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Health Promotion Strategies to Address Gambling-Related Harm in Indigenous Communities: A Review of Reviews

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Abstract: The evolution of commercial gambling and its expansion into digital arenas has increased opportunities for people all over the world—including Indigenous people—to gamble. While there is considerable evidence for the suitability of a health promotion approach to improving the health and well-being of Indigenous communities worldwide, the evidence-base does not extend to the field of gambling research. A systematic review of reviews was conducted to identify relevant reviews in crossover areas of interest: interventions to address gambling-related harm in Indigenous populations and/or health promotion interventions on related health or behavioural outcomes. The quality of reviews was critically assessed—13 fit the inclusion criteria. Principal themes were characterised as being either related to 'cultural,' 'structural,' or 'methodological' factors. Findings indicate that an appropriate model of health promotion to address Indigenous gambling would necessarily involve careful consideration of all three elements. Applying a health promotion approach to the context of Indigenous gambling harms is increasingly relevant considering recent conceptual shifts in key areas, but there is currently limited evidence to guide the implementation and evaluation of such strategies. This review highlights what published evidence is available to strengthen future research in this area.

Keywords: gambling, addiction, Indigenous, health promotion, Aboriginal

Introduction

The harms associated with gambling are a public health concern globally. It is not the case that all gambling products cause harm; however, there is an association between greater exposure to, and involvement in, gambling activities and an amplified risk of people developing gambling disorders (GDs) based on a number of identified risk factors (Hing et al., 2014b). In the International Classification of Diseases (ICD-11; World Health Organization, 2009), GDs are classified as neurodevelopmental disorders; in the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5®)*, GDs are identified in the Substance Related and Addictive Disorders category as 'non-substance behavioural addictions' (American Psychiatric Association, 2013). The evolution of commercial gambling and its expansion into digital arenas has increased opportunities for all people—including Indigenous[2] people—to gamble.

International research has found higher rates of GDs among culturally and linguistically diverse groups compared to general populations (Oei et al., 2019). Gambling harm also appears to be more widespread in Indigenous populations when compared to those in non-Indigenous populations (Dyall, 2010), including in Australia (Hing et al., 2014a; Stevens & Young, 2009; Welte et al., 2007), New Zealand (Dyall & Hand, 2003; Gray, 2011), and Canada and the United States (Westermeyer et al., 2005; Williams et al., 2011). For example, a significantly higher proportion of

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[2] 'Indigenous' is used as an umbrella term to reflect 'the experiences shared by a group of people who have inhabited a country for thousands of years, which often contrast with those of other groups of people who reside in the same country for a few hundred years' (Cunningham and Stanley, 2003, p. 403). 'Indigenous' groups vary between regions and populations, for example: 'Aboriginal Australian' or 'Torres Strait Islanders'; 'First Nations' to describe populations indigenous to Canada and the United States; 'Native Hawaiians' for Hawaii's Indigenous; and 'Tangata Whenua' for the Māori of New Zealand.

Indigenous Australians (80%) engaged in commercial gambling activities, especially electronic gaming machines, compared to the general population (64%) (Hing et al., 2014a). In 2016, the prevalence of GDs (moderate risk/problem gamblers) in New Zealand relative to the total population was 4.6% for Māori, 1.8% for Pacific Islanders, 8% for European/Other, and 2.9% for Asian people (Thimasarn-Anwar et al., 2017). In Canada and the United States, Indigenous people also have some of the highest rates of gambling and gambling-related harm (Hagen et al., 2013; Korn, 2001; Momper, 2010; Williams et al., 2018).

Social determinants of health contribute markedly to persistent health inequalities Indigenous people are known to experience. These include dispossession caused by colonisation; subsequent disconnection to cultural practices and traditional economies important for health and well-being; the socio-political status of such groups within the broader society (e.g., lack of representation); and the presence of interpersonal and institutional racism (Clarke et al., 2007; Mowbray, 2007; Raylu & Oei, 2004; Rintoul et al., 2013). With regard to the latter, there is growing recognition of the importance of cultural safety[3] (and related concepts such as cultural competency), within and beyond healthcare organisations, to achieving health equity (Curtis et al., 2019).

Research suggests that GDs and other behavioural addictions make up a significant component of the overall disease burden for Indigenous peoples of colonised countries. Indigenous worldviews are often cited as being closely tied to place, culture,[4] and kinship systems (Joukhador et al., 2004; Walker et al., 2012). Harms from gambling are likely to affect Indigenous people in complex and distinct ways (Breen & Gainsbury, 2013; Hing et al., 2013). Changes to the gambling environment, such as the shift of gambling activities from community settings to organised urban venues, have resulted in a range of sweeping socio-economic impacts for some Indigenous people (McMillen & Donnelly, 2008). There is evidence indicating that flexible strategies, designed in response to local contexts and influences, are more suitable to address gambling harms in complex social settings than a standardised approach (Breen et al., 2012). Strategies designed to address gambling harm in such communities should aim to be multi-level, with a public health basis focusing on prevention, early intervention, and harm reduction (Fogarty et al., 2018).

A public health approach often takes the form of community-based interventions or programs to reduce gambling harms as experienced by individuals and at-risk groups (Breen & Gainsbury, 2013). It also means incorporating Indigenous gambling risk and resilience factors, and potentially modifying public health aims, to develop and implement culturally relevant prevention and treatment programs. Health promotion is a set of actions to foster good health and well-being that sits within the public health model. Health promotion activities (HPAs) aim to promote and improve the health and well-being of individuals, communities, and whole populations through empowering, participatory approaches (Chambers et al., 2015).

There is considerable evidence highlighting the use of health promotion practices to improve the lives of Indigenous people (Clelland et al., 2007; McPhail-Bell et al., 2018; Vujcich et al., 2018). Culturally appropriate HPAs have been applied in areas such as sexual health promotion, substance misuse and addiction, and chronic disease prevention, and may also offer a suitable framework for designing gambling prevention and intervention programs (Fogarty et al., 2018). However, health promotion has not yet been extensively explored in gambling research. This overview attempts to address this gap in knowledge, as we believe there is much that can be learned from related fields (i.e., sexual health promotion, substance misuse, and chronic disease prevention).

An overview[5] of Indigenous health promotion targeted at addressing behavioural disorders (such as gambling) is warranted for several reasons. First, gambling harm minimisation and prevention is a growing area of inquiry in the health promotion arena with relevance for Indigenous populations. Second, the distinct social, cultural, and familial influences of gambling on Indigenous peoples means that mainstream mechanisms to address gambling harm cannot be simply transferred to such settings. Third, a definitive summary of current evidence relevant to Indigenous health promotion, that we argue can be applied to prevention and intervention strategies to reduce gambling-related harm, is vital to direct practice, policy, and future research in this area.

Review Questions

The main goal of this review is to document and synthesise the knowledge of health promotion strategies considered relevant and applicable to address gambling-related harm in Indigenous communities. Two review questions directed this research:

1. What is the breadth and quality of systematic reviews that assess health promotion strategies for improving health or changing behaviours, and/or addressing gambling-related harm, in Indigenous communities?

[3] Cultural safety encompasses a critical consciousness where healthcare professionals and healthcare organisations engage in ongoing self-reflection and self-awareness (i.e., by examining the potential impact of their own culture on clinical interactions and healthcare service delivery) and hold themselves accountable for providing culturally safe care (Curtis et al., 2019).

[4] UNESCO (2008) defines culture as the set of distinctive spiritual, material, intellectual, and emotional features of a society or social group, that encompasses, not only art and literature, but lifestyles, ways of living together, value systems, traditions, and beliefs.

[5] A systematic review of systematic reviews.

2. What are the implications for future research and practice of applying health promotion strategies to address gambling-related harm in Indigenous communities?

Methods

Overviews of reviews can be useful when the review's aim is to appraise and combine the extent and quality of relevant evidence on a pre-specified topic (Thomson et al., 2010). They may also be used to generate new insights and understanding in the absence of evidence (Becker & Oxman, 2008) by analysing the findings of reviews on a particular intervention of interest through contrast and comparison (Smith et al., 2011). To facilitate knowledge translation related specifically to applying HPAs to address gambling harm, an interdisciplinary approach was important. This overview examined the cross-over literature where Indigenous health and gambling research converges with HPAs in related health fields (i.e., alcohol and other drug use, tobacco use, sexual health, and chronic disease prevention).

The PICO formula (population, intervention, comparison, and outcomes) was used to define this structured overview of cross-literature (Higgins & Green, 2011), and a review protocol was registered with PROSPERO [registration number CRD42019119548[6]]. Data is presented according to Cochrane review standards (Higgins & Green, 2011) including a PRISMA statement (Moher et al., 2010) outlining the search and selection process.

Data Collection and Analysis

Searches

In September 2017, an initial scoping search was conducted of the following electronic databases: Google Scholar, ProQuest Central, PubMed, Scopus, and Web of Science. The first 10 pages of results were manually scanned for relevance. Search terms were expanded to include a combination of health/medical and social science databases and websites to reflect the multidisciplinary nature of the study. Full search terms and search strings used across all databases (adjusted to database specific requirements, where necessary) are set out in Table 1. A second systematic search informed by, and updating, the original search was conducted in February 2019. Saturation was determined and searching was concluded.

Table 1

Search Terms and Results

Database	Query	Number of Studies
Google Scholar	allintitle: (indigenous OR aboriginal OR maori OR "torres strait") AND review AND ("health promotion" OR gambling OR gaming OR betting)	15
ProQuest Central	TI (((gambling OR gaming OR betting) AND (aborigin* OR indigenous OR maori OR native OR "first nations") AND review) OR ("Health Promotion" AND (aborigin* OR indigenous OR maori OR native OR "first nations") AND review))	20
PubMed	((((review[Title]) AND (aborigin* [Title/Abstract] OR indigenous [Title/Abstract] OR maori [Title/Abstract] OR native [Title/Abstract] OR "first nations"[Title/Abstract])) AND (gambling [Title/Abstract] OR gaming [Title/Abstract] OR betting[Title/Abstract]))) OR (((review[Title]) AND (aborigin* [Title/Abstract] OR indigenous [Title/Abstract] OR maori [Title/Abstract] OR native [Title/Abstract] OR "first nations"[Title/Abstract])) AND "Health Promotion"[Title/Abstract])	37
Scopus	TITLE-ABS-KEY (((gambling OR gaming OR betting) AND (aborigin* OR indigenous OR maori OR native OR "first nations") AND review) OR ("Health Promotion" AND (aborigin* OR indigenous OR maori OR native OR "first nations") AND review))	447
Web of Science	TI =(((gambling OR gaming OR betting) AND (aborigin* OR indigenous OR maori OR native OR "first nations") AND review) OR ("Health Promotion" AND (aborigin* OR indigenous OR maori OR native OR "first nations") AND review))	5
Total:		**524**

Searches conducted September 2017 and February 2019

[6]http://www.crd.york.ac.uk/PROSPERO/display_record.php?ID=CRD42019119548

Study Selection

Titles/abstracts were screened against the inclusion criteria. This was an interpretive process whereby research questions and inclusion criteria were refined and refocused according to preliminary findings. The search strategy and outcomes are summarised in Fig. 1. Two authors independently assessed the screened reviews for eligibility, with discrepancies resolved by discussion with the review team. Full texts were obtained, and duplicates and immaterial reviews discarded.

Interventions of interest include: health promotion activities (HPAs) and other public health approaches (such as harm minimisation, harm reduction, harm prevention, and community-driven responses); addressing and/or reducing gambling-related harms; reporting on the impact of health promotion interventions for improving health or changing behaviours. For the purpose of inclusion, reviews were considered as having a health promotion focus if any of the following strategies were discussed in depth: improving public policy, social marketing, health education and skills development, community action, and creating supportive environments. Similarly, Indigenous health and well-being was defined broadly as

> the social, emotional and cultural wellbeing of the whole community in which each individual is able to achieve their full potential as a human being, thereby bringing about the total wellbeing of their community, but not just the physical wellbeing of an individual. (NACCHO, 1989, p. 1)

Inclusion Criteria

Reviews were included if they: (1) were a systematic review; (2) had an Ottawa Charter strategy focus (building healthy public policy, creating supportive environments, strengthening community actions, developing personal skills, and reorienting health services; World Health Organization, 1986); (3) targeted the health and well-being of any Indigenous population and/or had Indigenous health promotion principles articulated (i.e., author reference to cultural safety/competence, community engagement and ownership, partnerships, holism, best practice, capacity development, sustainability, leadership, consultation, and participation); (4) investigated gambling programs and/or interventions; (5) were published between 2000[7] and 2018 (inclusive); (6) were written in English; and (7) the title/abstract contained the search terms.

To be considered eligible for inclusion, papers also needed to meet the two mandatory criteria of Database of Abstracts of Reviews of Effects (NHS Centre for Reviews and Dissemination, 2002): (1) that there is a defined review question; and (2) that the search strategy included at least one named database, in conjunction with either reference checking, hand-searching, citation searching, or contact with authors in the field.

Exclusion Criteria

Studies were excluded if they were not published within the review parameters (i.e., non-systematic reviews, outside date range) or had insufficient discussion of the health promotion approaches targeting behavioural addictions of Indigenous groups.

Data Extraction

A rigorous and transparent data extraction process was employed in this review. The 'Data collection form for intervention review—randomised controlled trials (RCTs) and non-RCTs' of The Cochrane Collaboration was customised and applied to this review (Higgins & Green, 2011). The tool was piloted and refined leading to some new questions being added and irrelevant sections removed. One reviewer independently conducted a data extraction of the included reviews, which was cross-checked by a second reviewer. The following information was recorded: first author, year, country of first author; type of review, methods; number of studies and type of studies analysed; health area; target group; research aims; major findings (or authors' conclusions); and identified health promotion approach, if relevant. An Excel spreadsheet recorded the data items, which were then tabulated based on the GRADE approach to summarising findings used in Cochrane reviews (Dijkers, 2013).

Quality Assessment

To understand the strength of the synthesised knowledge presented in this review and ascertain if each identified paper met the minimum standard of quality for inclusion, reviews were critically assessed in a four-step process:

- Step 1: Non-peer-reviewed papers were excluded.
- Step 2: The type of review was determined and considered as a quality measure (Dijkers, 2013).
- Step 3: The use of established reporting guidelines and appropriate methodology (e.g., PRISMA) was noted.

[7] Searches were limited to reviews published after January 2000. Justification for this specified inclusion date is based on the topic becoming more publicised since the mid-2000s with growing research, publications, and government-sponsored public health initiatives in several countries, such as Australia, New Zealand, Canada ,and US.

- Step 4: A purposefully designed quality appraisal tool was adapted from the Center for Evidence-Based Management's *Critical Appraisal Checklist of a Meta-Analysis or Systematic Review* (CEBMa, 2014) and applied to the remaining sample.

The adapted tool (Step 4) contained two sections and a total of 10 questions. Each included review was assessed against all the domains with assessments determined as ●, ◐, or ○. Reviews that fully addressed the criteria were labelled ●; reviews that addressed the criteria to some extent were assigned ◐; reviews that did not provide enough information for quality analysis, or answers could not be found in text, were assigned ○; or 'N/A' if the criteria was deemed not applicable. Quality appraisal was initially carried out by one author and then independently cross-checked by a second. Inter-rater reliability was calculated and recorded. Independent assessment by two members of the review team reduced bias and allowed for appropriate discussion. Quality assessment was for descriptive purposes only, did not result in any exclusions, and resulted in a narrative discussion of heterogeneity and publication bias where relevant.

Analysis

From the analysis, the extracted data was synthesised using a narrative approach (Popay et al., 2006). The summative evidence reported in the included reviews (the extracted data) was analysed according to narrative synthesis methods—a generic framework used to synthesize the evidence, and identify and textually describe meaningful patterns and themes in the included studies while also noting variations. It typically involves four stages: (1) developing a theory; (2) developing a preliminary synthesis; (3) exploring relationships within and between studies; and (4) assessing the robustness of the synthesis product (Popay et al., 2006).

Due to the expected heterogeneity of health areas, interventions, and outcomes, only descriptive analysis was planned (no meta-analysis). Thematic synthesis was conducted in three stages based on the extracted data (Thomas & Harden, 2008). Line-by-line coding of summary text generated descriptive themes, which developed into three overarching 'analytical themes.' We used the latter to frame the review findings and structure the discussion.

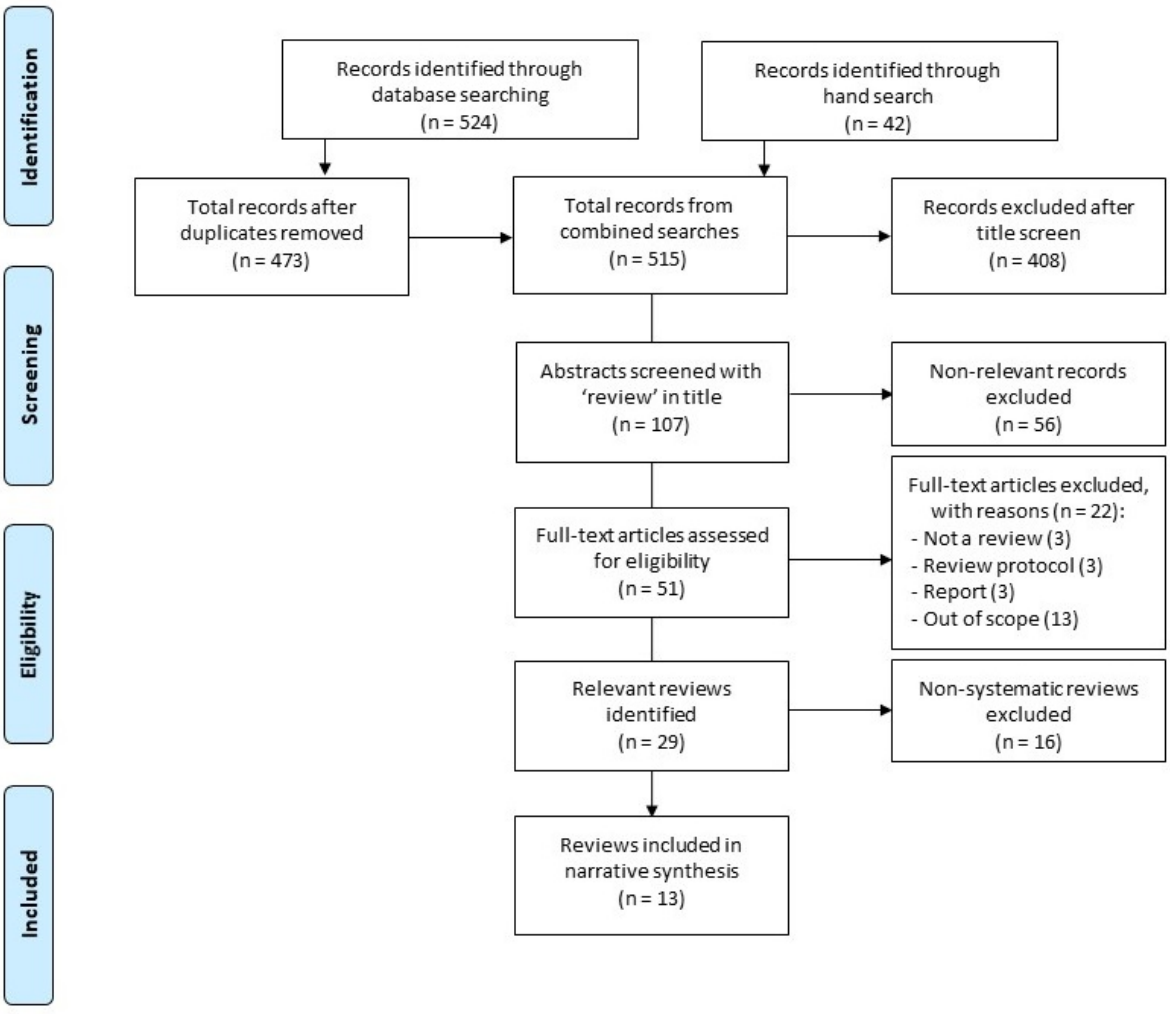

Fig. 1. *PRISMA flow diagram*

Results

The original international literature search yielded 566 citations, from which 51 full-text articles were retrieved and reviewed for inclusion. Search results and the selection process are summarised in Fig. 1. Twenty-nine papers were considered eligible for further consideration based on their relevance to our review objectives. Fig. 2 presents the number of reviews by year of publication to gauge trends in the literature over time. This sample includes non-systematic reviews and articles from 2018 identified in the updated search (this 1-year period is presented as a striped bar to distinguish it from the others which each represent a 3-year period). Sixteen reviews that were not transparent enough to be classified as 'systematic reviews' were excluded from further analysis (Fig. 1). The final sample (n=13) included 6 systematic reviews, 3 scoping reviews, 3 systematic searches, and 1 overview (Table 2). Reviews predominantly focused on Australia, Canada, New Zealand, and the United States; however, several extended the scope to include other minority ethnic/cultural groups globally. Over half of the included reviews looked specifically at HPAs targeting Australian Indigenous populations (n=7) (Brusse et al., 2014; Ivers, 2003; Lokuge et al., 2017; MacLean et al., 2017; McCalman et al., 2016; Snijder et al., 2015). The balance addressed Indigenous HPAs in other countries (n=6) (Gould et al., 2013; Harfield et al., 2018; Jongen et al., 2017; McFarlane et al., 2016; Minichiello et al., 2015; Vujcich et al., 2018). Interestingly, all except one review (Minichiello et al., 2015) were led by an Australian author.

Articles were published between 2003 and 2018. The number of studies analysed in each separate review ranged from 4 to 118. With search periods reported from September 1978 to June 2017, collectively, this represents knowledge synthesis spanning almost 40 years. One review analysed quantitative studies only, one analysed qualitative studies only, and the remaining 11 reviewed primary studies of any design.[8]

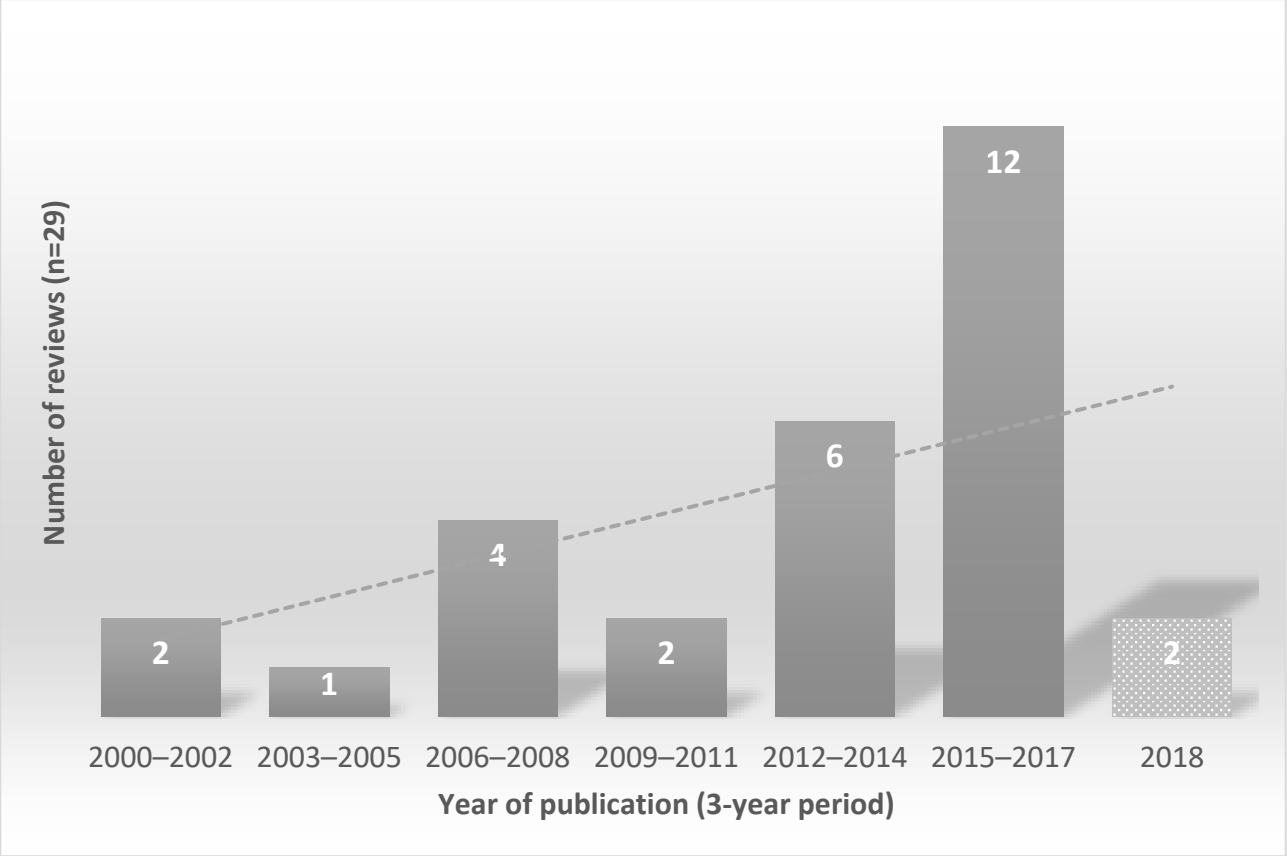

Fig. 2. *Charting Published Reviews*

[8] Quantitative, qualitative, and mixed methods.

Table 2
Characteristics of Included Reviews

Author and year	Population	Review type (PRISMA Y/N)	No. Studies	Primary studies analysed[9]	Quality measure
Brusse et al., 2014	Indigenous and non-Indigenous Australians	Scoping review (N) 2011–Nov 2013	17	Quantitative, qualitative, and systematic reviews	(not listed)
Gould et al., 2013	Indigenous people Aust., Canada, NZ, United States (US).	Systematic search/narrative synthesis (N) up to Oct 2011	21	Any design	Scottish Intercollegiate Guidelines Network (SIGN) for (quant studies) & Daly et al. 2007 (qual studies)
Harfield et al., 2018	Indigenous people Aust., Canada, NZ, US.	Scoping review (Y) Sep 1978–May 2015	62	Any design	(not listed)
Ivers, 2003	Indigenous Australians	Systematic review/audit (N) 1980–Mar 2001	4	Qualitative (with evaluative component)	NHMRC evidence rating system
Jongen et al., 2017	Indigenous peoples and other minority ethnic/cultural groups Aust., Canada, NZ, US.	Scoping review (Y) Jan 2006–Dec 2015	22	Any design (with evaluative component)	Effective Public Health Practice Project quality assessment tool
Lokuge et al., 2017	Indigenous Australians	Systematic review (Y) Nov 2009–2014	118	Any design (with evaluative component)	(not listed)
MacLean et al., 2017	Indigenous Australians	Systematic review (Y) up to Aug 2015	13	Quantitative	General assessed and assessment of Indigenous involvement
McCalman, 2014	Indigenous people Aust., Canada, NZ, US.	Systematic search (Y) 2002–2012	74	Any design (with evaluative component)	PARiHS[10] framework and EPHPP[11] tool
McCalman et al., 2016	Indigenous Australians	Overview of reviews (Y) 2005–2014	6	Reviews	Peer-reviewed studies were used as a marker for quality reviews
McFarlane et al., 2016	Indigenous organisations globally (including Canada, NZ, Aust., US, Africa, China, UK, Sweden, and Solomon Islands)	Systematic search (Y) 1990–2014	25	Quantitative, qualitative	(not listed)
Minichiello et al., 2015	Indigenous people globally (including Canada, NZ, Aust., US, Taiwan, Pacific Islanders, and ethnic Fijians)	Systematic review (Y) 1994–2015	73	Any design (with evaluative component)	Public Health Agency of Canada Lessons Learned Data Extraction Guide & Well Living House quality assessment tool
Snijder et al., 2015	Indigenous Australians	Systematic review (Y) 1990–2015	31	Any design (with evaluative component)	Dictionary for Effective Public Health Practice Project Quality Assessment tool
Vujcich et al., 2018	Indigenous people Aust., Canada, NZ, US.	Systematic review (Y) up to June 2017	24	Any design	Critical Appraisal Skills Program Checklists

[9] 'Any design' includes quantitative, qualitative, and/or mixed methods, or indicates that design type was not listed as an inclusion/exclusion criterion in this review.

[10] Promoting Action on Research Implementation in Health Services (PARiHS)

[11] Dictionary for Effective Public Health Practice Project (EPHPP)

Reviews examined empirical research on HPAs to address the disproportionate burden of disease on Indigenous health and well-being in Australia and internationally. No reviews specifically focused on the use of HPAs to address gambling harm within Indigenous populations. However, four reviews looked at HPAs addressing smoking harm within the target population, focusing on: the effectiveness of self-determination strategies in program implementation (Minichiello et al., 2015); culturally targeted anti-tobacco messaging (Gould et al., 2013); social media and mobile software for health promotion interventions (Brusse et al. 2014); and culturally targeted harm reduction campaigns (Ivers, 2003).

Review authors primarily aimed to understand and synthesise evidence on measurable improvements in health and well-being associated with certain health promotion characteristics. The following results are organised according to the six topics discussed within this dataset: Indigenous Primary Health Care (PHC) characteristics (Harfield et al., 2018) and health promotion capacity (McFarlane et al., 2016); improving cultural competency (Jongen et al., 2017); promoting Indigenous cultural identity; measuring community participation (Snijder et al., 2015); implementing culturally targeted media campaigns (Brusse et al., 2014); and peer-led health promotion (Vujcich et al., 2018).

Indigenous Primary Health Care

The greatest distinction between Indigenous PHC service delivery and other models of care is consideration of culture—the defining characteristic of Indigenous PHC. Two reviews examined health promotion within this setting (Harfield et al., 2018; McFarlane et al., 2016). Harfield et al.'s (2018) synthesis of Indigenous PHC components found that local cultural values, customs, and beliefs were pivotal and underpinned all aspects of this service delivery model. Strategies for embedding culture in the context of Indigenous PHC were of central importance.

Exploring Indigenous PHC attempts to increase their health promotion capacity, McFarlane et al. (2016) investigated common enablers and barriers to organisational HPA implementation. In this setting, they reported that health organisations that implemented specific capacity building interventions (e.g., training and leadership development) were enabled by several factors including: management support, a skilled and knowledgeable workforce, external specialist assistance, resource allocation, leadership, and access to external partners to work on HPAs. Conversely, factors consistently reported as obstructing health promotion capacity building were: limited management support; a lack of dedicated health promotion staff (staff with limited skills or confidence in health promotion); competing priorities; and time and resource constraints.

Improving Cultural Safety

The impact of health promotion services and programs to increase cultural safety and, in turn, attempt to improve intermediate health outcomes was another area of investigation covered by the included reviews. Jongen et al. (2017) provide innovative examples of cultural adaptation and engagement strategies used by cultural competency services and programs. Their review contributes many potential approaches to inform future health promotion services and programs to improve cultural competency. However, a lack of systematic tools and approaches for measuring the presence, level, and contribution of cultural competency interventions to quality health care does little to strengthen the slow-growing evidence base.

Strategies to enable the expression of Indigenous cultural identities within general Indigenous health promotion interventions (Lokuge, 2017; MacLean et al., 2017) and tools (McCalman, 2016; McCalman et al., 2014) were also reviewed. Programs that included components to enable and support Indigenous peoples to express their cultural identity were reported to have positive health and well-being effects by MacLean et al. (2017). 'Cultural elements' include: visiting country and cultural sites; education in traditional cultural practices; hunting, fishing and eating bush foods; traditional games; yarning and sharing cultural stories; mapping and activating cultural relationships of care; reinforcing Elder authority; and painting, dancing, playing instruments, and singing as a community.

Similarly, Minichiello et al. (2015) reported tobacco interventions with relevance for ethnic and community groups, including elements of self-determination, were more likely to be successful (i.e., affecting quit rates; increasing individual knowledge; and reducing initiation, consumption, and prevalence rates). The outcomes described are inconsistent and the evidence base is small; however, review findings indicate that programs that include cultural strategies to address smoking, nutrition, physical activity, and emotional well-being can assist in improving health outcomes for Indigenous peoples.

Applying Health Promotion Principles, Tools, and Strategies

Reviewing community participation within Indigenous Australian community development projects, Snijder and colleagues (2015) found wide variations in levels of community participation being recorded and documented. They concluded that positive outcomes are difficult to interpret due to the relatively poor quality of evaluation designs and reports.

Further, insufficient evidence has been documented regarding the impacts of community development projects on health and well-being outcomes for Indigenous Australians (Snijder et al., 2015). Internationally, studies have demonstrated that

programs with evidence of Indigenous community participation are more likely to have positive program outcomes compared to those without (Smylie et al., 2016). The extent and nature of community participation should be improved by future utilisation of appropriate frameworks to guide the development, implementation, and evaluation of community-based projects (e.g., participatory action research approach).

Focusing on culturally targeted media campaigns, Ivers (2003) found that such interventions can prevent smoking uptake among young people and can result in small reductions in tobacco use. Gould et al. (2013) provide a summary of research on the effectiveness of targeted and non–targeted anti-tobacco media messages (i.e., mass media, new media platforms, and social marketing). Preliminary evidence shows that culturally targeted messages can be as effective for Indigenous populations as generic messages are for the general population in the short term.

Health promotion interventions using social media and mobile software appear to have potential for Indigenous populations; however, evidence about their effectiveness or health benefit is sparse and mixed (Brusse et al., 2014). A common taxonomy to describe media-based interventions for Indigenous studies is currently missing (Gould et al., 2013). Culturally targeted media interventions have been reported to be no more effective than control interventions, despite being collaboratively developed (Gould et al., 2013). Most evidence in this area comes from studies about text messaging for smoking cessation. At the time of review publication, only one study on social media intervention could be linked to a significant (though small) change in behaviours directly related to health outcomes. Brusse et al. (2014) speculate that the presence of institutional barriers and methodological shortcomings might obstruct publication of research in this area, thereby lowering incentives for research investment.

The range, characteristics, and effectiveness of Indigenous youth-led health promotion projects were investigated (Vujcich et al., 2018). Interventions reviewed were mostly targeted at sexual health, alcohol and other drugs, and mental health/suicide prevention. This knowledge base is dominated by Australian-led sexual health intervention research. A minority of studies found evidence of changes in behaviour, but changes in knowledge and attitudes were more common. Overall, there is limited evidence for the effectiveness of peer-led health interventions with Indigenous young people. Reasons for this scarcity include significant methodological limitations and an absence of robust program evaluations. The authors conclude that improved service provider access to practical evaluation tools, the development of knowledge and skills in evaluation techniques, and the provision of additional funding to support rigorous data collection would address these gaps (Vujcich et al., 2018).

Building on Wise et al.'s (2012) scoping study, the reviewed evidence provided an overview of Indigenous health promotion tool implementation and evaluation in Australia. This series of reviews looked specifically at the implementation of Indigenous health promotion tools and the effectiveness of implementation itself. McCalman et al. (2014) and McCalman et al. (2016) found that organisational settings for implementation were diverse and that documentation of how health promotion tools were intended or were actually incorporated into particular settings was poor. This, coupled with limited high-quality impact evaluations, meant there was little evidence for whether such tools work to improve Indigenous health promotion effectiveness. The dominance of descriptive studies and poor quality of evaluations found in this review are consistent with wider Indigenous health promotion literature (Kinchin et al., 2017; Whitesell et al., 2020).

Few reviews included in the umbrella review by McCalman et al. (2016) explicitly considered how Indigenous knowledge (such as conceptual principles underpinning health programs and services) was reflected in program or service implementation. The importance of Indigenous co-authorship, especially given that design and reporting of study findings from an Indigenous worldview demonstrates respect, increases the likelihood of a converging interpretation of the aims and targets of implementation, and hence of research benefit. The authors indicate that the PARiHS framework was not necessarily applicable to understand *all* factors affecting implementation in various settings; however, as a theoretical model, it was useful for identifying the broad elements critical to implementing Indigenous Australian health services and programs (McCalman et al., 2016). Review recommendations include: increasing the use of local Indigenous knowledge to inform program implementation; improving the application of valid and reliable measures; evaluation rigour and improved reporting to accurately quantify the effect of implementation and program impact; recognising the value of Indigenous healthcare workers as facilitators and change agents; actively disseminating effective strategies; extending short-term funding timeframes; and a commitment to—and investment in—collaboration, to promote Indigenous leadership, governance, and sustainability (e.g., capacity building, staff training).

Table 3
Quality Appraisal

Quality appraisal criteria	Brusse et al., 2014	Gould et al., 2013	Harfield et al., 2018	Ivers, 2003	Jongen et al., 2017	Lokuge et al., 2017	Maclean et al., 2017	McCalman et al., 2014	McCalman et al., 2016	McFarlane et al., 2016	Minichiello et al., 2015	Snijder et al., 2015	Vujcich et al., 2018
Address a clearly focused question/issue?	●	●	●	◐	●	●	●	●	●	●	●	●	●
Unlikely important/relevant studies were missed?	●	●	●	●	●	◐	●	●	●	●	●	●	●
Criteria to select articles for inclusion appropriate?	●	●	●	○	●	●	●	●	●	●	●	●	●
Study selection performed in duplicate?	○	●	●	○	●	○	●	○	●	●	●	○	●
Data extraction performed in duplicate?	○	●	●	○	○	●	●	○	○	○	●	●	○
Satisfactory data analysis and cross-checking?	●	●	●	◐	●	●	●	●	●	◐	●	●	●
Results make sense/justify the conclusions?	●	●	●	●	●	●	●	●	●	●	●	●	●
Review limitations acknowledged/discussed?	●	○	○	○	●	○	●	●	●	●	●	●	●
Data collection methods of primary studies detailed?	●	●	○	●	●	●	○	●	●	●	●	●	●
Review authors use a validated/satisfactory tool for assessing the quality of the primary studies?	N/A	●	N/A	●	●	○	●	●	○	○	●	●	●
Total	**77%**	**90%**	**88%**	**50%**	**90%**	**65%**	**90%**	**80%**	**80%**	**85%**	**100%**	**90%**	**90%**

Quality Appraisal

Review quality was assessed using a number of criteria, the results of which are presented in Table 3. In summary, the majority of reviews addressed a clearly focused research question, had reproducible search methods, used appropriate inclusion criteria, and incorporated satisfactory data analysis and cross-checking. The selected reviews were deemed sufficient in their coverage of the literature and their conclusions were justified by review results. Several methodological weaknesses were observed, including: a lack of independent assessment when selecting studies (n=5) and extracting data (n=7); failing to adequately acknowledge review limitations (n=4); data collection methods of primary studies not adequately detailed (n=2); and review authors not reporting the use of a validated tool to assess the quality of primary studies (n=3).

Overall, reviews on the topic were of a high standard, meaning the quality of synthesised evidence on health promotion is a sound resource for the potential development of strategies to address gambling-related harm in Indigenous communities. Brusse et al. (2014) point out several key limitations in this area (terminology, measures, and institutional problems). It is important to note that limitations in searchable terms are a large issue in this research field. Additionally, missing elements in the literature do not necessarily mean that such elements are not being applied in practice and are not relevant—simply that they are not documented and therefore are not reported in the reviews.

Ivers's (2003) review, for example, was completed when information on this topic was in its infancy. Despite its small sample, it is an informative contribution and demonstrates the strength of systematic reviews using prescribed protocols and tools that assess quality, a movement that has evolved over 20 years. Jongen and colleagues' (2017) scoping review (completed as part of a larger systematic literature review) demonstrates robust search methods and consistent categorisation, lending weight and validity to their findings.

According to our quality measures, the most technically rigorous and comprehensive in its reporting was Minichiello et al. (2015). The review makes a strong case for engaging with Indigenous self-determination and grounding Indigenous research on tobacco (and more broadly addiction and health behaviour) firmly in Indigenous cultural protocols and practices.

Discussion

This overview assembles reviews examining different strategies related to health promotion in Indigenous-specific settings. Taken together, they contribute methodological and practice-based insights that potentially relate to addressing gambling harm for these population groups. We did not find any published reviews on the application of HPAs that specifically address gambling-related harm within Indigenous communities, but by reviewing the cross-over literature, our analysis identified three overarching themes constructive to further research in this area. These themes describe Indigenous health-promotion strategies across related research and are broadly defined here as 'cultural,' 'structural,' or 'methodological' factors. Cultural factors encompass expressions of Indigenous cultural identity, the promotion of cultural safety/competency, and culturally designed and targeted HPAs (i.e., media campaigns). An emphasis on community participation, Indigenous involvement and leadership, and youth-led health promotion activities are all related techniques explored in the reviews that are potentially applicable to health promotion that addresses gambling harm. Recognising the necessity of accurately assessing cultural competency in HPAs, Jongen et al. (2017) provided an evidence-based framework for planning, implementation, and evaluation of cultural competency services and programs. This review situates research synthesis in the area of Indigenous health and well-being.

Respecting and responding to regional cultural norms and local gambling patterns is another key learning point from the literature. Differences in socio-economic circumstances and locations relevant to local gambling contexts mean that Indigenous peoples' gambling patterns vary, as does their potential for developing effective gambling programs. These local complexities (segregated along temporal, spatial, and racial lines) obscure the impact of macro-policy interventions such as income management. Identifying underlying cultural contexts of gambling harm is important to determining strategies to address them.

A qualitative study conducted in New Zealand reports that while harms experienced by Indigenous people might be similar to those in mainstream society, the contexts within which gambling activities occur (and how related harm manifests) is distinct and complex (Kolandai-Matchett et al., 2017). Understanding cultural nuance is essential given the impact such factors have on gambling-related behaviour. This sentiment is consistent with cultural factors that emerged from the included reviews: They indicate that successful gambling health promotion strategies and interventions must achieve a certain degree of cultural safety to engage people's cultural identities and understand how it intersects with gambling and the community at large (Kolandai-Matchett et al., 2017). Targeted HPAs using social marketing, for example, are an important strategy for addressing harm associated with addictive behaviour at a population level and are therefore applicable to gambling harm minimisation. Research shows campaigns are most effective if they are owned, developed, and implemented by Indigenous communities, and create 'sticky' social media health messages (i.e., messages that provoke interest, raise

awareness, impart knowledge, and inspire change) to facilitate Knowledge Translation (Shibasaki et al., 2016).

The second theme, structural barriers, describes barriers to implementing HPAs and program evaluation in Indigenous settings, as opposed to the broader structural barriers to health equity (income, ethnicity, and gender inequities) that shape health behaviours. Although these were mentioned to different degrees in the review, related structural factors here include integration of Indigenous primary health care systems and the reorienting of health and well-being services to include the above-mentioned cultural factors. Our findings indicate that organisations need adequate resources, and they need to practice cultural safety and develop culturally appropriate prevention and health promotion strategies. Furthermore, organisational systems need to support managers and practitioners, provide partnership opportunities, and develop internal capacity for health services to deliver both treatment and health promotion programs to the communities they service. In summary, important characteristics of the PHC service delivery models identified here, and considered global in their application, include: a culturally appropriate and skilled workforce, community participation, and key elements of self-determination and empowerment (Harfield et al., 2018).

The final theme is methodological factors. Common elements here were (a) the identification of methodological and systemic barriers; (b) strategies to overcome identified challenges; and (c) a consistent call for increasing evaluation rigour in this area (e.g., improving reporting standards, promoting established guideline use) (Snijder et al., 2015). Specific issues related to research methods include the use of appropriate outcome indicators and study design (Jongen et al., 2017), and difficulties with recruitment and retention of participants (Minichiello et al., 2015; Vujcich et al., 2018). More systemic issues linked to short-term funding, inconsistencies in measurement tools (and their use), inadequate documenting and reporting frameworks, intervention fidelity, and potential publication bias also reflect this theme (MacLean et al., 2017). The capacity for robust recruitment and follow-up strategies indicates a 'measures problem' (Brusse et al., 2014). This is the challenge of reporting clear research methods (particularly RCT and quasi-experimental designs) while simultaneously prioritising local health promotion and real-world engagement.

Our review reveals an intrinsic tension between maintaining rigorous research practices while conducting ethical and respectful research with Indigenous groups. The challenge of developing interventions for target groups with unique cultural needs and characteristics, while trying to evaluate health outcomes using systematic tools (designed for the general population), presents an unusual conundrum. Flexibility in methods, attitudes, and timeframes are critical components for research in this area (Pyett et al., 2008). Indeed, 'interventions need to be based on the evidence available for what works with different populations and health issues as well as the desires of the community/target population' (Jongen et al., 2017, p. 12).

> Effectiveness of interventions is not the sole consideration when implementing interventions in Indigenous populations … Emotional engagement/identification is also plausibly higher if the targeted community has been involved in formative research. (Gould et al., 2013, p. 8)

Ethically navigating the convergence of a health promotion rationale with the principles of collective well-being and self-determination, while also acknowledging the social and structural determinants of Indigenous health, is very important. Capturing community-level change can be challenging (Minichiello et al., 2015). This difficult issue affects the validity of public health research generally and is exacerbated by the consistent prioritisation of experimental and quasi-experimental studies (testing individual clinical interventions) over assessing activities that reach the whole community. This theme included both (a) attention given to the use of appropriate and/or validated measurement tools, and (b) discussion of the methodological limitations of primary studies. While the former reflects attempts made by researchers and policy makers to improve the evaluation quality of Indigenous services and programs overall, the latter inevitably affects the quality of the evidence-base relating to research in this area. For example, involving participants as partners in research, a participatory action research approach based on principles of *The Ottawa Charter* (WHO, 1986), can help resolve methodological issues by fostering equitability in the research process.

Jongen et al. (2017) reviews targeted tobacco campaigns and broader health promotion approaches for Indigenous people, but their outcomes are applicable to gambling harm reduction. Findings indicate that an appropriate model of HPAs related to Indigenous gambling would involve education and awareness raising programs, strategies to address stigma, building community relationships, and dealing with the underlying social determinants of gambling; rather than generic 'top-down' directives (e.g., money quarantining). Elements identified as facilitating positive change include: cultivating meaningful relationships with community members; providing access to culturally based health care; and engaging with, and grounding work in, cultural protocol and practice (Minichiello et al., 2015). There was also a clear emphasis on health promotion implementation and program effectiveness and the overarching importance of thorough evaluation efforts in the reviews. However,

the degree to which this translates into new norms in research practice is unclear.

Implications

From a public health perspective, research addressing gambling harm in Indigenous settings should encourage and support increased cultural safety and involve strategies that are responsive to Indigenous sociocultural determinants of health. Quantitative researchers exploring cultural implications of Indigenous people's gambling can provide ideas for community-grounded HPAs to address gambling harms as they evolve. However, limitations (such as small sample sizes) affect the applicability and/or transferability of research findings; that is, the ability to apply findings from a mix of evidence on HPAs from one Indigenous population group (tobacco users) to another Indigenous population group (problem gamblers), or from research on Indigenous people from one country to Indigenous people from another.

Regarding implications for practice, this review recommends health promotion initiatives be multi-faceted and rooted in principles of self-determination, the needs of local community, using Indigenous ways of knowing and doing, and generating community interest. Common factors contributing to a greater sense of community interest include: having strong local drivers, long-term investment in relationship building, and the development of credibility and trust between community members and project staff (Minichiello et al., 2015). Further, the policy integrity and application of a public health framework to address gambling-related harm in Indigenous communities rests on accurate cessation and prevention indicators, as well as the coordinated planning and implementation of appropriate health promotion campaigns, in conjunction with complementary regulatory measures. There is sufficient evidence that providing culturally appropriate strategies to tackle gambling harms, and community involvement in shaping these programs, are more likely to be effective than those that do not. Therefore, future research assessing the applicability of themes and strategies for Indigenous health promotion targeting GDs in differing countries with differing Indigenous populations would address gaps in the current knowledge base.

Limitations

Overviews generally create a meta-analysis of the included reviews, but the descriptive foci of the included reviews prevented this. While we provide an overview of the state of certain HPAs within Indigenous health research, we did not assess any potentially useful primary studies that were not included by the reviews we identified. Similarly, the exclusion of grey literature means we might not have located all relevant Indigenous health promotion materials published within the review period. For example, most countries produce national reports on prevalence and patterns of addiction, such as Australia's Productivity Commission (1999, 2010), and the United States' National Gambling Impact Study Commission (1999). Health promotion is often listed as a key prevention and harm reduction strategy to address health inequalities in Indigenous populations; however, such reports were not included. We acknowledge the limitations our approach had in its analysis. Our ability to comprehensively answer the proposed review questions was affected by the absence of information provided in the reviews (limited range of Indigenous health issues discussed), our choice of methods (strict inclusion criteria), and gaps in the literature overall (no information on gambling-specific HPAs in Indigenous populations).

Conclusion

We identified knowledge and methodological gaps in Indigenous health promotion and gambling research that can be addressed by researchers and policy makers. Our findings also justify the use of culturally safe prevention and intervention strategies that consider GD risk, and protective factors that are influenced by Indigenous-specific cultures. Although no reviews were identified that apply health promotion explicitly to address gambling-related harm within Indigenous communities, the synthesised evidence suggests strategies incorporated into a health promotion perspective need to reflect three overarching constructs, namely cultural, structural, and methodological considerations. Using a multi-component, collaborative health promotion strategy to help reduce stigma and increase awareness about gambling harm through culturally sensitive investigation is also key. Gaining insight from exploring the intersection of Indigenous cultures and gambling is crucial for the success of equitable future program development and intervention.

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