National Institute for Health and Care Excellence

Harmful gambling: identification, assessment and management

[B] Tools for identification and assessment of harmful gambling

NICE guideline number tbc

Evidence reviews underpinning recommendations 1.1.1, 1.1.5 and 1.1.12 to 1.1.14 and research recommendations in the NICE guideline

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Contents

1 Summary of review questions covered in 2 this report

3 This evidence report contains information on 2 reviews relating to tools for identifying and
4 assessing harmful gambling.

5 • What is the accuracy of individual brief screening tools in identifying harmful gambling?

6 • What is the accuracy of tools to identify and assess harmful gambling?

1 Tools for identification and assessment of
2 harmful gambling

3 Review question

4 What is the accuracy of individual brief screening tools in identifying harmful gambling?

5 Introduction

6 Many people affected by gambling-related harms do not seek treatment (which could be for a
7 number of reasons including stigma, shame, or because they do not know that treatment is
8 available) and therefore pro-actively identifying these people may increase the number of
9 people entering into treatment. Furthermore, if people do present for help and support for
10 gambling-related harms they will usually present initially in a generalist setting – for example
11 to their GP, in a social care setting or to other agencies such as the voluntary sector – and it
12 would be useful for the professionals and practitioners in these settings to have a simple tool
13 they could use to assess whether a person is experiencing harmful gambling.

14 The aim of this review is to determine if there is a brief screening tool which can be used in
15 non-specialist settings to identify people who may be experiencing gambling-related harms.

16 Summary of the protocol

17 See Table 1 for the summary of the Population, Index test, Reference standard and Outcome
18 (PIRO) characteristics of this review question.

19 **Table 1: Summary of the protocol (PIRO table) for individual brief screening tools to
20 identify harmful gambling**

Population	**Inclusion:** Adults (aged 18 years and over), in a general, non-specialist setting (such as primary care).
Index test	Any validated individual brief (1-5 item) screening tool for harmful gambling (for example, Brief Bio-Social Gambling Screen (BBGS), The Lie/ Bet Questionnaire, the National Opinion Research Center Diagnostic Screen for Gambling Disorders – Loss of Control, Lying and Preoccupation 2 (NODS-CLiP2)
Reference standard	• DSM-5 criteria for diagnosing gambling disorder o For studies published prior to May 2013, the DSM-IV (for diagnosing pathological gambling) will be used as a reference standard. • ICD (10th or 11th version) criteria for diagnosing gambling disorder
Outcome	**Critical outcomes** • Sensitivity • Specificity **Important outcomes** • Positive predictive value • Negative predictive value

21 *DSM-IV: Diagnostic and statistical manual of mental disorders (4th edition); DSM-5: Diagnostic and statistical*
22 *manual of mental disorders (5th edition); ICD: International classification of diseases*

23 For further details see the review protocol in appendix A.

1 Methods and process

2 This evidence review was developed using the methods and process described in
3 Developing NICE guidelines: the manual. Methods specific to this review question are
4 described in the review protocol in appendix A and the methods document (supplement 1:
5 methods).

6 Declarations of interest were recorded according to NICE's conflicts of interest policy.

7 Diagnostic evidence for individual brief screening tools to identify harmful
8 gambling

9 Included studies

10 A systematic review of the literature was conducted but no studies were identified which
11 were applicable to this review question.

12 See the literature search strategy in appendix B and study selection flow chart in appendix C.

13 Excluded studies

14 Studies not included in this review are listed, and reasons for their exclusion are provided in
15 appendix J.

16 Summary of included studies

17 No studies were identified which were applicable to this review question (and so there are no
18 evidence tables in appendix D).

19 No meta-analysis was conducted for this review (and so there are no forest plots in appendix
20 E).

21 Summary of the evidence

22 No studies were identified which were applicable to this review question (and so there are no
23 GRADE tables in appendix F).

24 Economic evidence

25 Included studies

26 A single economic search was undertaken for all topics included in the scope of this
27 guideline, but no economic studies were identified which were applicable to this review
28 question. See the literature search strategy in appendix B and economic study selection flow
29 chart in appendix G.

30 Excluded studies

31 No economic studies were reviewed at full text and excluded from this review.

1 **Economic model**

2 No economic modelling was undertaken for this review because the committee agreed that
3 other topics were higher priorities for economic evaluation.

4 **The committee's discussion and interpretation of the evidence for individual**
5 **brief screening tools to identify harmful gambling**

6 **The outcomes that matter most**

7 When prioritising outcomes, the committee considered the aim of this review question and its
8 place at the beginning of the treatment pathway for people experiencing harmful gambling.
9 They discussed the importance of identifying true positives (correctly screening for harmful
10 gambling and then initiating further assessment or treatment) over the disadvantage of
11 identifying false positives (potentially subjecting people without harmful gambling to further
12 assessment or treatment). The impact of true negatives was also acknowledged to be
13 important as it will allow professionals to be reassured and to reassure people that they are
14 not experiencing harmful gambling. Sensitivity and specificity were therefore selected as
15 critical outcomes.

16 The committee also selected positive and negative predictive values of individual harmful
17 gambling screening tools as important outcomes to consider in their discussions. This
18 information would allow them to understand the impact of recommending certain actions for
19 all positive or negative test results for the wider healthcare system.

20 **The quality of the evidence**

21 No studies were identified which were applicable to this review question.

22 **Benefits and harms**

23 Recommendations based on this review are for health and social care professionals, and for
24 professionals within the criminal justice system. They may also be relevant for people
25 working within voluntary, community and social enterprise sectors.

26 The committee discussed the lack of evidence for this review, and the fact that studies had
27 mainly been excluded because they did not meet the protocol criteria for the population,
28 because they had not been conducted in countries with similar health and care systems to
29 the UK, or because they had used a reference standard other than DSM or International
30 Classification of Diseases (ICD). In particular the committee discussed the exclusion of US
31 studies but agreed that outcome data in this review is affected by prevalence and therefore
32 the context and setting for the evidence ought to be as close to the UK context as possible,
33 and thus US evidence may not be applicable to the UK. As no evidence had been identified
34 the committee made a research recommendation to encourage further research on this topic.

35 The committee discussed whether it was possible to recommend a brief screening tool
36 without evidence but agreed that they could not make a national recommendation to use a
37 specific tool without evidence that the tool was accurate within the generalist setting.

38 The committee then discussed that it was, however, important to encourage wider
39 identification of people affected by harmful gambling and, even if a tool could not be
40 recommended, the knowledge and experience of the committee would allow them to make
41 more general recommendations about identifying these people. The committee discussed

1 that it may be possible to use a direct question to ask about gambling harms, and agreed this
2 would need to be simple enough to be used by non-specialists in healthcare and social care
3 settings, and broad enough to identify both people experiencing harmful gambling
4 themselves and those experiencing gambling-related harms due to another person's
5 gambling. The committee also agreed that the question would need to reflect the amount of
6 gambling or the harm it was causing, but that using the word 'harm' may not reflect how
7 people interpret theirs or another's gambling behaviour.

8 The committee discussed some of the brief screening tools they were aware of and the
9 questions included in these tools, and noted that many (for example LieBet) asked about the
10 lying or deceit that may accompany harmful gambling (for example, 'Have you ever had to lie
11 to people important to you about how much you gamble?'). However, the committee agreed
12 that this question would not identify those people harmed by another person's gambling.

13 The committee agreed that they could not be prescriptive about the question to be used but
14 suggested the questions 'Do you gamble?' and 'Are you worried that you or someone close
15 to you is gambling too much?' would both identify those who had not reported gambling-
16 related harms.

17 The committee discussed the stigma that surrounds gambling which can lead to people
18 being reluctant to discuss their gambling and professionals being reluctant to ask about
19 gambling. However, the committee agreed that people are very used to being asked by
20 professionals about their smoking behaviour, about how many units of alcohol they drink,
21 and if they use other substances. By including the advice to use a simple question about
22 gambling in the guideline recommendations, this would lead to gambling behaviour being
23 addressed more widely and questions about it becoming more routine. The committee
24 agreed this would apply when, for example, people register with a GP, or attend a new health
25 or social care service.

26 The committee agreed that if people were asked about harmful gambling in this way and
27 answered 'yes' the guideline needed to provide advice on what action should be taken and
28 noted that recommendations covering initial support and advice had already been drafted
29 based on the findings from the evidence review on risk factors for harmful gambling (see
30 evidence review A).

31 The committee discussed that lack of evidence identified for this review question. They
32 highlighted that this was especially concerning due to the amount of people who are not
33 currently recognised as experiencing gambling-related harms. They therefore made a
34 research recommendation to identify a screening tool for gambling-related harms to use in
35 non-specialist, general settings.

36 **Cost effectiveness and resource use**

37 The committee discussed that including a gambling question in registration and initial
38 assessment procedures has minor resource implications in terms of staff time. There may
39 also be some implications around training needs as staff asking this question need to feel
40 comfortable asking it, and able to provide further advice and initial support for people who
41 answer 'yes'. However, the committee agreed that asking a gambling question and providing
42 initial support is likely to lead to earlier identification and management of gambling-related
43 harms (either from their own or other people's gambling) which, in turn, can lead to improved
44 outcomes and potential cost-savings, as it may prevent further harm due to gambling and
45 reduce the need for more costly interventions further down the care pathway.

1   **Recommendations supported by this evidence review**

2   This evidence review supports recommendations 1.1.1 and 1.1.5 and a research
3   recommendation on brief screening tools.

4   # Review question

5   What is the accuracy of tools to identify and assess harmful gambling?

6   **Introduction**

7   When a person experiencing harmful gambling seeks help or presents for treatment in
8   specialist gambling treatment services there is a need to accurately diagnose their condition
9   and assess its severity. This will allow the appropriate care pathway and treatment modalities
10   to be identified. Currently in the UK, the Problem Gambling Severity Index (PGSI) is the most
11   commonly used instrument to do this, but there are also a number of other tools available
12   which could be used. However, the accuracy of these tools in the specialist gambling
13   treatment setting is not known, and therefore the best tool to use in this setting is also not
14   known.

15   The aim of this review is to identify a tool that can assist in the diagnosis and assessment of
16   harmful gambling in people presenting to specialist gambling settings for assessment or
17   treatment.

18   **Summary of the protocol**

19   See Table 2 for the summary of the Population, Index test, Reference standard and Outcome
20   (PIRO) characteristics of this review question.

1 **Table 2: Summary of the protocol (PIRO table) for measurement tools to identify and**
2 **assess harmful gambling**

Population	**Inclusion:** Adults (aged 18 years and over) attending a specialist gambling setting for assessment or treatment.
Index test	• Any validated measurement tool designed to identify and/or assess the severity of harmful gambling (for example, Problem and Pathological Gambling Measure (PPGM), South Oaks Gambling Screen (SOGS), Victorian Gambling Screen (VGS), and Problem Gambling Severity Index (PGSI) [of The Canadian Problem Gambling Index (CPGI)]) • Any validated objective test designed to identify and/or assess the severity of harmful gambling (for example, Stop Signal Reaction Time test, The CANTAB Cambridge Gambling Task, and Iowa Gambling Task)
Reference standard	• DSM-5 criteria for diagnosing gambling disorder ○ For studies published prior to May 2013, the DSM-IV (for diagnosing pathological gambling) will be used as a reference standard. • International Classification of Diseases (10th or 11th version) criteria for diagnosing gambling disorder
Outcome	**Critical outcomes** • Sensitivity • Specificity **Important outcomes** • Positive predictive value • Negative predictive value

3 *DSM-IV: Diagnostic and Statistical Manual of Mental Disorders (4th edition); DSM-5: Diagnostic and Statistical*
4 *Manual of Mental Disorders (5th edition)*

5 For further details see the review protocol in appendix A.

6 ## Methods and process

7 This evidence review was developed using the methods and process described in
8 Developing NICE guidelines: the manual. Methods specific to this review question are
9 described in the review protocol in appendix A and the methods document (supplement 1:
10 methods).

11 Declarations of interest were recorded according to NICE's conflicts of interest policy.

12 ## Diagnostic evidence for measurement tools to identify and assess harmful
13 gambling

14 ### Included studies

15 Three studies were included for this review: 2 cross-sectional studies (Granero 2020,
16 Molander 2021) and 1 non-randomised controlled trial (Toneatto 2008).

17 The included studies are summarised in Table 3.

18 One study was conducted in Spain (Granero 2020); 1 study was conducted in Sweden
19 (Molander 2021); and 1 study was conducted in Canada (Toneatto 2008).

20 One study investigated the diagnostic accuracy of the South Oaks Gambling Severity Screen
21 (SOGS) as an index test (Granero 2020); 1 investigated the diagnostic accuracy of the

1 Gambling Disorder Identification Test (GDIT) (Molander 2021); and 1 investigated the
2 diagnostic accuracy of the Gamblers Anonymous 20 Questions (GA20) Toneatto 2008).

3 All 3 studies used a variation of the Diagnostic and Statistical Manual of Mental Disorders
4 (DSM) criteria as a reference standard. One study used a Diagnostic Questionnaire for
5 Pathological Gambling according to DSM criteria (version not reported) (Granero 2020); 1
6 used the Structured Clinical Interview for Gambling Disorder based on DSM-5 criteria for
7 gambling disorder (Molander 2021); and 1 study used DSM-IV criteria (Toneatto 2008).

8 See the literature search strategy in appendix B and study selection flow chart in appendix C.

9 **Excluded studies**

10 Studies not included in this review are listed, and reasons for their exclusion are provided in
11 appendix J.

12 **Summary of included studies**

13 Summaries of the studies that were included in this review are presented in Table 3.

14 **Table 3: Summary of included studies**

Study	Population	Index test(s)	Reference standard	Outcomes
Granero 2020 Spain Cross-sectional study No industry funding	N=408 people over 50 years of age from the general population and a gambling outpatient treatment centre • Population-based sample: n=361 • Clinical sample: n=47 Age in years (Mean [SD]): • Population-based sample: 73.8 (8.4) • Clinical sample: 70.0 (5.6) Sex (n): • Population-based sample: M=226, F=135 • Clinical sample: M=37, F=10	• South Oaks Gambling Severity Screen (SOGS)	• Diagnostic Questionnaire for Pathological Gambling	• Sensitivity • Specificity • PPV • NPV

Study	Population	Index test(s)	Reference standard	Outcomes
	Gambling severity scale and score: Not reported.			
Molander 2021 Sweden Cross-sectional study No industry funding	N=603 people from self-help groups, social media and online forums, and an addiction treatment centre • Recreational gamblers: n=292 • Support-seeking gamblers: n=185 • Self-help groups gamblers: n=47 • Treatment-seeking gamblers: n=79 Age in years (Mean [SD]): • Recreational gamblers: 29.5 (10.5) • Support-seeking gamblers: 35.2 (14.0) • Self-help groups gamblers: 40.1 (9.8) • Treatment-seeking gamblers: 36.6 (10.0) Sex (n): • Recreational gamblers: M=239, F=50, not reported=3 • Support-seeking gamblers: M=11, F=67, not reported=0 • Self-help groups gamblers: M=31, F=16, not reported=0	• Gambling Disorder Identification Test (GDIT)	• Structured Clinical Interview for Gambling Disorder (SCI-GD)	• Sensitivity • Specificity • PPV • NPV

Study	Population	Index test(s)	Reference standard	Outcomes
	• Treatment-seeking gamblers: M=57, F=19, not reported=3 Gambling severity scale and score (Mean [SD]): • Recreational gamblers: PGSI, 3.3 (5.2) • Support-seeking gamblers: PGSI, 11.8 (9.0) • Self-help groups gamblers: PGSI, 12.7 (9.9) • Treatment-seeking gamblers: PGSI, 14.8 (8.1)			
Toneatto 2008 Canada Non-randomised controlled trial Unclear funding source	N=159 treatment-seeking gamblers from the general population • Treatment seeking group 1: n=61 • Treatment-seeking group 2: n=98 Age in years (Mean [SD]): • Treatment seeking group 1: 40.92 (14.66) • Treatment-seeking group 2: 46.98 (14.24) Sex (n): • Treatment seeking group 1: M=39, F=22 • Treatment-seeking group 2: M=73, F=26	• Gamblers Anonymous 20 Questions (GA20)	• DSM-IV	• Sensitivity • Specificity • PPV • NPV

16

Study	Population	Index test(s)	Reference standard	Outcomes
	Gambling severity scale and score (Mean [SD]): • Treatment seeking group 1: DSM-IV-PG, 7.00 (1.94) • Treatment-seeking group 2: DSM-IV-PG, 6.49 (2.23)			

1 *DSM-IV(-PG): Diagnostic and Statistical Manual of Mental Disorders, 4th edition (pathological gambling criteria);;*
2 *NPV: Negative predictive value; PGSI: Problem Gambling Severity Index; PPV: Positive predictive value*

3 See the full evidence tables in appendix D. No meta-analysis was conducted (and so there
4 are no forest plots in appendix E).

Summary of the evidence

6 Data were extracted from 3 studies to generate sensitivity and specificity for each of the
7 included tools. Sensitivity shows how well a particular diagnostic test identifies true positives
8 (that is, people who are experiencing in harmful gambling). Specificity shows how well an
9 index test identifies true negatives (that is, people who are not experiencing in harmful
10 gambling). These 2 outcomes are inversely proportional to each other. The committee
11 applied the following decision-making thresholds to both sensitivity and specificity values:

12 • Very useful test: ≥90%
13 • Moderately useful test: ≥60%
14 • Not a useful test: <60%

No industry funding

16 The SOGS is a 20-item test, with possible scores ranging from 0-20. At a threshold of ≥2,
17 SOGS was moderately sensitive (≥60%) and very specific (≥90%) in diagnosing at-risk
18 gambling according to DSM-5 criteria (DSM-5 score ≥1). At a threshold of ≥4, SOGS was
19 both very sensitive (≥90%) and specific (≥90%) in diagnosing gambling disorder as per DSM-
20 5 (DSM-5 score ≥4).

21 The GDIT is a 14-item measurement tool, with possible scores ranging from 0-63. At
22 thresholds of ≥20 and ≥25, GDIT was moderately sensitive and specific (≥60%) in detecting
23 low level gambling disorder (DSM-5 score 4-5) and mild gambling disorder respectively
24 (DSM-5 score 6-7). At a threshold of ≥30, GDIT was very sensitive and moderately specific in
25 diagnosing severe gambling disorder as per DSM-5 criteria (DSM-5 score ≥8).

Unclear funding source

27 The GA20 is a 10-item measurement tool, with possible scores ranging from 0-10. At a
28 threshold of ≥7, GA20 was very sensitive (≥90%) but not specific (<60%) in diagnosing
29 pathological gambling according to DSM-IV criteria (DSM-IV score ≥5).

30 See appendix F for full GRADE tables.

1 Economic evidence

2 Included studies

3 A single economic search was undertaken for all topics included in the scope of this
4 guideline, but no economic studies were identified which were applicable to this review
5 question. See the literature search strategy in appendix B and economic study selection flow
6 chart in appendix G.

7 Excluded studies

8 No economic studies were reviewed at full text and excluded from this review.

9 Economic model

10 No economic modelling was undertaken for this review because the committee agreed that
11 other topics were higher priorities for economic evaluation.

12 The committee's discussion and interpretation of the evidence for
13 measurement tools to identify and assess harmful gambling

14 The outcomes that matter most

15 When prioritising outcomes, the committee considered the aim of this review question and its
16 place at the beginning of the treatment pathway for people presenting to specialist gambling
17 services. They considered the impact of true positives (correctly identifying people
18 experiencing harmful gambling) to be very important in this population, allowing people to
19 receive an accurate diagnosis and to be started on appropriate treatment. Therefore,
20 sensitivity was selected as a critical outcome. However, the committee also discussed the
21 importance of false positives and ensuring that people are not mislabelled as experiencing
22 harmful gambling, which could increase shame and stigma. Therefore, specificity was
23 selected as an additional critical outcome.

24 The committee also selected positive and negative predictive values of the harmful gambling
25 screening tools as important outcomes to consider in their discussions as this provides
26 information on the proportion of people correctly diagnosed as 'experiencing harmful
27 gambling' or 'not experiencing harmful gambling' from those who had a 'positive' or 'negative'
28 result respectively. This information would allow them to understand the impact of
29 recommending certain actions for all positive (or all negative) test results on gambling
30 treatment services.

31 The quality of the evidence

32 The quality of the evidence for quantitative outcomes was assessed with GRADE and was
33 rated as very low. Findings were downgraded in 3 areas.

34 The main areas evidence was downgraded was risk of bias (for example, when not all of the
35 study population were assessed with a reference standard or when cut-off values were not
36 pre-specified before analysis) and indirectness (for example, when a study included
37 participants who did not present at a specialist gambling setting). Studies were also
38 downgraded for imprecision when 95% confidence intervals crossed 1 decision-making
39 threshold.

1 No diagnostic accuracy evidence was identified for objective tests designed to identify or
2 assess the severity of harmful gambling.

3 See appendix F for full GRADE tables with quality ratings of all outcomes.

4 **Benefits and harms**

5 Recommendations based on this review are aimed at providers for gambling treatment
6 services.

7 The committee first looked at the results for sensitivity and specificity for the included tools to
8 identify if any of the tools were 'very useful' (≥90%) and agreed that positive and negative
9 predictive values could provide useful additional information but only if the sensitivity and
10 specificity indicated that a test was 'very useful' in predicting those experiencing harmful
11 gambling and ruling out people who were not experiencing harmful gambling.

12 The committee discussed the evidence showing that SOGS was moderately sensitive
13 (≥60%) and very specific (≥90%) when diagnosing at-risk gambling, and very sensitive
14 (≥90%) and specific at diagnosing gambling disorder. However, they noted that the sample in
15 the study that generated these data was people aged over 50 years (which is generally older
16 than the people seeking treatment from specialist services in the UK) and taken from an
17 indirect population including people from a gambling outpatient treatment centre (within
18 protocol population) and people from the general population (outside the protocol
19 population). It was discussed that this made it difficult to generalise the findings to the
20 population of people experiencing harmful gambling and presenting to specialist treatment
21 settings.

22 The committee also discussed the data for the GDIT, which was moderately sensitive and
23 specific (≥60%) at diagnosing low and mild gambling disorder, and very sensitive and
24 moderately specific at detecting severe gambling disorder. The committee were not aware of
25 the GDIT currently being used in the UK and were concerned that it is a relatively new tool
26 with which they were not familiar but agreed that it may warrant consideration if a UK-based
27 version becomes available (currently it is only available for US, Turkish and Swedish users).

28 Finally the committee discussed evidence for the GA20, which was very sensitive (≥90%) in
29 diagnosing pathological gambling, but not specific (<60%). The committee discussed that this
30 might lead to a large number of false diagnoses in the clinical setting and consequently,
31 people undergoing treatment that would not be necessary.

32 Due to the concerns described above, the fact that none of the tools showed very useful
33 levels of both sensitivity and specificity in a generalisable population, plus the very low
34 quality of the evidence, the committee agreed not to recommend a specific tool for the
35 diagnosis and assessment of harmful gambling in specialist settings. They nevertheless
36 agreed that it was better to use a validated assessment tool than not to use anything, but that
37 the choice of tool, until further evidence to confirm the accuracy of a tool was available, could
38 be made by the healthcare professional. On the basis of their expertise, the committee
39 recommended the SOGS and the PGSI as examples of tools that healthcare professionals
40 could use. Although the committee discussed that the evidence identified for the SOGS (as
41 described above) was not robust enough to make a recommendation on its use, they did feel
42 confident to include it as an example, considering it is commonly used in gambling treatment
43 services. Although no evidence had been found for the PGSI the committee agreed that it is
44 already used in existing NHS gambling services, is easy to administer and gives a good
45 indication of appropriate treatment pathways.

Although the committee did not recommend a specific tool, they discussed the factors that are the most important when diagnosing and assessing harmful gambling, and that would usefully be included in an assessment tool. They agreed, based on their knowledge and experience, that obtaining a complete history of someone's harmful gambling is important to inform and develop a tailored and effective treatment plan (for example, timing, intensity and content of treatment). A complete gambling history, including current frequency, format, and alignment to the DSM5 criteria for gambling disorder is important when assessing the severity of someone's harmful gambling and therefore which treatment would be most suitable. Additionally, factors that contribute to their continued gambling should be identified in order to minimise the chance of relapse. The impact of harmful gambling on an individual's financial situation, mental health and other aspects of their life (for example, social functioning and interpersonal relationships), any safeguarding concerns, risk of suicide, and other immediate needs (for example, housing issues or food shortages) should be considered in order to identify the need for further support via referral or signposting. The committee agreed a person's medical history is also important for prescribing the most appropriate treatment. Finally, the committee agreed that the results of this assessment should be discussed with the individual experiencing harmful gambling and used to formulate a considered and holistic care and safety plan, to have the best chance of successful treatment. As this period of presentation often requires immediate actions to restrict gambling opportunities, the committee also signposted to a previous recommendation to highlight several practical ways to limit gambling in the short-term.

The committee discussed that one of the main reasons for excluding studies from this review was population, with studies primarily investigating diagnostic tools within samples from the general population rather than people presenting to specialist gambling settings. Specifically, the committee noted that this led to no evidence being included for the PGSI. This is the tool currently used most widely to diagnose harmful gambling within the UK, but it has only been validated in the general population. Given its current wide use in the UK, and the lack of evidence to support its accuracy in a specialist gambling setting, the committee agreed to make a research recommendation to address this gap in the evidence. However, they also agreed that future research should examine other diagnostic tools, as well as the PGSI so they made a broad research recommendation to ensure that other tools were not excluded.

Cost effectiveness and resource use

No economic evidence was identified for this review question. The committee agreed that assessment of gambling-related harm in specialist gambling treatment settings may have moderate resource implications in terms of staff time. However, they agreed that discussing a person's gambling behaviour with them in order to assess gambling harm and, subsequently, developing a care formulation and care plan with the person, will enable delivery of timely and appropriate treatment and care, addressing the person's specific needs. This, in turn, is expected to lead to improved outcomes for the person and their family and close others, and potential cost-savings resulting from prevention of further gambling-related harms, which might also require more resource-intensive intervention further down the care pathway.

Other factors the committee took into account

The funding sources for the studies included in this evidence review were:
- No industry funding: Granero 2020, Molander 2021
- Unclear funding source: Toneatto 2008

1 The committee discussed the unclear funding source of Toneatto 2008, agreeing that the
2 lack of reporting meant it was difficult to determine any gambling industry involvement.
3 However, as the committee did not make any recommendations based on this study, they
4 considered their funding source to be less relevant.

5 ## Recommendations supported by this evidence review

6 This evidence review supports recommendations 1.1.12 to 1.1.14 and a research
7 recommendation on tools to assess gambling-related harms in a specialist setting.

8 # References – included studies

9 **Diagnostic studies**

10 **Granero 2020**

11 Granero, Roser, Jimenez-Murcia, Susana, Fernandez-Aranda, Fernando et al. (2020)
12 Presence of problematic and disordered gambling in older age and validation of the South
13 Oaks Gambling Scale. PloS one 15(5): e0233222

14 **Molander 2021**

15 Molander, Olof; Wennberg, Peter; Berman, Anne H (2021) The Gambling Disorders
16 Identification Test (GDIT): Psychometric Evaluation of a New Comprehensive Measure for
17 Gambling Disorder and Problem Gambling. Assessment: 10731911211046045

18 **Toneatto 2008**

19 Toneatto, T. (2008) Reliability and validity of the gamblers anonymous twenty questions.
20 Journal of Psychopathology and Behavioral Assessment 30(1): 71-78

21

1 Appendices

2 Appendix A Review protocols

3 **Review protocol for review question: What is the accuracy of individual brief screening tools in identifying harmful**
4 **gambling?**

5 **Table 4:   Review protocol**

ID	Field	Content
0.	PROSPERO registration number	CRD42022344753
1.	Review title	Individual screening for harmful gambling
2.	Review question	What is the accuracy of individual brief screening tools in identifying harmful gambling?
3.	Objective	To establish the accuracy of brief screening tools for identification of harmful gambling.
4.	Searches	The following databases will be searched: • Applied Social Science Index and Abstracts (ASSIA) • Cumulative Index to Nursing and Allied Health Literature (CINAHL) • Cochrane Central Register of Controlled Trials (CENTRAL) • Cochrane Database of Systematic Reviews (CDSR) • Embase • Emcare • Epistemonikos • Health Management Information Consortium (HMIC) • International Health Technology Assessment (IHTA) • Medline and Medline In-Process • PsycInfo • Social Care Online • Social Policy and Practice

22

ID	Field	Content
		• Social Sciences Citation Index Searches will be restricted by: • Date: 2000 onwards (see rationale under Section 10) • English language • Human studies Other searches: • Inclusion lists of systematic reviews • Kings Fund reports • Campbell Collaboration • Gov.uk • National Grey Literature Collection • Be Gamble Aware • GamCare • Gambling Research Exchange Ontario • Gambling Commission • Advisory Board for Safer Gambling • Gambling Watch UK • Australian Gambling Research Centre • Gambling Compliance • Gambling and Addictions Research Centre • Responsible Gambling Council • Victorian Responsible Gambling Foundation The searches will be re-run 6 weeks before final submission of the review and further studies retrieved for inclusion.

ID	Field	Content
		The full search strategies will be published in the final review.
5.	Condition or domain being studied	Brief screening tools (1-5 items) for harmful gambling
6.	Population	**Inclusion:** Adults (aged 18 years and over), in a general, non-specialist setting (such as primary care). **Exclusion:** • Children and young people <18 years of age.
7.	Index test	Any validated individual brief (1-5 item) screening tool for harmful gambling (for example, Brief Bio-Social Gambling Screen (BBGS), The Lie/ Bet Questionnaire, the National Opinion Research Center Diagnostic Screen for Gambling Disorders – Loss of Control, Lying and Preoccupation 2 (NODS-CLiP2)
8.	Reference standard	• DSM-5 criteria for diagnosing gambling disorder o For studies published prior to May 2013, the DSM-IV (for diagnosing pathological gambling) will be used as a reference standard. • ICD (10th or 11th version) criteria for diagnosing gambling disorder
9.	Types of study to be included	• Systematic reviews of diagnostic test accuracy studies • Individual studies of diagnostic test accuracy • In addition, any study with random or consecutive selection of the target participants from which diagnostic data can be extracted. It is anticipated this will primarily be cross-sectional or cohort studies, but this also includes randomised controlled trials with one or more arms that meets the inclusion criteria.
10.	Other exclusion criteria	Inclusion: • Full text papers • Studies conducted in high income countries (as defined by the World Bank) in Europe as well as Australia, New Zealand and Canada. Exclusion: • Articles published before 2000 • Studies using qualitative methods only • Studies about population-based screening tools

ID	Field	Content
		• Non-English language articles • Conference proceedings • Abstract only • Books and book chapters
11.	Context	Recommendations will apply in all settings where harmful gambling may be identified.
12.	Primary outcomes (critical outcomes)	• Sensitivity • Specificity
13.	Secondary outcomes (important outcomes)	• Positive predictive value • Negative predictive value
14.	Data extraction (selection and coding)	All references identified by the searches and from other sources will be uploaded into EPPI-Reviewer 5 and de-duplicated. Titles and abstracts of the retrieved citations will be screened to identify studies that potentially meet the inclusion criteria outlined in the review protocol. Dual sifting will be performed on at least 10% of records; 90% agreement is required. Disagreements will be resolved via discussion between the two reviewers, and consultation with senior staff if necessary. Full versions of the selected studies will be obtained for assessment. Studies that fail to meet the inclusion criteria once the full version has been checked will be excluded at this stage. Each study excluded after checking the full version will be listed, along with the reason for its exclusion. A standardised form will be used to extract data from studies. The following data will be extracted: study details (reference, country where study was carried out, type and dates), participant characteristics, inclusion and exclusion criteria, details of the interventions if relevant, setting and follow-up, relevant outcome data and source of funding. One reviewer will extract relevant data into a standardised form, and this will be quality assessed by a senior reviewer.

ID	Field	Content
15.	Risk of bias (quality) assessment	Quality assessment of individual studies will be performed according to Developing NICE guidelines: the manual, using the following checklists: • ROBIS for systematic reviews • QUADAS-2 for diagnostic accuracy studies • QUADAS-C for comparative diagnostic accuracy studies The quality assessment will be performed by one reviewer and this will be quality assessed by a senior reviewer.

16.	Strategy for data synthesis	Depending on the availability of the evidence, the findings will be summarised narratively or quantitatively. Where appropriate, meta-analysis of diagnostic test accuracy will be performed using the metandi and midas applications in STATA/winbugs and Cochrane Review Manager software.
		
		Sensitivity, specificity, positive predictive values, negative predictive values and AUCs with 95% CIs will be used as outcomes for diagnostic test accuracy. These diagnostic accuracy parameters will be obtained from the studies or calculated by the technical team using data from the studies.
		
		The confidence in the findings across all available evidence will be evaluated for each outcome using an adaptation of the 'Grading of Recommendations Assessment, Development and Evaluation (GRADE) toolbox' developed by the international GRADE working group: http://www.gradeworkinggroup.org/.
		
		Decision making thresholds for the primary outcomes to be used in the analysis:
		• Sensitivity:
		  o Very useful test: ≥90%
		  o Moderately useful test: ≥60%
		  o Not a useful test <60%
		• Specificity:
		  o Very useful test: ≥90%
		  o Moderately useful test: ≥60%
		  o Not a useful test <60%

17.	Analysis of sub-groups	Evidence will be stratified according to the funding source of included studies:

ID	Field	Content	
		• Any industry funding • No industry funding • Unclear funding source Evidence will also be stratified according to the reference standard used. In the event of significant heterogeneity in outcomes, evidence will be sub-grouped by the following: • Sex • Age • Ethnicity • People for whom English is not their first language • Neurodiversity (including learning difficulties and disabilities, cognitive impairments and other conditions such as ADHD and autism spectrum conditions) • Co-morbidities (including mental health conditions and other addictions). Where evidence is stratified or sub-grouped the committee will consider on a case-by-case basis if separate recommendations should be made for distinct groups. Separate recommendations may be made where there is evidence of a differential effect of interventions in distinct groups. If there is a lack of evidence in one group, the committee will consider, based on their experience, whether it is reasonable to extrapolate and assume the interventions will have similar effects in that group compared with others.	
18.	Type and method of review	☐	Intervention
		☒	Diagnostic
		☐	Prognostic
		☐	Qualitative
		☐	Epidemiologic
		☐	Service Delivery
		☐	Other (please specify)

ID	Field	Content		
19.	Language	English		
20.	Country	England		
21.	Anticipated or actual start date	May 2022		
22.	Anticipated completion date	February 2024		
23.	Stage of review at time of this submission	Review stage	Started	Completed
		Preliminary searches	☑	☑
		Piloting of the study selection process	☑	☑
		Formal screening of search results against eligibility criteria	☑	☑
		Data extraction	☑	☑
		Risk of bias (quality) assessment	☑	☑
		Data analysis	☑	☑
24.	Named contact	**5a Named contact** National Institute for Health and Care Excellence (NICE) **5b Named contact e-mail** Gambling@nice.org.uk **5c Organisational affiliation of the review** National Institute for Health and Care Excellence (NICE)		
25.	Review team members	NICE review team		
26.	Funding sources/sponsor	This systematic review is being completed by NICE which receives funding from the Department of Health and Social Care.		
27.	Conflicts of interest	All guideline committee members and anyone who has direct input into NICE guidelines (including the evidence review team and expert witnesses) must declare any potential conflicts of interest in line with NICE's code of practice for declaring and dealing with conflicts of interest. Any relevant interests, or changes to interests, will		

ID	Field	Content	
		also be declared publicly at the start of each guideline committee meeting. Before each meeting, any potential conflicts of interest will be considered by the guideline committee Chair and a senior member of the development team. Any decisions to exclude a person from all or part of a meeting will be documented. Any changes to a member's declaration of interests will be recorded in the minutes of the meeting. Declarations of interests will be published with the final guideline.	
28.	Collaborators	Development of this systematic review will be overseen by an advisory committee who will use the review to inform the development of evidence-based recommendations in line with section 3 of Developing NICE guidelines: the manual. Members of the guideline committee are available on the NICE website: https://www.nice.org.uk/guidance/indevelopment/gid-ng10210.	
29.	Other registration details	N/A	
30.	Reference/URL for published protocol	https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42022344753	
31.	Dissemination plans	NICE may use a range of different methods to raise awareness of the guideline. These include standard approaches such as: • notifying registered stakeholders of publication • publicising the guideline through NICE's newsletter and alerts • issuing a press release or briefing as appropriate, posting news articles on the NICE website, using social media channels, and publicising the guideline within NICE.	
32.	Keywords	Harmful gambling; gambling disorder; diagnosis; test accuracy; measurement tools; assessment	
33.	Details of existing review of same topic by same authors	N/A	
34.	Current review status	☒	Ongoing
		☐	Completed but not published
		☐	Completed and published
		☐	Completed, published and being updated
		☐	Discontinued
35.	Additional information	N/A	

ID	Field	Content
36.	Details of final publication	www.nice.org.uk

ADHD: attention deficit hyperactivity disorder; AUC: area under the curve; CI: confidence interval; DSM-IV: Diagnostic and Statistical Manual of Mental Disorders (4th edition); DSM-5: Diagnostic and Statistical Manual of Mental Disorders (5th edition); GRADE: Grading of Recommendations Assessment, Development and Evaluation; ICD: International classification of diseases; N/A: not applicable: NICE: National Institute for Health and Care Excellence; RoB: risk of bias; ROBIS: Risk of bias in systematic reviews; SD: standard deviation: QUADAS-2; Quality Assessment of Diagnostic Accuracy Studies - revised; QUADAS-C: Quality Assessment of Diagnostic Accuracy Studies - Comparative

Review protocol for review question: What is the accuracy of tools to identify and assess harmful gambling?

Table 5: Review protocol

ID	Field	Content
0.	PROSPERO registration number	CRD42022344762
1.	Review title	Assessment for harmful gambling
2.	Review question	What is the accuracy of tools to identify and assess harmful gambling?
3.	Objective	To determine the accuracy of measurement tests or tools designed to identify, assess, or both, the severity of harmful gambling.
4.	Searches	The following databases will be searched: • Applied Social Science Index and Abstracts (ASSIA) • Cumulative Index to Nursing and Allied Health Literature (CINAHL) • Cochrane Central Register of Controlled Trials (CENTRAL) • Cochrane Database of Systematic Reviews (CDSR) • Embase • Emcare • Epistemonikos • Health Management Information Consortium (HMIC) • International Health Technology Assessment (IHTA) • Medline and Medline In-Process • PsycInfo

ID	Field	Content
		• Social Care Online • Social Policy and Practice • Social Sciences Citation Index Searches will be restricted by: • Date: 2000 onwards (see rationale under Section 10) • English language • Human studies Other searches: • Inclusion lists of systematic reviews • Kings Fund reports • Campbell Collaboration • Gov.uk • National Grey Literature Collection • Be Gamble Aware • GamCare • Gambling Research Exchange Ontario • Gambling Commission • Advisory Board for Safer Gambling • Gambling Watch UK • Australian Gambling Research Centre • Gambling Compliance • Gambling and Addictions Research Centre • Responsible Gambling Council • Victorian Responsible Gambling Foundation

ID	Field	Content
		The searches will be re-run 6 weeks before final submission of the review and further studies retrieved for inclusion. The full search strategies will be published in the final review.
5.	Condition or domain being studied	Measurement tools for identifying and assessing severity of harmful gambling.
6.	Population	**Inclusion:** Adults (aged 18 years and over) attending a specialist gambling setting for assessment or treatment. **Exclusion:** • Children and young people <18 years of age.
7.	Index test	• Any validated measurement tool designed to identify and/or assess the severity of harmful gambling (for example, Problem and Pathological Gambling Measure (PPGM), South Oaks Gambling Screen (SOGS), Victorian Gambling Screen (VGS), and Problem Gambling Severity Index (PGSI) [of The Canadian Problem Gambling Index (CPGI)]) • Any validated objective test designed to identify and/or assess the severity of harmful gambling (for example, Stop Signal Reaction Time test, The CANTAB Cambridge Gambling Task, and Iowa Gambling Task)
8.	Reference standard	• DSM-5 criteria for diagnosing gambling disorder o For studies published prior to May 2013, the DSM-IV (for diagnosing pathological gambling) will be used as a reference standard. • International Classification of Diseases (10th or 11th version) criteria for diagnosing gambling disorder
9.	Types of study to be included	• Systematic reviews of diagnostic test accuracy studies • Individual studies of diagnostic test accuracy • In addition, any study with random or consecutive selection of the target participants from which diagnostic data can be extracted. It is anticipated this will primarily be cross-sectional or cohort studies, but this also includes randomised controlled trials with one or more arms that meets the inclusion criteria.
10.	Other exclusion criteria	Inclusion: • Full text papers

ID	Field	Content
		• Studies conducted in high income countries (as defined by the World Bank) in Europe as well as Australia, New Zealand and Canada. Exclusion: • Articles published before 2000 • Studies using qualitative methods only • Studies about population-based identification and assessment tools • Non-English language articles • Conference proceedings • Abstract only • Books and book chapters
11.	Context	Recommendations will apply in all settings where harmful gambling may be identified and assessed.
12.	Primary outcomes (critical outcomes)	• Sensitivity • Specificity
13.	Secondary outcomes (important outcomes)	• Positive predictive value • Negative predictive value
14.	Data extraction (selection and coding)	All references identified by the searches and from other sources will be uploaded into EPPI-Reviewer 5 and de-duplicated. Titles and abstracts of the retrieved citations will be screened to identify studies that potentially meet the inclusion criteria outlined in the review protocol. Dual sifting will be performed on at least 10% of records; 90% agreement is required. Disagreements will be resolved via discussion between the two reviewers, and consultation with senior staff if necessary.

ID	Field	Content
		Full versions of the selected studies will be obtained for assessment. Studies that fail to meet the inclusion criteria once the full version has been checked will be excluded at this stage. Each study excluded after checking the full version will be listed, along with the reason for its exclusion. A standardised form will be used to extract data from studies. The following data will be extracted: study details (reference, country where study was carried out, type and dates), participant characteristics, inclusion and exclusion criteria, details of the interventions if relevant, setting and follow-up, relevant outcome data and source of funding. One reviewer will extract relevant data into a standardised form, and this will be quality assessed by a senior reviewer.
15.	Risk of bias (quality) assessment	Quality assessment of individual studies will be performed according to Developing NICE guidelines: the manual, using the following checklists:: • ROBIS for systematic reviews • QUADAS-2 for diagnostic accuracy studies • QUADAS-C for comparative diagnostic accuracy studies The quality assessment will be performed by one reviewer and this will be quality assessed by a senior reviewer.
16.	Strategy for data synthesis	Depending on the availability of the evidence, the findings will be summarised narratively or quantitatively. Where appropriate, meta-analysis of diagnostic test accuracy will be performed using the metandi and midas applications in STATA/winbugs and Cochrane Review Manager software. Sensitivity, specificity, positive predictive values, negative predictive values and AUCs with 95% CIs will be used as outcomes for diagnostic test accuracy. These diagnostic accuracy parameters will be obtained from the studies or calculated by the technical team using data from the studies. The confidence in the findings across all available evidence will be evaluated for each outcome using an adaptation of the 'Grading of Recommendations Assessment, Development and Evaluation (GRADE) toolbox' developed by the international GRADE working group: http://www.gradeworkinggroup.org/. Decision making thresholds for the primary outcomes to be used in the analysis: • Sensitivity:

ID	Field	Content

		o Very useful test: ≥90%
		o Moderately useful test: ≥60%
		o Not a useful test <60%
		• Specificity:
		  o Very useful test: ≥90%
		  o Moderately useful test: ≥60%
		  o Not a useful test <60%

17.	Analysis of sub-groups	Evidence will be stratified according to the funding source of included studies: • Any industry funding • No industry funding • Unclear funding source Evidence will also be stratified according to the reference standard used. Additionally, if an index test includes multiple thresholds (for example, relating to different severity of harmful gambling), evidence will also be stratified according to threshold values. In the event of significant heterogeneity in outcomes, evidence will be sub-grouped by the following: • Sex • Age • Ethnicity • People for whom English is not their first language • Neurodiversity (including learning difficulties and disabilities, cognitive impairments and other conditions such as ADHD and autism spectrum conditions) • Co-morbidities (including mental health conditions and other addictions). Where evidence is stratified or sub-grouped the committee will consider on a case-by-case basis if separate recommendations should be made for distinct groups. Separate recommendations may be made where there is evidence of a differential effect of interventions in distinct groups. If there is a lack of evidence in one

ID	Field	Content		
		group, the committee will consider, based on their experience, whether it is reasonable to extrapolate and assume the interventions will have similar effects in that group compared with others.		
18.	Type and method of review	☐	Intervention	
		☒	Diagnostic	
		☐	Prognostic	
		☐	Qualitative	
		☐	Epidemiologic	
		☐	Service Delivery	
		☐	Other (please specify)	
19.	Language	English		
20.	Country	England		
21.	Anticipated or actual start date	May 2022		
22.	Anticipated completion date	February 2024		
23.	Stage of review at time of this submission	Review stage	Started	Completed
		Preliminary searches	✔	✔
		Piloting of the study selection process	✔	✔
		Formal screening of search results against eligibility criteria	✔	✔
		Data extraction	✔	✔
		Risk of bias (quality) assessment	✔	✔
		Data analysis	✔	✔
24.	Named contact	**5a Named contact** National Institute for Health and Care Excellence (NICE)		

ID	Field	Content
		5b Named contact e-mail Gambling@nice.org.uk **5c Organisational affiliation of the review** National Institute for Health and Care Excellence (NICE)
25.	Review team members	NICE review team
26.	Funding sources/sponsor	This systematic review is being completed by NICE which receives funding from the Department of Health and Social Care.
27.	Conflicts of interest	All guideline committee members and anyone who has direct input into NICE guidelines (including the evidence review team and expert witnesses) must declare any potential conflicts of interest in line with NICE's code of practice for declaring and dealing with conflicts of interest. Any relevant interests, or changes to interests, will also be declared publicly at the start of each guideline committee meeting. Before each meeting, any potential conflicts of interest will be considered by the guideline committee Chair and a senior member of the development team. Any decisions to exclude a person from all or part of a meeting will be documented. Any changes to a member's declaration of interests will be recorded in the minutes of the meeting. Declarations of interests will be published with the final guideline.
28.	Collaborators	Development of this systematic review will be overseen by an advisory committee who will use the review to inform the development of evidence-based recommendations in line with section 3 of Developing NICE guidelines: the manual. Members of the guideline committee are available on the NICE website: https://www.nice.org.uk/guidance/indevelopment/gid-ng10210.
29.	Other registration details	N/A
30.	Reference/URL for published protocol	https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42022344762
31.	Dissemination plans	NICE may use a range of different methods to raise awareness of the guideline. These include standard approaches such as: • notifying registered stakeholders of publication • publicising the guideline through NICE's newsletter and alerts

ID	Field	Content	
		• issuing a press release or briefing as appropriate, posting news articles on the NICE website, using social media channels, and publicising the guideline within NICE.	
32.	Keywords	Harmful gambling; gambling disorder; diagnosis; test accuracy; measurement tools; assessment	
33.	Details of existing review of same topic by same authors	N/A	
34.	Current review status	☒	Ongoing
		☐	Completed but not published
		☐	Completed and published
		☐	Completed, published and being updated
		☐	Discontinued
35.	Additional information	N/A	
36.	Details of final publication	www.nice.org.uk	

1   *ADHD: attention deficit hyperactivity disorder; AUC: area under the curve; CI: confidence interval; DSM-IV: Diagnostic and Statistical Manual of Mental Disorders (4th edition);*
2   *DSM-5: Diagnostic and Statistical Manual of Mental Disorders (5th edition); GRADE: Grading of Recommendations Assessment, Development and Evaluation; N/A: not*
3   *applicable: NICE: National Institute for Health and Care Excellence; RoB: risk of bias; ROBIS: Risk of bias in systematic reviews; SD: standard deviation: QUADAS-2; Quality*
4   *Assessment of Diagnostic Accuracy Studies - revised; QUADAS-C: Quality Assessment of Diagnostic Accuracy Studies - Comparative*
5

Appendix B Literature search strategies

Literature search strategies for review questions: What is the accuracy of individual brief screening tools in identifying harmful gambling? and What is the accuracy of tools to identify and assess harmful gambling?

Main searches

Database: Applied Social Science Index and Abstracts (ASSIA)

Date of last search: 03/11/2022

Set#	Searched for
S1	MAINSUBJECT.EXACT("Pathological gambling") OR MAINSUBJECT.EXACT("Pathological gamblers") OR MAINSUBJECT.EXACT("Gamblers") OR MAINSUBJECT.EXACT("Gambling")
S2	TI,AB(Gambler or gambling or betting or bets or gaming)
S3	S1 or S2
S4	MAINSUBJECT.EXACT("Screening") or MAINSUBJECT.EXACT("Selfreport measures") OR MAINSUBJECT.EXACT("Selfreport") or MAINSUBJECT.EXACT("Psychometric tests") OR MAINSUBJECT.EXACT("Psychometrics") or MAINSUBJECT.EXACT("Psychological tests") OR MAINSUBJECT.EXACT("Personality tests")
S5	TI,AB(Psychometric or psychometry)
S6	TI,AB(SOGS or BBGS or BPGS or PGSI or CSPG or RSPG or BAGS or PPGM or VGS or CPGI or CGT or SCIGC or "SCI GD" or SGHS or GA20 or "GA 20" or MAGS or GBI or SLUGS)
S7	TI(Test* OR Questionnaire or Question or Questions OR Survey OR Scale OR Index OR Indices OR Tool OR Rating OR Measure* OR Classify OR Classification OR Instrument OR Profile OR Profiling OR Checklist OR Score OR Inventor* OR Model OR Taxonom*)
S8	TI(Case Finding NEAR/2 Help Assessment Tool) or TI(Questionnaire NEAR/2 Impulsive Compulsive Disorder NEAR/2 Parkinson) or TI(QUIP or QUIPS) OR TI((cambridge or cantab) NEAR/2 stop signal) or TI(stop signal NEAR/2 test) or TI(stop signal NEAR/2 reaction time) OR TI(National Opinion Research Cent* NEAR/2 DSM* NEAR/2 Screen*) or TI(NODS)
S9	AB(Case Finding NEAR/2 Help Assessment Tool) or AB(Questionnaire NEAR/2 Impulsive Compulsive Disorder NEAR/2 Parkinson) or AB(QUIP or QUIPS) OR AB((cambridge or cantab) NEAR/2 stop signal) or AB(stop signal NEAR/2 test) or Ab(stop signal NEAR/2 reaction time) OR AB(National Opinion Research Cent* NEAR/2 DSM* NEAR/2 Screen*) or AB(NODS)
S10	S4 OR S5 OR S6 OR S7 OR S8 OR S9
S11	S3 AND S10
S12	TI(South Oaks NEAR/2 Gambl*) OR TI(One item screen NEAR/2 problem gambling) OR TI(National Opinion Research Center NEAR/2 Diagnostic Screen* NEAR/2 Gambling) or TI(NODSCLIP* or NODS CLIP* or NODSPERC* or NODS PERC*) OR TI(Lie NEAR/2 Bet NEAR/2 Questionnaire) OR TI(LieBet NEAR/2 Questionnaire) OR TI(Biosocial NEAR/2 Gambling Screen*) OR TI(Problem NEAR/2 Gambling Screen*) OR TI(Problem NEAR/2 Severity Index) OR TI(Consumption Screen* NEAR/2 Problem Gambling) OR TI(Rapid Screener NEAR/2 Problem Gambling) OR TI(Adolescent NEAR/2 Gambling Screen*) OR TI(Pathological NEAR/2 Gambling Measure) OR TI(Victorian NEAR/2 Gambling Screen*) OR TI(Problem NEAR/2 Gambling Index) OR TI(Canadian NEAR/3 Gambling Index) OR TI((Cambridge or CANTAB) NEAR/2 Gambling Task) OR TI(Iowa NEAR/2 Gambling Task) OR TI(Yale Brown NEAR/2 Obsessive Compulsive Scale NEAR/5 Pathologic Gambling) or TI(PG-YBOCS or PGYBOCS) OR TI(Structured Clinical Interview NEAR/2 Gambling Disorder) OR TI(Gambling Harm NEAR/2 Screen*) OR TI(Gamblers NEAR/1 Anonymous NEAR/2 question) OR TI(Massachusetts NEAR/2 Gambling Screen*) OR TI(Gambling NEAR/2 (Behavior or Behaviour) NEAR/2 Interview) OR TI(Gambling Treatment NEAR/2 Outcome Monitoring NEAR/2 System*) or TI(GAMTOMS or GAM TOMS) OR TI((Laval or Universities) NEAR/2 Gambling Screen*) OR TI(National Lottery NEAR/2 Screen* NEAR/2 Loss*) or TI(NLCLiP)
S13	AB(South Oaks NEAR/2 Gambl*) OR AB(One item screen NEAR/2 problem gambling) OR AB(National Opinion Research Center NEAR/2 Diagnostic Screen* NEAR/2 Gambling) OR AB(NODSCLIP* OR NODS CLIP* OR NODSPERC* OR NODS PERC*) OR AB(Lie NEAR/2 Bet NEAR/2 Questionnaire) OR AB(LieBet NEAR/2 Questionnaire) OR AB(Biosocial NEAR/2 Gambling Screen*) OR AB(Problem NEAR/2 Gambling Screen*) OR AB(Problem NEAR/2 Severity Index) OR AB(Consumption Screen* NEAR/2 Problem Gambling) OR AB(Rapid Screener NEAR/2 Problem Gambling) OR AB(Adolescent NEAR/2 Gambling Screen*) OR AB(Pathological NEAR/2 Gambling Measure) OR AB(Victorian NEAR/2 Gambling Screen*) OR AB(Problem NEAR/2 Gambling Index) OR AB(Canadian NEAR/3 Gambling Index) OR AB((Cambridge OR CANTAB) NEAR/2 Gambling Task) OR AB(Iowa NEAR/2 Gambling Task) OR AB(Yale Brown NEAR/2 Obsessive Compulsive Scale NEAR/5 Pathologic Gambling) OR AB(PG-YBOCS OR PGYBOCS) OR AB(Structured Clinical Interview NEAR/2 Gambling Disorder) OR AB(Gambling Harm NEAR/2 Screen*) OR AB(Gamblers NEAR/1 Anonymous NEAR/2 question) OR AB(Massachusetts NEAR/2 Gambling Screen*) OR AB(Gambling NEAR/2 (Behavior OR

Set#	Searched for
	Behaviour) NEAR/2 Interview) OR AB(Gambling Treatment NEAR/2 Outcome Monitoring NEAR/2 System*) OR AB(GAMTOMS OR GAM TOMS) OR AB((Laval OR Universities) NEAR/2 Gambling Screen*) OR AB(National Lottery NEAR/2 Screen* NEAR/2 Loss*) OR AB(NLCLiP)?
S14	S11 OR S12 OR S13
S15	MAINSUBJECT.EXACT("Internal validity") OR MAINSUBJECT.EXACT("Validation") OR MAINSUBJECT.EXACT("Validity") OR MAINSUBJECT.EXACT("Predictive validity") OR MAINSUBJECT.EXACT("Validity studies") OR MAINSUBJECT.EXACT("Reproducibility") OR MAINSUBJECT.EXACT("Severity") OR MAINSUBJECT.EXACT("Crossvalidation studies")
S16	TI((disease or illness or addict* or disorder) NEAR/2 (severity or classify or classification))
S17	AB((disease or illness or addict* or disorder) NEAR/2 (severity or classify or classification))
S18	TI(valid* or invalid* or crossvalid* or inaccurate* or inaccurac* or accurate* or accuracy* or reproducib* or invariance* or variance* or endors* or reliab* or unreliabl* or inconsisten* or consistency* or consistent*)
S19	TI(sensitivity or specificity or probability or likelihood or AUC or ROC or diagnosis or diagnoses or diagnosing or predictive or prediction or ICD or DSM or PPV or NPV)
S20	TI(incidence or longitudinal or prospective or retrospective or cohort or prevalence or cross sectional or concurrent)
S21	TI(systematic or meta* or trial* or random* or placebo)
S22	S15 or S16 or S17 or S18 or S19 or S20 or S21
S23	s14 and s22
S24	s14 and s22 AND yr(2000-2022)

Database: Cochrane Central Register of Controlled Trials (CENTRAL)

Date of last search: 03/11/2022

Query	
#1	[mh ^"GAMBLING"]
#2	(gambl* or betting or bets or wager* or pokies or pokey or puggy or fruities or loot box* or lootbox*):ti,ab
#3	((gaming or gambling or slot or fruit or poker or lottery or lotteries) near/5 (machine* or terminal*)):ti,ab
#4	((dice or card or cards or roulette or blackjack or poker or baccarat or crap or craps or keno or casino or casinos or bingo or bookmaker* or book maker* or bookie* or lottery or lotteries or lotto or scratch card or scratch cards or scratchcard* or raffle or raffles or sweepstak* or amusement arcade or amusement arcades or slot* or slots) near/5 (money or monetization or monetisation or monetary or currency or currencies or cryptocurrency or cryptocurrencies or reward* or win or wins or winning* or loss or losses or lose)):ti,ab
#5	((game or games or gaming or gamer*) near/5 (money or monetization or monetisation or monetary)):ti,ab
#6	{or #1-#5}
#7	[mh ^"psychological tests"] or [mh ^"behavior rating scale"] or [mh ^"neuropsychological tests"] or [mh ^"psychiatric status rating scales"] or [mh ^"brief psychiatric rating scale"] or [mh ^"patient health questionnaire"] or [mh ^"Personality Tests"] or [mh ^"personality inventory"] or [mh ^"psychometrics"]
#8	[mh ^"surveys and questionnaires"] or [mh ^"self report"] or [mh ^"patient acuity"] or [mh ^"health surveys"]
#9	[mh ^"Mass screening"] or [mh "population surveillance"]
#10	(Psychometric* or psychometry*):ti,ab
#11	((Neuro* or Psycho* or Psychiatric* or Personality* or Personalities* or Behavior* or Behaviour* or Severity* or Acuity* or Acuities* or Self Report* or Cognitive* or screen* or assess* or detect* or identif* or surveillance* or disorder* or pathological* or brief*) near/3 (Test* or Question* or Survey* or Scale* or Index* or Indice* or Tool* or Rating* or Measure* or Classify* or Classification* or Instrument* or Profile* or Profiling* or Checklist* or Score* or Inventor* or Model* or Taxonom*)):ti,ab
#12	{or #7-#11}
#13	#6 and #12
#14	(South Oaks near/2 Gambl*):ti,ab
#15	((One NEXT item NEXT screen*) near/2 (problem NEXT gambling*)):ti,ab
#16	(NODSCLIP* or NODS CLIP* or NODSPERC* or NODS PERC*):ti,ab
#17	((National Opinion Research Center*) near/2 (Diagnostic Screen*) near/2 (Gambling Disorder*)):ti,ab
#18	((National Opinion Research NEXT Center*) near/2 (Diagnostic NEXT Screen*) near/2 (Gambling*)):ti,ab
#19	((Lie* near/2 Bet* near/2 Questionnaire*) or (LieBet* near/2 Questionnaire*)):ti,ab
#20	(Biosocial* near/2 (Gambling NEXT Screen*)):ti,ab
#21	(Problem* near/2 (Gambling NEXT Screen*)):ti,ab
#22	((Consumption NEXT Screen*) near/2 (Problem NEXT Gambling*)):ti,ab
#23	((Rapid NEXT Screener*) near/2 (Problem NEXT Gambling*)):ti,ab
#24	(Adolescent* near/2 (Gambling NEXT Screen*)):ti,ab
#25	(Pathological* near/2 (Gambling NEXT Measure*)):ti,ab
#26	(Victorian* near/2 (Gambling NEXT Screen*)):ti,ab
#27	(Problem* near/2 (Gambling NEXT Index*)):ti,ab
#28	(Canadian* near/3 (Gambling NEXT Index*)):ti,ab
#29	((Cambridge* or CANTAB) near/2 (Gambling NEXT Task*)):ti,ab
#30	(Iowa* near/2 (Gambling NEXT Task*)):ti,ab
#31	(PG NEXT YBOCS* or PGYBOCS*):ti,ab

Query
#32 ((Yale NEXT Brown*) near/2 (Obsessive NEXT Compulsive NEXT Scale*) near/5 (Pathologic* NEXT Gambling*)):ti,ab
#33 ((Structured NEXT Clinical NEXT Interview*) near/2 (Gambling NEXT Disorder*)):ti,ab
#34 ((Gambling NEXT Harm*) near/2 Screen*):ti,ab
#35 (Gamblers* near/1 Anonymous* near/2 question*):ti,ab
#36 (Massachusetts* near/2 (Gambling NEXT Screen*)):ti,ab
#37 (Gambling near/2 (Behavior* or Behaviour*) near/2 Interview*):ti,ab
#38 (GAMTOMS* or GAM TOMS*):ti,ab
#39 ((Gambling NEXT Treatment*) near/2 (Outcome* NEXT Monitoring*) near/2 System*)
#40 ((Laval* or Universities*) near/2 (Gambling NEXT Screen*)):ti,ab
#41 NLCLiP:ti,ab
#42 ((National NEXT Lottery*) near/2 Screen* near/2 Loss*):ti,ab
#43 {or #14-#42}
#44 CHAT:ti,ab
#45 ((Case NEXT Finding*) near/2 (Help NEXT Assessment NEXT Tool*)):ti,ab
#46 (QUIP or QUIPS):ti,ab
#47 (Questionnaire* near/2 (Impulsive NEXT Compulsive NEXT Disorder*) near/2 Parkinson*):ti,ab
#48 ((cambridge* or cantab*) near/2 ((stop NEXT signal*))):ti,ab
#49 ((stop NEXT signal*) near/2 test*):ti,ab
#50 ((stop NEXT signal*) near/2 (reaction NEXT time*)):ti,ab
#51 ((DSM* or "Statistical Manual of Mental Disorder" or "Statistical Manual of Mental Disorders") near/2 (Multiple NEXT Response*)):ti,ab
#52 (DSMIVMR or "DSM IV MR" or "DSMIV MR" or DSM4MR or "DSM 4 MR" or "DSM4 MR" or DSMVMR or "DSM V MR" or "DSMV MR" or DSM5MR or "DSM 5 MR" or "DSM5 MR"):ti,ab
#53 NODS:ti,ab
#54 ((National NEXT Opinion NEXT Research NEXT Cent*) near/2 DSM* near/2 Screen*):ti,ab
#55 {or #44-#54}
#56 #6 and #55
#57 #13 or #43 or #56
#58 conference:pt
#59 #57 not #58
#60 (clinicaltrials or trialsearch):so
#61 #59 not #60
#62 #59 not #60 in Trials
#63 #59 not #60 with Publication Year from 2000 to 2022, in Trials

Database: Cochrane Database of Systematic Reviews (CDSR)

Date of last search: 03/11/2022

Query
#1 [mh ^"GAMBLING"]
#2 (gambl* or betting or bets or wager* or pokies or pokey or puggy or fruities or loot box* or lootbox*):ti,ab
#3 ((gaming or gambling or slot or fruit or poker or lottery or lotteries) near/5 (machine* or terminal*)):ti,ab
#4 ((dice or card or cards or roulette or blackjack or poker or baccarat or crap or craps or keno or casino or casinos or bingo or bookmaker* or book maker or bookie* or lottery or lotteries or lotto or scratch card or scratch cards or scratchcard* or raffle or raffles or sweepstak* or amusement arcade or amusement arcades or slot* or slots) near/5 (money or monetization or monetisation or monetary or currency or currencies or cryptocurrency or cryptocurrencies or reward* or win or wins or winning* or loss or losses or lose)):ti,ab
#5 ((game or games or gaming or gamer*) near/5 (money or monetization or monetisation or monetary)):ti,ab
#6 {or #1-#5}
#7 {or #1-#5} with Cochrane Library publication date Between Jan 2000 and Nov 2022, in Cochrane Reviews, Cochrane Protocols

Database: Cumulative Index to Nursing and Allied Health Literature (CINAHL)

Date of last search: 03/11/2022

#	Query
S1	(MH "Gambling")
S2	TI(gambl* or betting or bets or wager* or pokies or pokey or puggy or fruities or loot box* or lootbox*)
S3	AB(gambl* or betting or bets or wager* or pokies or pokey or puggy or fruities or loot box* or lootbox*)
S4	TI((gaming or gambling or slot or fruit or poker or lottery or lotteries) N5 (machine* or terminal*))
S5	AB((gaming or gambling or slot or fruit or poker or lottery or lotteries) N5 (machine* or terminal*))
S6	TI((dice or card or cards or roulette or blackjack or poker or baccarat or crap or craps or keno or casino or casinos or bingo or bookmaker* or book maker* or bookie* or lottery or lotteries or lotto or scratch card* or scratchcard* or raffle or raffles or sweepstak* or amusement arcade* or slot or slots) N5 (money or monetization

#	Query
	or monetisation or monetary or currency or currencies or cryptocurrency or cryptocurrencies or reward* or win or wins or winning* or loss or losses or lose))
S7	AB((dice or card or cards or roulette or blackjack or poker or baccarat or crap or craps or keno or casino or casinos or bingo or bookmaker* or book maker* or bookie* or lottery or lotteries or lotto or scratch card* or scratchcard* or raffle or raffles or sweepstak* or amusement arcade* or slot or slots) N5 (money or monetization or monetisation or monetary or currency or currencies or cryptocurrency or cryptocurrencies or reward* or win or wins or winning* or loss or losses or lose))
S8	TI((game or games or gaming or gamer or gamers) N5 (money or monetization or monetisation or monetary))
S9	AB((game or games or gaming or gamer or gamers) N5 (money or monetization or monetisation or monetary))
S10	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9
S11	(MH "Psychological Tests") OR (MH "Neuropsychological Tests") OR (MH "Personality Tests") OR (MH "Psychometrics") OR (MH "Behavior Rating Scales") OR (MH "Checklists")
S12	(MH "Surveys") OR (MH "Questionnaires+") OR (MH "Scales") OR (MH "Patient Classification") OR (MH "Self Report")
S13	(MH "Health Screening") OR (MH "Population Surveillance")
S14	TI((Neuro* or Psycho* or Psychiatric* or Personality* or Personalities* or Behavior* or Behaviour* or Severity* or Acuity* or Acuities* or Self Report* or Cognitive* or screen* or assess* or detect* or identif* or surveillance* or disorder* or pathological* or brief*) N3 (Test* or Question* or Survey* or Scale* or Index* or Indice* or Tool* or Rating* or Measure* or Classify* or Classification* or Instrument* or Profile* or Profiling* or Checklist* or Score* or Inventor* or Model* or Taxonom*))
S15	AB((Neuro* or Psycho* or Psychiatric* or Personality* or Personalities* or Behavior* or Behaviour* or Severity* or Acuity* or Acuities* or Self Report* or Cognitive* or screen* or assess* or detect* or identif* or surveillance* or disorder* or pathological* or brief*) N3 (Test* or Question* or Survey* or Scale* or Index* or Indice* or Tool* or Rating* or Measure* or Classify* or Classification* or Instrument* or Profile* or Profiling* or Checklist* or Score* or Inventor* or Model* or Taxonom*))
S16	TI(Psychometric* or psychometry*)
S17	AB(Psychometric* or psychometry*)
S18	S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17
S19	S10 AND S18
S20	TI(South Oaks N2 Gambl*) OR AB(South Oaks N2 Gambl*)
S21	TI(One item screen* N2 problem gambling*) OR AB(One item screen* N2 problem gambling*)
S22	TI(National Opinion Research Center* N2 Diagnostic Screen* N2 Gambling*) or TI(NODSCLIP* or NODS CLIP* or NODSPERC* or NODS PERC*) OR AB(National Opinion Research Center* N2 Diagnostic Screen* N2 Gambling*) or AB(NODSCLIP* or NODS CLIP* or NODSPERC* or NODS PERC*)
S23	TI(Lie* N2 Bet* N2 Questionnaire*) OR TI(LieBet* N2 Questionnaire*) OR AB(Lie* N2 Bet* N2 Questionnaire*) OR AB(LieBet* N2 Questionnaire*)
S24	TI(Biosocial* N2 Gambling Screen*) OR AB(Biosocial* N2 Gambling Screen*)
S25	TI(Problem* N2 Gambling Screen*) OR AB(Problem* N2 Gambling Screen*)
S26	TI(Problem* N2 Severity Index*) OR AB(Problem* N2 Severity Index*)
S27	TI(Consumption Screen* N2 Problem Gambling*) OR AB(Consumption Screen* N2 Problem Gambling*)
S28	TI(Rapid Screener* N2 Problem Gambling*) OR AB(Rapid Screener* N2 Problem Gambling*)
S29	TI(Adolescent* N2 Gambling Screen*) OR AB(Adolescent* N2 Gambling Screen*)
S30	TI(Pathological* N2 Gambling Measure*) OR AB(Pathological* N2 Gambling Measure*)
S31	TI(Victorian* N2 Gambling Screen*) OR AB(Victorian* N2 Gambling Screen*)
S32	TI(Problem* N2 Gambling Index*) OR AB(Problem* N2 Gambling Index*)
S33	TI(Canadian* N3 Gambling Index*) OR AB(Canadian* N3 Gambling Index*)
S34	TI((Cambridge* or CANTAB) N2 Gambling Task*) OR AB((Cambridge* or CANTAB) N2 Gambling Task*)
S35	TI(Iowa* N2 Gambling Task*) OR AB(Iowa* N2 Gambling Task*)
S36	TI(Yale Brown* N2 Obsessive Compulsive Scale* N5 Pathologic* Gambling*) or TI(PG-YBOCS* or PGYBOCS*) OR AB(Yale Brown* N2 Obsessive Compulsive Scale* N5 Pathologic* Gambling*) or AB(PG-YBOCS* or PGYBOCS*)
S37	TI(Structured Clinical Interview* N2 Gambling Disorder*) OR AB(Structured Clinical Interview* N2 Gambling Disorder*)
S38	TI(Gambling Harm* N2 Screen*) OR AB(Gambling Harm* N2 Screen*)
S39	TI(Gamblers* N1 Anonymous* N2 question*) OR AB(Gamblers* N1 Anonymous* N2 question*)
S40	TI(Massachusetts* N2 Gambling Screen*) OR AB(Massachusetts* N2 Gambling Screen*)
S41	TI(Gambling N2 (Behavior* or Behaviour*) N2 Interview*) OR AB(Gambling N2 (Behavior* or Behaviour*) N2 Interview*)
S42	TI(Gambling Treatment* N2 Outcome* Monitoring* N2 System*) or TI(GAMTOMS* or GAM TOMS*) OR AB(Gambling Treatment* N2 Outcome* Monitoring* N2 System*) or AB(GAMTOMS* or GAM TOMS*)
S43	TI((Laval* or Universities*) N2 Gambling Screen*) OR AB((Laval* or Universities*) N2 Gambling Screen*)
S44	TI(National Lottery* N2 Screen* N2 Loss*) or TI(NLCLiP) OR AB(National Lottery* N2 Screen* N2 Loss*) or AB(NLCLiP)
S45	S20 OR S21 OR S22 OR S23 OR S24 OR S25 OR S26 OR S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35 OR S36 OR S37 OR S38 OR S39 OR S40 OR S41 OR S42 OR S43 OR S44

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#	Query
S46	TI(SOGS or BBGS or BPGS or PGSI or CSPG or RSPG or BAGS or PPGM or VGS or CPGI or CGT or SCIGC or "SCI GD" or SGHS or GA20 or "GA 20" or MAGS or GBI or SLUGS) OR AB(SOGS or BBGS or BPGS or PGSI or CSPG or RSPG or BAGS or PPGM or VGS or CPGI or CGT or SCIGC or "SCI GD" or SGHS or GA20 or "GA 20" or MAGS or GBI or SLUGS)
S47	TI(Case Finding* N2 Help Assessment Tool*) or TI(CHAT) or AB(Case Finding* N2 Help Assessment Tool*) or AB(CHAT)
S48	TI(Questionnaire* N2 Impulsive Compulsive Disorder* N2 Parkinson*) or TI(QUIP or QUIPS) OR AB(Questionnaire* N2 Impulsive Compulsive Disorder* N2 Parkinson*) or AB(QUIP or QUIPS)
S49	TI((cambridge* or cantab*) N2 stop signal*) or TI(stop signal* N2 test*) or TI(stop signal* N2 reaction time*) OR AB((cambridge* or cantab*) N2 stop signal*) or AB(stop signal* N2 test*) or AB(stop signal* N2 reaction time*)
S50	TI((DSM* or "Statistical Manual of Mental Disorder*") N2 Multiple Response*) or AB((DSM* or "Statistical Manual of Mental Disorder*") N2 Multiple Response*)
S51	TI(DSMIVMR or "DSM IV MR" or "DSMIV MR" or DSM4MR or "DSM 4 MR" or "DSM4 MR" or DSMVMR or "DSM V MR" or "DSMV MR" or DSM5MR or "DSM 5 MR" or "DSM5 MR") OR AB(DSMIVMR or "DSM IV MR" or "DSMIV MR" or DSM4MR or "DSM 4 MR" or "DSM4 MR" or DSMVMR or "DSM V MR" or "DSMV MR" or DSM5MR or "DSM 5 MR" or "DSM5 MR")
S52	TI(National Opinion Research Cent* N2 DSM* N2 Screen*) or TI(NODS) or AB(National Opinion Research Cent* N2 DSM* N2 Screen*) or AB(NODS)
S53	S46 OR S47 OR S48 OR S49 OR S50 OR S51 OR S52
S54	S10 AND S53
S55	S19 OR S45 OR S54
S56	(MH "Validation Studies")
S57	(MH "Reproducibility of Results")
S58	(MH "Factor Analysis")
S59	(MH "Severity of Illness Indices")
S60	(MH "Reliability and Validity+")
S61	TI((disease* or illness* or addict* or disorder*) N2 (severity* or classify* or classification*)
S62	AB((disease* or illness* or addict* or disorder*) N2 (severity* or classify* or classification*)
S63	TI((valid* or invalid* or crossvalid* or inaccurate* or inaccurac* or accurate* or accuracy* or reproducib* or invariance* or variance* or endors* or reliab* or unreliabl* or inconsisten* or consistency* or consistent*) N3 (Test* or Question* or Survey* or Scale* or Index* or Indice* or Tool* or Rating* or Measure* or Classify* or Classification* or Instrument* or Profile* or Profiling* or Checklist* or Score* or Inventory* or Model* or Taxonom* or Brief*))
S64	AB((valid* or invalid* or crossvalid* or inaccurate* or inaccurac* or accurate* or accuracy* or reproducib* or invariance* or variance* or endors* or reliab* or unreliabl* or inconsisten* or consistency* or consistent*) N3 (Test* or Question* or Survey* or Scale* or Index* or Indice* or Tool* or Rating* or Measure* or Classify* or Classification* or Instrument* or Profile* or Profiling* or Checklist* or Score* or Inventory* or Model* or Taxonom* or Brief*))
S65	TI(statistic* N1 factor*) or TI(factor N1 analys*) OR AB(statistic* N1 factor*) or AB(factor N1 analys*)
S66	S56 OR S57 OR S58 OR S59 OR S60 OR S61 OR S62 OR S63 OR S64 OR S65
S67	S55 AND S66
S68	(MH "Sensitivity and Specificity")
S69	TI(sensitivity or specificity) OR AB(sensitivity or specificity)
S70	TI(("pre test" or pretest or "post test" or posttest) N1 probability) OR AB(("pre test" or pretest or "post test" or posttest) N1 probability)
S71	TI("predictive value*" or PPV or NPV) OR AB("predictive value*" or PPV or NPV)
S72	TI("likelihood ratio*") OR AB("likelihood ratio*")
S73	TI("ROC curve*" or AUC) OR AB("ROC curve*" or AUC)
S74	TI(diagnos*)
S75	AB(diagnos* N3 (performance* or accurac* or utilit* or value* or efficien* or effectiveness))
S76	AB "gold standard"
S77	MW "di"
S78	(MH "Predictive Value of Tests")
S79	(MH "International Classification of Diseases")
S80	(MH "DSM")
S81	TI((icd or dsm) N1 (code* or coding* or criteria* or diagnos* or classify* or classification*))
S82	AB((icd or dsm) N1 (code* or coding* or criteria* or diagnos* or classify* or classification*))
S83	TI(ICD10 or "ICD 10" or ICD11 or "ICD 11" or DSMIV or "DSM IV" or DSM4 or "DSM 4" or DSMV or "DSM V" or DSM5 or "DSM 5") OR AB(ICD10 or "ICD 10" or ICD11 or "ICD 11" or DSMIV or "DSM IV" or DSM4 or "DSM 4" or DSMV or "DSM V" or DSM5 or "DSM 5")
S84	TI(International Classification N2 Disease*) OR AB(International Classification N2 Disease*)
S85	TI("Statistical Manual of Mental Disorder*") OR AB("Statistical Manual of Mental Disorder*")
S86	S68 OR S69 OR S70 OR S71 OR S72 OR S73 OR S74 OR S75 OR S76 OR S77 OR S78 OR S79 OR S80 OR S81 OR S82 OR S83 OR S84 OR S85
S87	S55 AND S86

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#	Query
S88	(MH "Prospective Studies+")
S89	TI((follow up* or followup* or concurrent* or incidence* or population*) N3 (study* or studies* or analy* or observation* or design* or method* or research*))
S90	AB((follow up* or followup* or concurrent* or incidence* or population*) N3 (study* or studies* or analy* or observation* or design* or method* or research*))
S91	TI(longitudinal* or prospective* or retrospective* or cohort*) OR AB(longitudinal* or prospective* or retrospective* or cohort*)
S92	(MH "Cross Sectional Studies")
S93	TI((prevalence* or disease frequenc*) N3 (study* or studies* or analy* or observation* or design* or method* or research*))
S94	AB((prevalence* or disease frequenc*) N3 (study* or studies* or analy* or observation* or design* or method* or research*))
S95	TI(cross sectional*) OR AB(cross sectional*)
S96	S88 OR S89 OR S90 OR S91 OR S92 OR S93 OR S94 OR S95
S97	S55 AND S96
S98	(TI (systematic* n3 review*)) or (AB (systematic* n3 review*)) or (TI (systematic* n3 bibliographic*)) or (AB (systematic* n3 bibliographic*)) or (TI (systematic* n3 literature)) or (AB (systematic* n3 literature)) or (TI (comprehensive* n3 literature)) or (AB (comprehensive* n3 literature)) or (TI (comprehensive* n3 bibliographic*)) or (AB (comprehensive* n3 bibliographic*)) or (TI (integrative n3 review)) or (AB (integrative n3 review)) or (JN "Cochrane Database of Systematic Reviews") or (TI (information n2 synthesis)) or (TI (data n2 synthesis)) or (AB (information n2 synthesis)) or (AB (data n2 synthesis)) or (TI (data n2 extract*)) or (AB (data n2 extract*)) or (TI (medline or pubmed or psyclit or cinahl or (psycinfo not "psycinfo database") or "web of science" or scopus or embase)) or (AB (medline or pubmed or psyclit or cinahl or (psycinfo not "psycinfo database") or "web of science" or scopus or embase)) or (MH "Systematic Review") or (MH "Meta Analysis") or (TI (meta-analy* or metaanaly*)) or (AB (meta-analy* or metaanaly*))
S99	S55 AND S98
S100	MH randomized controlled trials
S101	MH double-blind studies
S102	MH single-blind studies
S103	MH random assignment
S104	MH pretest-posttest design
S105	MH cluster sample
S106	TI (randomised OR randomized)
S107	AB (random*)
S108	TI (trial)
S109	MH (sample size) AND AB (assigned OR allocated OR control)
S110	MH (placebos)
S111	PT (randomized controlled trial)
S112	AB (control W5 group)
S113	MH (crossover design) OR MH (comparative studies)
S114	AB (cluster W3 RCT)
S115	S100 OR S101 OR S102 OR S103 OR S104 OR S105 OR S106 OR S107 OR S108 OR S109 OR S110 OR S111 OR S112 OR S113 OR S114
S116	S55 AND S115
S117	S67 OR S87 OR S97 OR S99 OR S116
S118	PT(anecdote or audiovisual or bibliography or biography or brief item or cartoon or commentary or computer program or editorial or games or glossary or historical material or interview or letter or listservs or masters thesis or obituary or pamphlet or pamphlet chapter or pictorial or poetry or proceedings or "questions and answers" or response or software or teaching materials or website)
S119	S117 NOT S118
S120	mh(animals+ or animals, laboratory or mh rodents+) or TI(rat or rats or mouse or mice)
S121	mh(human)
S122	S120 NOT S121
S123	S119 NOT S122
S124	S119 NOT S122
S125	S119 NOT S122

Database: Embase

Date of last search: 03/11/2022

#	Searches
1	gambling/
2	PATHOLOGICAL GAMBLING/

#	Searches
3	(gambl* or betting or bets or wager* or pokies or pokey or puggy or fruities or loot box* or lootbox*).ti,ab.
4	((gaming or gambling or slot or fruit or poker or lottery or lotteries) adj5 (machine? or terminal?)).ti,ab.
5	((dice or card? or roulette or blackjack or poker or baccarat or crap or craps or keno or casino? or bingo or bookmaker? or book maker? or bookie? or lottery or lotteries or lotto or scratch card? or scratchcard? or raffle or raffles or sweepstak* or amusement arcade? or slot?) adj5 (money or monetization or monetisation or monetary or currency or currencies or cryptocurrency or cryptocurrencies or reward* or win or wins or winning* or loss or losses or lose)).ti,ab.
6	((game or games or gaming or gamer?) adj5 (money or monetization or monetisation or monetary)).ti,ab.
7	or/1-6
8	psychologic test/ or behavior assessment/ or attitude assessment/ or coping behavior assesment/ or individual behavior assessment/ or cognitive function test/ or neuropsychological test/ or psychological rating scale/ or brief psychiatric rating scale/ or general mental disease assessment/ or patient health questionnaire/ or personality test/ or psychometry/
9	questionnaire/ or open ended questionnaire/ or structured questionnaire/ or self report/ or health survey/ or patient acuity/
10	mass screening/ or screening/ or screening test/
11	(Psychometric* or psychometry*).ti,ab.
12	((Neuro* or Psycho* or Psychiatric* or Personality* or Personalities* or Behavior* or Behaviour* or Severity* or Acuity* or Acuities* or Self Report* or Cognitive* or screen* or assess* or detect* or identif* or surveillance* or disorder* or pathological* or brief*) adj3 (Test* or Question* or Survey* or Scale* or Index* or Indice* or Tool* or Rating* or Measure* or Classify* or Classification* or Instrument* or Profile* or Profiling* or Checklist* or Score* or Inventor* or Model* or Taxonom*)).ti,ab.
13	or/8-12
14	7 and 13
15	(South Oaks adj2 Gambl*).ti,ab.
16	(One item screen* adj2 problem gambling*).ti,ab.
17	((National Opinion Research Center* adj2 Diagnostic Screen* adj2 Gambling*) or (NODSCLIP* or NODS CLIP* or NODSPERC* or NODS PERC*)).ti,ab.
18	((Lie* adj2 Bet* adj2 Questionnaire*) or (LieBet* adj2 Questionnaire*)).ti,ab.
19	(Biosocial* adj2 Gambling Screen*).ti,ab.
20	(Problem* adj2 Gambling Screen*).ti,ab.
21	(Problem* adj2 Severity Index*).ti,ab.
22	(Consumption Screen* adj2 Problem Gambling*).ti,ab.
23	(Rapid Screener* adj2 Problem Gambling*).ti,ab.
24	(Adolescent* adj2 Gambling Screen*).ti,ab.
25	(Pathological* adj2 Gambling Measure*).ti,ab.
26	(Victorian* adj2 Gambling Screen*).ti,ab.
27	(Problem* adj2 Gambling Index*).ti,ab.
28	(Canadian* adj3 Gambling Index*).ti,ab.
29	((Cambridge* or CANTAB) adj2 Gambling Task*).ti,ab.
30	(Iowa* adj2 Gambling Task*).ti,ab.
31	((Yale Brown* adj2 Obsessive Compulsive Scale* adj5 Pathologic* Gambling*) or (PG-YBOCS* or PGYBOCS*)).ti,ab.
32	(Structured Clinical Interview* adj2 Gambling Disorder*).ti,ab.
33	(Gambling Harm* adj2 Screen*).ti,ab.
34	(Gamblers* adj1 Anonymous* adj2 question*).ti,ab.
35	(Massachusetts* adj2 Gambling Screen*).ti,ab.
36	(Gambling adj2 (Behavior* or Behaviour*) adj2 Interview*).ti,ab.
37	((Gambling* Treatment* adj2 Outcome Monitoring* adj2 System*) or (GAMTOMS* or GAM TOMS*)).ti,ab.
38	((Laval* or Universities*) adj2 Gambling Screen*).ti,ab.
39	((National Lottery* adj2 Screen* adj2 Loss*) or NLCLiP).ti,ab.
40	or/15-39
41	(SOGS or BBGS or BPGS or PGSI or CSPG or RSPG or BAGS or PPGM or VGS or CPGI or CGT or SCIGC or "SCI GD" or SGHS or GA20 or "GA 20" or MAGS or GBI or SLUGS).ti,ab.
42	((Case Finding* adj2 Help Assessment Tool*) or CHAT).ti,ab.
43	((Questionnaire* adj2 Impulsive Compulsive Disorder* adj2 Parkinson*) or (QUIP or QUIPS)).ti,ab.
44	(((cambridge* or cantab*) adj2 stop signal*) or (stop signal* adj2 test*) or (stop signal* adj2 reaction time*)).ti,ab.
45	(((DSM* or "Statistical Manual of Mental Disorder*") adj2 Multiple Response*) or (DSMIVMR or "DSM IV MR" or "DSMIV MR" or DSM4MR or "DSM 4 MR" or "DSM4 MR" or DSMVMR or "DSM V MR" or "DSMV MR" or DSM5MR or "DSM 5 MR" or "DSM5 MR")).ti,ab.
46	((National Opinion Research Cent* adj2 DSM* adj2 Screen*) or NODS).ti,ab.
47	or/41-46
48	7 and 47
49	14 or 40 or 48

45

#	Searches
50	validation study/
51	reproducibility/
52	exp factor analysis/
53	disease severity assessment/ or disease activity score/ or "severity of illness index"/
54	((disease* or illness* or addict* or disorder*) adj2 (severity* or classify* or classification*)).ti,ab.
55	((valid* or invalid* or crossvalid* or inaccurate* or inaccurac* or accurate* or accuracy* or reproducib* or invariance* or variance* or endors* or reliab* or unreliabl* or inconsisten* or consistency* or consistent*) adj3 (Test* or Question* or Survey* or Scale* or Index* or Indice* or Tool* or Rating* or Measure* or Classify* or Classification* or Instrument* or Profile* or Profiling* or Checklist* or Score* or Inventor* or Model* or Taxonom* or Brief*)).ti,ab.
56	((statistic* adj1 factor*) or (factor adj1 analys*)).ti,ab.
57	or/50-56
58	49 and 57
59	"SENSITIVITY AND SPECIFICITY"/
60	(sensitivity or specificity).ti,ab.
61	((pre test or pretest or post test or posttest) adj probability).ti,ab.
62	(predictive value* or PPV or NPV).ti,ab.
63	likelihood ratio*.ti,ab.
64	STATISTICAL MODEL/
65	(ROC curve* or AUC).ti,ab.
66	diagnos*.ti.
67	(diagnos* adj2 (performance* or accurac* or utilit* or value* or efficien* or effectiveness)).ab.
68	gold standard.ab.
69	*DIAGNOSTIC ACCURACY/ or DIAGNOSTIC TEST ACCURACY STUDY/
70	di.fs.
71	"international classification of diseases"/ or icd-10/ or icd-10-cm/ or icd-10-pcs/ or icd-11/
72	"diagnostic and statistical manual of mental disorders"/ or dsm-5/ or dsm-iv/ or dsm-iv-tr/
73	(International Classification adj2 Disease*).ti,ab.
74	"Statistical Manual of Mental Disorder*".ti,ab.
75	((icd or dsm) adj1 (code* or coding* or criteria* or diagnos* or classify* or classification*)).ti,ab.
76	(ICD10 or "ICD 10" or ICD11 or "ICD 11" or DSMIV or "DSM IV" or DSM4 or "DSM 4" or DSMV or "DSM V" or DSM5 or "DSM 5").ti,ab.
77	or/59-76
78	49 and 77
79	cohort analysis/
80	longitudinal study/
81	prospective study/
82	retrospective study/
83	follow up/
84	((follow up* or followup* or concurrent* or incidence* or population*) adj3 (study* or studies* or analy* or observation* or design* or method* or research*)).ti,ab.
85	(longitudinal* or prospective* or retrospective* or cohort*).ti,ab.
86	cross-sectional study/
87	((prevalence* or disease frequenc*) adj3 (study* or studies* or analy* or observation* or design* or method* or research*)).ti,ab.
88	cross sectional*.ti,ab.
89	or/79-88
90	49 and 89
91	systematic review/
92	meta-analysis/
93	(meta analy* or metanaly* or metaanaly*).ti,ab.
94	((systematic or evidence) adj2 (review* or overview*)).ti,ab.
95	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
96	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
97	(search* adj4 literature).ab.
98	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
99	((pool* or combined) adj2 (data or trials or studies or results)).ab.
100	cochrane.jw.
101	or/91-100
102	49 and 101
103	random*.ti,ab.
104	factorial*.ti,ab.
105	(crossover* or cross over*).ti,ab.

46

#	Searches
106	((doubl* or singl*) adj blind*).ti,ab.
107	(assign* or allocat* or volunteer* or placebo*).ti,ab.
108	crossover procedure/
109	single blind procedure/
110	randomized controlled trial/
111	double blind procedure/
112	or/103-111
113	49 and 112
114	58 or 78 or 90 or 102 or 113
115	limit 114 to english language
116	(letter.pt. or letter/ or note.pt. or editorial.pt. or case report/ or case study/ or (letter or comment*).ti.) not (randomized controlled trial/ or random*.ti,ab.)
117	115 not 116
118	(animal/ not human/) or nonhuman/ or exp Animal Experiment/ or exp Experimental Animal/ or animal model/ or exp Rodent/ or (rat or rats or mouse or mice).ti.
119	117 not 118
120	(conference abstract* or conference review or conference paper or conference proceeding).db,pt,su.
121	119 not 120
122	limit 121 to yr="2000 -Current"

Database: Emcare

Date of last search: 03/11/2022

#	Searches
1	gambling/
2	PATHOLOGICAL GAMBLING/
3	(gambl* or betting or bets or wager* or pokies or pokey or puggy or fruities or loot box* or lootbox*).ti,ab.
4	((gaming or gambling or slot or fruit or poker or lottery or lotteries) adj5 (machine? or terminal?)).ti,ab.
5	((dice or card? or roulette or blackjack or poker or baccarat or crap or craps or keno or casino? or bingo or bookmaker? or book maker? or bookie? or lottery or lotteries or lotto or scratch card? or scratchcard? or raffle or raffles or sweepstak* or amusement arcade? or slot?) adj5 (money or monetization or monetisation or monetary or currency or currencies or cryptocurrency or cryptocurrencies or reward* or win or wins or winning* or loss or losses or lose)).ti,ab.
6	((game or games or gaming or gamer?) adj5 (money or monetization or monetisation or monetary)).ti,ab.
7	or/1-6
8	psychologic test/ or behavior assessment/ or attitude assessment/ or coping behavior assesment/ or individual behavior assessment/ or cognitive function test/ or neuropsychological test/ or psychological rating scale/ or brief psychiatric rating scale/ or general mental disease assessment/ or patient health questionnaire/ or personality test/ or psychometry/
9	questionnaire/ or open ended questionnaire/ or structured questionnaire/ or self report/ or health survey/ or patient acuity/
10	mass screening/ or screening/ or screening test/
11	(Psychometric* or psychometry*).ti,ab.
12	((Neuro* or Psycho* or Psychiatric* or Personality* or Personalities* or Behavior* or Behaviour* or Severity* or Acuity* or Acuities* or Self Report* or Cognitive* or screen* or assess* or detect* or identif* or surveillance* or disorder* or pathological* or brief*) adj3 (Test* or Question* or Survey* or Scale* or Index* or Indice* or Tool* or Rating* or Measure* or Classify* or Classification* or Instrument* or Profile* or Profiling* or Checklist* or Score* or Inventor* or Model* or Taxonom*)).ti,ab.
13	or/8-12
14	7 and 13
15	(South Oaks adj2 Gambl*).ti,ab.
16	(One item screen* adj2 problem gambling*).ti,ab.
17	((National Opinion Research Center* adj2 Diagnostic Screen* adj2 Gambling) or (NODSCLIP* or NODS CLIP* or NODSPERC* or NODS PERC*)).ti,ab.
18	((Lie* adj2 Bet* adj2 Questionnaire*) or (LieBet* adj2 Questionnaire*)).ti,ab.
19	(Biosocial* adj2 Gambling Screen*).ti,ab.
20	(Problem* adj2 Gambling Screen*).ti,ab.
21	(Problem* adj2 Severity Index*).ti,ab.
22	(Consumption Screen* adj2 Problem Gambling*).ti,ab.
23	(Rapid Screener* adj2 Problem Gambling*).ti,ab.
24	(Adolescent* adj2 Gambling Screen*).ti,ab.
25	(Pathological* adj2 Gambling Measure*).ti,ab.
26	(Victorian* adj2 Gambling Screen*).ti,ab.

#	Searches
27	(Problem* adj2 Gambling Index*).ti,ab.
28	(Canadian* adj3 Gambling Index*).ti,ab.
29	((Cambridge* or CANTAB) adj2 Gambling Task*).ti,ab.
30	(Iowa* adj2 Gambling Task*).ti,ab.
31	((Yale Brown* adj2 Obsessive Compulsive Scale* adj5 Pathologic* Gambling*) or (PG-YBOCS* or PGYBOCS*)).ti,ab.
32	(Structured Clinical Interview* adj2 Gambling Disorder*).ti,ab.
33	(Gambling Harm* adj2 Screen*).ti,ab.
34	(Gamblers* adj1 Anonymous* adj2 question*).ti,ab.
35	(Massachusetts* adj2 Gambling Screen*).ti,ab.
36	(Gambling adj2 (Behavior* or Behaviour*) adj2 Interview*).ti,ab.
37	((Gambling Treatment* adj2 Outcome* Monitoring* adj2 System*) or (GAMTOMS* or GAM TOMS*)).ti,ab.
38	((Laval* or Universities*) adj2 Gambling Screen*).ti,ab.
39	((National Lottery* adj2 Screen* adj2 Loss*) or NLCLiP).ti,ab.
40	or/15-39
41	(SOGS or BBGS or BPGS or PGSI or CSPG or RSPG or BAGS or PPGM or VGS or CPGI or CGT or SCIGC or "SCI GD" or SGHS or GA20 or "GA 20" or MAGS or GBI or SLUGS).ti,ab.
42	((Case Finding* adj2 Help Assessment Tool*) or CHAT).ti,ab.
43	((Questionnaire* adj2 Impulsive Compulsive Disorder* adj2 Parkinson*) or (QUIP or QUIPS)).ti,ab.
44	(((cambridge* or cantab*) adj2 stop signal*) or (stop signal* adj2 test*) or (stop signal* adj2 reaction time*)).ti,ab.
45	((((DSM* or "Statistical Manual of Mental Disorder*") adj2 Multiple Response*) or (DSMIVMR or "DSM IV MR" or "DSMIV MR" or DSM4MR or "DSM 4 MR" or "DSM4 MR" or DSMVMR or "DSM V MR" or "DSMV MR" or DSM5MR or "DSM 5 MR" or "DSM5 MR")).ti,ab.
46	((National Opinion Research Cent* adj2 DSM* adj2 Screen*) or NODS).ti,ab.
47	or/41-46
48	7 and 47
49	14 or 40 or 48
50	validation study/
51	reproducibility/
52	exp factor analysis/
53	disease severity assessment/ or disease activity score/ or "severity of illness index"/
54	((disease* or illness* or addict* or disorder*) adj2 (severity* or classify* or classification*)).ti,ab.
55	((valid* or invalid* or crossvalid* or inaccurate* or inaccurac* or accurate* or accuracy* or reproducib* or invariance* or variance* or endors* or reliab* or unreliabl* or inconsisten* or consistency* or consistent*) adj3 (Test* or Question* or Survey* or Scale* or Index* or Indice* or Tool* or Rating* or Measure* or Classify* or Classification* or Instrument* or Profile* or Profiling* or Checklist* or Score* or Inventor* or Model* or Taxonom* or Brief*)).ti,ab.
56	((statistic* adj1 factor*) or (factor adj1 analys*)).ti,ab.
57	or/50-56
58	49 and 57
59	"SENSITIVITY AND SPECIFICITY"/
60	(sensitivity or specificity).ti,ab.
61	((pre test or pretest or post test or posttest) adj probability).ti,ab.
62	(predictive value* or PPV or NPV).ti,ab.
63	likelihood ratio*.ti,ab.
64	STATISTICAL MODEL/
65	(ROC curve* or AUC).ti,ab.
66	diagnos*.ti.
67	(diagnos* adj2 (performance* or accurac* or utilit* or value* or efficien* or effectiveness)).ab.
68	gold standard.ab.
69	*DIAGNOSTIC ACCURACY/ or DIAGNOSTIC TEST ACCURACY STUDY/
70	"international classification of diseases"/ or icd-10/ or icd-10-cm/ or icd-10-pcs/ or icd-11/
71	"diagnostic and statistical manual of mental disorders"/ or dsm-5/ or dsm-iv/ or dsm-iv-tr/
72	(International Classification adj2 Disease*).ti,ab.
73	"Statistical Manual of Mental Disorder*".ti,ab.
74	((icd or dsm) adj1 (code* or coding* or criteria* or diagnos* or classify* or classification*)).ti,ab.
75	(ICD10 or "ICD 10" or ICD11 or "ICD 11" or DSMIV or "DSM IV" or DSM4 or "DSM 4" or DSMV or "DSM V" or DSM5 or "DSM 5").ti,ab.
76	or/59-75
77	49 and 76
78	cohort analysis/
79	longitudinal study/
80	prospective study/
81	retrospective study/

#	Searches
82	follow up/
83	((follow up* or followup* or concurrent* or incidence* or population*) adj3 (study* or studies* or analy* or observation* or design* or method* or research*)).ti,ab.
84	(longitudinal* or prospective* or retrospective* or cohort*).ti,ab.
85	cross-sectional study/
86	((prevalence* or disease frequenc*) adj3 (study* or studies* or analy* or observation* or design* or method* or research*)).ti,ab.
87	cross sectional*.ti,ab.
88	or/78-87
89	49 and 88
90	systematic review/
91	meta-analysis/
92	(meta analy* or metanaly* or metaanaly*).ti,ab.
93	((systematic or evidence) adj2 (review* or overview*)).ti,ab.
94	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
95	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
96	(search* adj4 literature).ab.
97	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
98	((pool* or combined) adj2 (data or trials or studies or results)).ab.
99	cochrane.jw.
100	or/90-99
101	49 and 100
102	random*.ti,ab.
103	factorial*.ti,ab.
104	(crossover* or cross over*).ti,ab.
105	((doubl* or singl*) adj blind*).ti,ab.
106	(assign* or allocat* or volunteer* or placebo*).ti,ab.
107	crossover procedure/
108	single blind procedure/
109	randomized controlled trial/
110	double blind procedure/
111	or/102-110
112	49 and 111
113	58 or 77 or 89 or 101 or 112
114	limit 113 to english language
115	(letter.pt. or letter/ or note.pt. or editorial.pt. or case report/ or case study/ or (letter or comment*).ti.) not (randomized controlled trial/ or random*.ti,ab.)
116	114 not 115
117	(animal/ not human/) or nonhuman/ or exp Animal Experiment/ or exp Experimental Animal/ or animal model/ or exp Rodent/ or (rat or rats or mouse or mice).ti.
118	116 not 117
119	conference*.pt,su,so.
120	118 not 119
121	limit 120 to yr="2000 -Current"

Database: Epistemonikos

Date of last search: 03/11/2022

#	Searches
Search 1	title:(Gamble* OR gambling* OR betting OR bets OR wager* OR gaming*) AND title:(Psychometric* OR psychometry*) = 4 results
Search 2	title:(Gamble* OR gambling* OR betting OR bets OR wager* OR gaming*) AND title:((SOGS OR BBGS OR BPGS OR PGSI OR CSPG OR RSPG OR BAGS OR PPGM OR VGS OR CPGI OR CGT OR SCIGC OR "SCI GD" OR SGHS OR GA20 OR "GA 20" OR MAGS OR GBI OR SLUGS) = 2 results
Search 3	title:(Gamble* OR gambling* OR betting OR bets OR wager* OR gaming*) AND title:(Neuro* OR Psycho* OR Psychiatric* OR Personality* OR Personalities* OR Behavior* OR Behaviour* OR Severity* OR Acuity* OR Self Report* OR Cognitive* OR screen* OR assess* OR detect* OR identif* OR surveillance* OR disorder* OR pathological* or brief*) AND title:(Test* OR Question* OR Survey* OR Scale* OR Index*or Indice* OR Tool* OR Rating* OR Measure* OR Classify* OR Classification* OR Instrument* OR Profile* OR Profiling* OR Checklist* OR Score* OR Inventor* OR Model* OR Taxonom*)

#	Searches
	= 47 results
Search 4	title:(Gamble* OR gambling* OR betting OR bets OR wager* OR gaming*) AND title:(valid* OR crossvalid* OR invalid* OR inaccurate* OR inaccurac* OR accurate* OR accuracy* OR reproducib* OR invariance* OR variance* OR endors* OR reliab* OR unreliabl* OR inconsisten* OR consistency* OR consistent*) = 18 results
Search 5	title:(Gamble* OR gambling* OR betting OR bets OR wager* OR gaming*) AND title:(severity* or classify* or classification* or sensitivity* or specificity* or probability* or likelihood* or AUC or ROC or diagnosis* or diagnoses* or diagnosing* or predictive* or prediction* or ICD* or DSM* or PPV or NPV) = 21 results
Search 6	(title:(Gamble* OR gambling* OR betting OR bets OR wager* OR gaming*)) AND (title:(Case Finding* AND Help Assessment Tool*) OR title:(CHAT OR QUIP OR QUIPS OR NODS) OR title:(Questionnaire* AND Impulsive Compulsive Disorder* AND Parkinson*) OR title:(stop signal*) OR title:(Multiple Response*) OR title:(National Opinion Research Cent*))
Search 7	title:(South Oaks AND Gambl*) OR title:(One item screen* AND problem gambling*) OR title:(National Opinion Research Center* AND Diagnostic Screen* AND Gambling*) OR title:(NODSCLIP* OR NODSPERC*) OR title:(Lie* AND Bet* AND Questionnaire*) OR title:(LieBet* AND Questionnaire*) OR title:(Biosocial* AND Gambling Screen*) OR title:(Problem* AND Gambling Screen*) OR title:(Problem* AND Severity Index*) OR title:(Consumption Screen* AND Problem Gambling*) OR title:(Rapid Screener* AND Problem Gambling*) OR title:(Adolescent* AND Gambling Screen*) OR title:(Pathological* AND Gambling Measure*) OR title:(Victorian* AND Gambling Screen*) OR title:(Problem* AND Gambling Index*) OR title:(Canadian* AND Gambling Index*) OR title:(Cambridge* AND Gambling Task*) OR title:(Iowa* AND Gambling Task*) OR title:(Yale Brown* AND Obsessive Compulsive Scale* AND Pathologic* Gambling*) OR title:(PG-YBOCS* OR PGYBOCS*) OR title:(Structured Clinical Interview* AND Gambling Disorder*) OR title:(Gambling Harm* AND Screen*) OR title:(Gamblers* AND Anonymous* AND question*) OR title:(Massachusetts* AND Gambling Screen*) OR title:(Gambling AND Behavior* AND Interview*) OR title:(Gambling Treatment* AND Outcome* Monitoring* AND System*) OR title:(GAMTOMS* OR GAM TOMS*) OR title:(Laval* AND Gambling Screen*) OR title:(National Lottery* AND Screen* AND Loss*) OR title:(NLCLiP) OR title:(Gambling AND Behaviour* AND Interview*) OR title:(CANTAB AND Gambling Task*) = 53 results
Search 8	title:(Gamble* OR gambling* OR betting OR bets OR wager* OR gaming*) AND title:(longitudinal* or prospective* or retrospective* or cohort* or concurrent* or incidence* or prevalence* or cross sectional*) = 1 result

Database: Health Information Management Consortium (HMIC)

Date of last search: 03/11/2022

#	Searches
1	(gambl* or betting or bets or wager* or pokies or pokey or puggy or fruities or loot box* or lootbox*).ti,ab.
2	(gambl* or betting or bets or wager* or pokies or pokey or puggy or fruities or loot box* or lootbox*).hw.
3	((gaming or gambling or slot or fruit or poker or lottery or lotteries) adj5 (machine? or terminal?)).ti,ab.
4	((gaming or gambling or slot or fruit or poker or lottery or lotteries) and (machine? or terminal?)).hw.
5	((dice or card? or roulette or blackjack or poker or baccarat or crap or craps or keno or casino? or bingo or bookmaker? or book maker? or bookie? or lottery or lotteries or lotto or scratch card? or scratchcard? or raffle or raffles or sweepstak* or amusement arcade? or slot?) adj5 (money or monetization or monetisation or monetary or currency or currencies or cryptocurrency or cryptocurrencies or reward* or win or wins or winning* or loss or losses or lose)).ti,ab.
6	((dice or card? or roulette or blackjack or poker or baccarat or crap or craps or keno or casino? or bingo or bookmaker? or book maker? or bookie? or lottery or lotteries or lotto or scratch card? or scratchcard? or raffle or raffles or sweepstak* or amusement arcade? or slot?) and (money or monetization or monetisation or monetary or currency or currencies or cryptocurrency or cryptocurrencies or reward* or win or wins or winning* or loss or losses or lose)).hw.
7	((game or games or gaming or gamer?) adj5 (money or monetization or monetisation or monetary)).ti,ab.
8	((game or games or gaming or gamer?) and (money or monetization or monetisation or monetary)).hw.
9	or/1-8
10	(Psychometric* or psychometry*).ti,ab.
11	(Psychometric* or psychometry*).hw.
12	((Neuro* or Psycho* or Psychiatric* or Personality* or Personalities* or Behavior* or Behaviour* or Severity* or Acuity* or Acuities* or Self Report* or Cognitive* or screen* or assess* or detect* or identif* or surveillance* or disorder* or pathological* or brief*) adj3 (Test* or Question* or Survey* or Scale* or Index* or Indice* or Tool* or Rating* or Measure* or Classify* or Classification* or Instrument* or Profile* or Profiling* or Checklist* or Score* or Inventor* or Model* or Taxonom*)).ti,ab.
13	((Neuro* or Psycho* or Psychiatric* or Personality* or Personalities* or Behavior* or Behaviour* or Severity* or Acuity* or Acuities* or Self Report* or Cognitive* or screen* or assess* or detect* or identif* or surveillance* or disorder* or pathological* or brief*) and (Test* or Question* or Survey* or Scale* or Index* or Indice* or Tool* or

50

#	Searches
	Rating* or Measure* or Classify* or Classification* or Instrument* or Profile* or Profiling* or Checklist* or Score* or Inventor* or Model* or Taxonom*)).hw.
14	or/10-13
15	9 and 14
16	(South Oaks adj2 Gambl*).ti,ab.
17	(One item screen* adj2 problem gambling*).ti,ab.
18	((National Opinion Research Center* adj2 Diagnostic Screen* adj2 Gambling*) or (NODSCLIP* or NODS CLIP* or NODSPERC* or NODS PERC*)).ti,ab.
19	((Lie* adj2 Bet* adj2 Questionnaire*) or (LieBet* adj2 Questionnaire*)).ti,ab.
20	(Biosocial* adj2 Gambling Screen*).ti,ab.
21	(Problem* adj2 Gambling Screen*).ti,ab.
22	(Problem* adj2 Severity Index*).ti,ab.
23	(Consumption Screen* adj2 Problem Gambling*).ti,ab.
24	(Rapid Screener* adj2 Problem Gambling*).ti,ab.
25	(Adolescent* adj2 Gambling Screen*).ti,ab.
26	(Pathological* adj2 Gambling Measure*).ti,ab.
27	(Victorian* adj2 Gambling Screen*).ti,ab.
28	(Problem* adj2 Gambling Index*).ti,ab.
29	(Canadian* adj3 Gambling Index*).ti,ab.
30	((Cambridge* or CANTAB) adj2 Gambling Task*).ti,ab.
31	(Iowa* adj2 Gambling Task*).ti,ab.
32	((Yale Brown* adj2 Obsessive Compulsive Scale* adj5 Pathologic* Gambling*) or (PG-YBOCS* or PGYBOCS*)).ti,ab.
33	(Structured Clinical Interview* adj2 Gambling Disorder*).ti,ab.
34	(Gambling Harm* adj2 Screen*).ti,ab.
35	(Gamblers* adj1 Anonymous* adj2 question*).ti,ab.
36	(Massachusetts* adj2 Gambling Screen*).ti,ab.
37	(Gambling adj2 (Behavior* or Behaviour*) adj2 Interview*).ti,ab.
38	((Gambling Treatment* adj2 Outcome* Monitoring* adj2 System*) or (GAMTOMS* or GAM TOMS*)).ti,ab.
39	((Laval* or Universities*) adj2 Gambling Screen*).ti,ab.
40	((National Lottery* adj2 Screen* adj2 Loss*) or NLCLiP).ti,ab.
41	or/16-40
42	(SOGS or BBGS or BPGS or PGSI or CSPG or RSPG or BAGS or PPGM or VGS or CPGI or CGT or SCIGC or "SCI GD" or SGHS or GA20 or "GA 20" or MAGS or GBI or SLUGS).ti,ab.
43	((Case Finding* adj2 Help Assessment Tool*) or CHAT).ti,ab.
44	((Questionnaire* adj2 Impulsive Compulsive Disorder* adj2 Parkinson*) or (QUIP or QUIPS)).ti,ab.
45	((((cambridge* or cantab*) adj2 stop signal*) or (stop signal* adj2 test*) or (stop signal* adj2 reaction time*)).ti,ab.
46	((((DSM* or "Statistical Manual of Mental Disorder*") adj2 Multiple Response*) or (DSMIVMR or "DSM IV MR" or "DSMIV MR" or DSM4MR or "DSM 4 MR" or "DSM4 MR" or DSMVMR or "DSM V MR" or "DSMV MR" or DSM5MR or "DSM 5 MR" or "DSM5 MR")).ti,ab.
47	((National Opinion Research Cent* adj2 DSM* adj2 Screen*) or NODS).ti,ab.
48	or/42-47
49	9 and 48
50	(South Oaks and Gambl*).hw.
51	(One item screen* and problem gambling*).hw.
52	((National Opinion Research Center* and Diagnostic Screen* and Gambling*) or (NODSCLIP* or NODS CLIP* or NODSPERC* or NODS PERC*)).hw.
53	((Lie* and Bet* and Questionnaire*) or (LieBet* and Questionnaire*)).hw.
54	(Biosocial* and Gambling Screen*).hw.
55	(Problem* and Gambling Screen*).hw.
56	(Problem* and Severity Index*).hw.
57	(Consumption Screen* and Problem Gambling*).hw.
58	(Rapid Screener* and Problem Gambling*).hw.
59	(Adolescent* and Gambling Screen*).hw.
60	(Pathological* and Gambling Measure*).hw.
61	(Victorian* and Gambling Screen*).hw.
62	(Problem* and Gambling Index*).hw.
63	(Canadian* and Gambling Index*).hw.
64	((Cambridge* or CANTAB) and Gambling Task*).hw.
65	(Iowa* and Gambling Task*).hw.
66	((Yale Brown* and Obsessive Compulsive Scale* and Pathologic Gambling*) or (PG-YBOCS* or PGYBOCS*)).hw.
67	(Structured Clinical Interview* and Gambling Disorder*).hw.
68	(Gambling Harm* and Screen*).hw.

#	Searches
69	(Gamblers* and Anonymous* and question*).hw.
70	(Massachusetts* and Gambling Screen*).hw.
71	(Gambling and (Behavior* or Behaviour*) and Interview*).hw.
72	((Gambling Treatment* and Outcome* Monitoring* and System*) or (GAMTOMS* or GAM TOMS*)).hw.
73	((Laval* or Universities*) and Gambling Screen*).hw.
74	((National Lottery* and Screen* and Loss*) or NLCLiP).hw.
75	or/50-74
76	(SOGS or BBGS or BPGS or PGSI or CSPG or RSPG or BAGS or PPGM or VGS or CPGI or CGT or SCIGC or "SCI GD" or SGHS or GA20 or "GA 20" or MAGS or GBI or SLUGS).hw.
77	((Case Finding* and Help Assessment Tool*) or CHAT).hw.
78	((Questionnaire* and Impulsive Compulsive Disorder* and Parkinson*) or (QUIP or QUIPS)).hw.
79	(((cambridge* or cantab*) and stop signal*) or (stop signal* and test*) or (stop signal* and reaction time*)).hw.
80	(((DSM* or "Statistical Manual of Mental Disorder*") and Multiple Response*) or (DSMIVMR or "DSM IV MR" or "DSMIV MR" or DSM4MR or "DSM 4 MR" or "DSM4 MR" or DSMVMR or "DSM V MR" or "DSMV MR" or DSM5MR or "DSM 5 MR" or "DSM5 MR")).hw.
81	((National Opinion Research Cent* and DSM* and Screen*) or NODS).hw.
82	or/76-81
83	82 and 9
84	15 or 41 or 49 or 75 or 83
85	limit 84 to yr="2000 -Current"

Database: International Health Technology Assessment Database (INAHTA)

Date of last search: 03/11/2022

1	"Gambling"[mh]
2	(betting or bets)[abs]
3	(betting or bets)[title]
4	(dice or "card game" or "card games" or roulette or blackjack or poker or baccarat or crap or craps or keno or casino or casinos or bingo or bookmaker* or "book maker" or "book makers" or bookie* or lottery or lotteries or lotto or "scratch card" or "scratch cards" or scratchcard* or raffle or raffles or sweepstak* or "amusement arcade" or "amusement arcades" or "slot machine" or "slot machines" or cryptocurrenc*)[abs]
5	(dice or "card game" or "card games" or roulette or blackjack or poker or baccarat or crap or craps or keno or casino or casinos or bingo or bookmaker* or "book maker" or "book makers" or bookie* or lottery or lotteries or lotto or "scratch card" or "scratch cards" or scratchcard* or raffle or raffles or sweepstak* or "amusement arcade" or "amusement arcades" or "slot machine" or "slot machines" or cryptocurrenc*)[title]
6	(gambl*)[abs]
7	(gambl*)[title]
8	(gaming or gamer or gamers)[abs]
9	(gaming or gamer or gamers)[title]
10	(loot box* or lootbox*)[abs]
11	(loot box* or lootbox*)[title]
12	(pokies or pokey or puggy or fruities)[abs]
13	(pokies or pokey or puggy or fruities)[title]
14	(wager*)[abs]
15	(wager*)[title]
16	#15 OR #14 OR #13 OR #12 OR #11 OR #10 OR #9 OR #8 OR #7 OR #6 OR #5 OR #4 OR #3 OR #2 OR #1
17	* FROM 2000 TO 2022
18	#17 and #16

Database: MEDLINE ALL

Date of last search: 03/11/2022

#	Searches
1	GAMBLING/
2	(gambl* or betting or bets or wager* or pokies or pokey or puggy or fruities or loot box* or lootbox*).ti,ab.
3	((gaming or gambling or slot or fruit or poker or lottery or lotteries) adj5 (machine? or terminal?)).ti,ab.
4	((dice or card? or roulette or blackjack or poker or baccarat or crap or craps or keno or casino? or bingo or bookmaker? or book maker? or bookie? or lottery or lotteries or lotto or scratch card? or scratchcard? or raffle or raffles or sweepstak* or amusement arcade? or slot?) adj5 (money or monetization or monetisation or monetary or currency or currencies or cryptocurrency or cryptocurrencies or reward* or win or wins or winning* or loss or losses or lose)).ti,ab.

#	Searches
5	((game or games or gaming or gamer?) adj5 (money or monetization or monetisation or monetary)).ti,ab.
6	or/1-5
7	psychological tests/ or behavior rating scale/ or neuropsychological tests/ or psychiatric status rating scales/ or brief psychiatric rating scale/ or patient health questionnaire/ or Personality Tests/ or personality inventory/ or psychometrics/
8	"surveys and questionnaires"/ or self report/ or patient acuity/ or health surveys/
9	Mass screening/ or exp population surveillance/
10	(Psychometric* or psychometry*).ti,ab.
11	((Neuro* or Psycho* or Psychiatric* or Personality* or Personalities* or Behavior* or Behaviour* or Severity* or Acuity* or Acuities* or Self Report* or Cognitive* or screen* or assess* or detect* or identif* or surveillance* or disorder* or pathological* or brief*) adj3 (Test* or Question* or Survey* or Scale* or Index* or Indice* or Tool* or Rating* or Measure* or Classify* or Classification* or Instrument* or Profile* or Profiling* or Checklist* or Score* or Inventor* or Model* or Taxonom*)).ti,ab.
12	or/7-11
13	6 and 12
14	(South Oaks adj2 Gambl*).ti,ab.
15	(One item screen* adj2 problem gambling*).ti,ab.
16	((National Opinion Research Center* adj2 Diagnostic Screen* adj2 Gambling*) or (NODSCLIP* or NODS CLIP* or NODSPERC* or NODS PERC*)).ti,ab.
17	((Lie* adj2 Bet* adj2 Questionnaire*) or (LieBet* adj2 Questionnaire*)).ti,ab.
18	(Biosocial* adj2 Gambling Screen*).ti,ab.
19	(Problem* adj2 Gambling Screen*).ti,ab.
20	(Problem* adj2 Severity Index*).ti,ab.
21	(Consumption Screen* adj2 Problem Gambling*).ti,ab.
22	(Rapid Screener* adj2 Problem Gambling*).ti,ab.
23	(Adolescent* adj2 Gambling Screen*).ti,ab.
24	(Pathological* adj2 Gambling Measure*).ti,ab.
25	(Victorian* adj2 Gambling Screen*).ti,ab.
26	(Problem* adj2 Gambling Index*).ti,ab.
27	(Canadian* adj3 Gambling Index*).ti,ab.
28	((Cambridge* or CANTAB) adj2 Gambling Task*).ti,ab.
29	(Iowa* adj2 Gambling Task*).ti,ab.
30	((Yale Brown* adj2 Obsessive Compulsive Scale* adj5 Pathologic* Gambling*) or (PG-YBOCS* or PGYBOCS*)).ti,ab.
31	(Structured Clinical Interview* adj2 Gambling Disorder*).ti,ab.
32	(Gambling Harm* adj2 Screen*).ti,ab.
33	(Gamblers* adj1 Anonymous* adj2 question*).ti,ab.
34	(Massachusetts* adj2 Gambling Screen*).ti,ab.
35	(Gambling adj2 (Behavior* or Behaviour*) adj2 Interview*).ti,ab.
36	((Gambling Treatment* adj2 Outcome* Monitoring* adj2 System*) or (GAMTOMS* or GAM TOMS*)).ti,ab.
37	((Laval* or Universities*) adj2 Gambling Screen*).ti,ab.
38	((National Lottery* adj2 Screen* adj2 Loss*) or NLCLiP).ti,ab.
39	or/14-38
40	(SOGS or BBGS or BPGS or PGSI or CSPG or RSPG or BAGS or PPGM or VGS or CPGI or CGT or SCIGC or "SCI GD" or SGHS or GA20 or "GA 20" or MAGS or GBI or SLUGS).ti,ab.
41	((Case Finding* adj2 Help Assessment Tool*) or CHAT).ti,ab.
42	((Questionnaire* adj2 Impulsive Compulsive Disorder* adj2 Parkinson*) or (QUIP or QUIPS)).ti,ab.
43	(((cambridge* or cantab*) adj2 stop signal*) or (stop signal* adj2 test*) or (stop signal* adj2 reaction time*)).ti,ab.
44	((((DSM* or "Statistical Manual of Mental Disorder*") adj2 Multiple Response*) or (DSMIVMR or "DSM IV MR" or "DSMIV MR" or DSM4MR or "DSM 4 MR" or "DSM4 MR" or DSMVMR or "DSM V MR" or "DSMV MR" or DSM5MR or "DSM 5 MR" or "DSM5 MR")).ti,ab.
45	((National Opinion Research Cent* adj2 DSM* adj2 Screen*) or NODS).ti,ab.
46	or/40-45
47	6 and 46
48	13 or 39 or 47
49	Validation Study/
50	exp Reproducibility of Results/
51	Factor Analysis, Statistical/
52	"severity of illness index"/
53	((disease* or illness* or addict* or disorder*) adj2 (severity* or classify* or classification*)).ti,ab.
54	((valid* or invalid* or crossvalid* or inaccurate* or inaccurac* or accurate* or accuracy* or reproducib* or invariance* or variance* or endors* or reliab* or unreliabl* or inconsisten* or consistency* or consistent*) adj3 (Test* or Question* or Survey* or Scale* or Index* or Indice* or Tool* or Rating* or Measure* or Classify* or

#	Searches
	Classification* or Instrument* or Profile* or Profiling* or Checklist* or Score* or Inventor* or Model* or Taxonom* or Brief*)).ti,ab.
55	((statistic* adj1 factor*) or (factor adj1 analys*)).ti,ab.
56	or/49-55
57	48 and 56
58	exp "SENSITIVITY AND SPECIFICITY"/
59	(sensitivity* or specificity*).ti,ab.
60	((pre test or pretest or post test or posttest) adj probability).ti,ab.
61	likelihood ratio*.ti,ab.
62	LIKELIHOOD FUNCTIONS/
63	(ROC curve* or AUC).ti,ab.
64	(predictive value* or PPV or NPV).ti,ab.
65	diagnos*.ti.
66	(diagnos* adj2 (performance* or accurac* or utilit* or value* or efficien* or effectiveness)).ab.
67	gold standard.ab.
68	di.fs.
69	International Classification of Diseases/
70	"Diagnostic and Statistical Manual of Mental Disorders"/
71	(International Classification adj2 Disease*).ti,ab.
72	"Statistical Manual of Mental Disorder*".ti,ab.
73	((icd or dsm) adj1 (code* or coding* or criteria* or diagnos* or classify* or classification*)).ti,ab.
74	(ICD10 or "ICD 10" or ICD11 or "ICD 11" or DSMIV or "DSM IV" or DSM4 or "DSM 4" or DSMV or "DSM V" or DSM5 or "DSM 5").ti,ab.
75	or/58-74
76	48 and 75
77	exp Cohort studies/
78	((follow up* or followup* or concurrent* or incidence* or population*) adj3 (study* or studies* or analy* or observation* or design* or method* or research*)).ti,ab.
79	(longitudinal* or prospective* or retrospective* or cohort*).ti,ab.
80	Cross-Sectional Studies/
81	((prevalence* or disease frequenc*) adj3 (study* or studies* or analy* or observation* or design* or method* or research*)).ti,ab.
82	cross sectional*.ti,ab.
83	or/77-82
84	48 and 83
85	Meta-Analysis/
86	Meta-Analysis as Topic/
87	(meta analy* or metanaly* or metaanaly*).ti,ab.
88	((systematic* or evidence*) adj2 (review* or overview*)).ti,ab.
89	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
90	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
91	(search* adj4 literature).ab.
92	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
93	cochrane.jw.
94	or/85-93
95	48 and 94
96	randomized controlled trial.pt.
97	controlled clinical trial.pt.
98	pragmatic clinical trial.pt.
99	randomi#ed.ab.
100	placebo.ab.
101	randomly.ab.
102	Clinical Trials as topic/
103	trial.ti.
104	or/96-103
105	48 and 104
106	57 or 76 or 84 or 95 or 105
107	limit 106 to english language
108	(letter/ or editorial/ or news/ or exp historical article/ or anecdotes as topic/ or comment/ or case report/ or (letter or comment*).ti.) not (randomized controlled trial/ or random*.ti,ab.)
109	107 not 108
110	(animals/ not humans/) or exp Animals, Laboratory/ or exp Animal Experimentation/ or exp Models, Animal/ or exp Rodentia/ or (rat or rats or mouse or mice).ti.

54

#	Searches
111	109 not 110
112	limit 111 to yr="2000 -Current"

Database: PsycInfo

Date of last search: 03/11/2022

#	Searches
1	GAMBLING/
2	GAMBLING DISORDER/
3	(gambl* or betting or bets or wager* or pokies or pokey or puggy or fruities or loot box* or lootbox*).ti,ab.
4	((gaming or gambling or slot or fruit or poker or lottery or lotteries) adj5 (machine? or terminal?)).ti,ab.
5	((dice or card? or roulette or blackjack or poker or baccarat or crap or craps or keno or casino? or bingo or bookmaker? or book maker? or bookie? or lottery or lotteries or lotto or scratch card? or scratchcard? or raffle or raffles or sweepstak* or amusement arcade? or slot?) adj5 (money or monetization or monetisation or monetary or currency or currencies or cryptocurrency or cryptocurrencies or reward* or win or wins or winning* or loss or losses or lose)).ti,ab.
6	((game or games or gaming or gamer?) adj5 (money or monetization or monetisation or monetary)).ti,ab.
7	or/1-6
8	psychological assessment/ or behavioral assessment/ or cognitive assessment/ or health psychology assessment/ or "mental health and illness assessment"/ or neuropsychological assessment/ or personality measures/ or psychosocial assessment/ or rating scales/ or exp screening tests/ or psychometrics/
9	surveys/ or mail surveys/ or telephone surveys/ or online surveys/ or questionnaires/ or general health questionnaire/ or self-report/
10	health screening/ or disease screening/ or disease surveillance/
11	(Psychometric* or psychometry*).ti,ab.
12	((Neuro* or Psycho* or Psychiatric* or Personality* or Personalities* or Behavior* or Behaviour* or Severity* or Acuity* or Acuities* or Self Report* or Cognitive* or screen* or assess* or detect* or identif* or surveillance* or disorder* or pathological* or brief*) adj3 (Test* or Question* or Survey* or Scale* or Index* or Indice* or Tool* or Rating* or Measure* or Classify* or Classification* or Instrument* or Profile* or Profiling* or Checklist* or Score* or Inventor* or Model* or Taxonom*)).ti,ab.
13	or/8-12
14	7 and 13
15	(South Oaks adj2 Gambl*).ti,ab.
16	(One item screen* adj2 problem gambling*).ti,ab.
17	((National Opinion Research Center* adj2 Diagnostic Screen* adj2 Gambling*) or (NODSCLIP* or NODS CLIP* or NODSPERC* or NODS PERC*)).ti,ab.
18	((Lie* adj2 Bet* adj2 Questionnaire*) or (LieBet* adj2 Questionnaire*)).ti,ab.
19	(Biosocial* adj2 Gambling Screen*).ti,ab.
20	(Problem* adj2 Gambling Screen*).ti,ab.
21	(Problem* adj2 Severity Index*).ti,ab.
22	(Consumption Screen* adj2 Problem Gambling*).ti,ab.
23	(Rapid Screener* adj2 Problem Gambling*).ti,ab.
24	(Adolescent* adj2 Gambling Screen*).ti,ab.
25	(Pathological* adj2 Gambling Measure*).ti,ab.
26	(Victorian* adj2 Gambling Screen*).ti,ab.
27	(Problem* adj2 Gambling Index*).ti,ab.
28	(Canadian* adj3 Gambling Index*).ti,ab.
29	((Cambridge* or CANTAB) adj2 Gambling Task*).ti,ab.
30	(Iowa* adj2 Gambling Task*).ti,ab.
31	((Yale Brown* adj2 Obsessive Compulsive Scale* adj5 Pathologic* Gambling*) or (PG-YBOCS* or PGYBOCS*)).ti,ab.
32	(Structured Clinical Interview* adj2 Gambling Disorder*).ti,ab.
33	(Gambling Harm* adj2 Screen*).ti,ab.
34	(Gamblers* adj1 Anonymous* adj2 question*).ti,ab.
35	(Massachusetts* adj2 Gambling Screen*).ti,ab.
36	(Gambling adj2 (Behavior* or Behaviour*) adj2 Interview*).ti,ab.
37	((Gambling Treatment* adj2 Outcome* Monitoring* adj2 System*) or (GAMTOMS* or GAM TOMS*)).ti,ab.
38	((Laval* or Universities*) adj2 Gambling Screen*).ti,ab.
39	((National Lottery* adj2 Screen* adj2 Loss*) or NLCLiP).ti,ab.
40	or/15-39
41	(SOGS or BBGS or BPGS or PGSI or CSPG or RSPG or BAGS or PPGM or VGS or CPGI or CGT or SCIGC or "SCI GD" or SGHS or GA20 or "GA 20" or MAGS or GBI or SLUGS).ti,ab.
42	((Case Finding* adj2 Help Assessment Tool*) or CHAT).ti,ab.

#	Searches
43	((Questionnaire* adj2 Impulsive Compulsive Disorder* adj2 Parkinson*) or (QUIP or QUIPS)).ti,ab.
44	(((cambridge* or cantab*) adj2 stop signal*) or (stop signal* adj2 test*) or (stop signal* adj2 reaction time*)).ti,ab.
45	(((DSM* or "Statistical Manual of Mental Disorder*") adj2 Multiple Response*) or (DSMIVMR or "DSM IV MR" or "DSMIV MR" or DSM4MR or "DSM 4 MR" or "DSM4 MR" or DSMVMR or "DSM V MR" or "DSMV MR" or DSM5MR or "DSM 5 MR" or "DSM5 MR")).ti,ab.
46	((National Opinion Research Cent* adj2 DSM* adj2 Screen*) or NODS).ti,ab.
47	or/41-46
48	7 and 47
49	14 or 40 or 48
50	exp test validity/ or external validity/ or internal validity/ or variability measurement/ or "Predictability (Measurement)"/
51	exp test reliability/
52	exp factor analysis/
53	"severity (disorders)"/
54	((disease* or illness* or addict* or disorder*) adj2 (severity* or classify* or classification*)).ti,ab.
55	((valid* or invalid* or crossvalid* or inaccurate* or inaccurac* or accurate* or accuracy* or reproducib* or invariance* or variance* or endors* or reliab* or unreliabl* or inconsisten* or consistency* or consistent*) adj3 (Test* or Question* or Survey* or Scale* or Index* or Indice* or Tool* or Rating* or Measure* or Classify* or Classification* or Instrument* or Profile* or Profiling* or Checklist* or Score* or Inventor* or Model* or Taxonom* or Brief*)).ti,ab.
56	((statistic* adj1 factor*) or (factor adj1 analys*)).ti,ab.
57	or/50-56
58	49 and 57
59	TEST SENSITIVITY/
60	TEST SPECIFICITY/
61	MAXIMUM LIKELIHOOD/
62	(sensitivity or specificity).ti,ab.
63	((pre test or pretest or post test or posttest) adj probability).ti,ab.
64	(predictive value* or PPV or NPV).ti,ab.
65	likelihood ratio*.ti,ab.
66	(ROC curve* or AUC).ti,ab.
67	diagnos*.ti.
68	(diagnos* adj2 (performance* or accurac* or utilit* or value* or efficien* or effectiveness)).ti,ab.
69	gold standard.ab.
70	"international classification of diseases"/
71	"diagnostic and statistical manual"/
72	(International Classification adj2 Disease*).ti,ab.
73	"Statistical Manual of Mental Disorder*".ti,ab.
74	((icd or dsm) adj1 (code* or coding* or criteria* or diagnos* or classify* or classification*)).ti,ab.
75	(ICD10 or "ICD 10" or ICD11 or "ICD 11" or DSMIV or "DSM IV" or DSM4 or "DSM 4" or DSMV or "DSM V" or DSM5 or "DSM 5").ti,ab.
76	or/59-75
77	49 and 76
78	cohort analysis/
79	longitudinal studies/
80	prospective studies/
81	retrospective studies/
82	followup studies/
83	(longitudinal study or followup study or prospective study or retrospective study).md.
84	((follow up* or followup* or concurrent* or incidence* or population*) adj3 (study* or studies* or analy* or observation* or design* or method* or research*)).ti,ab.
85	(longitudinal* or prospective* or retrospective* or cohort*).ti,ab.
86	((prevalence* or disease frequenc*) adj3 (study* or studies* or analy* or observation* or design* or method* or research*)).ti,ab.
87	cross sectional*.ti,ab.
88	or/78-87
89	49 and 88
90	(meta analysis or "systematic review").md.
91	META ANALYSIS/
92	SYSTEMATIC REVIEW/
93	(meta analy* or metanaly* or metaanaly*).ti,ab.
94	((systematic* or evidence*) adj2 (review* or overview*)).ti,ab.
95	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
96	(search strategy or search criteria or systematic search or study selection or data extraction).ab.

#	Searches
97	(search* adj4 literature).ab.
98	cochrane.jw.
99	((pool* or combined) adj2 (data or trials or studies or results)).ab.
100	(medline or pubmed or cochrane or embase or psychlit or psyclit or cinahl or science citation index or bids or cancerlit).ab.
101	or/90-100
102	49 and 101
103	clinical trial.md.
104	Clinical trials/
105	Randomized controlled trials/
106	Randomized clinical trials/
107	assign*.ti,ab.
108	allocat*.ti,ab.
109	crossover*.ti,ab.
110	cross over*.ti,ab.
111	((doubl* or singl*) adj blind*).ti,ab.
112	factorial*.ti,ab.
113	placebo*.ti,ab.
114	random*.ti,ab.
115	volunteer*.ti,ab.
116	trial?.ti,ab.
117	or/103-116
118	49 and 117
119	58 or 77 or 89 or 102 or 118
120	limit 119 to english language
121	((letter or editorial or comment reply).dt. or case report/ or (letter or comment*).ti.) not (exp randomized controlled trial/ or random*.ti,ab.)
122	120 not 121
123	animal.po. or (rat or rats or mouse or mice).ti.
124	122 not 123
125	dissertation*.pt.
126	124 not 125
127	limit 126 to yr="2000 -Current"

Database: Social Care Online

Date of last search: 03/11/2022

#	Search Query
Search 1	All fields(Gamble* OR gambling* OR betting OR bets OR wager* OR gaming*) AND All fields:(Psychometric* OR psychometry* OR SOGS OR BBGS OR BPGS OR PGSI OR CSPG OR RSPG OR BAGS OR PPGM OR VGS OR CPGI OR CGT OR SCIGC OR "SCI GD" OR SGHS OR GA20 OR "GA 20" OR MAGS OR GBI OR SLUGS OR Test* OR Question* OR Survey* OR Scale* OR Index*or Indice* OR Tool* OR Rating* OR Measure* OR Classify* OR Classification* OR Instrument* OR Profile* OR Profiling* OR Checklist* OR Score* OR Inventor* OR Model* OR Taxonom* OR brief* OR valid* OR crossvalid* OR invalid* OR inaccurate* OR inaccurac* OR accurate* OR accuracy* OR reproducib* OR invariance* OR variance* OR endors* OR reliab* OR unreliabl* OR inconsisten* OR consistency* OR consistent* OR valid* OR crossvalid* OR invalid* OR inaccurate* OR inaccurac* OR accurate* OR accuracy* OR reproducib* OR invariance* OR variance* OR endors* OR reliab* OR unreliabl* OR inconsisten* OR consistency* OR consistent* OR severity* OR classify* OR classification* OR sensitivity* OR specificity* OR probability* OR likelihood* OR AUC OR ROC OR diagnosis* OR diagnoses* OR diagnosing* OR predictive* OR prediction* OR ICD* OR DSM* OR PPV OR NPV OR screen* OR surveillance* OR south oaks OR iowa* OR NODSCLIP* OR NODSPERC* OR Yale OR PG-YBOCS* OR PGYBOCS* OR Gamblers* Anonymous OR Massachusetts* OR GAMTOMS* OR GAM TOMS* OR Laval* OR NLCLiP OR CANTAB OR Case Finding* OR CHAT OR QUIP OR QUIPS OR NODS) AND Publication year: 2000-2022 = 14 results
Search 2	Subject term("Gambling") AND All fields:(Psychometric* OR psychometry* OR SOGS OR BBGS OR BPGS OR PGSI OR CSPG OR RSPG OR BAGS OR PPGM OR VGS OR CPGI OR CGT OR SCIGC OR "SCI GD" OR SGHS OR GA20 OR "GA 20" OR MAGS OR GBI OR SLUGS OR Test* OR Question* OR Survey* OR Scale* OR Index*or Indice* OR Tool* OR Rating* OR Measure* OR Classify* OR Classification* OR Instrument* OR Profile* OR Profiling* OR Checklist* OR Score* OR Inventor* OR Model* OR Taxonom* OR brief* OR valid* OR crossvalid* OR invalid*

#	Search Query
	OR inaccurac* OR inaccurac* OR accurate* OR accuracy* OR reproducib* OR invariance* OR variance* OR endors* OR reliab* OR unreliabl* OR inconsisten* OR consistency* OR consistent* OR valid* OR crossvalid* OR invalid* OR inaccurate* OR inaccurac* OR accurate* OR accuracy* OR reproducib* OR invariance* OR variance* OR endors* OR reliab* OR unreliabl* OR inconsisten* OR consistency* OR consistent* OR severity* OR classify* OR classification* OR sensitivity* OR specificity* OR probability* OR likelihood* OR AUC OR ROC OR diagnosis* OR diagnoses* OR diagnosing* OR predictive* OR prediction* OR ICD* OR DSM* OR PPV OR NPV OR screen* OR surveillance* OR south oaks OR iowa* OR NODSCLIP* OR NODSPERC* OR Yale OR PG-YBOCS* OR PGYBOCS* OR Gamblers* Anonymous OR Massachusetts* OR GAMTOMS* OR GAM TOMS* OR Laval* OR NLCLiP OR CANTAB OR Case Finding* OR CHAT OR QUIP OR QUIPS OR NODS) AND Publication year: 2000-2022 =21 results

Database: Social Science Citation Index (SSCI)

Date of last search: 03/11/2022

#	Search Query
1	TI=(Gamble* or gambling* or betting or bets or wager* or "gaming machine" or "slot machine" or "fruit machine" or "poker machine" or "lottery machine" or "lotteries machine" or "gaming terminal" or "slot terminal" or "fruit terminal" or "poker terminal" or "lottery terminal" or "lotteries terminal" or "gaming machines" or "slot machines" or "fruit machines" or "poker machines" or "lottery machines" or "lotteries machines" or "gaming terminals" or "slot terminals" or "fruit terminals" or "poker terminals" or "lottery terminals" or "lotteries terminals" or pokies or pokey or puggy or fruities or "loot box" or "loot boxes" or lootbox* or roulette or blackjack or poker or baccarat or crap or craps or keno or casino* or bingo* or "scratch cards" or "scratch card" or scratchcard or "amusement arcade" or "amusement arcades" or cryptocurrency* or cryptocurrencies)
2	TI=(Psychometric* or psychometry*)
3	TI=(SOGS or BBGS or BPGS or PGSI or CSPG or RSPG or BAGS or PPGM or VGS or CPGI or CGT or SCIGC or "SCI GD" or SGHS or GA20 or "GA 20" or MAGS or GBI or SLUGS)
4	TI=(Neuro* or Psycho* or Psychiatric* or Personality* or Personalities* or Behavior* or Behaviour* or Severity* or Acuity* or Acuities* or Self Report* or Cognitive* or screen* or assess* or detect* or identif* or surveillance* or disorder* or pathological* or brief*) AND TI=(Test* or Question* or Survey* or Scale* or Index*or Indice* or Tool* or Rating* or Measure* or Classify* or Classification* or Instrument* or Profile* or Profiling* or Checklist* or Score* or Inventor* or Model* or Taxonom*)
5	TI=(Case Finding NEAR/2 Help Assessment Tool) or TI=(Questionnaire NEAR/2 Impulsive Compulsive Disorder NEAR/2 Parkinson) or TI=(QUIP or QUIPS) OR TI=((cambridge or cantab) NEAR/2 stop signal) or TI=(stop signal NEAR/2 test) or TI=(stop signal NEAR/2 reaction time) OR TI=(National Opinion Research Cent* NEAR/2 DSM* NEAR/2 Screen*) or TI=(NODS)
6	#2 OR #3 OR #4 OR #5
7	#6 AND #1
8	TI=(South Oaks NEAR/2 Gambl*) OR TI=(One item screen* NEAR/2 problem gambling) OR TI=(National Opinion Research Center* NEAR/2 Diagnostic Screen* NEAR/2 Gambling) or TI=(NODSCLIP* or NODS CLIP* or NODSPERC* or NODS PERC*) OR TI=(Lie NEAR/2 Bet NEAR/2 Questionnaire*) OR TI=(LieBet NEAR/2 Questionnaire*) OR TI=(Biosocial* NEAR/2 Gambling Screen*) OR TI=(Problem* NEAR/2 Gambling Screen*) OR TI=(Problem* NEAR/2 Severity Index*) OR TI=(Consumption Screen* NEAR/2 Problem Gambling) OR TI=(Rapid Screener* NEAR/2 Problem Gambling) OR TI=(Adolescent* NEAR/2 Gambling Screen*) OR TI=(Pathological* NEAR/2 Gambling Measure*) OR TI=(Victorian NEAR/2 Gambling Screen*) OR TI=(Problem* NEAR/2 Gambling Index*) OR TI=(Canadian* NEAR/3 Gambling Index*) OR TI=((Cambridge* or CANTAB) NEAR/2 Gambling Task*) OR TI=(Iowa NEAR/2 Gambling Task*) OR TI=(Yale Brown NEAR/2 Obsessive Compulsive Scale NEAR/5 Pathologic Gambling) or TI=(PG-YBOCS or PGYBOCS) OR TI=(Structured Clinical Interview* NEAR/2 Gambling Disorder*) OR TI=(Gambling Harm NEAR/2 Screen*) OR TI=(Gamblers NEAR/1 Anonymous NEAR/2 question*) OR TI=(Massachusetts NEAR/2 Gambling Screen*) OR TI=(Gambling NEAR/2 (Behavior* or Behaviour*) NEAR/2 Interview*) OR TI=(Gambling Treatment* NEAR/2 Outcome Monitoring* NEAR/2 System*) or TI=(GAMTOMS or GAM TOMS) OR TI=((Laval or Universities) NEAR/2 Gambling Screen*) OR TI=(National Lottery NEAR/2 Screen* NEAR/2 Loss*) or TI=(NLCLiP)
9	#7 OR #8
10	TI=((disease* or illness* or addict* or disorder*) near/2 (severity* or classify* or classification*))
11	TI=(valid* or crossvalid* or invalid* or inaccurate* or inaccurac* or accurate* or accuracy* or reproducib* or invariance* or variance* or endors* or reliab* or unreliabl* or inconsisten* or consistency* or consistent*)
12	TI=(statistic* near/1 factor*) or TI=(factor near/1 analys*)
13	TI=(incidence* or longitudinal* or prospective* or retrospective* or cohort* or prevalence* or cross section* or concurrent*)
14	TI=(systematic* or meta* or trial* or random* or placebo*)
15	TI=(sensitivity* or specificity* or probability* or likelihood* or AUC or ROC or diagnosis* or diagnoses* or diagnosing* or predictive* or prediction* or ICD* or DSM* or PPV or NPV)
16	#10 OR #11 OR #12 OR #13 OR #14 OR #15

#	Search Query
17	#16 AND #9
18	LA=(English)
19	#17 AND #18
20	PY=(2000-2022)
21	#19 AND #20

Database: Social Policy and Practice (SPP)

Date of last search: 03/11/2022

#	Searches
1	(gambl* or betting or bets or wager* or pokies or pokey or puggy or fruities or loot box* or lootbox*).ti,ab.
2	(gambl* or betting or bets or wager* or pokies or pokey or puggy or fruities or loot box* or lootbox*).hw.
3	((gaming or gambling or slot or fruit or poker or lottery or lotteries) adj5 (machine? or terminal?)).ti,ab.
4	((gaming or gambling or slot or fruit or poker or lottery or lotteries) and (machine? or terminal?)).hw.
5	((dice or card? or roulette or blackjack or poker or baccarat or crap or craps or keno or casino? or bingo or bookmaker? or book maker? or bookie? or lottery or lotteries or lotto or scratch card? or scratchcard? or raffle or raffles or sweepstak* or amusement arcade? or slot?) adj5 (money or monetization or monetisation or monetary or currency or currencies or cryptocurrency or cryptocurrencies or reward* or win or wins or winning* or loss or losses or lose)).ti,ab.
6	((dice or card? or roulette or blackjack or poker or baccarat or crap or craps or keno or casino? or bingo or bookmaker? or book maker? or bookie? or lottery or lotteries or lotto or scratch card? or scratchcard? or raffle or raffles or sweepstak* or amusement arcade? or slot?) and (money or monetization or monetisation or monetary or currency or currencies or cryptocurrency or cryptocurrencies or reward* or win or wins or winning* or loss or losses or lose)).hw.
7	((game or games or gaming or gamer?) adj5 (money or monetization or monetisation or monetary)).ti,ab.
8	((game or games or gaming or gamer?) and (money or monetization or monetisation or monetary)).hw.
9	or/1-8
10	(Psychometric* or psychometry*).ti,ab.
11	(Psychometric* or psychometry*).hw.
12	((Neuro* or Psycho* or Psychiatric* or Personality* or Personalities* or Behavior* or Behaviour* or Severity* or Acuity* or Acuities* or Self Report* or Cognitive* or screen* or assess* or detect* or identif* or surveillance* or disorder* or pathological* or brief*) adj3 (Test* or Question* or Survey* or Scale* or Index* or Indice* or Tool* or Rating* or Measure* or Classify* or Classification* or Instrument* or Profile* or Profiling* or Checklist* or Score* or Inventor* or Model* or Taxonom*)).ti,ab.
13	((Neuro* or Psycho* or Psychiatric* or Personality* or Personalities* or Behavior* or Behaviour* or Severity* or Acuity* or Acuities* or Self Report* or Cognitive* or screen* or assess* or detect* or identif* or surveillance* or disorder* or pathological* or brief*) and (Test* or Question* or Survey* or Scale* or Index* or Indice* or Tool* or Rating* or Measure* or Classify* or Classification* or Instrument* or Profile* or Profiling* or Checklist* or Score* or Inventor* or Model* or Taxonom*)).hw.
14	or/10-13
15	9 and 14
16	(South Oaks adj2 Gambl*).ti,ab.
17	(One item screen* adj2 problem gambling*).ti,ab.
18	((National Opinion Research Center* adj2 Diagnostic Screen* adj2 Gambling*) or (NODSCLIP* or NODS CLIP* or NODSPERC* or NODS PERC*)).ti,ab.
19	((Lie* adj2 Bet* adj2 Questionnaire*) or (LieBet* adj2 Questionnaire*)).ti,ab.
20	(Biosocial* adj2 Gambling Screen*).ti,ab.
21	(Problem* adj2 Gambling Screen*).ti,ab.
22	(Problem* adj2 Severity Index*).ti,ab.
23	(Consumption Screen* adj2 Problem Gambling*).ti,ab.
24	(Rapid Screener* adj2 Problem Gambling*).ti,ab.
25	(Adolescent* adj2 Gambling Screen*).ti,ab.
26	(Pathological* adj2 Gambling Measure*).ti,ab.
27	(Victorian* adj2 Gambling Screen*).ti,ab.
28	(Problem* adj2 Gambling Index*).ti,ab.
29	(Canadian* adj3 Gambling Index*).ti,ab.
30	((Cambridge* or CANTAB) adj2 Gambling Task*).ti,ab.
31	(Iowa* adj2 Gambling Task*).ti,ab.
32	((Yale Brown* adj2 Obsessive Compulsive Scale* adj5 Pathologic* Gambling*) or (PG-YBOCS* or PGYBOCS*)).ti,ab.
33	(Structured Clinical Interview* adj2 Gambling Disorder*).ti,ab.
34	(Gambling Harm* adj2 Screen*).ti,ab.
35	(Gamblers* adj1 Anonymous* adj2 question*).ti,ab.

#	Searches
36	(Massachusetts* adj2 Gambling Screen*).ti,ab.
37	(Gambling adj2 (Behavior* or Behaviour*) adj2 Interview*).ti,ab.
38	((Gambling Treatment* adj2 Outcome* Monitoring* adj2 System*) or (GAMTOMS* or GAM TOMS*)).ti,ab.
39	((Laval* or Universities*) adj2 Gambling Screen*).ti,ab.
40	((National Lottery* adj2 Screen* adj2 Loss*) or NLCLiP).ti,ab.
41	or/16-40
42	(SOGS or BBGS or BPGS or PGSI or CSPG or RSPG or BAGS or PPGM or VGS or CPGI or CGT or SCIGC or "SCI GD" or SGHS or GA20 or "GA 20" or MAGS or GBI or SLUGS).ti,ab.
43	((Case Finding* adj2 Help Assessment Tool*) or CHAT).ti,ab.
44	((Questionnaire* adj2 Impulsive Compulsive Disorder* adj2 Parkinson*) or (QUIP or QUIPS)).ti,ab.
45	(((cambridge* or cantab*) adj2 stop signal*) or (stop signal* adj2 test*) or (stop signal* adj2 reaction time*)).ti,ab.
46	(((DSM* or "Statistical Manual of Mental Disorder*") adj2 Multiple Response*) or (DSMIVMR or "DSM IV MR" or "DSMIV MR" or DSM4MR or "DSM 4 MR" or "DSM4 MR" or DSMVMR or "DSM V MR" or "DSMV MR" or DSM5MR or "DSM 5 MR" or "DSM5 MR")).ti,ab.
47	((National Opinion Research Cent* adj2 DSM* adj2 Screen*) or NODS).ti,ab.
48	or/42-47
49	9 and 48
50	(South Oaks and Gambl*).hw.
51	(One item screen* and problem gambling*).hw.
52	((National Opinion Research Center* and Diagnostic Screen* and Gambling*) or (NODSCLIP* or NODS CLIP* or NODSPERC* or NODS PERC*)).hw.
53	((Lie* and Bet* and Questionnaire*) or (LieBet* and Questionnaire*)).hw.
54	(Biosocial* and Gambling Screen*).hw.
55	(Problem* and Gambling Screen*).hw.
56	(Problem* and Severity Index*).hw.
57	(Consumption Screen* and Problem Gambling*).hw.
58	(Rapid Screener* and Problem Gambling*).hw.
59	(Adolescent* and Gambling Screen*).hw.
60	(Pathological* and Gambling Measure*).hw.
61	(Victorian* and Gambling Screen*).hw.
62	(Problem* and Gambling Index*).hw.
63	(Canadian* and Gambling Index*).hw.
64	((Cambridge* or CANTAB) and Gambling Task*).hw.
65	(Iowa* and Gambling Task*).hw.
66	((Yale Brown* and Obsessive Compulsive Scale* and Pathologic Gambling*) or (PG-YBOCS* or PGYBOCS*)).hw.
67	(Structured Clinical Interview* and Gambling Disorder*).hw.
68	(Gambling Harm* and Screen*).hw.
69	(Gamblers* and Anonymous* and question*).hw.
70	(Massachusetts* and Gambling Screen*).hw.
71	(Gambling and (Behavior* or Behaviour*) and Interview*).hw.
72	((Gambling Treatment* and Outcome* Monitoring* and System*) or (GAMTOMS* or GAM TOMS*)).hw.
73	((Laval* or Universities*) and Gambling Screen*).hw.
74	((National Lottery* and Screen* and Loss*) or NLCLiP).hw.
75	or/50-74
76	(SOGS or BBGS or BPGS or PGSI or CSPG or RSPG or BAGS or PPGM or VGS or CPGI or CGT or SCIGC or "SCI GD" or SGHS or GA20 or "GA 20" or MAGS or GBI or SLUGS).hw.
77	((Case Finding* and Help Assessment Tool*) or CHAT).hw.
78	((Questionnaire* and Impulsive Compulsive Disorder* and Parkinson*) or (QUIP or QUIPS)).hw.
79	(((cambridge* or cantab*) and stop signal*) or (stop signal* and test*) or (stop signal* and reaction time*)).hw.
80	(((DSM* or "Statistical Manual of Mental Disorder*") and Multiple Response*) or (DSMIVMR or "DSM IV MR" or "DSMIV MR" or DSM4MR or "DSM 4 MR" or "DSM4 MR" or DSMVMR or "DSM V MR" or "DSMV MR" or DSM5MR or "DSM 5 MR" or "DSM5 MR")).hw.
81	((National Opinion Research Cent* and DSM* and Screen*) or NODS).hw.
82	or/76-81
83	82 and 9
84	15 or 41 or 49 or 75 or 83
85	limit 84 to yr="2000 -Current"

Additional searches: citation searching

Date of last search: 01/11/2022

Papers citing Dowling et al., Edgren et al. and Forward et al. were checked in Web of Science (comprising Science Citation Index Expanded (1990-present); Social Sciences Citation Index (1990-present); Arts & Humanities Citation Index (1990-present); Emerging Sources Citation Index (2017-present)):

Dowling NA et al. (2019) The diagnostic accuracy of brief screening instruments for problem gambling: a systematic review and meta-analysis. Clinical Psychology Review, 74, 101784.

Edgren R et al. (2016) Reliability of Instruments Measuring At-Risk and Problem Gambling Among Young Individuals: A Systematic Review Covering Years 2009-2015. Journal of Adolescent Health 58(6); 600-15.

Forward C et al (2022) Assessing potential brief screening questions for use within different social care-related contexts to identify individuals experiencing gambling-related harms: A scoping review. Health & Social Care in the Community, 10.1111/hsc.13976. Advance online publication.

Additional searches: reference checking

Date of last search: 01/11/2022

Papers in the reference lists to Dowling et al., Edgren et al. and Forward et al. were checked in Web of Science (comprising Science Citation Index Expanded (1990-present); Social Sciences Citation Index (1990-present); Arts & Humanities Citation Index (1990-present); Emerging Sources Citation Index (2017-present)).

Additional searches: websites

All websites listed in the protocol were searched and browsed.

Date of last search: 04/11/2022

Economics searches

Please note that a combined literature search was undertaken to cover the economics aspects of all the review questions in a single search.

Database: Applied Social Science Index and Abstracts (ASSIA)

Date of last search: 04/04/2023

#	Searches
	AB,TI (gambl* or betting or bet or bets or wager* or "gaming machine*" or "slot machine*" or "fruit machine*" or "poker machine*" or "lottery machine*" or "lotteries machine*" or "gaming terminal*" or "slot terminal*" or "fruit terminal*" or "poker terminal*" or "lottery terminal*" or "lotteries terminal*" or pokies or pokey or puggy or fruities)
AND	AB,TI(budget* OR cost* OR economic* OR pharmaco-economic* OR price* OR pricing* OR financ* OR fee OR fees OR expenditure* OR saving* OR "value for money" OR "monetary value" OR "resourc* allocat*" OR "allocat* resourc*" OR fund OR funds OR funding* OR funded OR ration OR rations OR rationing* OR rationed or "quality of life" or "quality adjusted life" or "disability adjusted life" or "short form or shortform" or "health year equivalent*" or "nottingham health profile*" or "sickness impact profile*" or "health status indicator*" or "health utilit*" or "utilit* valu*" or "utilit* measur*" or "willingness to pay" or "standard gamble*" or "time trade off" or "time tradeoff" or "duke health profile" or "functional status questionnaire" or "dartmouth coop functional health assessment*")
AND	Additional limits - Date: From January 2000

Database: Cochrane Central Register of Controlled Trials (CENTRAL)

Date of last search: 04/04/2023

#	Searches
#1	MeSH descriptor: [Gambling] this term only
#2	gambl*:ti,ab
#3	betting:ti,ab
#4	(bet or bets):ti,ab
#5	wager*:ti,ab
#6	((gaming or gambling or slot or fruit or poker or lottery or lotteries) near/5 (machine* or terminal*)):ti,ab
#7	(pokies or pokey or puggy or fruities):ti,ab
#8	((dice or card or cards or roulette or blackjack or poker or baccarat or crap or craps or keno or casino* or bingo or bookmaker* or "book maker" or bookie* or lottery or lotteries or lotto or "scratch card*" or scratchcard* or raffle or raffles or sweepstak* or "amusement arcade*" or slot or slots) near/5 (money or monetization or monetisation or monetary or currency or currencies or cryptocurrency or cryptocurrencies or reward* or win or wins or winning* or loss or losses or lose)):ti,ab
#9	((game or games or gaming or gamer*) near/5 (money or monetization or monetisation or monetary)):ti,ab
#10	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9
#11	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 with Cochrane Library publication date Between Jan 2000 and Mar 2022
#12	MeSH descriptor: [Economics] this term only
#13	MeSH descriptor: [Value of Life] this term only
#14	MeSH descriptor: [Costs and Cost Analysis] explode all trees
#15	MeSH descriptor: [Economics, Hospital] explode all trees
#16	MeSH descriptor: [Economics, Medical] explode all trees
#17	MeSH descriptor: [Resource Allocation] explode all trees
#18	MeSH descriptor: [Economics, Nursing] this term only
#19	MeSH descriptor: [Economics, Pharmaceutical] this term only
#20	MeSH descriptor: [Fees and Charges] explode all trees
#21	MeSH descriptor: [Budgets] explode all trees
#22	budget*:ti,ab
#23	cost*:ti,ab
#24	(economic* or pharmaco?economic*):ti,ab
#25	(price* or pricing*):ti,ab
#26	(financ* or fee or fees or expenditure* or saving*):ti,ab
#27	(value near/2 (money or monetary)):ti,ab
#28	resourc* allocat*:ti,ab
#29	(fund or funds or funding* or funded):ti,ab
#30	(ration or rations or rationing* or rationed):ti,ab
#31	#12 or #13 or #14 or #15 or #16 or #17 or #18 or #19 or #20 or #21 or #22 or #23 or #24 or #25 or #26 or #27 or #28 or #29 or #30
#32	MeSH descriptor: [Value of Life] this term only
#33	MeSH descriptor: [Quality of Life] this term only
#34	"quality of life":ti
#35	((instrument or instruments) near/3 "quality of life"):ab
#36	MeSH descriptor: [Quality-Adjusted Life Years] this term only
#37	"quality adjusted life":ti,ab
#38	(qaly* or qald* or qale* or qtime* or "life year" or "life years"):ti,ab
#39	"disability adjusted life":ti,ab
#40	daly*:ti,ab
#41	(sf36 or "sf 36" or "short form 36" or "shortform 36" or "short form36" or shortform36 or "sf thirtysix" or sfthirtysix or "sfthirty six" or "sf thirty six" or "shortform thirtysix" or "shortform thirty six" or "short form thirtysix" or "short form thirty six"):ti,ab
#42	(sf6 or "sf 6" or "short form 6" or "shortform 6" or "sf six" or sfsix or "shortform six" or "short form six" or shortform6 or "short form6"):ti,ab
#43	(sf8 or "sf 8" or "sf eight" or sfeight or "shortform 8" or "shortform 8" or shortform8 or "short form8" or "shortform eight" or "short form eight"):ti,ab
#44	(sf12 or "sf 12" or "short form 12" or "shortform 12" or "short form12" or shortform12 or "sf twelve" or sftwelve or "shortform twelve" or "short form twelve"):ti,ab
#45	(sf16 or "sf 16" or "short form 16" or "shortform 16" or "short form16" or shortform16 or "sf sixteen" or sfsixteen or "shortform sixteen" or "short form sixteen"):ti,ab
#46	(sf20 or "sf 20" or "short form 20" or "shortform 20" or "short form20" or shortform20 or "sf twenty" or sftwenty or "shortform twenty" or "short form twenty"):ti,ab
#47	(hql or hqol or "h qol" or hrqol or "hr qol"):ti,ab
#48	(hye or hyes):ti,ab

#	Searches
#49	(health* near/2 year* near/2 equivalent*):ti,ab
#50	(pqol or qls):ti,ab
#51	(quality of wellbeing or "quality of well being" or "index of wellbeing" or "index of well being" or qwb):ti,ab
#52	"nottingham health profile*":ti,ab
#53	"sickness impact profile":ti,ab
#54	MeSH descriptor: [Health Status Indicators] explode all trees
#55	(health near/3 (utilit* or status)):ti,ab
#56	(utilit* near/3 (valu* or measur* or health or life or estimat* or elicit* or disease or score* or weight)):ti,ab
#57	(preference* near/3 (valu* or measur* or health or life or estimat* or elicit* or disease or score* or instrument or instruments)):ti,ab
#58	disutilit*:ti,ab
#59	rosser:ti,ab
#60	"willingness to pay":ti,ab
#61	"standard gamble*":ti,ab
#62	("time trade off" or "time tradeoff"):ti,ab
#63	tto:ti,ab
#64	(hui or hui1 or hui2 or hui3):ti,ab
#65	(eq or euroqol or "euro qol" or eq5d or "eq 5d" or euroqual or "euro qual"):ti,ab
#66	"duke health profile":ti,ab
#67	"functional status questionnaire":ti,ab
#68	"dartmouth coop functional health assessment*":ti,ab
#69	#32 or #33 or #34 or #35 or #36 or #37 or #38 or #39 or #40 or #41 or #42 or #43 or #44 or #45 or #46 or #47 or #48 or #49 or #50 or #51 or #52 or #53 or #54 or #55 or #56 or #57 or #58 or #59 or #60 or #61 or #62 or #63 or #64 or #65 or #66 or #67 or #68
#70	#11 and #31
#71	#11 and #69
#72	#70 or #71

Database: Cumulative Index to Nursing and Allied Health Literature (CINAHL)

Date of last search: 04/04/2023

#	Searches
S1	TI (gambl* or betting or bet or bets or wager* or "gaming machine*" or "slot machine*" or "fruit machine*" or "poker machine*" or "lottery machine*" or "lotteries machine*" or "gaming terminal*" or "slot terminal*" or "fruit terminal*" or "poker terminal*" or "lottery terminal*" or "lotteries terminal*" or pokies or pokey or puggy or fruities) Limiters - Publication Year: 2000-
S2	TI (budget* OR cost* OR economic* OR pharmaco-economic* OR price* OR pricing* OR financ* OR fee OR fees OR expenditure* OR saving* OR "value for money" OR "monetary value" OR "resourc* allocat*" OR "allocat* resourc*" OR fund OR funds OR funding* OR funded OR ration OR rations OR rationing* OR rationed or "quality of life" or "quality adjusted life" or "disability adjusted life" or "short form or shortform" or "health year equivalent*" or "nottingham health profile*" or "sickness impact profile*" or "health status indicator*" or "health utilit*" or "utilit* valu*" or "utilit* measur*" or "willingness to pay" or "standard gamble*" or "time trade off" or "time tradeoff" or "duke health profile" or "functional status questionnaire" or "dartmouth coop functional health assessment*") Limiters - Publication Year: 2000-
S3	S1 and S2

Database: Embase

Date of last search: 04/04/2023

#	Searches
1	GAMBLING/
2	PATHOLOGICAL GAMBLING/
3	(gambl* not standard gamble).ti,ab.
4	betting.ti,ab.
5	(bet or bets).ti,ab.
6	wager*.ti,ab.
7	((gaming or gambling or slot or fruit or poker or lottery or lotteries) adj5 (machine? or terminal?)).ti,ab.
8	(pokies or pokey or puggy or fruities).ti,ab.
9	((dice or card? or roulette or blackjack or poker or baccarat or crap or craps or keno or casino? or bingo or bookmaker? or book maker or bookie? or lottery or lotteries or lotto or scratch card? or scratchcard? or raffle or raffles or sweepstak* or amusement arcade? or slot?) adj5 (money or monetization or monetisation or monetary or currency or currencies or cryptocurrency or cryptocurrencies or reward* or win or wins or winning* or loss or losses or lose)).ti,ab.
10	((game or games or gaming or gamer?) adj5 (money or monetization or monetisation or monetary)).ti,ab.

#	Searches
11	or/1-10
12	limit 11 to english language
13	limit 12 to yr="2000 -Current"
14	letter.pt. or LETTER/
15	note.pt.
16	editorial.pt.
17	CASE REPORT/ or CASE STUDY/
18	(letter or comment*).ti.
19	or/14-18
20	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
21	19 not 20
22	ANIMAL/ not HUMAN/
23	NONHUMAN/
24	exp ANIMAL EXPERIMENT/
25	exp EXPERIMENTAL ANIMAL/
26	ANIMAL MODEL/
27	exp RODENT/
28	(rat or rats or mouse or mice).ti.
29	or/21-28
30	13 not 29
31	HEALTH ECONOMICS/
32	exp ECONOMIC EVALUATION/
33	exp HEALTH CARE COST/
34	exp FEE/
35	BUDGET/
36	FUNDING/
37	RESOURCE ALLOCATION/
38	budget*.ti,ab.
39	cost*.ti,ab.
40	(economic* or pharmaco?economic*).ti,ab.
41	(price* or pricing*).ti,ab.
42	(financ* or fee or fees or expenditure* or saving*).ti,ab.
43	(value adj2 (money or monetary)).ti,ab.
44	resourc* allocat*.ti,ab.
45	(fund or funds or funding* or funded).ti,ab.
46	(ration or rations or rationing* or rationed).ti,ab.
47	or/31-46
48	SOCIOECONOMICS/
49	exp QUALITY OF LIFE/
50	quality of life.ti,kw.
51	((instrument or instruments) adj3 quality of life).ab.
52	QUALITY-ADJUSTED LIFE YEAR/
53	quality adjusted life.ti,ab,kw.
54	(qaly* or qald* or qale* or qtime* or life year or life years).ti,ab,kw.
55	disability adjusted life.ti,ab,kw.
56	daly*.ti,ab,kw.
57	(sf36 or sf 36 or short form 36 or shortform 36 or short form36 or shortform36 or sf thirtysix or sfthirtysix or sfthirty six or sf thirty six or shortform thirtysix or shortform thirty six or short form thirtysix or short form thirty six).ti,ab,kw.
58	(sf6 or sf 6 or short form 6 or shortform 6 or sf six or sfsix or shortform six or short form six or shortform6 or short form6).ti,ab,kw.
59	(sf8 or sf 8 or sf eight or sfeight or shortform 8 or shortform 8 or shortform8 or short form8 or shortform eight or short form eight).ti,ab,kw.
60	(sf12 or sf 12 or short form 12 or shortform 12 or short form12 or shortform12 or sf twelve or sftwelve or shortform twelve or short form twelve).ti,ab,kw.
61	(sf16 or sf 16 or short form 16 or shortform 16 or short form16 or shortform16 or sf sixteen or sfsixteen or shortform sixteen or short form sixteen).ti,ab,kw.
62	(sf20 or sf 20 or short form 20 or shortform 20 or short form20 or shortform20 or sf twenty or sftwenty or shortform twenty or short form twenty).ti,ab,kw.
63	(hql or hqol or h qol or hrqol or hr qol).ti,ab,kw.
64	(hye or hyes).ti,ab,kw.
65	(health* adj2 year* adj2 equivalent*).ti,ab,kw.
66	(pqol or qls).ti,ab,kw.
67	(quality of wellbeing or quality of well being or index of wellbeing or index of well being or qwb).ti,ab,kw.

#	Searches
68	NOTTINGHAM HEALTH PROFILE/
69	nottingham health profile*.ti,ab,kw.
70	SICKNESS IMPACT PROFILE/
71	sickness impact profile.ti,ab,kw.
72	HEALTH STATUS INDICATOR/
73	(health adj3 (utilit* or status)).ti,ab,kw.
74	(utilit* adj3 (valu* or measur* or health or life or estimat* or elicit* or disease or score* or weight)).ti,ab,kw.
75	(preference* adj3 (valu* or measur* or health or life or estimat* or elicit* or disease or score* or instrument or instruments)).ti,ab,kw.
76	disutilit*.ti,ab,kw.
77	rosser.ti,ab,kw.
78	willingness to pay.ti,ab,kw.
79	standard gamble*.ti,ab,kw.
80	(time trade off or time tradeoff).ti,ab,kw.
81	tto.ti,ab,kw.
82	(hui or hui1 or hui2 or hui3).ti,ab,kw.
83	(eq or euroqol or euro qol or eq5d or eq 5d or euroqual or euro qual).ti,ab,kw.
84	duke health profile.ti,ab,kw.
85	functional status questionnaire.ti,ab,kw.
86	dartmouth coop functional health assessment*.ti,ab,kw.
87	or/48-86
88	30 and 47
89	30 and 87
90	88 or 89

Database: Emcare

Date of last search: 04/04/2023

#	Searches
1	GAMBLING/
2	PATHOLOGICAL GAMBLING/
3	(gambl* not standard gamble).ti,ab.
4	betting.ti,ab.
5	(bet or bets).ti,ab.
6	wager*.ti,ab.
7	((gaming or gambling or slot or fruit or poker or lottery or lotteries) adj5 (machine? or terminal?)).ti,ab.
8	(pokies or pokey or puggy or fruities).ti,ab.
9	((dice or card? or roulette or blackjack or poker or baccarat or crap or craps or keno or casino? or bingo or bookmaker? or book maker or bookie? or lottery or lotteries or lotto or scratch card? or scratchcard? or raffle or raffles or sweepstak* or amusement arcade? or slot?) adj5 (money or monetization or monetisation or monetary or currency or currencies or cryptocurrency or cryptocurrencies or reward* or win or wins or winning* or loss or losses or lose)).ti,ab.
10	((game or games or gaming or gamer?) adj5 (money or monetization or monetisation or monetary)).ti,ab.
11	or/1-10
12	limit 11 to english language
13	limit 12 to yr="2000 -Current"
14	letter.pt. or LETTER/
15	note.pt.
16	editorial.pt.
17	CASE REPORT/ or CASE STUDY/
18	(letter or comment*).ti.
19	or/14-18
20	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
21	19 not 20
22	ANIMAL/ not HUMAN/
23	NONHUMAN/
24	exp ANIMAL EXPERIMENT/
25	exp EXPERIMENTAL ANIMAL/
26	ANIMAL MODEL/
27	exp RODENT/
28	(rat or rats or mouse or mice).ti.
29	or/21-28
30	13 not 29

#	Searches
31	HEALTH ECONOMICS/
32	exp ECONOMIC EVALUATION/
33	exp HEALTH CARE COST/
34	exp FEE/
35	BUDGET/
36	FUNDING/
37	RESOURCE ALLOCATION/
38	budget*.ti,ab.
39	cost*.ti,ab.
40	(economic* or pharmaco?economic*).ti,ab.
41	(price* or pricing*).ti,ab.
42	(financ* or fee or fees or expenditure* or saving*).ti,ab.
43	(value adj2 (money or monetary)).ti,ab.
44	resourc* allocat*.ti,ab.
45	(fund or funds or funding* or funded).ti,ab.
46	(ration or rations or rationing* or rationed).ti,ab.
47	or/31-46
48	SOCIOECONOMICS/
49	exp QUALITY OF LIFE/
50	quality of life.ti,kw.
51	((instrument or instruments) adj3 quality of life).ab.
52	QUALITY-ADJUSTED LIFE YEAR/
53	quality adjusted life.ti,ab,kw.
54	(qaly* or qald* or qale* or qtime* or life year or life years).ti,ab,kw.
55	disability adjusted life.ti,ab,kw.
56	daly*.ti,ab,kw.
57	(sf36 or sf 36 or short form 36 or shortform 36 or short form36 or shortform36 or sf thirtysix or sfthirtysix or sfthirty six or sf thirty six or shortform thirtysix or shortform thirty six or short form thirtysix or short form thirty six).ti,ab,kw.
58	(sf6 or sf 6 or short form 6 or shortform 6 or sf six or sfsix or shortform six or short form six or shortform6 or short form6).ti,ab,kw.
59	(sf8 or sf 8 or sf eight or sfeight or shortform 8 or shortform 8 or shortform8 or short form8 or shortform eight or short form eight).ti,ab,kw.
60	(sf12 or sf 12 or short form 12 or shortform 12 or short form12 or shortform12 or sf twelve or sftwelve or shortform twelve or short form twelve).ti,ab,kw.
61	(sf16 or sf 16 or short form 16 or shortform 16 or short form16 or shortform16 or sf sixteen or sfsixteen or shortform sixteen or short form sixteen).ti,ab,kw.
62	(sf20 or sf 20 or short form 20 or shortform 20 or short form20 or shortform20 or sf twenty or sftwenty or shortform twenty or short form twenty).ti,ab,kw.
63	(hql or hqol or h qol or hrqol or hr qol).ti,ab,kw.
64	(hye or hyes).ti,ab,kw.
65	(health* adj2 year* adj2 equivalent*).ti,ab,kw.
66	(pqol or qls).ti,ab,kw.
67	(quality of wellbeing or quality of well being or index of wellbeing or index of well being or qwb).ti,ab,kw.
68	NOTTINGHAM HEALTH PROFILE/
69	nottingham health profile*.ti,ab,kw.
70	SICKNESS IMPACT PROFILE/
71	sickness impact profile.ti,ab,kw.
72	HEALTH STATUS INDICATOR/
73	(health adj3 (utilit* or status)).ti,ab,kw.
74	(utilit* adj3 (valu* or measur* or health or life or estimat* or elicit* or disease or score* or weight)).ti,ab,kw.
75	(preference* adj3 (valu* or measur* or health or life or estimat* or elicit* or disease or score* or instrument or instruments)).ti,ab,kw.
76	disutilit*.ti,ab,kw.
77	rosser.ti,ab,kw.
78	willingness to pay.ti,ab,kw.
79	standard gamble*.ti,ab,kw.
80	(time trade off or time tradeoff).ti,ab,kw.
81	tto.ti,ab,kw.
82	(hui or hui1 or hui2 or hui3).ti,ab,kw.
83	(eq or euroqol or euro qol or eq5d or eq 5d or euroqual or euro qual).ti,ab,kw.
84	duke health profile.ti,ab,kw.
85	functional status questionnaire.ti,ab,kw.
86	dartmouth coop functional health assessment*.ti,ab,kw.
87	or/48-86

#	Searches
88	30 and 47
89	30 and 87
90	88 or 89

Database: Health Information Management Consortium (HMIC)

Date of last search: 04/04/2023

#	Searches
1	GAMBLING/
2	GAMBLERS/
3	GAMBLING MACHINES/
4	AMUSEMENT ARCADES/
5	CASINOS/
6	BOOKMAKERS/
7	LOTTERIES/
8	NATIONAL LOTTERY/
9	(gambl* not standard gamble).ti,ab.
10	betting.ti,ab.
11	(bet or bets).ti,ab.
12	wager*.ti,ab.
13	((gaming or gambling or slot or fruit or poker or lottery or lotteries) adj5 (machine? or terminal?)).ti,ab.
14	(pokies or pokey or puggy or fruities).ti,ab.
15	((dice or card? or roulette or blackjack or poker or baccarat or crap or craps or keno or casino? or bingo or bookmaker? or book maker or bookie? or lottery or lotteries or lotto or scratch card? or scratchcard? or raffle or raffles or sweepstak* or amusement arcade? or slot?) adj5 (money or monetization or monetisation or monetary or currency or currencies or cryptocurrency or cryptocurrencies or reward* or win or wins or winning* or loss or losses or lose)).ti,ab.
16	((game or games or gaming or gamer?) adj5 (money or monetization or monetisation or monetary)).ti,ab.
17	or/1-16
18	limit 17 to yr="2000 -Current"
19	exp ECONOMICS/
20	exp COSTS/
21	exp FEES/
22	exp BUDGETS/
23	RESOURCE ALLOCATION/
24	budget*.ti,ab.
25	cost*.ti,ab.
26	(economic* or pharmaco?economic*).ti,ab.
27	(price* or pricing*).ti,ab.
28	(financ* or fee or fees or expenditure* or saving*).ti,ab.
29	(value adj2 (money or monetary)).ti,ab.
30	resourc* allocat*.ti,ab.
31	(fund or funds or funding* or funded).ti,ab.
32	(ration or rations or rationing* or rationed).ti,ab.
33	or/19-32
34	"QUALITY OF LIFE"/
35	QUALITY-ADJUSTED LIFE YEARS/
36	HEALTH STATUS MEASURES/
37	HEALTH SERVICE INDICATORS/
38	quality of life.ti.
39	((instrument or instruments) adj3 quality of life).ab.
40	quality adjusted life.ti,ab.
41	(qaly* or qald* or qale* or qtime* or life year or life years).ti,ab.
42	disability adjusted life.ti,ab.
43	daly*.ti,ab.
44	(sf36 or sf 36 or short form 36 or shortform 36 or short form36 or shortform36 or sf thirtysix or sfthirtysix or sfthirty six or sf thirty six or shortform thirtysix or shortform thirty six or short form thirtysix or short form thirty six).ti,ab.
45	(sf6 or sf 6 or short form 6 or shortform 6 or sf six or sfsix or shortform six or short form six or shortform6 or short form6).ti,ab.
46	(sf8 or sf 8 or sf eight or sfeight or shortform 8 or shortform 8 or shortform8 or short form8 or shortform eight or short form eight).ti,ab.
47	(sf12 or sf 12 or short form 12 or shortform 12 or short form12 or shortform12 or sf twelve or sftwelve or shortform twelve or short form twelve).ti,ab.

#	Searches
48	(sf16 or sf 16 or short form 16 or shortform 16 or short form16 or shortform16 or sf sixteen or sfsixteen or shortform sixteen or short form sixteen).ti,ab.
49	(sf20 or sf 20 or short form 20 or shortform 20 or short form20 or shortform20 or sf twenty or sftwenty or shortform twenty or short form twenty).ti,ab.
50	(hql or hqol or h qol or hrqol or hr qol).ti,ab.
51	(hye or hyes).ti,ab.
52	(health* adj2 year* adj2 equivalent*).ti,ab.
53	(pqol or qls).ti,ab.
54	(quality of wellbeing or quality of well being or index of wellbeing or index of well being or qwb).ti,ab.
55	nottingham health profile*.ti,ab.
56	sickness impact profile.ti,ab.
57	(health adj3 (utilit* or status)).ti,ab.
58	(utilit* adj3 (valu* or measur* or health or life or estimat* or elicit* or disease or score* or weight)).ti,ab.
59	(preference* adj3 (valu* or measur* or health or life or estimat* or elicit* or disease or score* or instrument or instruments)).ti,ab.
60	disutilit*.ti,ab.
61	rosser.ti,ab.
62	willingness to pay.ti,ab.
63	standard gamble*.ti,ab.
64	(time trade off or time tradeoff).ti,ab.
65	tto.ti,ab.
66	(hui or hui1 or hui2 or hui3).ti,ab.
67	(eq or euroqol or euro qol or eq5d or eq 5d or euroqual or euro qual).ti,ab.
68	duke health profile.ti,ab.
69	functional status questionnaire.ti,ab.
70	dartmouth coop functional health assessment*.ti,ab.
71	or/34-70
72	18 and 33
73	18 and 71
74	72 or 73

Database: International Health Technology Assessment Database (INAHTA)

Date of last search: 04/04/2023

#	Searches
	All:(gamble or gambler or gamblers or gambling or gambled or betting or bet or bets or wager or wagers)
	AND Publication Year: 2000-2022

Database: MEDLINE ALL

Date of last search: 04/04/2023

#	Searches
1	GAMBLING/
2	(gambl* not standard gamble).ti,ab.
3	betting.ti,ab.
4	(bet or bets).ti,ab.
5	wager*.ti,ab.
6	((gaming or gambling or slot or fruit or poker or lottery or lotteries) adj5 (machine? or terminal?)).ti,ab.
7	(pokies or pokey or puggy or fruities).ti,ab.
8	((dice or card? or roulette or blackjack or poker or baccarat or crap or craps or keno or casino? or bingo or bookmaker? or book maker or bookie? or lottery or lotteries or lotto or scratch card? or scratchcard? or raffle or raffles or sweepstak* or amusement arcade? or slot?) adj5 (money or monetization or monetisation or monetary or currency or currencies or cryptocurrency or cryptocurrencies or reward* or win or wins or winning* or loss or losses or lose)).ti,ab.
9	((game or games or gaming or gamer?) adj5 (money or monetization or monetisation or monetary)).ti,ab.
10	or/1-9
11	limit 10 to english language
12	limit 11 to yr="2000 -Current"
13	LETTER/
14	EDITORIAL/
15	NEWS/
16	exp HISTORICAL ARTICLE/

#	Searches
17	ANECDOTES AS TOPIC/
18	COMMENT/
19	CASE REPORT/
20	(letter or comment*).ti.
21	or/13-20
22	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
23	21 not 22
24	ANIMALS/ not HUMANS/
25	exp ANIMALS, LABORATORY/
26	exp ANIMAL EXPERIMENTATION/
27	exp MODELS, ANIMAL/
28	exp RODENTIA/
29	(rat or rats or mouse or mice).ti.
30	or/23-29
31	12 not 30
32	ECONOMICS/
33	VALUE OF LIFE/
34	exp "COSTS AND COST ANALYSIS"/
35	exp ECONOMICS, HOSPITAL/
36	exp ECONOMICS, MEDICAL/
37	exp RESOURCE ALLOCATION/
38	ECONOMICS, NURSING/
39	ECONOMICS, PHARMACEUTICAL/
40	exp "FEES AND CHARGES"/
41	exp BUDGETS/
42	budget*.ti,ab.
43	cost*.ti,ab.
44	(economic* or pharmaco?economic*).ti,ab.
45	(price* or pricing*).ti,ab.
46	(financ* or fee or fees or expenditure* or saving*).ti,ab.
47	(value adj2 (money or monetary)).ti,ab.
48	resourc* allocat*.ti,ab.
49	(fund or funds or funding* or funded).ti,ab.
50	(ration or rations or rationing* or rationed).ti,ab.
51	ec.fs.
52	or/32-51
53	"VALUE OF LIFE"/
54	QUALITY OF LIFE/
55	quality of life.ti,kf.
56	((instrument or instruments) adj3 quality of life).ab.
57	QUALITY-ADJUSTED LIFE YEARS/
58	quality adjusted life.ti,ab,kf.
59	(qaly* or qald* or qale* or qtime* or life year or life years).ti,ab,kf.
60	disability adjusted life.ti,ab,kf.
61	daly*.ti,ab,kf.
62	(sf36 or sf 36 or short form 36 or shortform 36 or short form36 or shortform36 or sf thirtysix or sfthirtysix or sfthirty six or sf thirty six or shortform thirtysix or shortform thirty six or short form thirtysix or short form thirty six).ti,ab,kf.
63	(sf6 or sf 6 or short form 6 or shortform 6 or sf six or sfsix or shortform six or short form six or shortform6 or short form6).ti,ab,kf.
64	(sf8 or sf 8 or sf eight or sfeight or shortform 8 or shortform 8 or shortform8 or short form8 or shortform eight or short form eight).ti,ab,kf.
65	(sf12 or sf 12 or short form 12 or shortform 12 or short form12 or shortform12 or sf twelve or sftwelve or shortform twelve or short form twelve).ti,ab,kf.
66	(sf16 or sf 16 or short form 16 or shortform 16 or short form16 or shortform16 or sf sixteen or sfsixteen or shortform sixteen or short form sixteen).ti,ab,kf.
67	(sf20 or sf 20 or short form 20 or shortform 20 or short form20 or shortform20 or sf twenty or sftwenty or shortform twenty or short form twenty).ti,ab,kf.
68	(hql or hqol or h qol or hrqol or hr qol).ti,ab,kf.
69	(hye or hyes).ti,ab,kf.
70	(health* adj2 year* adj2 equivalent*).ti,ab,kf.
71	(pqol or qls).ti,ab,kf.
72	(quality of wellbeing or quality of well being or index of wellbeing or index of well being or qwb).ti,ab,kf.
73	nottingham health profile*.ti,ab,kf.

69

#	Searches
74	sickness impact profile.ti,ab,kf.
75	exp HEALTH STATUS INDICATORS/
76	(health adj3 (utilit* or status)).ti,ab,kf.
77	(utilit* adj3 (valu* or measur* or health or life or estimat* or elicit* or disease or score* or weight)).ti,ab,kf.
78	(preference* adj3 (valu* or measur* or health or life or estimat* or elicit* or disease or score* or instrument or instruments)).ti,ab,kf.
79	disutilit*.ti,ab,kf.
80	rosser.ti,ab,kf.
81	willingness to pay.ti,ab,kf.
82	standard gamble*.ti,ab,kf.
83	(time trade off or time tradeoff).ti,ab,kf.
84	tto.ti,ab,kf.
85	(hui or hui1 or hui2 or hui3).ti,ab,kf.
86	(eq or euroqol or euro qol or eq5d or eq 5d or euroqual or euro qual).ti,ab,kf.
87	duke health profile.ti,ab,kf.
88	functional status questionnaire.ti,ab,kf.
89	dartmouth coop functional health assessment*.ti,ab,kf.
90	or/53-89
91	31 and 52
92	31 and 90
93	91 or 92

Database: NHS Economic Evaluation Database (NHS EED)

Date of last search: 04/04/2023

#	Searches
1	MeSH DESCRIPTOR GAMBLING IN NHSEED
2	(gambl*) TI IN NHSEED
3	(betting) IN NHSEED
4	(bet or bets) IN NHSEED
5	(wager*) IN NHSEED
6	(((gaming or gambling or slot or fruit or poker or lottery or lotteries) near5 (machine* or terminal*))) IN NHSEED
7	(pokies or pokey or puggy or fruities) IN NHSEED
8	(((dice or card or cards or roulette or blackjack or poker or baccarat or crap or craps or keno or casino* or bingo or bookmaker* or book maker or bookie* or lottery or lotteries or lotto or scratch card* or scratchcard* or raffle or raffles or sweepstak* or amusement arcade* or slot*) near5 (money or monetization or monetisation or monetary or currency or currencies or cryptocurrency or cryptocurrencies or reward* or win or wins or winning* or loss or losses or lose))) IN NHSEED
9	(((game or games or gaming or gamer*) near5 (money or monetization or monetisation or monetary))) IN NHSEED
10	#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9

Database: PsycInfo

Date of last search: 04/04/2023

#	Searches
1	GAMBLING/
2	GAMBLING DISORDER/
3	(gambl* not standard gamble).ti,ab.
4	betting.ti,ab.
5	(bet or bets).ti,ab.
6	wager*.ti,ab.
7	((gaming or gambling or slot or fruit or poker or lottery or lotteries) adj5 (machine? or terminal?)).ti,ab.
8	(pokies or pokey or puggy or fruities).ti,ab.
9	((dice or card? or roulette or blackjack or poker or baccarat or crap or craps or keno or casino? or bingo or bookmaker? or book maker or bookie? or lottery or lotteries or lotto or scratch card? or scratchcard? or raffle or raffles or sweepstak* or amusement arcade? or slot?) adj5 (money or monetization or monetisation or monetary or currency or currencies or cryptocurrency or cryptocurrencies or reward* or win or wins or winning* or loss or losses or lose)).ti,ab.
10	((game or games or gaming or gamer?) adj5 (money or monetization or monetisation or monetary)).ti,ab.
11	or/1-10
12	limit 11 to english language
13	limit 12 to yr="2000 -Current"
14	(letter or editorial or comment reply).dt. or case report/

#	Searches
15	(letter or comment*).ti.
16	or/14-15
17	exp randomized controlled trial/
18	random*.ti,ab.
19	or/17-18
20	16 not 19
21	animal.po.
22	(rat or rats or mouse or mice).ti.
23	or/20-22
24	13 not 23
25	ECONOMICS/
26	HEALTH CARE ECONOMICS/
27	exp "COSTS AND COST ANALYSIS"/
28	RESOURCE ALLOCATION/
29	budget*.ti,ab.
30	cost*.ti,ab.
31	(economic* or pharmaco?economic*).ti,ab.
32	(price* or pricing*).ti,ab.
33	(financ* or fee or fees or expenditure* or saving*).ti,ab.
34	(value adj2 (money or monetary)).ti,ab.
35	resourc* allocat*.ti,ab.
36	(fund or funds or funding* or funded).ti,ab.
37	(ration or rations or rationing* or rationed).ti,ab.
38	or/25-37
39	"QUALITY OF LIFE"/
40	"HEALTH RELATED QUALITY OF LIFE"/
41	quality of life.ti.
42	((instrument or instruments) adj3 quality of life).ab.
43	quality adjusted life.ti,ab.
44	(qaly* or qald* or qale* or qtime* or life year or life years).ti,ab.
45	disability adjusted life.ti,ab.
46	daly*.ti,ab.
47	(sf36 or sf 36 or short form 36 or shortform 36 or short form36 or shortform36 or sf thirtysix or sfthirtysix or sfthirty six or sf thirty six or shortform thirtysix or shortform thirty six or short form thirtysix or short form thirty six).ti,ab.
48	(sf6 or sf 6 or short form 6 or shortform 6 or sf six or sfsix or shortform six or short form six or shortform6 or short form6).ti,ab.
49	(sf8 or sf 8 or sf eight or sfeight or shortform 8 or shortform 8 or shortform8 or short form8 or shortform eight or short form eight).ti,ab.
50	(sf12 or sf 12 or short form 12 or shortform 12 or short form12 or shortform12 or sf twelve or sftwelve or shortform twelve or short form twelve).ti,ab.
51	(sf16 or sf 16 or short form 16 or shortform 16 or short form16 or shortform16 or sf sixteen or sfsixteen or shortform sixteen or short form sixteen).ti,ab.
52	(sf20 or sf 20 or short form 20 or shortform 20 or short form20 or shortform20 or sf twenty or sftwenty or shortform twenty or short form twenty).ti,ab.
53	(hql or hqol or h qol or hrqol or hr qol).ti,ab.
54	(hye or hyes).ti,ab.
55	(health* adj2 year* adj2 equivalent*).ti,ab.
56	(pqol or qls).ti,ab.
57	(quality of wellbeing or quality of well being or index of wellbeing or index of well being or qwb).ti,ab.
58	nottingham health profile*.ti,ab.
59	sickness impact profile.ti,ab.
60	(health adj3 (utilit* or status)).ti,ab.
61	(utilit* adj3 (valu* or measur* or health or life or estimat* or elicit* or disease or score* or weight)).ti,ab.
62	(preference* adj3 (valu* or measur* or health or life or estimat* or elicit* or disease or score* or instrument or instruments)).ti,ab.
63	disutilit*.ti,ab.
64	rosser.ti,ab.
65	willingness to pay.ti,ab.
66	standard gamble*.ti,ab.
67	(time trade off or time tradeoff).ti,ab.
68	tto.ti,ab.
69	(hui or hui1 or hui2 or hui3).ti,ab.
70	(eq or euroqol or euro qol or eq5d or eq 5d or euroqual or euro qual).ti,ab.
71	duke health profile.ti,ab.

Harmful gambling: evidence reviews for tools for identification and assessment of harmful gambling DRAFT (October 2023)

#	Searches
72	functional status questionnaire.ti,ab.
73	dartmouth coop functional health assessment*.ti,ab.
74	or/39-73
75	24 and 38
76	24 and 74
77	75 or 76
78	limit 77 to ("0100 journal" or "0110 peer-reviewed journal")

Database: Social Care Online

Date of last search: 04/04/2023

#	Searches
	AllFields: 'gamble or gambler or gamblers or gambling or gambled or betting or bet or bets or wager or wagers or "gaming machine" or "slot machine" or "fruit machine" or "poker machine" or "lottery machine" or "lotteries machine" or "gaming terminal" or "slot terminal" or "fruit terminal" or "poker terminal" or "lottery terminal" or "lotteries terminal" or pokies or pokey or puggy or fruities'
	AND AllFields: 'budget or cost or economic or pharmaco-economic or price or pricing or finance or fee or fees or expenditure or saving or "value for money" or "monetary value" or "allocate resource" or "resource allocation" or fund or funds or funding or funded or ration or rations or rationing or rationed' or "quality of life" or "quality adjusted life" or "disability adjusted life" or "short form or shortform" or "health year equivalent" or "sickness impact profile" or "health status indicator" or "health utility" or "utility value" or "utility measure" or "standard gamble" or "time trade off" or "time tradeoff"'
	AND PublicationYear:'2000 2020'

Database: Social Policy and Practice (SPP)

Date of last search: 04/04/2023

#	Searches
1	(gambl* not standard gamble).ti,ab.
2	betting.ti,ab.
3	(bet or bets).ti,ab.
4	wager*.ti,ab.
5	((gaming or gambling or slot or fruit or poker or lottery or lotteries) adj5 (machine? or terminal?)).ti,ab.
6	(pokies or pokey or puggy or fruities).ti,ab.
7	((dice or card? or roulette or blackjack or poker or baccarat or crap or craps or keno or casino? or bingo or bookmaker? or book maker or bookie? or lottery or lotteries or lotto or scratch card? or scratchcard? or raffle or raffles or sweepstak* or amusement arcade? or slot?) adj5 (money or monetization or monetisation or monetary or currency or currencies or cryptocurrency or cryptocurrencies or reward* or win or wins or winning* or loss or losses or lose)).ti,ab.
8	((game or games or gaming or gamer?) adj5 (money or monetization or monetisation or monetary)).ti,ab.
9	or/1-8
10	limit 9 to yr="2000 -Current"
11	budget*.ti,ab.
12	cost*.ti,ab.
13	(economic* or pharmaco?economic*).ti,ab.
14	(price* or pricing*).ti,ab.
15	(financ* or fee or fees or expenditure* or saving*).ti,ab.
16	(value adj2 (money or monetary)).ti,ab.
17	resourc* allocat*.ti,ab.
18	(fund or funds or funding* or funded).ti,ab.
19	(ration or rations or rationing* or rationed).ti,ab.
20	or/11-19
21	quality of life.ti.
22	((instrument or instruments) adj3 quality of life).ab.
23	quality adjusted life.ti,ab.
24	(qaly* or qald* or qale* or qtime* or life year or life years).ti,ab.
25	disability adjusted life.ti,ab.
26	daly*.ti,ab.
27	(sf36 or sf 36 or short form 36 or shortform 36 or short form36 or shortform36 or sf thirtysix or sfthirtysix or sfthirty six or sf thirty six or shortform thirtysix or shortform thirty six or short form thirtysix or short form thirty six).ti,ab.
28	(sf6 or sf 6 or short form 6 or shortform 6 or sf six or sfsix or shortform six or short form six or shortform6 or short form6).ti,ab.

#	Searches
29	(sf8 or sf 8 or sf eight or sfeight or shortform 8 or shortform 8 or shortform8 or short form8 or shortform eight or short form eight).ti,ab.
30	(sf12 or sf 12 or short form 12 or shortform 12 or short form12 or shortform12 or sf twelve or sftwelve or shortform twelve or short form twelve).ti,ab.
31	(sf16 or sf 16 or short form 16 or shortform 16 or short form16 or shortform16 or sf sixteen or sfsixteen or shortform sixteen or short form sixteen).ti,ab.
32	(sf20 or sf 20 or short form 20 or shortform 20 or short form20 or shortform20 or sf twenty or sftwenty or shortform twenty or short form twenty).ti,ab.
33	(hql or hqol or h qol or hrqol or hr qol).ti,ab.
34	(hye or hyes).ti,ab.
35	(health* adj2 year* adj2 equivalent*).ti,ab.
36	(pqol or qls).ti,ab.
37	(quality of wellbeing or quality of well being or index of wellbeing or index of well being or qwb).ti,ab.
38	nottingham health profile*.ti,ab.
39	sickness impact profile.ti,ab.
40	(health adj3 (utilit* or status)).ti,ab.
41	(utilit* adj3 (valu* or measur* or health or life or estimat* or elicit* or disease or score* or weight)).ti,ab.
42	(preference* adj3 (valu* or measur* or health or life or estimat* or elicit* or disease or score* or instrument or instruments)).ti,ab.
43	disutilit*.ti,ab.
44	rosser.ti,ab.
45	willingness to pay.ti,ab.
46	standard gamble*.ti,ab.
47	(time trade off or time tradeoff).ti,ab.
48	tto.ti,ab.
49	(hui or hui1 or hui2 or hui3).ti,ab.
50	(eq or euroqol or euro qol or eq5d or eq 5d or euroqual or euro qual).ti,ab.
51	duke health profile.ti,ab.
52	functional status questionnaire.ti,ab.
53	dartmouth coop functional health assessment*.ti,ab.
54	or/21-53
55	10 and 20
56	10 and 54
57	55 or 56

Database: Social Science Citation Index (SSCI)

Date of last search: 04/04/2023

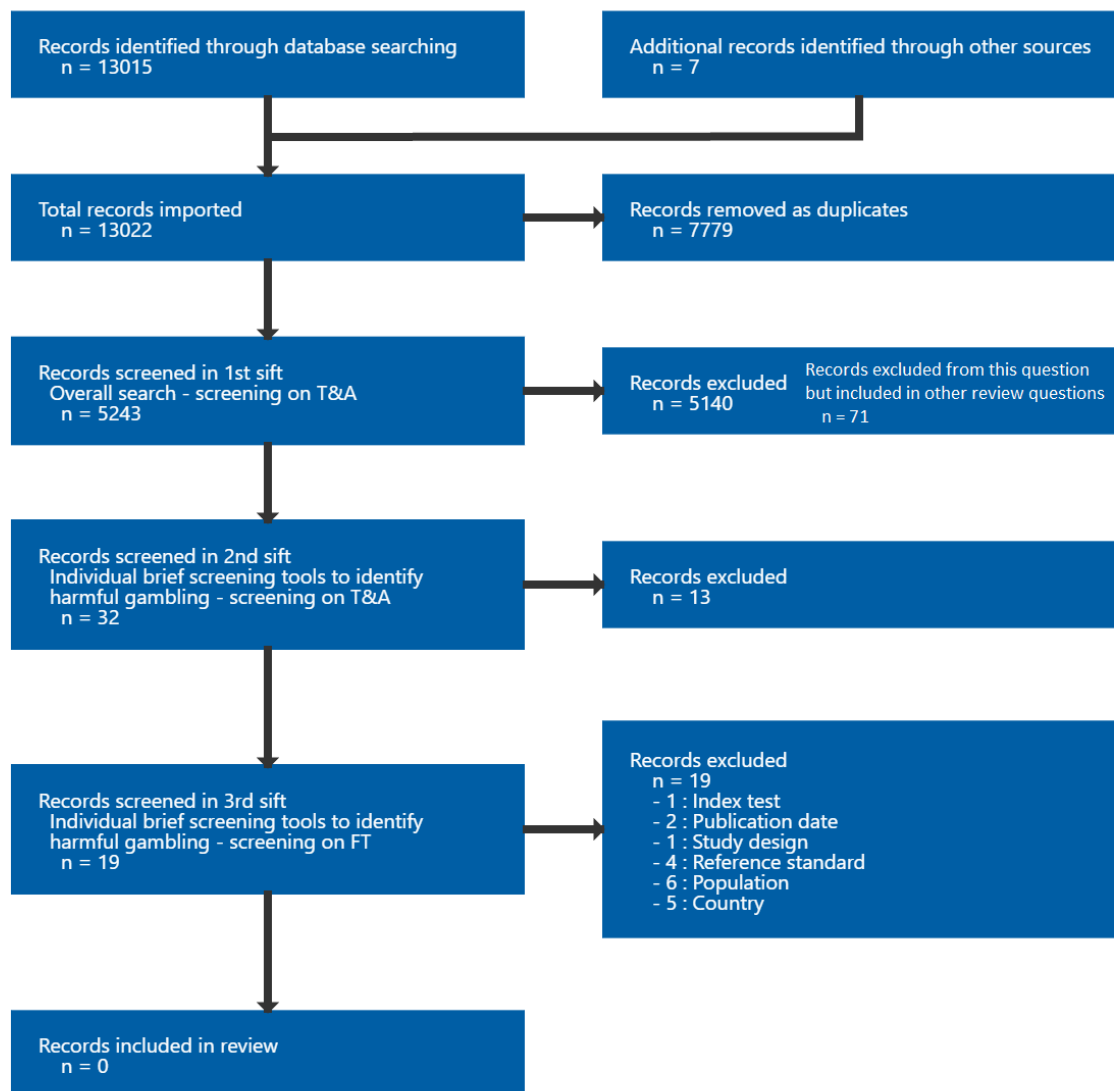| #	Searches
	(gambl* or betting or bet or bets or wager* or "gaming machine*" or "slot machine*" or "fruit machine*" or "poker machine*" or "lottery machine*" or "lotteries machine*" or "gaming terminal*" or "slot terminal*" or "fruit terminal*" or "poker terminal*" or "lottery terminal*" or "lotteries terminal*" or pokies or pokey or puggy or fruities) and (budget* OR cost* OR economic* OR pharmaco-economic* OR price* OR pricing* OR financ* OR fee OR fees OR expenditure* OR saving* OR "value for money" OR "monetary value" OR "resourc* allocat*" OR "allocat* resourc*" OR fund OR funds OR funding* OR funded OR ration OR rations OR rationing* OR rationed or "quality of life" or "quality adjusted life" or "disability adjusted life" or "short form or shortform" or "health year equivalent*" or "nottingham health profile*" or "sickness impact profile*" or "health status indicator*" or "health utilit*" or "utilit* valu*" or "utilit* measur*" or "willingness to pay" or "standard gamble*" or "time trade off" or "time tradeoff" or "duke health profile" or "functional status questionnaire" or "dartmouth coop functional health assessment*") (Title) Timespan: 2000-01-01 to 2022-03-24

Other sources

All websites listed in the protocol were searched and browsed.

Date of last search: 11/04/2023

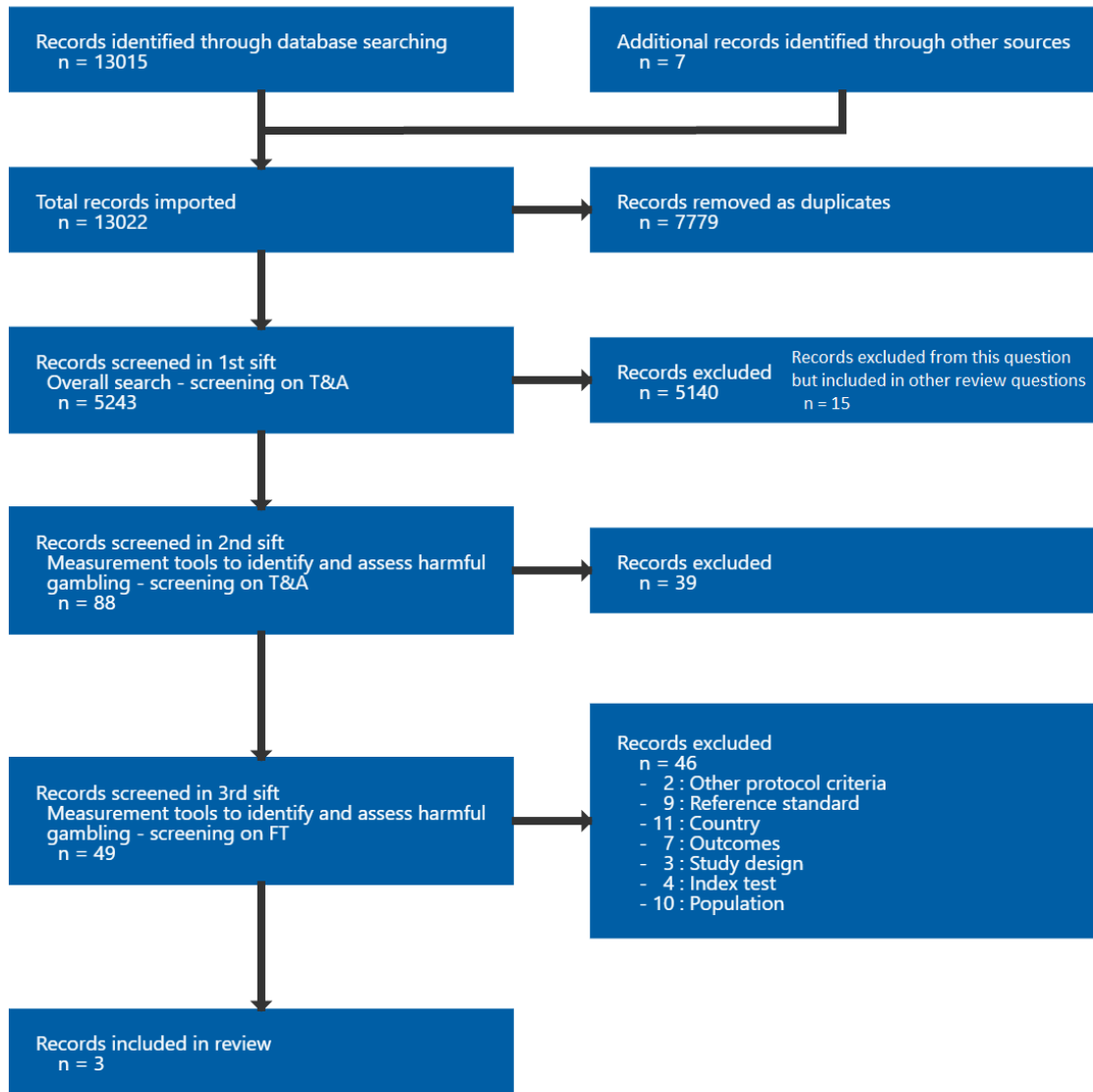# Appendix C Diagnostic evidence study selection

Study selection for: What is the accuracy of individual brief screening tools in identifying harmful gambling?

Figure 1: Study selection flow chart

Harmful gambling: evidence reviews for tools for identification and assessment of harmful gambling DRAFT (October 2023)

Study selection for: What is the accuracy of tools to identify and assess harmful gambling?

Figure 2: Study selection flow chart

Appendix D Evidence tables

Evidence tables for review question: What is the accuracy of individual brief screening tools in identifying harmful gambling?

No evidence was identified which was applicable to this review question.

Evidence tables for review question: What is the accuracy of tools to identify and assess harmful gambling?

Table 6:   Evidence tables

Bibliographic Reference	Granero, Roser; Jimenez-Murcia, Susana; Fernandez-Aranda, Fernando; Del Pino-Gutierrez, Amparo; Mena-Moreno, Teresa; Mestre-Bach, Gemma; Gomez-Pena, Monica; Moragas, Laura; Aymami, Neus; Giroux, Isabelle; Grall-Bronnec, Marie; Sauvaget, Anne; Codina, Ester; Vintro-Alcaraz, Cristina; Lozano-Madrid, Maria; Camozzi, Marco; Aguera, Zaida; Sanchez-Gonzalez, Jessica; Casale-Salayet, Gemma; Sanchez, Isabel; Lopez-Gonzalez, Hibai; Valenciano-Mendoza, Eduardo; Mora, Bernat; Baenas, Isabel; Menchon, Jose M; Presence of problematic and disordered gambling in older age and validation of the South Oaks Gambling Scale.; PloS one; 2020; vol. 15 (no. 5); e0233222

Study details

Country/ies where study was carried out	Spain
Study type	Cross-sectional study
Study dates	November 2016 - February 2018
Inclusion criteria	Participants had to: • Be aged 50 years or over • Have sufficient education and mental capacity to complete the self-report measures
Exclusion criteria	• Presence of the following co-morbidities:

	o Organic mental disorder o Intellectual disability o Neurodegenerative disorder (for example, Parkinson's disease) o Active psychotic disorder
Patient characteristics	N=408 people over 50 years of age from the general population and a gambling outpatient treatment centre • Population-based sample: n=361 • Clinical sample: n=47 Age in years (Mean [SD]): • Population-based sample: 73.8 (8.4) • Clinical sample: 70.0 (5.6) Sex (n): • Population-based sample: M=226, F=135 • Clinical sample: M=37, F=10 Gambling severity scale and score: Not reported. Ethnicity: Not reported. Co-morbidities: Not reported.
Index test(s)	South Oaks Gambling Screen. 20 items (scale 0-20, lower is better).
Reference standard(s)	Diagnostic Questionnaire for Pathological Gambling (according to DSM criteria)
Duration of follow-up	Not applicable.
Outcomes	To identify 'at-risk gambling+gambling disorder' as per DSM-5 (score ≥1)

	DSM-5 ≥1	DSM-5 <1

SOGS ≥2	64	11
SOGS <2	17	316

To identify 'gambling disorder' as per DSM-5 (score ≥4)

	DSM-5 ≥4	DSM-5 <4
SOGS ≥4	48	5
SOGS <4	4	351

Sources of funding	No industry funding (Received grants from the Ministerio de Economı́a y Competitividad, the Delegacio´n del Gobierno para el Plan Nacional sobre Drogas, Instituto de Salud Carlos III, and European Regional Development Fund)

Critical appraisal - QUADAS-2

Section	Question	Answer
Patient selection: risk of bias	Could the selection of patients have introduced bias?	Unclear *(Unclear whether consecutive sample enrolled.)*
Patient selection: applicability	Are there concerns that included patients do not match the review question?	High *(Population included participants not presenting to specialist gambling setting [361/408].)*
Index tests: risk of bias	Could the conduct or interpretation of the index test have introduced bias?	High *(Unclear whether index test interpreted with knowledge of reference standard result, thresholds not pre-specified.)*
Index tests: applicability	Are there concerns that the index test, its conduct, or interpretation differ from the review question?	Low
Reference standard: risk of bias	Could the reference standard, its conduct, or its interpretation have introduced bias?	Unclear *(Unclear whether reference standard interpreted with knowledge of index test result.)*

Section	Question	Answer
Reference standard: applicability	Is there concern that the target condition as defined by the reference standard does not match the review question?	Low
Flow and timing: risk of bias	Could the patient flow have introduced bias?	Low

Molander, 2021

Bibliographic Reference	Molander, Olof; Wennberg, Peter; Berman, Anne H; The Gambling Disorders Identification Test (GDIT): Psychometric Evaluation of a New Comprehensive Measure for Gambling Disorder and Problem Gambling.; Assessment; 2021; 10731911211046045

Study details

Country/ies where study was carried out	Sweden
Study type	Cross-sectional study
Study dates	November 2018 - June 2020
Inclusion criteria	Participants had to: • Be being ≥18 years old • Have gambled in the previous year o This criterion was not applied to self-help group participants.
Exclusion criteria	None reported.
Patient characteristics	N=603 people from self-help groups, social media and online forums, and an addiction treatment centre • Recreational gamblers: n=292 • Support-seeking gamblers: n=185 • Self-help groups gamblers: n=47

	• Treatment-seeking gamblers: n=79
	Age in years (Mean [SD]):
	• Recreational gamblers: 29.5 (10.5)
	• Support-seeking gamblers: 35.2 (14.0)
	• Self-help groups gamblers: 40.1 (9.8)
	• Treatment-seeking gamblers: 36.6 (10.0)
	Sex (n):
	• Recreational gamblers: M=239, F=50, not reported=3
	• Support-seeking gamblers: M=11, F=67, not reported=0
	• Self-help groups gamblers: M=31, F=16, not reported=0
	• Treatment-seeking gamblers: M=57, F=19, not reported=3
	Gambling severity scale and score (Mean [SD]):
	• Recreational gamblers: PGSI, 3.3 (5.2)
	• Support-seeking gamblers: PGSI, 11.8 (9.0)
	• Self-help groups gamblers: PGSI, 12.7 (9.9)
	• Treatment-seeking gamblers: PGSI, 14.8 (8.1)
	Ethnicity: Not reported.
	Co-morbidities: Not reported.
Index test(s)	Gambling Disorder Identification Test (GDIT). 14 items (scale 0-63, lower is better). Domains measure gambling behaviour, gambling symptoms, and negative consequences.
Reference standard(s)	Structured Clinical Interview for Gambling Disorder (SCI-GD). Semi-structured, clinician-administered interview to assess DSM-5 criteria for gambling disorder.
Duration of follow-up	Not applicable.

| **Outcomes** | To identify 'low+mild+severe gambling disorder' as per DSM-5 (score ≥4) | | |

	DSM-5 ≥4	DSM-5 <4
GDIT ≥20 (until 24)	97	27
GDIT <20	12	67

To identify 'mild+severe gambling disorder' as per DSM-5 (score ≥6)

	DSM-5 ≥6	DSM-5 <6
GDIT ≥25 (until 29)	66	44
GDIT <25	9	84

To identify 'severe gambling disorder' as per DSM-5 (score ≥8)

	DSM-5 ≥8	DSM-5 <8
GDIT ≥30 (until 62)	40	52
GDIT <30	2	109

Sources of funding	No industry funding (grants from 'Responding to and Reducing Gambling Problems—Studies in Help-seeking, Measurement, Comorbidity and Policy Impacts' [financed by the Swedish Research Council for Health, Working Life and Welfare] and development funds for identification and treatment of problem gambling from the Stockholm Health Care Services [Stockholm region]).

Critical appraisal - QUADAS-2

Section	Question	Answer
Patient selection: risk of bias	Could the selection of patients have introduced bias?	High *(Consecutive or randomised sample not enrolled.)*
Patient selection: applicability	Are there concerns that included patients do not match the review question?	High *(Population included participants not presenting to specialist gambling setting [293/603].)*
Index tests: risk of bias	Could the conduct or interpretation of the index test have introduced bias?	High

Section	Question	Answer
		(Unclear whether index test interpreted with knowledge of reference standard result, thresholds not pre-specified.)
Index tests: applicability	Are there concerns that the index test, its conduct, or interpretation differ from the review question?	Low
Reference standard: risk of bias	Could the reference standard, its conduct, or its interpretation have introduced bias?	Unclear *(Unclear whether reference standard interpreted with knowledge of index test result.)*
Reference standard: applicability	Is there concern that the target condition as defined by the reference standard does not match the review question?	Low
Flow and timing: risk of bias	Could the patient flow have introduced bias?	High *(Only 203/603 participants received reference standard.)*

Toneatto, 2008

Bibliographic Reference	Toneatto, T.; Reliability and validity of the gamblers anonymous twenty questions; Journal of Psychopathology and Behavioral Assessment; 2008; vol. 30 (no. 1); 71-78

Study details

Country/ies where study was carried out	Canada
Study type	Non-randomised controlled trial
Study dates	Not reported.
Inclusion criteria	Not reported.
Exclusion criteria	Not reported.

Patient characteristics	N=159 • Treatment seeking group 1: n=61 • Treatment-seeking group 2: n=98 Age in years (Mean [SD]): • Treatment seeking group 1: 40.92 (14.66) • Treatment-seeking group 2: 46.98 (14.24) Sex (n): • Treatment seeking group 1: M=39, F=22 • Treatment-seeking group 2: M=73, F=26 Gambling severity scale and score (Mean [SD]): Treatment seeking group 1: DSM-IV-PG, 7.00 (1.94) Treatment-seeking group 2: DSM-IV-PG, 6.49 (2.23) Ethnicity: Not reported. Co-morbidities: Not reported.
Index test(s)	Gamblers Anonymous 20 Questions. 20 items (scale 0-20, lower is better).
Reference standard(s)	DSM-IV. 10 items (scale 0-10, lower is better).
Duration of follow-up	Not applicable.
Outcomes	To identify 'pathological gambling' as per DSM-IV (score ≥5)

To identify 'pathological gambling' as per DSM-IV (score ≥5)

	DSM-IV ≥5	DSM-IV <5
GA20 ≥7	132	16
GA20 <7	1	10

Sources of funding	Unclear funding source (funding not reported)

Critical appraisal - QUADAS-2

Section	Question	Answer
Patient selection: risk of bias	Could the selection of patients have introduced bias?	High *(Consecutive or randomised sample not enrolled.)*
Patient selection: applicability	Are there concerns that included patients do not match the review question?	High *(Participants did not present to specialist gambling setting.)*
Index tests: risk of bias	Could the conduct or interpretation of the index test have introduced bias?	Unclear *(Unclear whether index test interpreted with knowledge of reference standard result, threshold appears to be pre-specified.)*
Index tests: applicability	Are there concerns that the index test, its conduct, or interpretation differ from the review question?	Low
Reference standard: risk of bias	Could the reference standard, its conduct, or its interpretation have introduced bias?	Unclear *(Unclear whether reference standard interpreted with knowledge of index test result.)*
Reference standard: applicability	Is there concern that the target condition as defined by the reference standard does not match the review question?	Unclear *(DSM-IV was self-administered.)*
Flow and timing: risk of bias	Could the patient flow have introduced bias?	Low

Appendix E Forest plots

Forest plots for review question: What is the accuracy of individual brief screening tools in identifying harmful gambling?

No meta-analysis was conducted for this review question and so there are no forest plots.

Forest plots for review question: What is the accuracy of tools to identify and assess harmful gambling?

No meta-analysis was conducted for this review question and so there are no forest plots.

Appendix F GRADE tables

GRADE tables for review question: What is the accuracy of individual brief screening tools in identifying harmful gambling?

No evidence was identified which was applicable to this review question.

GRADE tables for review question: What is the accuracy of tools to identify and assess harmful gambling?

Table 7: GRADE table for SOGS score for diagnosis of at-risk gambling in studies receiving no industry funding

No of studies	Study details	No of participants	Effect size (95% CI)	Risk of bias	Inconsistency	Indirectness	Imprecision	Quality of evidence	Importance	PPV (95% CI)	NPV (95% CI)
Threshold: SOGS score ≥2											
1 (Granero 2020)	Population: Population and clinical samples of people aged over 50 Reference standard: 'At-risk gambling' as per DSM-5 (score ≥1)	408	Sensitivity: 79.0 (68.9-86.5)	Very serious[1]	No serious inconsistency	Very serious [2]	No serious imprecision	VERY LOW	CRITICAL	85.3 (75.6-91.6)	94.9 (92.0-96.8)
			Specificity: 96.6 (94.1-98.1)	Very serious[1]	No serious inconsistency	Very serious[2]	No serious imprecision	VERY LOW	CRITICAL		

CI: Confidence interval; DSM-5: Diagnostic and Statistical Manual of Mental Disorders (5th edition); NPV: Negative predictive value; PPV: Positive predictive value; SOGS: South Oaks Gambling Screen
1 Very serious risk of bias in the evidence contributing to the outcomes as per QUADAS-2
2 Population is very indirect due to including participants not presenting to a specialist gambling setting (361/408) and those presenting to a specialist gambling setting (47/408)

Table 8: GRADE table for SOGS score for diagnosis of gambling disorder in studies receiving no industry funding

No of studies	Study details	No of participants	Effect size (95% CI)	Risk of bias	Inconsistency	Indirectness	Imprecision	Quality of evidence	Importance	PPV (95% CI)	NPV (95% CI)
Threshold: SOGS score ≥4											
1 (Granero 2020)	Population: Population and clinical samples Reference standard: 'Gambling disorder' as per DSM-5 (score ≥4)	408	Sensitivity: 92.3 (81.8-97.0)	Very serious[1]	No serious inconsistency	Very serious[2]	Serious imprecision[3]	VERY LOW	CRITICAL	90.6 (79.7-95.9)	98.9 (97.1-99.6)
			Specificity: 98.6 (96.8-99.4)	Very serious[1]	No serious inconsistency	Very serious[2]	No serious imprecision	VERY LOW	CRITICAL		

CI: Confidence interval; DSM-5: Diagnostic and Statistical Manual of Mental Disorders (5th edition); NPV: Negative predictive value; PPV: Positive predictive value; SOGS: South Oaks Gambling Screen
1 Very serious risk of bias in the evidence contributing to the outcomes as per QUADAS-2
2 Population is very indirect due to including participants not presenting to a specialist gambling setting (361/408) and those presenting to a specialist gambling setting (47/408)
3 95% CI crosses 1 MID (for sensitivity: 60 and 90)

Table 9: GRADE table for GDIT score for diagnosis of low gambling disorder in studies receiving no industry funding

No of studies	Study details	No of participants	Effect size (95% CI)	Risk of bias	Inconsistency	Indirectness	Imprecision	Quality of evidence	Importance	PPV (95% CI)	NPV (95% CI)
Threshold: GDIT ≥20											
1 (Molander 2021)	Population: Population and clinical samples	203	Sensitivity: 89.0 (81.7-93.6)	Very serious[1]	No serious inconsistency	Very serious[2]	Serious[3]	VERY LOW	CRITICAL	78.2 (70.2-84.6)	84.8 (75.3-91.1)
			Specificity: 71.3 (61.4-79.4)	Very serious[1]	No serious inconsistency	Very serious[2]	No serious imprecision	VERY LOW	CRITICAL		

No of studies	Study details	No of participants	Effect size (95% CI)	Risk of bias	Inconsistency	Indirectness	Imprecision	Quality of evidence	Importance	PPV (95% CI)	NPV (95% CI)
	Reference standard: 'Low gambling disorder' as per DSM-5 (score ≥4)										

CI: Confidence interval; DSM-5: Diagnostic and Statistical Manual of Mental Disorders (5th edition); GDIT: Gambling Disorders Identification Test; NPV: Negative predictive value; PPV: Positive predictive value

1 Very serious risk of bias in the evidence contributing to the outcomes as per QUADAS-2

2 Population is very indirect due to including participants not presenting to a specialist gambling setting (293/603 for whole study population, not reported for those receiving reference standard) and those presenting to a specialist gambling setting (311/603 for whole study population, not reported for those receiving reference standard)

3 95% CI crosses 1 MID (for sensitivity: 60 and 90)

Table 10: GRADE table for GDIT score for diagnosis of mild gambling disorder in studies receiving no industry funding

No of studies	Study details	No of participants	Effect size (95% CI)	Risk of bias	Inconsistency	Indirectness	Imprecision	Quality of evidence	Importance	PPV (95% CI)	NPV (95% CI)
Threshold: GDIT ≥25											
1 (Molander 2021)	Population: Population and clinical samples Reference standard: 'Mild gambling disorder' as per DSM-5 (score ≥6)	203	Sensitivity: 88.0 (78.7-93.6)	Very serious[1]	No serious inconsistency	Very serious[2]	Serious[3]	VERY LOW	CRITICAL	60.0 (50.7-68.7)	90.3 (82.6-94.8)
			Specificity: 65.6 (57.0-73.3)	Very serious[1]	No serious inconsistency	Very serious[2]	Serious[3]	VERY LOW	CRITICAL		

CI: Confidence interval; DSM-5: Diagnostic and Statistical Manual of Mental Disorders (5th edition); GDIT: Gambling Disorders Identification Test; NPV: Negative predictive value;
PPV: Positive predictive value
1 Very serious risk of bias in the evidence contributing to the outcomes as per QUADAS-2
2 Population is very indirect due to including participants not presenting to a specialist gambling setting (293/603 for whole study population, not reported for those receiving reference standard) and those presenting to a specialist gambling setting (311/603 for whole study population, not reported for those receiving reference standard)
3 95% CI crosses 1 MID (for sensitivity: 60 and 90; for specificity: 60 and 90)

Table 11: GRADE table for GDIT score for diagnosis of severe gambling disorder in studies receiving no industry funding

No of studies	Study details	No of participants	Effect size (95% CI)	Risk of bias	Inconsistency	Indirectness	Imprecision	Quality of evidence	Importance	PPV (95% CI)	NPV (95% CI)
Threshold: GDIT ≥30											
1 (Molander 2021)	Population: Population and clinical samples	203	Sensitivity: 95.2 (84.2-98.7)	Very serious[1]	No serious inconsistency	Very serious[2]	Serious[3]	VERY LOW	CRITICAL	43.5 (33.8-53.7)	98.2 (93.7-99.5)
	Reference standard: 'Severe gambling disorder' as per DSM-5 (score ≥8)		Specificity: 67.7 (60.1-74.4)	Very serious[1]	No serious inconsistency	Very serious[2]	No serious imprecision	VERY LOW	CRITICAL		

CI: Confidence interval; DSM-5: Diagnostic and Statistical Manual of Mental Disorders (5th edition); GDIT: Gambling Disorders Identification Test; NPV: Negative predictive value;
PPV: Positive predictive value
1 Very serious risk of bias in the evidence contributing to the outcomes as per QUADAS-2
2 Population is very indirect due to including participants not presenting to a specialist gambling setting (293/603 for whole study population, not reported for those receiving reference standard) and those presenting to a specialist gambling setting (311/603 for whole study population, not reported for those receiving reference standard)
3 95% CI crosses 1 MID (for sensitivity: 60 and 90)

Table 12: GRADE table for GA20 score for diagnosis of pathological gambling in studies receiving funding from an unclear funding source

No of studies	Study details	No of participants	Effect size (95% CI)	Risk of bias	Inconsistency	Indirectness	Imprecision	Quality of evidence	Importance	PPV (95% CI)	NPV (95% CI)
Threshold: GA20 ≥7											
1 (Toneatto 2008)	Population: Treatment-seeking problem gamblers from the community Reference standard: 'Pathological gambling' as per DSM-IV (score ≥5)	159	Sensitivity: 99.2 (95.9-99.9)	Very serious[1]	No serious inconsistency	Very serious[2]	No serious imprecision	VERY LOW	CRITICAL	89.2 (83.2-93.2)	90.9 (62.3-98.4)
			Specificity: 38.5 (22.4-57.5)	Very serious[1]	No serious inconsistency	Very serious[2]	No serious imprecision	VERY LOW	CRITICAL		

CI: Confidence interval; DSM-IV: Diagnostic and Statistical Manual of Mental Disorders (4th edition); GA20: Gamblers Anonymous 20 Questions; NPV: Negative predictive value; PPV: Positive predictive value

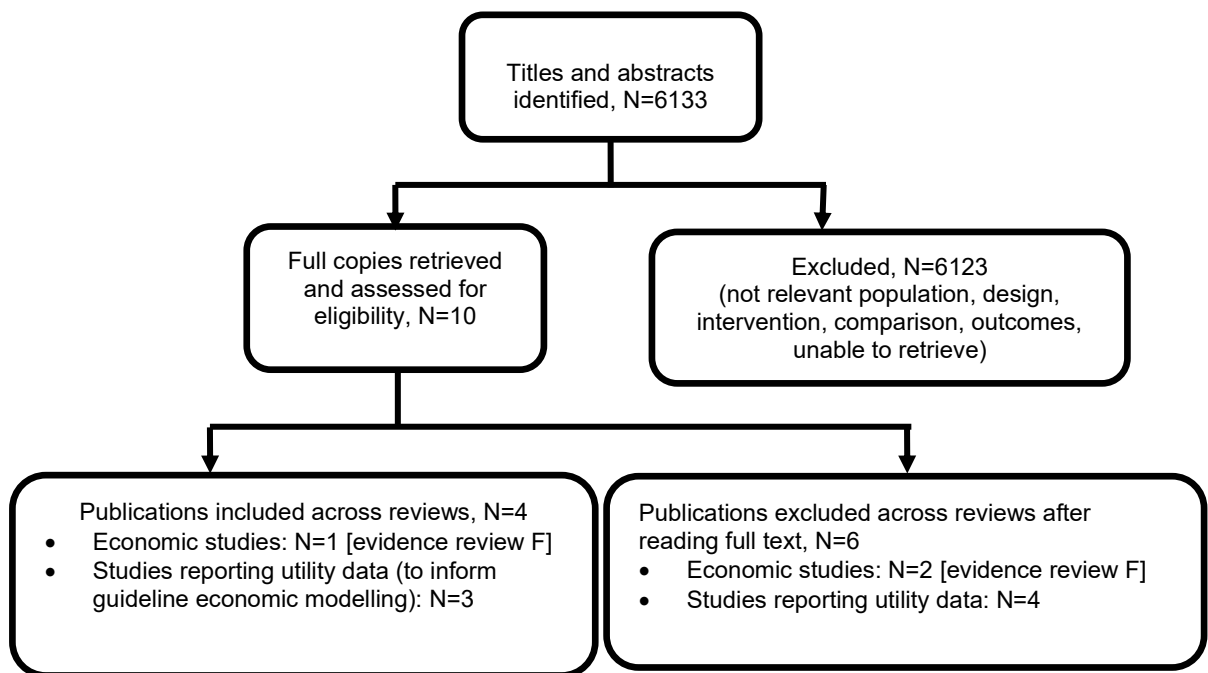1 Very serious risk of bias in the evidence contributing to the outcomes as per QUADAS-2

2 Population is very indirect due to participants being recruited from self-volunteering problem gamblers in the community, not from a specialist gambling setting

Appendix G Economic evidence study selection

Study selection for: What is the accuracy of individual brief screening tools in identifying harmful gambling? and What is the accuracy of tools to identify and assess harmful gambling?

A global health economics search was undertaken for all areas covered in the guideline. Figure 3 shows the flow diagram of the selection process for economic evaluations of interventions and strategies associated with the care of people experiencing harmful gambling, their families, friends and others close to them, and studies reporting gambling-related health state utility data.

Figure 3: Study selection flow chart

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                    │   Titles and abstracts   │
                    │   identified, N=6133     │
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│   and assessed for    │          │ (not relevant population, design,│
│   eligibility, N=10   │          │ intervention, comparison, outcomes,│
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Publications included across reviews, N=4
- Economic studies: N=1 [evidence review F]
- Studies reporting utility data (to inform guideline economic modelling): N=3

Publications excluded across reviews after reading full text, N=6
- Economic studies: N=2 [evidence review F]
- Studies reporting utility data: N=4

Appendix H Economic evidence tables

Economic evidence tables for review question: What is the accuracy of individual brief screening tools in identifying harmful gambling?

No economic evidence was identified which was applicable to this review question.

Economic evidence tables for review question: What is the accuracy of tools to identify and assess harmful gambling?

No economic evidence was identified which was applicable to this review question.

Appendix I Economic model

Economic model for review question: What is the accuracy of individual brief screening tools in identifying harmful gambling?

No economic analysis was conducted for this review question.

Economic model for review question: What is the accuracy of tools to identify and assess harmful gambling?

No economic analysis was conducted for this review question.

Appendix J Excluded studies

Excluded studies for review question: What is the accuracy of individual brief screening tools in identifying harmful gambling?

Excluded diagnostic studies

Table 13: Excluded studies and reasons for their exclusion

Study	Reason for exclusion
Bellringer, M. (2008) PROBLEM GAMBLING ASSESSMENT AND SCREENING INSTRUMENTS PHASE TWO FINAL REPORT.	- Population Participants not recruited from a general, non-specialist setting
Bellringer, Maria, Abbott, Max, Volberg, Rachel et al. (2008) PROBLEM GAMBLING ASSESSMENT AND SCREENING INSTRUMENTS PHASE ONE FINAL REPORT.	- Study design 4 studies reported in publication. Non-systematic literature review, qualitative research, population level data and consensus recommendations.
Blank, Lindsay, Baxter, Susan, Woods, Helen Buckley et al. (2021) Should screening for risk of gambling-related harm be undertaken in health, care and support settings? A systematic review of the international evidence. Addiction science & clinical practice 16(1): 35	- Population Systematic review included data from included populations (people presenting at general, non-specialist settings) and excluded populations (for example, healthcare professionals and social care professionals). Results not presented separately for target population. Included studies checked for relevance to protocol – and none were identified.
Brett, Emma I, Weinstock, Jeremiah, Burton, Steve et al. (2014) Do the DSM-5 diagnostic revisions affect the psychometric properties of the Brief Biosocial Gambling Screen?. International Gambling Studies 14(3): 447-456	- Country Study conducted in the US
Cathy King, Pike (2002) Measuring video gambling: Instrument development and validation. Research on Social Work Practice 12(3): 389-407	- Country Unclear. Participants recruited from 46 countries (no further details reported).
Christo, George, Jones, Susan L, Haylett, Samantha et al. (2003) The Shorter PROMIS Questionnaire: further validation of a tool for simultaneous assessment of multiple addictive behaviours. Addictive behaviors 28(2): 225-48	- Population Participants not recruited from a general, non-specialist setting
Davies, NH Roderique-Davies, G Drummond, LC Torrance, J Sabolova, K Thomas, S John, B Accessing the invisible population of low-risk gamblers, issues with screening, testing and theory: a systematic review. JOURNAL OF PUBLIC HEALTH-HEIDELBERG	- Reference standard Systematic review included studies using included reference standards and excluded reference standards (for example, South Oaks Gambling Screen and Problem Gambling Severity Index). Results not presented separately for target reference standards. Included studies checked for relevance to protocol – and none were identified.
Denis, Cecile, Fatseas, Melina, Beltran, Virginie et al. (2016) Usefulness and validity of the	- Population

Study	Reason for exclusion
modified Addiction Severity Index: A focus on alcohol, drugs, tobacco, and gambling. Substance abuse 37(1): 168-75	Participants not recruited from a general, non-specialist setting
Dowling, N A, Merkouris, S S, Dias, S et al. (2019) The diagnostic accuracy of brief screening instruments for problem gambling: A systematic review and meta-analysis. Clinical psychology review 74: 101784	- Country Systematic review included studies from included study countries and excluded study countries (for example, US). Results not presented separately for target countries. Included studies checked for relevance to protocol – and none were identified.
Edgren, Robert, Castren, Sari, Makela, Marjukka et al. (2016) Reliability of Instruments Measuring At-Risk and Problem Gambling Among Young Individuals: A Systematic Review Covering Years 2009-2015. The Journal of adolescent health : official publication of the Society for Adolescent Medicine 58(6): 600-15	- Population Mixed. Systematic review included participants from included age range (≥18 years) and excluded age ranges (≤17 years). Results not presented separately for target population. Included studies checked for relevance to protocol – and none were identified.
Goodyear-Smith, Felicity; Arroll, Bruce; Coupe, Nicole (2009) Asking for help is helpful: validation of a brief lifestyle and mood assessment tool in primary health care. Annals of family medicine 7(3): 239-44	- Reference standard Study used a non-protocol reference standard, the South Oaks Gambling Screen
Goodyear-Smith, Felicity, Coupe, Nicole M, Arroll, Bruce et al. (2008) Case finding of lifestyle and mental health disorders in primary care: validation of the 'CHAT' tool. The British journal of general practice : the journal of the Royal College of General Practitioners 58(546): 26-31	- Reference standard Study used a non-protocol reference standard, the South Oaks Gambling Screen
Johnson, EE Hamer, R Nora, RM Tan, B Eisenstein, N Engelhart, C (1997) The lie/bet questionnaire for screening pathological gamblers. PSYCHOLOGICAL REPORTS 80(1): 83 - 88	- Publication date Study published before 2000
Johnson, EE Hamer, RM Nora, RM (1998) The lie/bet questionnaire for screening pathological gamblers: A follow-up study. PSYCHOLOGICAL REPORTS 83(3): 1219 - 1224	- Publication date Study published before 2000
Langan, Kristen, Wall, Megan, Potts, Wendy et al. (2019) Prevalence and potential predictors of gambling disorder among people living with HIV. AIDS care 31(4): 421-426	- Country Study conducted in the US
Marcos, Marta and Choliz, Mariano (2021) Tecnotest: A screening tool for technological addictions and gambling disorder. Adicciones 0(0): 1380	- Population Participants not recruited from a general, non-specialist setting
Papay, Kimberly, Mamikonyan, Eugenia, Siderowf, Andrew D et al. (2011) Patient versus informant reporting of ICD symptoms in Parkinson's disease using the QUIP: validity and	- Country Study conducted in the US

Study	Reason for exclusion
variability. Parkinsonism & related disorders 17(3): 153-5	
Sullivan, Sean, Brown, Robert, Skinner, Bruce et al. (2008) Pathological and sub-clinical problem gambling in a New Zealand prison: A comparison of the Eight and SOGS gambling screens. International Journal of Mental Health and Addiction 6(3): 369-377	- Index test Study used a non-protocol index test, an 8-item gambling behaviour screening test
Wieczorek, Lukasz, Biechowska, Daria, Dabrowska, Katarzyna et al. (2021) Psychometric properties of the Polish version of two screening tests for gambling disorders: the Problem Gambling Severity Index and Lie/Bet Questionnaire. Psychiatry, psychology, and law : an interdisciplinary journal of the Australian and New Zealand Association of Psychiatry, Psychology and Law 28(4): 585-598	- Reference standard Study used a non-protocol reference standard developed by the author

Excluded economic studies

No economic evidence was reviewed at full text and excluded from this review.

Excluded studies for review question: What is the accuracy of tools to identify and assess harmful gambling?

Excluded diagnostic studies

Table 14: Excluded studies and reasons for their exclusion

Study	Reason for exclusion
Alvarez-Moya, Eva Ma, Jimenez-Murcia, Susana, Aymami, Ma Neus et al. (2010) Subtyping study of a pathological gamblers sample. Canadian journal of psychiatry. Revue canadienne de psychiatrie 55(8): 498-506	- Outcomes Primary and secondary outcomes not reported. Unable to produce 2x2 table from presented data
Bellringer, M. (2008) PROBLEM GAMBLING ASSESSMENT AND SCREENING INSTRUMENTS PHASE TWO FINAL REPORT.	- Study design No reference standard administered
Bellringer, Maria, Abbott, Max, Volberg, Rachel et al. (2008) PROBLEM GAMBLING ASSESSMENT AND SCREENING INSTRUMENTS PHASE ONE FINAL REPORT.	- Study design Non-systematic literature review, qualitative research, population level data and consensus recommendations.
Bernaldo-de-Quiros, Monica, Labrador, Francisco J, Estupina, Francisco et al. (2017) Psychometric properties of a brief on-line screening instrument to detect at-risk gamblers. Psicothema 29(4): 558-562	- Outcomes Primary and secondary outcomes not reported. Unable to produce 2x2 table from presented data
Bodor, Davor, Ricijas, Neven, Zoricic, Zoran et al. (2018) Prevalence of Pathological Gambling among Alcohol Addicts in Outpatient Treatment	- Population Participants did not present at a specialist gambling setting for assessment or treatment

Study	Reason for exclusion
in the City of Zagreb: a Cross-Sectional Study. Psychiatria Danubina 30(3): 348-355	
Bonnaire, Celine, Bungener, Catherine, Varescon, Isabelle et al. (2006) Pathological gambling and sensation seeking - How do gamblers playing games of chance in cafes differ from those who bet on horses at the racetrack?. Addiction Research & Theory 14(6): 619-629	- Population Participants did not present at a specialist gambling setting for assessment or treatment
Brandt, Laura and Fischer, Gabriele (2019) Adult ADHD Is Associated With Gambling Severity and Psychiatric Comorbidity Among Treatment-Seeking Problem Gamblers. Journal of attention disorders 23(12): 1383-1395	- Index test Study used a non-protocol index test, Gambling Attitudes and Beliefs Survey (designed to measure gambling-related dysfunctional beliefs rather than harmful gambling)
Cathy King, Pike (2002) Measuring video gambling: Instrument development and validation. Research on Social Work Practice 12(3): 389-407	- Country Unclear. Participants recruited from 46 countries (no further details reported)
Christo, George, Jones, Susan L, Haylett, Samantha et al. (2003) The Shorter PROMIS Questionnaire: further validation of a tool for simultaneous assessment of multiple addictive behaviours. Addictive behaviors 28(2): 225-48	- Reference standard Study used a non-protocol reference standard, South Oaks Gambling Screen
Currie, Shawn R.; Casey, David M.; Hodgins, David C. (2010) Improving the Psychometric Properties of the Problem Gambling Severity Index.	- Population Participants did not present at a specialist gambling setting for assessment or treatment
Dannon, Pinhas N, Lowengrub, Katherine, Aizer, Anat et al. (2006) Pathological gambling: comorbid psychiatric diagnoses in patients and their families. The Israel journal of psychiatry and related sciences 43(2): 88-92	- Country Study conducted in Israel
Davies, NH Roderique-Davies, G Drummond, LC Torrance, J Sabolova, K Thomas, S John, B Accessing the invisible population of low-risk gamblers, issues with screening, testing and theory: a systematic review. JOURNAL OF PUBLIC HEALTH-HEIDELBERG	- Reference standard Systematic review included studies using protocol reference standards and non-protocol reference standards (for example, South Oaks Gambling Screen and Problem Gambling Severity Index). Results not presented separately for target reference standards. Included studies checked for relevance to protocol – and none were identified.
Denis, Cecile, Fatseas, Melina, Beltran, Virginie et al. (2016) Usefulness and validity of the modified Addiction Severity Index: A focus on alcohol, drugs, tobacco, and gambling. Substance abuse 37(1): 168-75	- Outcomes Primary and secondary outcomes not reported. Unable to produce 2x2 table from presented data
Edgren, Robert, Castren, Sari, Makela, Marjukka et al. (2016) Reliability of Instruments Measuring At-Risk and Problem Gambling Among Young Individuals: A Systematic Review Covering Years 2009-2015. The Journal of adolescent	- Population Systematic review included participants from included age range (≥18 years) and excluded age ranges (≤17 years). Results not presented

Study	Reason for exclusion
health : official publication of the Society for Adolescent Medicine 58(6): 600-15	separately for target population. Included studies checked for relevance to protocol – and none were identified.
Esparza-Reig, Javier, Guillen-Riquelme, Alejandro, Marti-Vilar, Manuel et al. (2021) A Reliability Generalization Meta-analysis of the South Oaks Gambling Screen (SOGS). Psicothema 33(3): 490-499	- Country Systematic review included studies from protocol countries (for example, Canada and Australia) and non-protocol countries (for example, the US). Results not presented separately for target countries. Included studies checked for relevance to protocol – and none were identified.
Fernandez-Montalvo, Javier; Lopez-Goni, Jose Javier; Arteaga, Alfonso (2012) Prevalence of pathological gambling in treatment-seeking addicted patients: An exploratory study with the South Oaks Gambling Screen. Anales de Psicologia 28(2): 344-349	- Population Participants did not present at a specialist gambling setting for assessment or treatment
Ferris J and Wynne H (2001) The Canadian Problem Gambling Index: Final Report.	- Outcomes Primary and secondary outcomes not reported. Unable to produce 2x2 table from presented data
Gorsane, Mohamed Ali, Reynaud, Michel, Venisse, Jean-Luc et al. (2017) Gambling disorder-related illegal acts: Regression model of associated factors. Journal of behavioral addictions 6(1): 64-73	- Index test Study used a non-protocol index test, presence of gambling disorder-related acts
Granero, Roser, Penelo, Eva, Stinchfield, Randy et al. (2014) Is pathological gambling moderated by age?. Journal of gambling studies 30(2): 475-92	- Country Study conducted in the US
Grant, Jon E; Odlaug, Brian L; Chamberlain, Samuel R (2017) Gambling disorder, DSM-5 criteria and symptom severity. Comprehensive psychiatry 75: 1-5	- Study design No index test administered
Hart, K. and Frisch, R. Validating Questionnaires to Assess the Subjective Sense of Impaired Control Over Gambling Expenditures and Negative Gambling Expectancies Pertaining to Likely Consequences.	- Other protocol criteria Article unavailable
Holtgraves, Thomas (2009) Evaluating the problem gambling severity index. Journal of gambling studies 25(1): 105-20	- Population Participants did not present at a specialist gambling setting for assessment or treatment
Jimenez-Murcia, Susana, Granero, Roser, Tarrega, Salome et al. (2015) Gambling disorder and substance use disorders: Effect of early age and personality. Drogues, sante et societe 14(1): 94-109	- Other protocol criteria French language article
Leppink, Eric W; Redden, Sarah A; Grant, Jon E (2016) Impulsivity and gambling: A complex	- Index test

Study	Reason for exclusion
clinical association across three measures. The American journal on addictions 25(2): 138-44	Study used non-protocol index tests, Barratt Impulsivity Scale 11, Eyesnck Impulsiveness Questionnaire, and Stop-Signal Task
Linnet, Jakob, Jeppsen Mensink, Monique, de Neergaard Bonde, Johanne et al. (2017) Treatment of gambling disorder patients with comorbid depression. Acta neuropsychiatrica 29(6): 356-362	- Outcomes Primary and secondary outcomes not reported. Unable to produce 2x2 table from presented data
Manning, Victoria Dowling, Nicki. A. Lee, Stuart Rodda, Simone Garfield, Joshua Benjamin Bernard Volberg, Rachel Kulkarni, Jayashri Lubman, Dan Ian (2017) Problem gambling and substance use in patients attending community mental health services. JOURNAL OF BEHAVIORAL ADDICTIONS 6(4): 678 - 688	- Population Participants did not present at a specialist gambling setting for assessment or treatment
Marchetti, Daniela, Whelan, James P, Verrocchio, Maria C et al. (2016) Psychometric evaluation of the Italian translation of the Gamblers' Beliefs Questionnaire. International Gambling Studies 16(1): 17-30	- Reference standard Study used a non-protocol reference standard, the South Oaks Gambling Screen
Marcos, Marta and Choliz, Mariano (2021) Tecnotest: A screening tool for technological addictions and gambling disorder. Adicciones 0(0): 1380	- Population Participants did not present at a specialist gambling setting for assessment or treatment
Martinotti, Giovanni, Andreoli, Sara, Giametta, Emanuela et al. (2006) The dimensional assessment of personality in pathologic and social gamblers: the role of novelty seeking and self-transcendence. Comprehensive psychiatry 47(5): 350-6	- Population Participants did not present at a specialist gambling setting for assessment or treatment
Penelo, Eva, Granero, Roser, Fernandez-Aranda, Fernando et al. (2012) Comparison between immigrant and Spanish native-born pathological gambling patients. Psychological reports 110(2): 555-70	- Outcomes Primary and secondary outcomes not reported. Unable to produce 2x2 table from presented data
Petry, Nancy M (2003) Validity of a gambling scale for the addiction severity index. The Journal of nervous and mental disease 191(6): 399-407	- Country Study conducted in the US
Petry, Nancy M (2007) Concurrent and predictive validity of the Addiction Severity Index in pathological gamblers. The American journal on addictions 16(4): 272-82	- Country Study conducted in the US
Petry, Nancy M and Oncken, Cheryl (2002) Cigarette smoking is associated with increased severity of gambling problems in treatment-seeking gamblers. Addiction (Abingdon, England) 97(6): 745-53	- Country Study conducted in the US
Pietrzak, Robert H and Petry, Nancy M (2005) Antisocial personality disorder is associated with increased severity of gambling, medical, drug	- Country Study conducted in the US

Study	Reason for exclusion
and psychiatric problems among treatment-seeking pathological gamblers. Addiction (Abingdon, England) 100(8): 1183-93	
Savvidou, Lamprini G, Fagundo, Ana B, Fernandez-Aranda, Fernando et al. (2017) Is gambling disorder associated with impulsivity traits measured by the UPPS-P and is this association moderated by sex and age?. Comprehensive psychiatry 72: 106-113	- Reference standard Study sued non-protocol reference standards, UPPS-P Impulsive Behavior Scale, the Symptom Checklist, and the Temperament and Character Inventory-R
Slutske, Wendy S, Zhu, Gu, Meier, Madeline H et al. (2011) Disordered gambling as defined by the Diagnostic and Statistical Manual of Mental Disorders and the South Oaks Gambling Screen: evidence for a common etiologic structure. Journal of abnormal psychology 120(3): 743-51	- Population Participants did not present at a specialist gambling setting for assessment or treatment
Smith, David P, Pols, Rene G, Battersby, Malcolm W et al. (2013) The Gambling Urge Scale: Reliability and validity in a clinical population. Addiction Research & Theory 21(2): 113-122	- Reference standard Study used non-protocol reference standards, Victorian Gambling Screen, Gambling Related Cognitions Scale, and self-report
Stinchfield, Randy (2002) Reliability, validity, and classification accuracy of the South Oaks Gambling Screen (SOGS). Addictive behaviors 27(1): 1-19	- Country Study conducted in the US
Stinchfield, Randy; Govoni, Richard; Frisch, G Ron (2005) DSM-IV diagnostic criteria for pathological gambling: reliability, validity, and classification accuracy. The American journal on addictions 14(1): 73-82	- Index test Study used a non-protocol index test, attendance at gambling treatment facility
Stinchfield, Randy; Govoni, Richard; Frisch, G. Ron (2009) Development and Psychometric Evaluation of the Windsor Problem Gambling Scale (WPGS) and Windsor Screen for Problem Gambling (WSPG).	- Reference standard Study used a non-protocol reference standard, attendance at gambling treatment facility
Stinchfield, Randy; McCready, John; Govoni, Richard (2012) Cross-validation of the Windsor Ontario Gambling Problem Severity Item Pool.	- Reference standard Study used a non-protocol reference standard, attendance at gambling treatment facility
Strong, David R, Lesieur, Henry R, Breen, Robert B et al. (2004) Using a Rasch model to examine the utility of the South Oaks Gambling Screen across clinical and community samples. Addictive behaviors 29(3): 465-81	- Country Study conducted in the US
Townshend, Philip (2007) Self-exclusion in a public health environment: An effective treatment option in New Zealand. International Journal of Mental Health and Addiction 5(4): 390-395	- Outcomes Primary and secondary outcomes not reported. Unable to produce 2x2 table from presented data
Weinstock, Jeremiah, Whelan, James P, Meyers, Andrew W et al. (2007) The performance of two pathological gambling	- Country Study conducted in the US

Study	Reason for exclusion
screens in college students. Assessment 14(4): 399-407	
Wieczorek, Lukasz, Biechowska, Daria, Dabrowska, Katarzyna et al. (2021) Psychometric properties of the Polish version of two screening tests for gambling disorders: the Problem Gambling Severity Index and Lie/Bet Questionnaire. Psychiatry, psychology, and law : an interdisciplinary journal of the Australian and New Zealand Association of Psychiatry, Psychology and Law 28(4): 585-598	- Reference standard Study used a non-protocol reference standard developed by the author
Villella, Corrado, Pascucci, Marco, de Waure, Chiara et al. (2016) Validation of the Gambling Disorder Screening Questionnaire, a self-administered diagnostic questionnaire for gambling disorder based on the DSM-5 criteria. Rivista di psichiatria 51(5): 206-211	- Reference standard Study used a non-protocol reference standard, the South Oaks Gambling Screen

Excluded economic studies

No economic evidence was reviewed at full text and excluded from this review.

Appendix K Research recommendations – full details

Research recommendations for review question: What is the accuracy of individual brief screening tools in identifying harmful gambling?

K.1.1 Research recommendation

What is the accuracy of individual brief screening tools in identifying harmful gambling?

K.1.2 Why this is important

There is a need to identify people who present in general settings in health and social care and who may be affected by harmful gambling – either those experiencing harmful gambling themselves or those who are affected by another person's gambling – in order to offer information, support and if necessary, treatment. However, there is currently no evidence to support the use of any specific brief screening tools in this population to aid in this identification process.

K.1.3 Rationale for research recommendation

Table 15: Research recommendation rationale

Importance to 'patients' or the population	Many people do not seek help for their harmful gambling due to stigma, shame, because they do not recognise the harm being caused, or because they may be unaware that help is available. Using a brief screening tool may help identify those people and accurately identify those who may need help and support in relation to their harmful gambling.
Relevance to NICE guidance	There are currently no brief screening tools recommended in the NICE guideline on gambling due to a lack of evidence for their accuracy when used in a population presenting to generalist services.
Relevance to the NHS	More accurate identification of people experiencing harmful gambling would allow people to be offered help and support and so may prevent other long-term sequalae, as well as allowing limited treatment services to be targeted more effectively.
National priorities	The widening of treatment for harmful gambling is a national priority.
Current evidence base	No evidence available for UK population presenting to general services.
Equality considerations	None known

K.1.4   Modified PICO table

Table 16:   Research recommendation modified PICO table

Population	Adults (aged 18 years and over), in a general, non-specialist setting (such as primary care).
Index test	Any validated individual brief (1-5 item) screening tool for harmful gambling (for example, Brief Bio-Social Gambling Screen (BBGS), The Lie/ Bet Questionnaire, the National Opinion Research Center Diagnostic Screen for Gambling Disorders – Loss of Control, Lying and Preoccupation 2 (NODS-CLiP2)
Reference standard	• DSM-5 criteria for diagnosing gambling disorder • ICD (10th or 11th version) criteria for diagnosing gambling disorder
Outcome	**Critical** • Sensitivity • Specificity **Important** • Positive predictive value • Negative predictive value
Study design	Diagnostic test accuracy
Timeframe	N/A
Additional information	None

DSM-5: Diagnostic and Statistical Manual of Mental Disorders (5th edition); ICD: International classification of diseases; N/A: Not applicable

Research recommendations for review question: What is the accuracy of tools to identify and assess harmful gambling?

K.1.5   Research recommendation

What is the accuracy of tools to assess harmful gambling?

K.1.6   Why this is important

Before accessing treatment, the diagnosis of harmful gambling and assessment of its severity needs to be correctly made in order to allow care planning and the most effective intervention for an individual (for example, whether low intensity or high intensity interventions are necessary). Similarly, people without a diagnosis of harmful gambling need to be assessed so that alternative help can be offered and to ensure appropriate use of specialised gambling treatment services. While there is evidence available that examines the diagnostic accuracy of tools to measure harmful gambling within the general population, these tools are rarely validated for use in specialist gambling treatment services. It is unclear whether their validity can be generalised to these settings at which people present with very particular needs compared with the general public. For example, the PGSI is commonly used within UK harmful gambling treatment settings but has not been validated within this setting.

K.1.7   Rationale for research recommendation

Table 17: Research recommendation rationale

Importance to 'patients' or the population	Harmful gambling should be accurately diagnosed to allow people experiencing harmful gambling to access the correct treatment options, as well as preventing people who are not experiencing harmful gambling from entering long-term and intensive treatment for a condition which they do not have. Assessment tools should also ideally capture the type and severity of gambling, without being stigmatising for people to complete or answer.
Relevance to NICE guidance	It is important to calculate diagnostic accuracy in a clinical environment, in order to strengthen NICE recommendations in the area and make them more specific for future updates (for example, being able to recommend a specific instrument such as the PGSI).
Relevance to the NHS	Evidence in this area would increase the accuracy of identifying and assessing people with a harmful gambling diagnosis, ensuring access to treatment for people who need it. Additionally, the severity of harmful gambling would be better determined, allowing healthcare professionals to prescribe the most appropriate and effective treatment.
National priorities	High
Current evidence base	Minimal diagnostic accuracy data within people presenting to a harmful gambling treatment setting
Equality considerations	None known

PGSI: Problem Gambling Severity Index; NICE: National Institute for Health and Care Excellence

K.1.8   Modified PICO table

Table 18: Research recommendation modified PICO table

Population	**Inclusion:** Adults (aged 18 years and over) attending a specialist gambling setting for assessment or treatment.
Index test	• Any validated measurement tool designed to identify, assess, or both, the severity of harmful gambling (for example, Problem and Pathological Gambling Measure (PPGM), South Oaks Gambling Screen (SOGS), Victorian Gambling Screen (VGS), and Problem Gambling Severity Index (PGSI) [of The Canadian Problem Gambling Index (CPGI)])
Reference standard	• DSM-5 criteria for diagnosing gambling disorder • ICD (10th or 11th version) criteria for diagnosing gambling disorder
Outcome	**Critical** • Sensitivity • Specificity

	Important • Positive predictive value • Negative predictive value
Study design	Diagnostic test accuracy or cross-sectional study
Timeframe	N/A
Additional information	None

DSM-5: Diagnostic and Statistical Manual of Mental Disorders (5th edition); ICD: International classification of diseases; N/A: Not applicable