their family, spouse or friends (28%), they did not consider their problem severe enough for inpatient treatment (25%), to keep their daily activities (24%), could not afford paying for inpatient treatment (8%) and inpatient treatment did not work for them (5%). Inpatients selecting this modality of treatment for the following reasons: outpatient treatment did not work for them (26%), they needed to concentrate solely on their gambling problem (25%), they wanted support and supervision on a 24 hour a day basis (24%), they preferred to stay away from gambling activities (21%), and they wanted to engage in a process that they considered to be their “last chance” (14%).

Inpatient rehabilitation programs for gambling problems are more common in some jurisdictions, such as the United States, than other jurisdictions, such as Australia. These programs are often strongly influenced by the disease or addiction model of gambling problems derived from the drug and alcohol field. These inpatient or residential programs generally combine programs for problem gambling and alcohol dependence, and are comprised of components such as individual and group therapy, GA meetings, education on addictions, psychodrama, lectures, relaxation instruction, family counselling, financial and vocational counselling, and medical and legal consultation (212-216). The prolific number of components constituting these multimodal therapies generally preclude identification of the salient ingredients contributing to improvement.

Inclusion criteria

In this guideline, an inpatient or residential setting was defined as any psychological intervention employed to treat a person who is formally admitted (or 'hospitalised') to an institution (e.g., hospital, residential care facilities) and stays for a minimum of one night in the institution. In-patient care includes accommodation provided in combination with the treatment when the latter is the predominant activity provided during the stay as an in-patient. A community setting was defined as any psychological intervention conducted in a setting (e.g., clinic rooms, doctor's office, day surgery centre) that does not require an overnight stay in a hospital or residential care facility.

Summary of the evidence for clinical question 7. For people with gambling problems, are psychological interventions delivered in inpatient or residential settings more effective than psychological interventions delivered in community settings?

No studies were identified for inclusion, therefore an evidence-based recommendation could not be made. It was deemed appropriate to develop a research recommendation.

RESEARCH RECOMMENDATION

Randomised Controlled Trials, where feasible, should be conducted into the effectiveness of in-patient psychological interventions compared with psychological interventions delivered in community settings.

Goals of psychological interventions

Total abstinence has been historically viewed as the only legitimate and acceptable criteria of success for problem or pathological gambling (217-218). Proponents for non-abstinence goals typically do not disavow abstinence as a legitimate treatment goal. They do, however, argue that the single strict criterion of complete abstinence may not be appropriate for all problem gamblers and that providing controlled gambling as an alternative goal of treatment may offer a more realistic and appealing option to some problem gamblers (218-219). The provision of non-abstinence goals may offer an alternative to those individuals who become overwhelmed when considering the notion of complete abstinence and for those with less severe gambling problems (217-218). Non-abstinence goals may decrease the potential for the high rates of attrition commonly observed in the treatment of problem gambling by increasing self-efficacy and motivation early in the treatment process (217).

The viability of non-abstinent treatment goals is generally supported by the empirical literature (219-222). A substantial proportion of problem gamblers select non-abstinence gambling goals when they are available (223-226). While the most common reason for selecting abstinence is a belief that control is not possible, the most common reasons for problem gamblers to select non-abstinence gambling goals are that gambling retains some enjoyment, that abstinence is unrealistic or overwhelming, and that they want to successfully manage social situations involving gambling (225). There appear to be few differences on demographic, gambling, and psychosocial characteristic between

problem gamblers selecting abstinence and non-abstinence goals (224-226). Like controlled drinking, the choice of treatment goal in problem gambling appears fluid, with 66 percent of controlled gambling participants shifting to abstinence at least once during an intervention (222).

There is currently no standardised notion of what constitutes controlled gambling (218), with studies applying slightly different frequency, duration, and expenditure limits (221-222, 225). With a view to the long-term goal of establishing empirically based guidelines for moderated gambling in order to assist clinicians in the selection of the most appropriate treatment goal, Weinstock, Ledgerwood, and Petry (227) investigated the behavioural indicators for problem-free gambling in a sample of treatment-seeking pathological gamblers one year after initiating treatment. They found that gambling behaviour indices not associated with harm were gambling no more than once per month, gambling for no more than 1.5 hours per month, and spending no more than 1.9 percent of monthly income on gambling.

Inclusion criteria

In this guideline, psychosocial interventions with a goal of abstinence were defined as any psychological intervention with an abstinence related goal (as defined by the trialist). Psychological interventions with a non-abstinence goal were defined as any psychological intervention with a non-abstinence goal. Given the absence of a consistent definition of controlled or moderated gambling, abstinence and non-abstinence goals were as defined by the trialist.

Summary of the evidence for clinical question 8a. For people with gambling problems, are psychological interventions with a goal of abstinence more effective than psychological interventions with a non-abstinence goal?

No studies were identified for inclusion, therefore evidence-based recommendations could not be made.

Summary of the evidence for clinical question 8b. For people with gambling problems, are psychological interventions with a non-abstinence goal more effective than no intervention?

No studies were identified for inclusion, therefore evidence-based recommendations could not be made.

It was deemed appropriate to develop a research recommendation to answer clinical questions 8a and 8b.

RESEARCH RECOMMENDATION

Randomised Controlled Trials, where feasible, should be conducted into the effectiveness of psychological interventions with a non-abstinence goal compared with psychological interventions with a non-abstinence goal and no intervention.

Pharmacological interventions

A substantial body of literature evaluating the efficacy of pharmacological interventions in problem gambling behaviour has recently emerged. The clinical heterogeneity of problem gambling has led to the study of a wide range of psychopharmacological agents, including antidepressants, mood stabilisers, and opioid antagonists.

Antidepressant medications

Selective serotonin reuptake inhibitors (SSRIs) are the most frequently investigated form of antidepressants in the treatment of problem gambling. Their use is based on the hypothesis that the serotonergic system of problem gamblers is hypoactive (228). The literature has employed several SSRIs (fluvoxamine, citalopram, paroxetine, sertraline, and escitalopram) in the treatment of problem gambling. These studies have been confounded by high-placebo response rates and have failed to consistently demonstrate the efficacy of SSRIs in the treatment of problem gambling. SSRIs are usually well tolerated in the treatment of problem gambling, however, common adverse effects include nausea, headaches, diarrhoea, restlessness, increased sweating, weight gain, drowsiness and insomnia (229).

In addition to SSRIs, other studies have examined the efficacy of other antidepressants, such as clomipramine (a tricyclic antidepressant), nefazodone (a synthetically derived antidepressant that is a specific 5-HT₂ receptor antagonist), and bupropion (inhibits the reuptake of dopamine and norepinephrine and has a chemical structure similar to the psychostimulants).

Inclusion criteria

In this guideline, antidepressant medications were defined as any psychoactive medication classified as an antidepressant, including those classified as tricyclic antidepressants (TCAs), irreversible monoamine oxidase inhibitors (MAOIs), SSRIs, and other antidepressants (including tetracyclic antidepressants, reversible inhibitors of monoamine oxidase-Type A, serotonin and noradrenaline reuptake inhibitors [SNRIs], selective noradrenaline reuptake inhibitors [SNRIs], and noradrenaline and specific serotonergic antidepressants [NaSSAs]).

Summary of the evidence for clinical question 9a. For people with gambling problems, are antidepressant medications more effective than no intervention?

Seven RCTs were identified for inclusion. Two RCTs were found to have a moderate risk of bias and five RCTs were found to have a high risk of bias.

Various comparisons were addressed by these studies:

- Fluvoxamine vs. placebo (175, 230)
- Bupropion vs. placebo (231)
- Escitalopram vs. placebo (232)
- Paroxetine vs. placebo (233-234)
- Sertraline vs. placebo (235)

No significant differences were found in the two studies comparing fluvoxamine with placebo, in gambling behaviour or gambling severity (175, 230). No significant differences were found in the RCT comparing bupropion with placebo in gambling behaviour, gambling severity or psychological distress (231). No significant differences were found in the RCT comparing sertraline and placebo in gambling severity (235). Significant differences were found in one of the RCTs that compared paroxetine and placebo, in gambling severity, but not for psychological distress (233). In the other RCT that compared paroxetine with placebo, no significant differences were found in gambling severity or quality of life (234). The two phase study that compared escitalopram with placebo showed a mild worsening of gambling severity that did not reach statistical significance with the participants who continued on from the open label phase to the double blind discontinuation phase (232).

EVIDENCE-BASED RECOMMENDATION	
Antidepressant medications should not be used to reduce gambling severity in people with gambling problems alone.	B
CLINICAL PRACTICE POINT	
<ul style="list-style-type: none"> • This recommendation is applicable to those with gambling problems only, and not to those who may have other comorbidities, such as depression and anxiety 	

Summary of the evidence for clinical question 9b. For people with gambling problems, are antidepressant medications more effective than other pharmacological interventions?

Two RCTs were identified for inclusion (236-237). This was insufficient to make an evidence-based recommendation. It was not deemed appropriate to develop a research recommendation

Opioid antagonists

The use of opioid antagonists in the treatment of problem gambling is based on the hypothesis that over-production of endogenous opioids contributes to problem gambling and deficits in impulse control (228, 238). The use of naltrexone, a long acting

μ-opioid receptor antagonist that works on the reward system by reducing levels of dopamine, has been supported in the treatment of problem gambling. Naltrexone is usually well tolerated in the treatment of problem gambling, however, common adverse effects include abdominal or stomach pain, headaches, dizziness, fatigue and anxiety (229). There are, however, concerns that the clinical use of naltrexone may be limited by the risk of hepatotoxicity (i.e., chemical-driven liver damage), particularly at high doses (239). Nalmefene, which is an opioid antagonist similar in both structure and activity to naltrexone but has the advantage of no observed dose-dependent liver toxicity (238-239) has also been evaluated in the treatment of problem gambling.

Inclusion criteria

In this guideline, opioid antagonist medications were defined as any psychoactive medication classified as an opioid antagonist medication. Examples include naloxone, naltrexone, nalorphine, levallorphan, cyprodime, naltrindole, norbinaltophimine, and nalfemene.

Summary of the evidence for clinical question 10a. For people with gambling problems, are opioid antagonist medications more effective than no intervention?

Three RCTs were identified for inclusion. Two RCTs were found to have a moderate risk of bias and one RCT was found to have a high risk of bias.

Two different comparisons were addressed by these studies:

- Naltrexone vs. placebo (240-241)
- Nalmefene vs. placebo (239)

Significant differences were found in the two studies that compared naltrexone with placebo in gambling severity (240-241). One of these studies also found significant differences between naltrexone and placebo, in psychological distress (240). Significant differences in gambling severity between the groups were found in the study comparing nalmefene with placebo (239).

EVIDENCE-BASED RECOMMENDATION	
Opioid antagonists could be used to reduce gambling severity in people with gambling problems.	C
CLINICAL PRACTICE POINT	
<p>Where opioid antagonists are to be prescribed, the following should be considered:</p> <ul style="list-style-type: none"> • That the drug proposed should have problem gambling as a registered indication by the Therapeutic Goods Administration • That the prescribing practitioner has the appropriate skills and training • Recommended contraindications are carefully studied before prescription 	

Summary of the evidence for clinical question 10b. For people with gambling problems, are opioid antagonist medications more effective than other pharmacological interventions?

One RCT was identified for inclusion (237). This was insufficient to make an evidence-based recommendation. It was deemed appropriate to develop a research recommendation.

RESEARCH RECOMMENDATION

Randomised Controlled Trials, where feasible, should be conducted into the effectiveness of opioid antagonist medications compared with other pharmacological interventions.

Mood stabilisers/anticonvulsants

The use of mood stabilisers/anticonvulsants in the treatment of problem gambling is based on the similarity in the clinical features of problem gambling and bipolar disorder (242). This literature has predominantly evaluated the use of lithium, but also comprises studies evaluating the use of carbamazepine, valproate, and topiramate. These pharmacological agents are usually well tolerated in the treatment of problem gambling, however, common adverse effects for mood stabilisers include hair loss, skin reactions, weight gain and prolonged bleeding time (229).

Inclusion criteria

In this guideline, mood stabiliser/anticonvulsant medications were defined as any psychoactive medication classified as a mood stabiliser or anticonvulsant medication. Examples include lithium carbonate, valproic acid (sodium valproate), carbamazepine, oxcarbazepine, lamotrigine, topiramate.

Summary of the evidence for clinical question 11a. For people with gambling problems, are mood stabiliser/anticonvulsant medications more effective than no intervention?

One RCT was identified for inclusion (55). This was insufficient to make an evidence-based recommendation.

Summary of the evidence for clinical question 11b. For people with gambling problems, are mood stabiliser/anticonvulsant medications more effective than other pharmacological interventions?

One RCT was identified for inclusion (236). This was insufficient to make an evidence-based recommendation.

It was deemed appropriate to develop a research recommendation to answer clinical questions 11a and 11b.

RESEARCH RECOMMENDATION

Randomised Controlled Trials, where feasible, should be conducted into the effectiveness of mood stabiliser/anticonvulsant medications compared with no intervention and other pharmacological interventions.

Other pharmacological interventions

An emerging literature has also evaluated other pharmacological agents, such as the amino acid N-acetyl cysteine and the second generation antipsychotic olanzapine. Common side effects for the amino acid N-acetyl cysteine include fever and drowsiness and common adverse effects for the antipsychotic olanzapine include drowsiness, fatigue and rapid weight gain (229).

Inclusion criteria

In this guideline, pharmacological interventions other than antidepressant, opioid antagonist and mood stabiliser/anticonvulsant medications were defined as any other psychoactive medication, including benzodiazepines, antipsychotic medications and other medications.

Summary of the evidence for clinical question 12a. For people with gambling problems, are pharmacological interventions other than antidepressant, opioid antagonist, and mood stabiliser/anticonvulsant medications more effective than no intervention?

Three RCTs were identified for inclusion (243-245). However, there was no consistency in the pharmacological interventions compared therefore no evidence-based recommendation was made.

Summary of the evidence for clinical question 12b. For people with gambling problems, are pharmacological interventions other than antidepressant, opioid antagonist, and mood stabiliser/anticonvulsant medications more effective than other pharmacological interventions?

No studies were identified for inclusion, therefore an evidence-based recommendation could not be made.

It was deemed appropriate to develop a research recommendation to answer clinical questions 12a and 12b.

RESEARCH RECOMMENDATION

Randomised Controlled Trials, where feasible, should be conducted into the effectiveness of pharmacological interventions other than antidepressant, opioid antagonist, and mood stabiliser/anticonvulsant compared with no intervention and other pharmacological interventions.

Psychological and pharmacological interventions

Pharmacological versus psychological interventions

Although the evaluation of interventions for problem gambling remains relatively limited, the treatment outcome literature for problem gambling provides some evidence that this disorder is amenable to intervention. There is some empirical evidence for a number of psychological interventions, including:

- ***Cognitive-Behavioural interventions:*** In accordance with learning principles, behavioural approaches have commonly applied classical and operant conditioning techniques in order to reduce the arousal and excitement associated with gambling. Cognitive formulations of the development and maintenance of problem gambling imply that intervention should identify cognitive distortions and biases and correct them through cognitive restructuring techniques.
- ***Motivational enhancement therapies:*** MI and its derived manual-guided MET are client-centred, directive methods for enhancing intrinsic motivation to change by exploring and resolving ambivalence (192).
- ***Minimal or brief practitioner-delivered interventions:*** Minimal or brief interventions are those treatments involving less professional time and/or resources than are typical of traditional therapy (209).
- ***Self-help programs:*** Self-help interventions are those treatments involving no professional time and/or resources. To date, the self-help treatment outcome literature for problem gambling has comprised predominantly of the use of cognitive-behavioural self-help workbooks.
- ***Gamblers Anonymous:*** GA, the parallel organisation for Alcoholics Anonymous, is a voluntary fellowship that employs abstinent gamblers as counsellors.

The approximate overall success rates for psychological treatments have been estimated to be 70 percent at 6-months follow-up, 50 percent at 1-year follow-up, and 30 percent at 2-year follow-up (246). Although there has been improvement in the evidence base, no psychological treatment satisfies the current standards for evidence of efficacy (181). Cognitive-behavioural therapies have been cautiously recommended as 'best practice' for the psychological treatment of problem gambling (181, 246). However, available evidence does not enable clear recommendations as to which psychological interventions are suited to individual problem gamblers.

A substantial body of literature evaluating the efficacy of pharmacological interventions to directly treat problem gambling behaviour has recently emerged. The clinical heterogeneity of problem gambling has led to the study of a wide range of psychopharmacological agents, including antidepressants, mood stabilisers, and opioid

antagonists. However, to date, no specific pharmacological agent has been found effective in at least two double-blind studies conducted by independent research teams. Moreover, there is little empirical data to guide the selection of one pharmacological intervention over another, with few differences in outcome between the main classes of pharmacological interventions.

Available evidence does not enable clear recommendations as to which medication is best suited to individual patients. The current trend in the pharmacotherapy literature is to select a medication from a class of interventions according to the dominant presenting comorbid psychopathology (238). Recommendations include opioid antagonists when there is a co-occurring alcohol/substance use disorder, SSRIs when there is co-occurring depressive or anxiety symptoms, and lithium when there are comorbid symptoms of subsyndromal hypomania or mania.

The degree to which psychological interventions are more effective than pharmacological interventions remains unclear given the use of different control conditions and outcome measures.

Inclusion criteria

Any pharmacological intervention compared with any psychological intervention.

Summary of the evidence for clinical question 13. For people with gambling problems, are pharmacological interventions more effective than psychological interventions?

No studies were identified for inclusion, therefore an evidence-based recommendation could not be made. It was deemed appropriate to develop a research recommendation to answer these questions.

RESEARCH RECOMMENDATION

Randomised Controlled Trials, where feasible, should be conducted into the effectiveness of pharmacological interventions compared with psychological interventions.

Combined psychological and pharmacological interventions

The combination of psychological and pharmacological interventions should be superior to either form of treatment alone. The combination of psychological and pharmacological therapies can have significant advantages over monotherapies by providing additive, or even synergistic, effects on efficacy (247). However, the combination of psychological and pharmacological interventions has not always been superior to either form of treatment alone in treatment outcome studies for psychiatric disorders (248-249). There remains a dearth of studies that evaluate the use of psychological interventions in conjunction with pharmacological interventions in the treatment of problem gambling.

Inclusion criteria

Any psychological intervention in combination with any pharmacological intervention met the inclusion criteria.

Summary of the evidence for clinical question 14a. For people with gambling problems, are combined psychological and pharmacological interventions more effective than no intervention?

No studies were identified for inclusion, therefore an evidence-based recommendation could not be made.

Summary of the evidence for clinical question 14b. For people with gambling problems, are combined psychological and pharmacological interventions more effective than either psychological or pharmacological interventions alone?

One RCT was identified for inclusion (250). This was insufficient to make an evidence-based recommendation.

It was deemed appropriate to develop a research recommendation to answer clinical questions 14a and 14b.

RESEARCH RECOMMENDATION

Randomised Controlled Trials, where feasible, should be conducted into the effectiveness of combined psychological and pharmacological interventions compared with no intervention and either pharmacological or psychological interventions alone.

Targeted interventions

Gambling problems and co-occurring psychiatric symptoms

Different profiles of psychiatric comorbidity in problem gambling may eventually result in tailored interventions. The current trend in the pharmacotherapy literature is to select a medication from a class of interventions according to the dominant presenting comorbid psychopathology (238). Recommendations include opioid antagonists when there is a co-occurring alcohol/substance use disorder, SSRIs when there is co-occurring depressive or anxiety symptoms, and lithium when there are comorbid symptoms of subsyndromal hypomania or mania. Recent research has successfully applied such targeted interventions to subgroups of problem gamblers with co-occurring disorders, including bipolar spectrum disorders, anxiety, attention deficit hyperactivity disorder (ADHD) features, anger, and substance use.

Many clinical questions relating to the treatment implications of comorbid psychiatric conditions remain. Should problem gambling and the co-existing psychiatric condition be treated concomitantly or sequentially? If the disorders are to be treated sequentially, which disorder would be treated first on what basis? Winters and Kushner (56) provide

some guidelines derived from the more advanced substance abuse literature. They recommend:

1. screening for common comorbid disorders upon intake for problem gambling treatment;
2. a period of observing the comorbid symptomatology as treatment for problem gambling begins;
3. reassessment of the comorbid disorder after a period of abstinent or reduced gambling; and
4. specific treatment for the comorbid condition should it persist in the absence of problem gambling behaviour.

Despite these recommendations, the problem gambling literature has yet to evaluate sequenced interventions for problem gambling and comorbid conditions.

Inclusion criteria

In this guideline, people with gambling problems and co-occurring psychiatric symptoms or disorders were defined as people who present for problem gambling treatment with co-occurring psychiatric symptoms or disorders. Co-occurring psychiatric symptoms were defined by the trialist and could be any symptom associated with a DSM-IV Axis I or Axis II diagnosis. These symptoms are measured using any standardised or validated measure. Examples include:

- Depressive disorders (e.g., major depressive disorder, dysthymic disorder)
- Anxiety disorders (e.g., panic disorder, specific phobias, obsessive-compulsive disorder, post-traumatic stress disorder, generalised anxiety disorder)
- Bipolar disorders (e.g., bipolar I disorder, bipolar II disorders, cyclothymic disorder)
- Alcohol and other substance use disorders
- Attention-Deficit Hyperactivity Disorder (ADHD)
- Personality (Axis II) disorders (e.g., paranoid, schizoid, schizotypal, antisocial, borderline, histrionic, narcissistic, avoidant, dependent, obsessive-compulsive)
- Schizophrenia and other psychotic disorders
- Other impulse-control disorders (e.g., kleptomania)
- Adjustment disorders
- Impulsivity
- Anger

Summary of the evidence for clinical question 15a. For people with gambling problems and co-occurring psychiatric symptoms or disorders, are psychological or pharmacological interventions more effective than no intervention?

Two RCTs were identified for inclusion (55, 232). This was insufficient to make an evidence-based recommendation.

Summary of the evidence for clinical question 15b. For people with gambling problems and co-occurring psychiatric symptoms or disorders, are psychological or pharmacological interventions more effective than any other intervention?

Two RCTs were identified for inclusion (189, 250). This was insufficient to make an evidence-based recommendation.

Summary of the evidence for clinical question 16a. For people with gambling problems and co-occurring psychiatric symptoms or disorders, are interventions sequenced to treat gambling problems first more effective than interventions sequenced to treat co-occurring psychiatric symptoms or disorders first?

No studies were identified for inclusion, therefore no evidence-based recommendation could be made.

Summary of the evidence for clinical question 16b. For people with gambling problems and co-occurring psychiatric symptoms or disorders, are sequenced interventions more effective than simultaneous interventions?

No studies were identified for inclusion, therefore no evidence-based recommendation could be made.

Women and gambling

In many jurisdictions, women access gambling assistance services at a comparable level to men, with EGMs as the most common problematic form of gambling. Although there is currently little sound research investigating the efficacy of treatment for female problem gambling, there is evidence that cognitive-behavioural therapy (CBT) is effective for women (182, 221, 251).

Summary of the evidence for clinical question 17a. For women with gambling problems, are psychological or pharmacological interventions more effective than no intervention?

One RCT was identified for inclusion (182). This was insufficient to make an evidence-based recommendation.

Summary of the evidence for clinical question 17b. For women with gambling problems, are psychological or pharmacological interventions more effective than any other intervention?

No studies were identified for inclusion, therefore no evidence-based recommendation could be made.

Men and gambling

In many jurisdictions, men access gambling assistance services at higher or comparable levels to women, with EGMs as the most common problematic form of gambling (38).

Men have also been over-represented in treatment outcomes studies for gambling problems. Interestingly, however, most of the group-design studies have evaluated the efficacy of treatment on mixed gender samples and few have conducted gender analyses to elicit the specific treatment response of male or female pathological gamblers.

Summary of the evidence for clinical question 18a. For men with gambling problems, are psychological or pharmacological interventions more effective than no intervention?

Two RCTs were identified for inclusion (175, 187). This was insufficient to make an evidence-based recommendation.

Summary of the evidence for clinical question 18b. For men with gambling problems, are psychological or pharmacological interventions more effective than any other intervention?

Two RCTs were identified for inclusion (236-237). This was insufficient to make an evidence-based recommendation.

Young people and gambling

It is possible that the age of the client undergoing treatment for problem gambling may be related to the optimal treatment methods for that particular age group. In other health conditions, it is common to have different approaches to treatment for younger and older people. Age-specific approaches for the treatment of young problem gamblers remain to be adequately evaluated.

Inclusion criteria

In this guideline, young people were defined as people younger than 25 years of age.

Summary of the evidence for clinical question 19a. For young people with gambling problems, are psychological or pharmacological interventions more effective than no intervention?

No studies were identified for inclusion, therefore no evidence-based recommendation could be made.

Summary of the evidence for clinical question 19b. For young people with gambling problems, are psychological or pharmacological interventions more effective than any other intervention?

No studies were identified for inclusion, therefore no evidence-based recommendation could be made.

Seniors and gambling

Although stigma is a major impediment to help-seeking for problem gamblers in general, it may be felt more acutely among seniors (93, 252), who often feel that at their age they should “know better” (253). Indeed, this consciousness and perceived standards of conduct suggest that seniors may be most prone to hiding problematic behaviours (252, 254). Thus, gambling problems may have to be severe before there is willingness to seek formal assistance. Studies have shown that seniors can take as long as 17 years before seeking help (255-256).

Often, at the point of help seeking, seniors may present with complex comorbidities such as depression, anxiety, malnutrition, and other health detriments, which may mask the underlying gambling problems (89, 252). Analyses of problem gambling in seniors suggests that most seniors with gambling problems are behaviourally conditioned and emotionally vulnerable (257) and that late-onset problem gambling is more associated with affective issues than problematic family histories or legal issues (258).

Inclusion criteria

In this guideline, seniors were defined as people 60 years and over.

Summary of the evidence for clinical question 20a. For seniors with gambling problems, are psychological or pharmacological interventions more effective than no intervention?

No studies were identified for inclusion, therefore no evidence-based recommendation could be made.

Summary of the evidence for clinical question 20b. For seniors with gambling problems, are psychological or pharmacological interventions more effective than any other intervention?

No studies were identified for inclusion, therefore no evidence-based recommendation could be made.

Gambling modality

The recognition of differences between problem gamblers reporting problems on different forms of gambling may have implications for specifically designed interventions. However, this has generally not been addressed by the treatment outcome literature, which is underpinned by the assumptions that all forms of gambling are equivalent and that findings relating to one form of gambling can be generalised to other forms (259).

Inclusion criteria

In this guideline people who presented for problem gambling treatment with a primary modality of gambling on EGMs were assessed. People who presented for problem gambling treatment with a primary modality of gambling on a form of gambling other than EGMs were also assessed.

Summary of the evidence for clinical question 21a. For people with gambling problems on EGMs, are psychological or pharmacological interventions more effective than no intervention?

Two RCTs were identified for inclusion (182, 243). This was insufficient to make an evidence-based recommendation.

Summary of the evidence for clinical question 21b. For people with gambling problems on EGMs, are psychological or pharmacological interventions more effective than any other intervention?

No studies were identified for inclusion, therefore no evidence-based recommendation could be made.

Summary of the evidence for clinical question 22a. For people with gambling problems on any gambling activity other than EGMs, are psychological or pharmacological interventions more effective than no intervention?

No studies were identified for inclusion, therefore no evidence-based recommendation could be made.

Summary of the evidence for clinical question 22b. For people with gambling problems on any gambling activity other than EGMs, are psychological or pharmacological interventions more effective than any other intervention?

No studies were identified for inclusion, therefore no evidence-based recommendation could be made.

There is clearly too limited evidence to make evidence-based recommendations regarding targeted interventions. The following research recommendation is therefore made to answer clinical questions 15 to 22.

RESEARCH RECOMMENDATION

Randomised Controlled Trial, where feasible, should be conducted in order to provide more valid effectiveness data. These studies should make provision for studying potential differences in outcomes for key groups including:

- People with gambling problems with and without co-occurring psychiatric symptoms
- Males and females with gambling problems
- Younger and older people with gambling problems
- People with gambling problems on Electronic Gaming Machines or gambling activities other than EGMs
- People with gambling problems from different cultural backgrounds

DISSEMINATION AND IMPLEMENTATION STRATEGY

Approval for this guideline will be sought by the NHRMC, following public consultation.

A final version of the guideline, together with the supporting documents will be made available to health care professionals and the public on the PGRTC website and the clinical guideline register (www.clinicalguidelines.gov.au). Hard copies of the guideline will also be distributed and available upon request.

It is well understood that the development of evidence-based care recommendations for the screening, assessment and treatment of problem gambling is the first stage in ensuring that the best possible care is provided to people with problem gambling. The existence of evidence and indeed guidelines is no guarantee that quality evidence-based care will in fact be provided. The dissemination of this guideline is merely the first step in this process.

The ways in which this guideline will be implemented will vary from setting to setting according to local needs. While respecting the need for localisation of approaches, we nevertheless provide the following discussion of dissemination and implementation strategies. We propose a four-stage dissemination process as follows.



Stages in the dissemination of this guideline

The first stage in the dissemination strategy is distribution of the full guideline to all governments, key agencies and professional bodies involved in the delivery of problem gambling intervention services. These include, but are not limited to:

- Australian Federal, State and Territory Ministers with responsibility for problem gambling research and intervention services.
- The heads of sections of all Australian Federal, State and Territory governments with responsibility for problem gambling research and intervention services
- Consumer groups
- Gamblers Help and similar agencies in Australian State and Territories
- Australian Association of Social Workers
- Australian Psychological Society and its associated colleges
- Australian Counselling Association
- Australian Clinical Psychology Association
- Royal Australian College of General Practitioners
- Australian Medical Association
- Royal Australian and New Zealand College of Psychiatrists
- Australian College of Mental Health Nurses
- Royal College of Nursing Australia
- Australian Nursing Federation
- Gambling Research Australia
- International Gambling Think Tank
- National Association of Gambling Studies
- Selected Australian and New Zealand Gambling Researchers
- Australian Productivity Commission
- Australasian Gaming Council
- Australian Hotels Association
- Australian Casino Association
- Victorian Responsible Gambling Ministerial Advisory Committee and similar bodies in other states and territories
- Other technical working groups with an involvement in problem gambling, screening, assessment and treatment

We will also establish a web-site where the guideline and support materials may be downloaded and feedback provided.

The second stage in the dissemination strategy is the development of attractive short form versions of the guideline for use by:

- Primary care professionals
- General practitioners
- Mental health professionals with a primary role in screening assessment and treatment of problem gambling
- Mental health professionals without a primary role in screening assessment and treatment of problem gambling

- Consumer agencies and consumers
- Managers of services with a role in screening assessment and treatment of problem gambling
- Members of the general public

The third stage in the dissemination strategy is the development and delivery of short training sessions in the use of this guideline and the delivery of these sessions to:

- Primary care professionals
- General practitioners
- Mental health professionals with a primary role in screening assessment and treatment of problem gambling
- Mental health professionals without a primary role in screening assessment and treatment of problem gambling
- Consumer agencies
- Managers of services with a role in screening assessment and treatment of problem gambling

The fourth stage in the dissemination process is evaluation of the uptake of the guideline. This is discussed in a later section.

Barriers to implementation of this guideline

The most frequently cited systematic review of this issue is the Francke review (260).

The authors identified the following barriers in their review:

- *“Guidelines that are easy to understand, can easily be tried out, and do not require specific resources have a greater chance of being used”.*

It is for others to judge whether we have achieved this objective but it certainly has been a central consideration in our preparation of the guideline. The NHMRC process facilitates achievement of this objective through its structured approach and templates (2). The recommendations we have made in our opinion do not require extensive resources to implement but they do require some commitment. However, the implementation of the treatment recommendations requires a skill set amongst practitioners that involves significant preparatory training.

- *“Involving the targeted professionals already in the development phase enhances the chance of successful implementation”*

Once again we have adhered to the NHMRC protocols that intrinsically require the inclusion of key informant groups in the development process.

- *“A lack of awareness, limited familiarity and a lack of agreement with guidelines are the main barriers to guideline adoption”*

This is an issue that we intend to address with stage 3 of our process by conducting targeted training activities to the key groups. Because the guideline is evidence-based, we hope that disagreement will be limited. In addition our recommendations are not difficult to implement but some practitioners will not agree with the evidence.

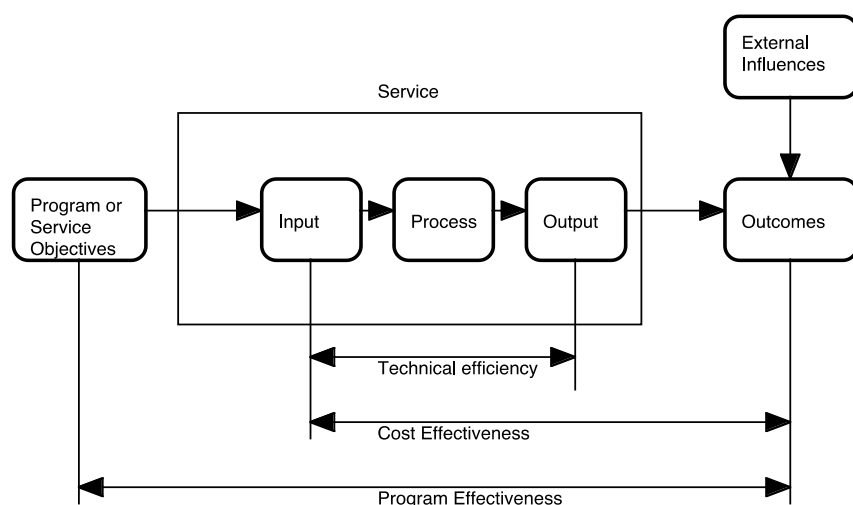
- *“Limited time and personnel resources as well as work pressure are rather frequently cited environmental characteristics said to negatively influence guideline implementation”*

In terms of personnel and time resources, it is our view that problem gambling services in Australia are relatively well resourced from the large revenues generated by licensing and taxation of the gaming industry. That said, this situation could readily change if more than the current fraction of people with problem gambling started to present to services. So under current circumstances these issues should not be major barriers to implementation of the guideline.

EVALUATION

An evaluation of this guideline will be conducted in order to measure the extent to which the recommendations have been applied and implemented. This will include an evaluation of who (e.g. which types of practitioners) has read and used the guideline and in what settings.

We propose to use program theory to evaluate the uptake of the guideline. In the Australian context program theory has been embraced in the Review of Government Services series published annually by the Productivity Commission since 1951 as well as by individual jurisdictions. The Review was established under the auspices of the Council of Australian Governments. The graphic provided in section 1 of the Productivity Commission Review provides a useful and simple depiction of the key elements of program theory and it is reproduced below:



For the purposes of the present project the following terms and definitions have been adopted. Table 5 summarises the key terms and their definitions.

Table 5. Key evaluation terms and definitions

Term	Meaning
Output	Description of the actions that have resulted from investment in a program
Outcome	Overall effect resulting from the implementation of a program
Indicator	Data that captures change in the area being measured over a specific time period
Output indicator	Data that measures change in outputs
Outcome indicator	Data that measures change in outcomes
Target	A designated result for an output or outcome usually associated with a specific time frame
Milestone	A designated point along a continuum between the beginning point (benchmark or baseline) and the conclusion of a program

Program effectiveness and cost effectiveness respectively are evaluated by comparing program objectives and program inputs against program outcomes.

Our objectives and proposed indicators are presented in Table 6.

Table 6. Objectives and indicators of program and cost effectiveness

Objective	Proposed indicator
To receive NHMRC approval for this guideline	Approval given
To receive endorsement of the guideline by professional bodies	Number of endorsements received
To achieve endorsement of the guideline by jurisdictions	Number of endorsements received
To disseminate widely copies of the full guideline	Number of copies of the full guideline distributed; including physical copies and downloads
To prepare consumer and professional short form versions of the guideline	Short form versions prepared
To disseminate widely consumer and professional short form versions of the guideline	Number of copies distributed; - including physical copies and downloads
To achieve widespread uptake of the guideline by practitioners directly involved in the delivery of screening assessment	Numbers of practitioners who uptake guideline recommendations as determined by an uptake audit study

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