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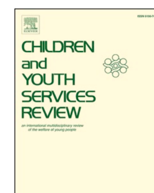

Wellbeing and mental health interventions for Indigenous children and youth: A systematic scoping review

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A B S T R A C T

Introduction: Key policy directives from Canada, Australia, New Zealand, Norway and the United States (CANNZUS countries) highlight the importance of addressing the unique and complex wellbeing and mental health needs of Indigenous school-aged children and youth. This systematic scoping review of the peer reviewed and grey literature identifies the extant evidence about the conditions, strategies and impacts of wellbeing and mental health screening, management and referral pathways for Indigenous children and youth in CANNZUS countries.
Methods: A search for peer reviewed and grey literature was conducted of 17 electronic databases and 13 clearinghouses and websites in each of the included countries. Search results were imported into Endnote X9 with titles and abstracts screened against inclusion criteria. The full texts of selected publications were screened by at least two blinded reviewers. Data extracted from the full texts included: authorship, year and publication type; country, target group, sample size and intervention setting, intervention type and study design, outcome measures and reported outcomes.
Results: The searches produced 3223 peer reviewed and 278 grey literature publications (after duplicates were removed) giving a total of 3501 references. Screening resulted in 15 papers arising from 14 intervention studies in primary health care services, education, juvenile justice and community settings. Only 9 of the 15 publications evaluated an intervention; 6 were program descriptions. The review identified four key approaches to improve wellbeing and mental health care for Indigenous children and youth – cross-service collaboration, professional education, intervention quality and appropriateness, and enhancing direct service provision pathways. Intervention outcomes included acceptability, appropriateness and effectiveness.
Discussion/conclusion: The small number of studies found suggests that this research niche area is still in development, with few evaluations of interventions. Identification of interventions within the four broad strategy areas is useful, and the review has some value in guiding the tailored development of interventions in other sites. Further Indigenous-led investigations of wellbeing are needed to identify what works to improve wellbeing and mental healthcare for Indigenous children and youth.

1. Introduction[3]

The mental health continuum encompasses wellbeing at one end and serious illness at the other (Keyes, 2002). Early intervention can provide opportunities for promoting good mental health, prevent onset of mental illness and reduce its progression along this continuum - and hence avoid the lifetime adverse outcomes and economic costs associated with serious mental illness (Lopez-Carmen, 2019; Quality Innovation Performance Limited. National Standards for Mental Health Services (NSMHS), 2021). The school years of childhood and youth (aged 5–18 years) are a particularly important time for early intervention in mental health since half of all global mental health conditions start by age 14 years and three quarters by age 24 (McGorry and e. al., 2007). Aiming to improve the quality, safety and efficacy of services provided to Indigenous children and youth in need of care, this systematic scoping review of the peer reviewed and grey literature identifies the extant evidence about the conditions, strategies and impacts of wellbeing and mental health screening, management and referral

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[3] CANNZUS refers to Canada, Australia, Norway, New Zealand and the United StatesSEWB refers to social and emotional wellbeingPHC refers to primary healthcare services.

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pathways for Indigenous children and youth in Canada, Australia, New Zealand, Norway and the United States (CANNZUS countries).

Concepts such as wellbeing and mental health require careful definition and nuance as they pertain to Indigenous populations (Hayward, 2020).The World Health Organization's definition of mental health is "a state of well-being in which an individual realises [their] own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to [their] community" (World Health Organization, Investing in mental health, Department of Mental Health and Substance Dependence, Editor., 2003), p.4. Wellbeing is defined by the US Centers for Disease Control and Prevention as a subjective measure of the presence of positive emotions and moods (e.g., contentment, happiness), the absence of negative emotions (e.g., depression, anxiety), satisfaction with life, fulfillment and positive functioning (Centers for Disease Control and Prevention, Well-being concepts, D.o.P.H. National Center for Chronic Disease Prevention and Health Promotion Editor., 2018). However, Indigenous peoples have practiced holistic wellbeing approaches for generations, and acknowledge the effects of cultural and socio-economic determinants in shaping the health of individuals and communities (Hayward, 2020; Bainbridge, et al., 2018); (McClintock, 2021) Indigenous peoples have thus developed specific terms that place Indigenous worldviews and culture as central to a holistic understanding of health not only on an individual level, but also for family and the whole community (Gee and Dudgeon, 2014). For example, many Aboriginal and Torres Strait Islander Australians prefer the term social and emotional wellbeing (SEWB) to refer to seven interconnected domains including body, mind and emotions, family and kinship, community, culture, country and spirituality (Dudgeon, 2017). Improving SEWB is about strengthening capacity across each of these domains (Dudgeon, 2017), not only on an individual level, but also for family and the whole community (McClintock, 2021; Gee and Dudgeon, 2014). Similarly, Maori people of New Zealand conceptualise a broad concept of whanau (extended family) wellness with three intersecting components of personal wellbeing, whanau and whanau wellbeing (McClintock, 2021; Menzies and Te, 2020).

Key policy directives from CANNZUS countries highlight the importance of addressing the unique and complex wellbeing and mental health needs of Indigenous school-aged children and youth. While most Indigenous youth exhibit positive mental health and there is considerable variation within and between populations (Williamson, 2016; Kvernmo, 2004; Chandler and Lalonde, 2008), research from CANNZUS countries suggests that Indigenous youth experience overall higher rates of mental health problems than their non-Indigenous peers (Carlisle, et al., 2017; Azzopardi, 2018; Gillies, 2017; Crengle, et al., 2012; CDC. High School Youth Risk Behavior Surveillance System (YRBSS), 2017; Trend Tables, 2017; Atkinson, 2017). Canadian First Nations, Inuit and Aboriginal/Metis, Australian Aboriginal and Torres Strait Islander, New Zealand Māori, and American Indian and Alaska Native children and youth experience higher rates of psychological distress, anxiety, depression, self-harm and suicidal ideation, as well as higher mortality rates from suicide (Carlisle, et al., 2017; Azzopardi, 2018; Gillies, 2017; Crengle, et al., 2012; CDC. High School Youth Risk Behavior Surveillance System (YRBSS), 2017; Trend Tables, 2017; Atkinson, 2017). In comparison, Norwegian Sami children and youth have been found to have positive mental health comparative to non-Sami children and youth (Kvernmo, 2004).

Indigenous wellbeing and mental health concerns are related to the pervasive, complex and compounding effects of historical and contemporary trauma experienced by Indigenous peoples (Hayward, 2020; Calma et al., 2017). The distinct socioeconomic risk factors and sociocultural determinants of health experienced situationally by Indigenous children and youth include racism, social exclusion, social inequality, grief and loss and unresolved trauma resulting from colonisation and colonial practices, such as the removal of Indigenous children from their families (Boksa et al., 2015; Priest, 2011; Zubrick, et al., 2005; Zubrick and Dudgeon, 2014; Dudgeon and Dudgeon, 2014; Loppie Reading and Wien, 2009). These determinants can also deter children and youth from seeking help, for example, through mistrust of authority or fear of racism, leading to low rates of identification and treatment of mental health concerns (Crengle, et al., 2012). The interrelated effects of the historical, social, economic and cultural determinants of health mean that improving an Indigenous children's wellbeing and mental health child's health requires coordinated responses from the health sector as part of whole-of-community and whole-of-government solutions. Understanding what works to support children's and youth wellbeing and mental health is important.

A range of sectors and services are engaged in supporting child and youth wellbeing and mental health including mental health, drug and alcohol, employment, education, housing, juvenile justice, child welfare, and youth services and programs (Hinton, 2015; Burns, 1995). Primary health care (PHC) services and schools are perhaps the most important sites because they are generally the first point of contact for an Indigenous child or young person in seeking wellbeing or mental health support. To improve care pathways in PHC, there is a need for effective, accurate screening and identification, referrals and follow-up (Lopez-Carmen, 2019; Hinton, 2015; Gardner, 2014). Concerningly, though, an Australian study examined the extent of mental health screening and management of Aboriginal and Torres Strait Islander clients across a sample of 100 PHC services and found that the majority (73.4 %) of youth were not screened (Langham, 2017). Additionally, no referral or further PHC service action was taken for 25 % of those young people who were screened and where mental health concerns were identified. For those where action was taken, there was no further follow up for approximately half (Langham, 2017).

This systematic scoping review responded to a broad priority determined by four Indigenous Australian primary healthcare services. The objective of the review was to examine the evidence about the screening, management and referral pathways to promote wellbeing and identify and treat mental health concerns for Indigenous children and youth from CANNZUS countries, including: 1) the conditions, enablers, barriers and strategies to improved identification and treatment of wellbeing and mental health concerns; and 2) the impacts and outcomes of mental health care screening, assessment and referral with Indigenous children and youth. The review was developed to frame the rationale for two (successful) grant applications to work with the four PHC to improve mental health service availability, appropriateness and measures.

2. Methods

Systematic scoping reviews are used to examine and summarise a range of evidence that is "complex, heterogeneous, or has not been previously comprehensively reviewed in order to understand broadly what is know about the phenomenon." (Whittemore, 2014) p. 458; (Peters, 2015). Consistent with other systematic scoping reviews, this review synthesises knowledge from heterogeneous bodies of literature "to map the key concepts and evidence of a particular phenomenon" (Whittemore, 2014) p. 455. A protocol was written for the systematic scoping review and outlined the purpose, definitions and methods for the search, screening, extraction and analysis of the literature. To encompass a breadth of evidence, the review included studies with wide-ranging designs, and hence it was not feasible to compare study quality. The review was led by three Indigenous Australian academics (RB, SC, VS) and six non-Indigenous co-authors (CJ, JM, DA, GS, EL, EG) including two primary healthcare service contributors (DA, GS). We attempted to frame the results and discussion using a strengths-based approach, and to draw from the findings to inform subsequent research collaborations with PHC, schools and other sectors.

2.1. Inclusion/Exclusion criteria

Studies were included if they:

1. were conducted in Canada, Australia, Norway, New Zealand, or the United States. The Western settler states of Canada, Australia, New Zealand and the USA were included because they share similar British colonial legacies and health systems to Australia; Norway was included as an example of a Nordic country which has innovations in many public policy areas, including child and adolescent wellbeing;
2. were published in English and available electronically;
3. were studies concerned with Indigenous children and youth (5–18 years) in the target group. This age range was chosen as encompassing the years in which schooling is compulsory in many States, Provinces or Territories of CANNZUS countries;
4. described or evaluated interventions to improve wellbeing and the identification and treatment of mental health concerns;
5. were published between January 1990 and October 2021 inclusive.

Studies were excluded if they were:

1. opinion pieces or perspectives
2. policy documents;
3. literature reviews;
4. study protocols; or
5. research theses.

2.2. Identification, screening and inclusion of publications

An initial literature search (Fig. 1) was conducted of literature published in English from January 1989 to December 2017. The start date was taken to coincide with the holistic view of Indigenous health identified by the Australian National Aboriginal Health Strategy Working Party (NAHS, 1989). A second search was conducted in October 2021 to update the review from January 2018-October 2021. For both searches, the same expert librarian searched 17 relevant electronic databases. Co-authors searched grey literature from 13 clearinghouses and websites of relevant organisations in each of the included countries.

Search results were imported into the bibliographic citation management software, Endnote X9 which was first used to identify and remove duplicates. One author (CJ) screened the titles and abstracts of all references to identify papers eligible for full text screening. Those identified as not meeting the inclusion criteria were excluded. The full texts of the remaining publications were each screened by at least two blinded reviewers (JM, EL, SC, DA, GS, VS). A process of discussion and negotiation was undertaken to reach consensus regarding any inconsistencies in reviewer assessments.

Data extraction & analysis.

Data were extracted from the full texts of included studies, including: authorship, year and publication type; country and target group. Data were also extracted on sample size and intervention setting, intervention type and study design, outcome measures and reported outcomes. Reviewed studies were analysed to identify key intervention characteristics and context in terms of intervention strategies implemented, as well as enabling or hindering conditions reported.

3. Results

The combined database searches produced 3223 peer reviewed publications (after 560 duplicates were removed), and 278 grey literature publications (after 5 duplicates were removed) giving a total of 3501 references (Fig. 2). Screening of the titles and abstracts against the inclusion criteria resulted in the exclusion of 3271, with 77 articles identified for examination as full text publications. At the second screening, a further 62 were excluded with reasons. A total of 15 papers arising from 14 intervention studies met the inclusion criteria and were

Electronic databases searched: Medline (including Epub Ahead of Print, In-Process & Other Non-Indexed Citations) / Ovid; Embase / Ovid; PsycINFO / Ovid; EBM Reviews - Cochrane Database of Systematic Reviews / Ovid; CINAHL / Ebsco; Global Health/ Ovid; ATSIHealth /Informit; APAIS-ATSIS / Informit; AIATSIS: Indigenous Studies Bibliography/ Informit; FAMILY-ATSIS / Informit; ERIC / Proquest; A+ Education / Informit; PAIS / Proquest; Sociological Abstracts / Proquest.

Search terms: (and their corresponding subject headings in each database where specialised thesauri existed):

1. Indigenous OR Aborigin* OR “Torres Strait Island”* OR Inuit OR Maori OR Iwi OR “Tangata Whenua” OR “First Nation”* OR Metis OR “Native American”* OR “American Indian”* OR “Native Hawaiian” OR tribal OR Sami
2. adolescen* OR youth* OR young people OR young adult* OR child* OR teen* OR juvenile*OR family OR families
3. wellbeing OR mental health OR wellness OR healing OR *stress
4. screen* or assess* or path* OR model OR manage* OR refer* OR tool OR measure OR indicator
5. Australia OR Canada OR USA OR New Zealand OR Norway

The initial searches were completed on 6, 8-10, 12-18 December 2017. The second search was completed on 21 October 2021.

Websites manually searched: Google Scholar, Google,
Australia: Indigenous HealthInfoNet; Closing the Gap Clearinghouse
Canada: The National Collaborating Centre for Aboriginal Health; (National Aboriginal Health Organisation was closed); Health Council of Canada: Aboriginal Health
New Zealand: Maori Health; Whakauae: Research for Maori Health and Development; MAI: A New Zealand Journal for Maori Health and Development
USA: American Indian Health; National Indian Health Board; Centres for American and Alaska Native Health.

Fig. 1. Search strategy.

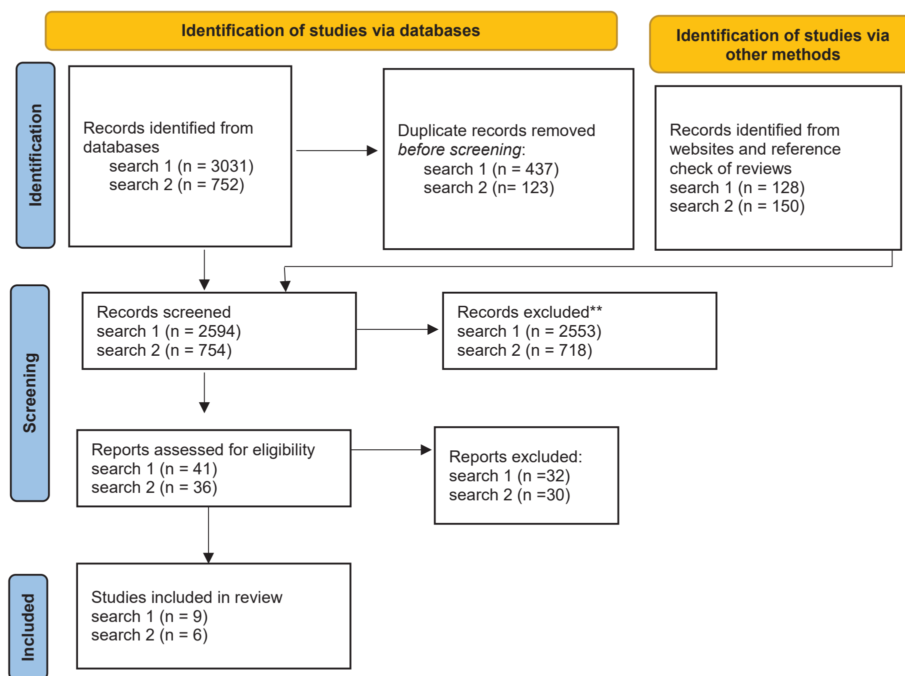

Fig. 2. Flowchart representing the selection process for publication inclusion. *From:* Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. https://doi.org/10.1136/bmj.n71. For more information, visit: https://www.prisma-statement.org/.

reviewed.

The reviewed papers had diverse study aims, but each reported evaluations ($n = 9$) or program descriptions ($n = 6$) of screening, assessment and/or referral interventions to improve the identification and treatment of wellbeing and mental health concerns among Indigenous children and youth. Seven were from Australia (Mushin, 2003; Stathis, 2006; Stathis, 2007), five from Canada (Lipton, 2008; Volpe et al., 2014; Young, 2016), two were from New Zealand (Clark, 2014; Goodyear-Smith et al., 2016) and one from the United States (US) (Kuo, 2009). No studies from Norway were found.

Of the 15 included papers, seven described or evaluated interventions implemented at a regional and/or inter-organisational (that is, between a PHC service and a school or other service) (Mushin, 2003; Hutt-MacLeod, 2019; Lipton, 2008; Volpe et al., 2014; Young, 2016; Clark, 2014). The remaining eight papers were implemented in a single service or institute: two in a PHC service (Goodyear-Smith et al., 2016), two in a mental health service (Sabbioni, 2018; Skerrett, 2018) two in a school/s (Kuo, 2009), one through equine-assisted learning (Coffin, 2019), and two papers reported different aspects of the same intervention in a juvenile justice setting (Stathis, 2006; Stathis, 2007). Nine publications (60 %) were focused on addressing mental health concerns (Mushin, 2003; Lipton, 2008; Volpe et al., 2014; Young, 2016; Clark, 2014; Goodyear-Smith et al., 2016); two papers were focused on substance use problems (Stathis, 2006; Stathis, 2007), three on social and emotional learning/wellbeing (Kuo, 2009), and one on lifestyle risk factors (Goodyear-Smith et al., 2016) (see Table 1 for details on study characteristics).

3.1. Characteristics of intervention strategies

The review identified four key approaches to enhancing pathways to wellbeing and mental health care for Indigenous children and youth – system-level collaboration, service level professional education, intervention-level quality and appropriateness, and client-level direct pathways.

3.1.1. Systems-level strategies

Strategies for improving cross sectoral collaboration were designed to improve the systems underpinning wellbeing mental health care. Cross-sectoral collaboration between health services or professionals and schools, and education, communities and health departments was reported in seven papers (Mushin, 2003; Lipton, 2008; Etter, 2019; Clark, 2014; Goodyear-Smith et al., 2016; Kuo, 2009; Hutt-MacLeod, 2019). Community and service stakeholder groups involved in collaborations included regional or local First Nations community governing bodies, government ministries and agencies, university faculties, health, education, child welfare, social and mental health services, and community elders (Lipton, 2008; Hutt-MacLeod, 2019; Etter, 2019). In the intervention evaluated by Clark et al. (2014), for example, a steering group with representatives from youth health services, non-governmental organisations, school-based services, child and adolescent mental health services, and cultural services was established to develop a referral-based intervention with facilitated access to free counselling support for youth with mild to moderate mental health problems in New Zealand. This involved the establishment of a multidisciplinary, cross-agency triage team and the utilisation of contract counsellors (Clark, 2014). They reported intervention effectiveness for improving service accessibility and service coordination (Clark, 2014).

3.1.2. Service-level strategies

Two strategies were focussed on improving health service processes: professional education and specialist clinical consultation to frontline practitioners. Five studies reported the provision of some form of education to professionals working with Indigenous children and youth (Goodyear-Smith et al., 2016; Mushin, 2003; Stathis, 2006; Stathis, 2007; Lipton, 2008; Volpe et al., 2014). This was most commonly in the form of training or education curricula regarding mental health and other wellbeing concerns. For example, Lipton et al. (2008) described an intervention which included a comprehensive, accredited continuing professional development curriculum for primary care practitioners, delivered online via E-Learning or video teleconferencing about mental health issues, screening and treatment. Education or training were provided to staff and practitioners on suicide prevention and trauma and

Table 1
Characteristics of included studies.

Author & study type	Country & intervention setting	Target group/sample	Study aim	Study design/ methods	Reported outcomes
(Clark, 2014) Intervention evaluation	New Zealand Regional/ collaboration between District Health Board and PHC	581 culturally diverse New Zealand youth aged 10–24 with mild to moderate mental health problems, including 182 Māori youth.	To evaluate a referral-based facilitated access to free counselling support intervention for youth with mild to moderate mental health problems. Participants were referred from PHC, schools, community organisations; family/whānau and young people themselves.	Mixed-method design: Quasi-experimental pre-/post quantitative evaluation and qualitative consumer feedback questionnaire.	Significant improvements in participants' social and psychiatric functioning, reduced risk of clinically significant mental health concerns and reductions in the use and impact of drugs/ alcohol. Mostly positive participant feedback regarding intervention appropriateness, acceptability.
(Coffin, 2019) Intervention evaluation	**Australia** West Australian equine assisted learning program	Aboriginal youth 6–25 years ($N = 270$) engaged in a minimum of 6-weeks of equine assisted learning.	**Study aim:** To evaluate the equine assisted learning model as a culturally secure and appropriate alternative therapy in outdoor spaces for grief, loss and trauma	Mixed methods design - Qualitative component included photography to capture participants' experiences through the program. Quantitative measure: a cultural and age-appropriate adaptation of the Strength and Difficulties Questionnaire to track changes.	**Outcomes:** observed improvements in self-regulation, self-awareness, and socialization skills. Parent and/ or caregiver and teacher reported changes in behaviour, self-regulation, and socialization skills were also recorded.
(Etter, 2019) Description of community-driven service transformation	Canada Remote small Indigenous community of Ulukhatok in Canada's Northwest Territories	Inuit youth (whole community approach)	To describe a community-specific and culturally coherent approach to youth mental health services, under the framework of ACCESS Open Minds (ACCESS OM), a pan-Canadian youth mental health research and evaluation network	Description of the transformation of community youth mental health services	Building supportive and integrated community responses to improve overall mental health literacy and wellness. Foci include connections to culture and traditional skills, honouring youth and community-expressed desires to incorporate Inuvialuit-specific approaches to wellness and strengthening the support systems to improve access to mainstream mental healthcare.
(Franck, 2020) Program evaluation	Australia Boarding schools	28 Aboriginal students from remote communities aged between 13 and 15 years	To evaluate a 10-session social and emotional learning program for Aboriginal boarders and identify contextual factors influencing its effectiveness.	Mixed methods including a pre-post quantitative evaluation using diverse social and emotional wellbeing measures and qualitative post focus groups and interviews with staff delivering the program.	Students' social and emotional skills significantly improved. Qualitative findings revealed improvements in students seeking and giving help, working in groups, managing conflict, being assertive and discussing cultural issues. Program elements that worked best and that needed improvement were identified. Critical enablers were secure relationships with staff delivering the program and participation in single sex groups.
(Goodyear-Smith et al., 2016) Intervention evaluation	New Zealand PHC	30 New Zealand youth under the age of 25 attending the PHC, including 27 Māori participants	To evaluate a youth program for electronic screening and intervention for lifestyle risk factors and mental health issues.	Mixed-methods evaluation: Quantitative evaluation of survey results; Qualitative survey of screening tool acceptability, focus groups with participating clients, and semi-structured interviews with participating clinicians.	Twenty-seven (90 %) of participants screened positive for at least one issue. Nineteen (67 %) had one to three issues. Sixteen (53 %) wanted help with at least one issue, either immediately or later. Very high acceptability ratings ($M = 8.29/10$) were given by participants and staff felt the intervention was acceptable to young participants.
(Hutt-MacLeod, 2019) Description of community-driven service transformation	Canada Remote First Nation community of Eskasoni, on Canada's east coast	Eskasoni youth – whole community approach-service use is based on clients' needs and desire rather than age restrictions	To describe the implementation of the ACCESS OM objectives for youth mental health service transformation within a pre-existing Fish Net Model of transformative youth mental healthcare service.	Description of an adaptation of the ACCESS OM service transformation objectives through the complementary blending of Indigenous and Western methodologies.	A Youth Space acts as a central location for the site team and its activities, which expand into the rest of the community to facilitate early identification of youth in need. Rapid access to care is promoted through a central intake crisis and

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Table 1 (*continued*)

Author & study type	Country & intervention setting	Target group/sample	Study aim	Study design/ methods	Reported outcomes
					referral centre, and ease of contact through social media and other modalities. Youth are given the choice between standard Western mental health services, or Indigenous methods of improving well-being, or both. Local leadership and community buy-in were key factors to success.
(Kuo, 2009; van der Stoep, 2005) Cost-effectiveness evaluation	United States School level	2190 6th grade students, including130 (5.9 %) Native American students	To assess the costs and effectiveness of a universal emotional health screening program implemented in the classroom.	Costs were enumerated for screening and clinical evaluation in terms of labour and overheads and summarised as cost per enrolled student, per positive screen, and per referral. Cost-effectiveness is summarized as cost per student successfully linked to services.	Screening costs ranged from $8.88 to $13.64 per enrolled student. The study found that as the proportion of students who screened positive increased, the cost per enrolled student increased somewhat, whereas the cost per positive screen, per referral and per successful linkage decreased sharply.
(Lipton, 2008) Intervention description	Canada Regional/inter-organisational	PHC providers in rural parts of southern Alberta including First Nations communities	To describe the development, implementation, and interim results of a program which sought to build primary care capacity in early identification and intervention in children's mental health.	Process description: Priority was given to building linkages with primary care physicians in rural parts of southern Alberta. An intersectoral working group was developed. The program was informed by a needs' assessment and literature review. A consultation/liaison model focussed on primary care physicians for dissemination of knowledge and skills using technology to span wide areas and offer isolated practitioners the same access to consultation and education as urban peers.	Program implementation encountered challenges and initial uptake of outreach services was slow due to the shift in practice culture for medical practitioners to collaborative care, difficulties with internet access in rural areas and unfamiliarity of some First Nations providers with some technology. Nevertheless, there were significant numbers of consultations with First Nations children, broad dissemination of well received resource materials, and a proliferation of continuing online professional development for front-line clinicians.
(Mushin, 2003) Intervention description	Australia PHC	Indigenous and non-Indigenous mental health workers providing child and adolescent psychiatric services to the Aboriginal community in Melbourne, Victoria	To describe the development of a collaborating group of Indigenous and non-Indigenous mental health workers.	Process description: A series of meetings, facilitated by an Aboriginal coordinator, formalised a network of people able to work with Aboriginal children and their families: the Koori Kids Mental Health Network. Development of the network promoted community participation and control, processes of knowledge exchange, and a lengthy timeframe for engagement.	Membership of the network included an Aboriginal coordinator and liaison health workers and mainstream mental health and child health professionals. Mainstream workers adapted to a new cultural environment and developed a sense of having a role and function and a sense of belonging within the network. Aboriginal members helped mainstream workers adapt their ways of working and undertook further education through a training course developed for mental health workers. The network provided direct clinical service for children, youth and families and consultation to agencies regarding their work with the Aboriginal community.
(Sabbioni, 2018) Intervention description	Australia A state-wide mental health service program in Western Australia for young people	40 young Aboriginal and Torres Strait people aged 13 to 24 years of age	To describe and document the effectiveness of the culturally sensitive model within Youthlink, a state-wide youth mental health service	A mixed-method design including description of the YouthLink framework and empirical research where clients completed client feed-back monitoring measures between 2014 and 2016.	This study was not designed to measure the impact of the Youthlink intervention although there is evidence that use of Outcome Rating Scale and Session Rating Scales measures can increase treatment efficacy. The measures are simple, brief and

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Table 1 (*continued*)

Author & study type	Country & intervention setting	Target group/sample	Study aim	Study design/ methods	Reported outcomes
					appropriate, and are successful in capturing clients' perspectives about their treatment progress and therapeutic bond. The principles of feedback monitoring can be considered more culturally appropriate than standardised measurement approaches.
(Skerrett, 2018) Program evaluation	Australia Headspace youth mental health service in urban Brisbane	Sixty-one Aboriginal and Torres Strait Islander persons aged 11–21 years	To describe the design and implementation of a group-based social and emotional wellbeing intervention, and report results of the various qualitative and quantitative measures.	Post- intervention evaluation of a group-based program designed and delivered in collaboration with local community members; follow up through to 2 months	First published intervention to report a significant decrease in suicidal ideation in an Aboriginal and Torres Strait Islander sample. The program was effective in improving social and emotional literacy and acceptance of help seeking. Findings suggest that suicide prevention initiatives that include strategies to ameliorate socially determined stressors are likely to have greater acceptance.
(Stathis, 2006) Intervention description	Australia Juvenile justice centre	Young people admitted to a youth detention centre, including Indigenous youth	To describe the expansion of an integrated Mental Health Alcohol Tobacco and Other Drugs Service (MHATODS) to juveniles in detention and report on rates of referrals and program access.	Process Description: A voluntary automatic referral process for young people screened as being substance users on admission to the detention centre. Young people were offered a single drug and alcohol counselling session. Attenders were invited to complete the full program (3 more sessions). An Indigenous health worker acted as a cultural broker and encouraged Indigenous young people to engage in treatment. A same-gender group relapse prevention programme was developed primarily directed at young who received a custodial sentence.	Drug and alcohol assessment and counselling increased from 17 % to 64 % of total referrals. Clinical staff became committed to quality substance use interventions. Referrals of Indigenous young people increased consistently to be equal to non-Indigenous referral rates. A total of 345 young people were referred for drug and alcohol counselling over a 20 month period. 28 % were released prior to any review. A further 21 % were released prior to commencement of treatment and 24 % refused treatment. 22 %, 16 %, 6 % and 32 % completed one, two, three and four sessions respectively. Over a 12 month period, the group relapse prevention programme was run four times with 22 young people, of whom 21 completed. Participants reported difficulties sharing and feeling vulnerable in the group setting. Not every-one respected group confidentiality.
(Stathis, 2007) Intervention evaluation	Australia Juvenile justice centre	527 young people admitted to a youth detention centre, including 225 Indigenous youth (42.7 %)	To describe strategies aimed at improving access of Indigenous young to MHATODS at a youth detention centre, and determine how well Indigenous youth were accessing the service.	Quantitative: Analysis of service access and utilisation rates.	Of the 225 Indigenous young people admitted, 128 (56.9 %) were referred to MHATODS. There was no significant statistical difference between MHATODS referrals for Indigenous compared to non-Indigenous young people. The differences in total number of clinical sessions per referral for Indigenous and non-Indigenous patients was not clinically significant.
(Volpe et al., 2014) Intervention evaluation	Canada Regional/inter-organisational	Health and mental health workers in the Nunavut territory of Canada	To examine the delivery of psychiatric consultation services using videoconferencing technology to health and mental	Qualitative process evaluation: Participant observation of 12 program consultations and 4 continuing education sessions.	Reports that the intervention was effective in helping participating practitioners think in new ways and apply knowledge, and that evidence

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Table 1 (*continued*)

Author & study type	Country & intervention setting	Target group/sample	Study aim	Study design/ methods	Reported outcomes
			health workers in the Nunavut territory of Canada.	Individual interviews with the consulting psychiatrist and lead program coordinator. A 90-minute focus group with participants.	of capacity building emerged as the sessions progressed. Reports increased participant comfort with the intervention over time, and program acceptability. Evidence of overall participant satisfaction with the program.
(Young, 2016) Intervention evaluation	Canada Regional/inter-organisational	293 First Nations Canadian children and youth, 8–18 years	To document the screening and triage process, embedded within the Aboriginal Children's Health and Wellbeing Measure (ACHWM) for identifying young people at-risk of mental health problems, and assess its effectiveness.	Quantitative observational study: Percentage of participants giving responses indicative of risk were compared with mental health worker assessments for all participants in one sample.	The study found high specificity and negative predictive value demonstrating effectiveness as a screening and triage tool. Approximately-one third of those screened and assessed as at risk were first time referrals indicating effectiveness of the tool for identifying young people at risk who are not identified by standard practice.

substance-induced psychosis (Volpe et al., 2014), as well as alcohol and other drug and mental health comorbidity (Stathis, 2006; Stathis, 2007). Four studies explicitly reported providing mental health training and professional education for Indigenous workers (Mushin, 2003; Stathis, 2007; Volpe et al., 2014; Coffin, 2019). One Australian study highlighted the importance of two-way learning; mainstream mental health professionals benefitted from the knowledge shared by their Aboriginal colleagues which helped them adapt to working in a new cultural environment. Mainstream professionals provided training and supervision for Aboriginal staff, and in turn, they were reliant on Aboriginal staff to supervise their work (Loppie Reading and Wien, 2009). Other professional education strategies included the provision of specialised training (Coffin, 2019), a manual for practitioners to guide intervention implementation (Goodyear-Smith et al., 2016) and the development and distribution of print and web-based resources (Lipton, 2008; Goodyear-Smith et al., 2016) to guide practitioners in the identification and treatment of wellbeing and mental health concerns among Indigenous children and youth.

Three interventions included clinical consultations provided by mental health specialists to front-line practitioners (Mushin, 2003; Lipton, 2008; Volpe et al., 2014). For example, the studies reported by Lipton et al. (2008) and Volpe et al. (2014) both included clinical consultations provided by mental health specialists via video teleconferencing delivered to frontline primary care workers, with the aim of increasing local capacity in the diagnosis, formulation, and management of mental health problems among Indigenous children and youth (Gardner, 2014; Langham, 2017). Both outlined the implementation of collaborative, multidisciplinary team consultations (Volpe et al., 2014) and one intervention sometimes involved the child, parents, caregivers, and other professionals, such as school personnel and social workers (Lipton, 2008). The use of video teleconferencing technology was seen as particularly important for rural and remote practitioners as an innovative approach to accessing similar professional development and clinical practice opportunities available to their urban peers (Gardner, 2014; Langham, 2017).

3.1.3. *Intervention-level quality and appropriateness*

Eight studies (53 %) reported consulting experts or young people and participating professionals in the development of interventions (Hutt-MacLeod, 2019; Skerrett, 2018; Etter, 2019; Stathis, 2006; Stathis, 2007; Lipton, 2008; Young, 2016; Clark, 2014; Goodyear-Smith et al., 2016). For example, Hutt-MacLeod (2019) reported that First Nations youth in the remote Canadian community of Eskasoni identified that it was important for them to be viewed holistically encompassing emotional, mental, spiritual and physical well-being as outlined in the Medicine Wheel, and not only focussing on their mental health concerns- hence the Eskasoni service model was developed for all youth from the community with no differentiation between mental health programming and regular youth programming. Youth identified activities and programmes included movie nights, youth dances, expressive art therapy, song writing circles, piano and guitar lessons, gamer nights, mixed martial arts sessions, exercise classes, traditional Native crafts, regalia making, sweats and language classes (Hutt-MacLeod, 2019). Two studies outlined strategies to maintain confidentiality for young people (Volpe et al., 2014; Kuo, 2009), such as the use of pseudonyms and presentation of hypothetical cases in the clinical consultancy intervention evaluated by Volpe et al. (2014). Nine studies identified strategies for local customisation or flexibility of interventions to address contextual differences (Stathis, 2006; Lipton, 2008; Goodyear-Smith et al., 2016; Hutt-MacLeod, 2019; Allen et al., 2004; Skerrett, 2018; Coffin, 2019; Etter, 2019). For example, Goodyear-Smith et al. (2016) developed a flexible program and associated manual and resources that could be customised according to the specific context and needs of each clinic or community (Goodyear-Smith et al., 2016). Sabbioni et al. (2018) reported the use of session rating and outcome rating scales to obtain clients' perspectives of the treatment session and therapeutic bond with the practitioner. These were used as feedback mechanisms to improve the therapeutic experience.

Twelve (80 %) intervention evaluations or descriptions included a strategy to improve or assure cultural appropriateness for Indigenous young people or professionals engaged in the intervention (Hutt-MacLeod, 2019; Mushin, 2003; Stathis, 2006; Stathis, 2007; Volpe et al., 2014; Young, 2016; Clark, 2014; Goodyear-Smith et al., 2016; Skerrett, 2018; Coffin, 2019; Etter, 2019). In five studies, culturally tailored or appropriate screening and assessment tools were utilised to this end (Young, 2016; Goodyear-Smith et al., 2016; Sabbioni, 2018; Coffin, 2019). The intervention reported by Goodyear-Smith, et al. (Goodyear-Smith et al., 2016) involved the adaptation and piloting of a screening tool through input from Māori youth and a Māori language version (Goodyear-Smith et al., 2016). Other studies explicitly described leadership or involvement of Indigenous staff in the delivery of programs (Hutt-MacLeod, 2019; Coffin, 2019; Etter, 2019; Mushin, 2003; Stathis, 2006; Stathis, 2007). For example, in the intervention reported by Mushin (2003) it was important for Aboriginal mental health workers to learn the clinical and therapeutic approaches of mainstream professionals and assess whether they would be acceptable to the Aboriginal

community (Loppie Reading and Wien, 2009). In the intervention reported by Stathis (Stathis, 2006; Stathis, 2007) an Indigenous health worker was recruited to act as a cultural broker, encourage engagement from Indigenous young people and provide cultural insight into appropriate mental health assessments and interventions (Stathis, 2006; Stathis, 2007). Other strategies included modification or design of programs to assure cultural appropriateness. Franck (Franck, 2020) reported the implementation and effects of a substantially redesigned 10-session 'Making Connections' social and emotional learning program for Aboriginal Australian students in boarding schools. The revised program drew upon the holistic Aboriginal conceptualisation of wellbeing which emphasises the interconnected mental, physical, cultural and spiritual aspects of health, family and community, and recognizes the impacts of intergenerational trauma due to historical and contemporary colonization (Gee and Dudgeon, 2014). Similarly, Skerrett et al. (2018) developed a SEWB program conceptualised in a way that made sense from a holistic cultural perspective. The resultant four broad topics were: Being healthy, being loved and safe, personal growth, and cultural and spiritual healing.

3.1.4. *Client-level strategies*

Five types of intervention were focussed directly on the effectiveness of pathways of care for Indigenous child or youth clients. While the reviewed examples occurred in varied settings, involved diverse sectors and showed variations in the number and order of steps implemented, there was a relatively consistent pattern across the interventions. The movement through care pathways typically started with screening or assessment, then referral, treatment selection, counselling interventions, and follow up.

Wellbeing and mental health screening or assessment was a key intervention strategy described in ten studies (Franck, 2020; Mushin, 2003; Stathis, 2006; Stathis, 2007; Young, 2016; Clark, 2014; Goodyear-Smith et al., 2016; Kuo, 2009; Sabbioni, 2018; Skerrett, 2018; Coffin, 2019). Screening or assessment processes were implemented to identify substance use and mental health concerns (Stathis, 2006; Stathis, 2007), lifestyle (Goodyear-Smith et al., 2016) and general health risks including wellbeing risks (Young, 2016; Skerrett, 2018; Coffin, 2019), social and emotional skills (Franck, 2020), factors including those related to wellbeing, sub-clinical symptoms of emotional distress (Kuo, 2009), and the severity of mental health issues (Clark, 2014). In three interventions, voluntary, universal screening processes were implemented, one for all grade six students in a school (Kuo, 2009), one for students in grades 7–9 (Franck, 2020), and another for all youth admitted to a juvenile detention centre (Stathis, 2006).Two screening tools were administered electronically using tablets (Young, 2016; Goodyear-Smith et al., 2016), one as a paper-based questionnaire (Kuo, 2009), and one was conducted through interviews by health or mental health professionals (Stathis, 2006). In two interventions mental healthcare workers conducted further clinical evaluations for participants who were identified as being at risk of mental health or wellbeing concerns during primary screening (Whittemore, 2014; Stathis, 2006). For example, in the screening process reported by Kuo et al. (2009), all students who screened positive received an on-site one-on-one clinical evaluation at the school to assess their level of distress; functional impairment in academic, emotional, and social domains; strength of support network; and need for referrals (Kuo, 2009). In the population health survey screening process reported by Young et al. (2016); all children who were potentially at-risk according to a screening tool subsequently met with a local mental health worker who conducted brief mental health assessments to determine their level of risk (Young, 2016).

Seven studies (47 %) reported referrals as an intervention strategy (Etter, 2019; Stathis, 2006; Stathis, 2007; Lipton, 2008; Clark, 2014; Goodyear-Smith et al., 2016; Kuo, 2009; Hutt-MacLeod, 2019). In the intervention reported by Clark et al. (2014) entry into the service started with a referral and was followed by an initial triage to ensure that the referral was appropriate and adequate information had been obtained (Clark, 2014). Etter (2019) and Hutt-MacLeod (2019) both reported that local community youth workers connected with help-seeking youth from remote Canadian communities to quickly guide them and their families towards the most appropriate services. Rapid access to specialised mental health interventions required leaving the small remote community, so the youth workers helped navigate these pathways towards care. In Kuo et al. (2009), for students who screened positive in a universal classroom screening program, referral plans were created with the student's input and were a voluntary automatic referral process for young people who were screened at risk for mental health or substance use problems for ongoing treatment at the youth detention centre and/or at local community services following release from detention (Stathis, 2006; Stathis, 2007).

Three studies outlined a process of treatment selection following screening and/or referral to the program (Stathis, 2006; Clark, 2014; Goodyear-Smith et al., 2016). Each intervention attempted to give some level of choice to participants or involve them in the process to different degrees. For example, in the referral-based program reported by Clark et al. (2014), suggestions regarding the type of therapy or care were made by a multidisciplinary team and the young person and their family/whanau were contacted to discuss treatment options and preferences, including provider gender and ethnicity, geographical location, and transport issues (Clark, 2014).

Nine studies described or evaluated some type of intervention program or service working directly with Indigenous young people to improve their wellbeing and/or mental health (Mushin, 2003; Stathis, 2006; Hutt-MacLeod, 2019; Young, 2016; Clark, 2014; Goodyear-Smith et al., 2016; Coffin, 2019; Etter, 2019; Franck, 2020). The most common types were individual counselling (Mushin, 2003; Stathis, 2006; Clark, 2014), family counselling (Mushin, 2003; Clark, 2014), group therapy/support programs (Stathis, 2006; Clark, 2014; Coffin, 2019) and/or cultural connection (Hutt-MacLeod, 2019; Skerrett, 2018; Coffin, 2019; Etter, 2019; Franck, 2020). Coffin (2019) reported that equine therapy sessions, administered in individual, pair or group formats, incorporated a holistic approach to therapy which was culturally appropriate in the context of treating Aboriginal youth in the areas of grief, loss and trauma. This was achieved through a focus in sessions on self-concept, self-regulation, self awareness, anxiety and depression, and sense of connectedness. Hutt-MacLeod (2019) reported providing youth with an option to undertake Indigenous traditions of improving mental wellness such as working with Elders in the traditional medicine garden, participating in land-based nature programs and summer culture camps, taking part in traditional pipe ceremonies, sweat lodge ceremonies, naming ceremonies, Grandmother Moon ceremonies, blanket ceremonies and Letting Go ceremonies, and practicing traditional crafts such as drum making, beadwork and basket-making. Such supports were considered to be effective in providing care for youth in need since not every young person experiencing distress necessarily required extensive psychological services. Three publications also included the provision of crisis intervention (Mushin, 2003; Young, 2016; Skerrett, 2018). The most common treatment settings were PHC services (Mushin, 2003; Goodyear-Smith et al., 2016), community-based services (Young, 2016) and schools (Young, 2016; Clark, 2014; Franck, 2020). One intervention also offered treatment services in young people's homes (Clark, 2014) and another was delivered within a youth detention centre (Stathis, 2006). One intervention program was targeted specifically at drug and alcohol use and abuse (Stathis, 2006).

Finally, three studies identified a follow-up strategy following screening, referral or treatment (Young, 2016; Clark, 2014; Kuo, 2009). In the study by Kuo, et al. (2009); a follow-up phone call was made to parents two weeks after the initial call to assess whether referral linkages had been made. If needed, further motivational interviewing techniques were used to discuss barriers to implementation and to encourage parents and guardians to make the linkage (Kuo, 2009). In the screening process evaluated by Young et al. (2016) young people who were

confirmed by a mental health worker as being at-risk following clinical evaluation were booked for a follow-up appointment for further assessment and treatment (Young, 2016). In the intervention reported by Clark et al. (2014), a program coordinator followed up with participants to establish the usefulness of treatment and the offer of alternatives if preferred (Peters, 2015).

3.2. Enabling conditions

There were several enabling factors at systems, service and individual levels identified in the reviewed studies which supported interventions to improve the identification and treatment of mental health concerns (Table 2).

3.3. Barriers

Several barriers to service access and availability, service collaboration, workforce development, and technological systems were also identified (Table 3).

3.4. Study outcomes

Of the nine intervention evaluations, eight reported results indicating effectiveness of the intervention (Stathis, 2007; Skerrett, 2018; Coffin, 2019; Franck, 2020; Volpe et al., 2014; Young, 2016; Clark, 2014; Goodyear-Smith et al., 2016). The other was concerned with intervention cost-effectiveness (Stathis, 2006). The remaining six papers were process descriptions of the development, implementation and in one case, expansion, of interventions to improve the identification and treatment of wellbeing and mental health concerns among Indigenous children and youth (Mushin, 2003; Stathis, 2006; Lipton, 2008; Hutt-MacLeod, 2019; Sabbioni, 2018; Etter, 2019). Two of the included papers, a process description (Hinton, 2015) and an evaluation (Burns, 1995) were related to different aspects of the same intervention in an Australian juvenile detention centre.

Two studies reported the outcomes of the strategies focussed on improving health system processes. In the evaluated intervention reviewed which utilised cross-sectoral collaboration, reported impacts including improved mental health outcomes (Clark, 2014) and the effectiveness of screening and referral processes (Stathis, 2007; Goodyear-Smith et al., 2016). However due to the range of intervention strategies implemented, the reported outcomes cannot be attributed to the cross-sectoral collaborations involved.

Two studies reported outcomes from service-level professional development initiatives. Volpe et al. (2014) highlighted the effectiveness of a professional development intervention targeting mental health professionals working in remote Aboriginal communities in Canada. Clinical consultations with a practicing psychiatrist helped participating practitioners to think in new ways and apply knowledge. Evidence of capacity building also emerged as the sessions progressed (Volpe et al., 2014). Feedback from program participants was very positive overall. The main factors identified as contributing to its success were 'gaining access, enhancing the participant experience, delivering continuing education, and ensuring stable and confidential technology' (Langham, 2017).

A further four papers reported included observed positive outcomes from the development of interventions, ensuring quality and appropriateness (Mushin, 2003; Lipton, 2008; Hutt-MacLeod, 2019; Skerrett, 2018; Etter, 2019; Franck, 2020). Mushin et al. (2003) reported a service relevant to the needs of an urban Aboriginal Australian community through the development of a network of Aboriginal and non-Aboriginal mental health professionals to work with Aboriginal children and their families. Lipton et al. (2008) reported significant numbers of child consultations, broad dissemination of resource materials and an uptake of online professional development as results of implementing a professional development program for Canadian practitioners addressing child mental health in rural and remote First Nation communities (Gardner, 2014).

Nine studies reported outcomes of client-focussed interventions. Four studies reported the effectiveness of screening tools in identifying social and emotional wellbeing skills and/or mental health concerns (Young, 2016; Goodyear-Smith et al., 2016; Skerrett, 2018; Franck, 2020). Goodyear-Smith et al. (2016) reported that 90 % of participants

Table 2
Enablers of wellbeing and mental health identification and treatment interventions for Indigenous children and youth.

Enablers of WELLBEING & Mental Health Identification and Treatment Interventions **System enablers**	**References**
• Funding support	(Mushin, 2003; Lipton, 2008; Clark, 2014; Coffin, 2019)
• An understanding of important community and cultural protocols and historical issues	(Stathis, 2007; Lipton, 2008; Hutt-MacLeod, 2019; Coffin, 2019; Etter, 2019)
• Developing interventions informed by local values and practices	(Volpe et al., 2014; Clark, 2014; Kuo, 2009; Hutt-MacLeod, 2019; Sabbioni, 2018; Skerrett, 2018; Coffin, 2019; Etter, 2019; Franck, 2020)
Service enablers	**References**
• The involvement of skilled, qualified and experienced mental health professionals	(Mushin, 2003; Lipton, 2008; Volpe et al., 2014; Clark, 2014; Kuo, 2009; Hutt-MacLeod, 2019; Sabbioni, 2018; Skerrett, 2018; Coffin, 2019; Etter, 2019)
• Indigenous staff and organisations guiding programs, building trust and sharing knowledge between services and with young people	(Young, 2016; Hutt-MacLeod, 2019; Etter, 2019; Franck, 2020; Mushin, 2003; Stathis, 2006; Stathis, 2007)
• Local leadership and community buy in	(Hutt-MacLeod, 2019; Etter, 2019)
• Support from management	(Lipton, 2008; Volpe et al., 2014)
• Formal agreements facilitated inter-agency and cross-community collaboration	(Stathis, 2006; Coffin, 2019)
• The development or rapport, trust and shared knowledge between practitioners, consultants, and services	(Mushin, 2003; Lipton, 2008; Volpe et al., 2014; Etter, 2019; Hutt-MacLeod, 2019; Sabbioni, 2018; Skerrett, 2018)
• The use of technology	
facilitated the engagement of young people	(Goodyear-Smith et al., 2016)
supported access to professional development for rural and isolated practitioners	(Lipton, 2008; Volpe et al., 2014; Hutt-MacLeod, 2019)
• Support from professionals to engage in programs for those needing assistance	(Clark, 2014; Kuo, 2009; Sabbioni, 2018; Skerrett, 2018)
• Providing services free of charge, having a single point of entry, and a low threshold for program acceptance	(Clark, 2014)
• A central intake facility/ youth space	(Hutt-MacLeod, 2019)
• Pre-scheduling professional development sessions and timing of sessions	(Volpe et al., 2014; Franck, 2020)
• Feedback and monitoring of clients' progress	(Sabbioni, 2018)
Individual client enablers	**References**
• Building trust, rapport, understanding and relationships between practitioners and young people and their families	(Mushin, 2003; Stathis, 2006; Hutt-MacLeod, 2019; Sabbioni, 2018; Etter, 2019; Franck, 2020)
• Young people informally referring friends and family to programs	(Stathis, 2007)
• Ease of contact through social media	(Hutt-MacLeod, 2019; Etter, 2019)
• Incorporation of strengths-based approaches such as rewards for positive behaviours and elements of leadership	(Sabbioni, 2018; Coffin, 2019; Franck, 2020)
• Availability of choice between Western and Indigenous methods of mental health treatment	(Hutt-MacLeod, 2019; Etter, 2019)
• Participation in single sex groups	(Franck, 2020)
• Engagement of youth and family and teachers in the program	(Hutt-MacLeod, 2019; Sabbioni, 2018; Coffin, 2019; Etter, 2019; Franck, 2020)

Table 3
Barriers to improving wellbeing and mental health identification and treatment interventions for Indigenous children and youth.

Barriers to SEWB & Mental Health Identification and Treatment Interventions	
Service access and availability barriers	**References**
• Culturally inappropriate services, health professionals perceptions that discrimination occurs, and cultural misunderstandings and mistrust between Indigenous peoples/communities and non-Indigenous services and practitioners	(Clark, 2014; Sabbioni, 2018; Franck, 2020; Mushin, 2003; Stathis, 2006; Stathis, 2007)
• Funding and resource shortages and approaches to distributing funds	(Volpe et al., 2014)
• A lack of engagement and attendance by Indigenous young people	(Stathis, 2007; Goodyear-Smith et al., 2016; Hutt-MacLeod, 2019; Etter, 2019)
• A lack of knowledge of available services among families	(Clark, 2014; Skerrett, 2018)
• A perception among Indigenous youth that nothing is wrong and that that nothing will help	(Clark, 2014)
Service collaboration barriers	**References**
• Service fragmentation and inadequate coordination between service sectors, and Indigenous and state-run governance entities	(Clark, 2014; Hutt-MacLeod, 2019; Etter, 2019)
• Challenges for medical practitioners shifting to more collaborative care	(Lipton, 2008)
• Confidentiality issues due to the small size of communities	(Volpe et al., 2014; Hutt-MacLeod, 2019; Etter, 2019)
Workforce barriers	**References**
• A lack of qualified mental health specialists, especially in rural areas, and a lack of Indigenous practitioners with advanced qualifications knowledge, experience and specialisations in mental health	(Mushin, 2003; Stathis, 2007; Hutt-MacLeod, 2019; Skerrett, 2018; Etter, 2019)
• Lack of cultural competence among non-Indigenous mental health professionals and services	(Volpe et al., 2014; Franck, 2020)
• Staffing shortages, high turnover and long waitlists	(Volpe et al., 2014)
• Blurred professional and community boundaries for Indigenous workers	(Stathis, 2007)
• A lack of understanding of and low levels of referral for mental health	(Stathis, 2006)
• Challenges recruiting Indigenous staff due to lack of clear professional standards	(Stathis, 2007)
Technological barriers	**References**
• Insufficient Internet connection, limited access to communication technology in rural communities, and/or unfamiliarity with some forms of technology	(Lipton, 2008)
• Technical difficulties including poor audio and visual quality for video teleconferencing and difficulty establishing internet connection	(Volpe et al., 2014)

in a low-decile school with a high Māori population in rural New Zealand screened positive for at least one domain of the YouthCHAT tool to identify mental health, drug and alcohol use and behavioural concerns; 67 % had up to three issues. Clinic staff identified youth in need of immediate help and effectively engaged them in joint problem-solving and decision-making regarding an intervention (Goodyear-Smith et al., 2016). Overall, participating youth rated the program highly in terms of acceptability, with a small minority saying the questions were too hard or too many. Clinicians felt that it was easy to use and the screening results helped guide consultations (Mushin, 2003). Young et al. (2016) reported high specificity and negative predictive value of a screening tool for identifying at-risk young Aboriginal people in Canada, demonstrating the effectiveness of the screening and triage tool (Young, 2016). Furthermore, approximately-one third of those screened and assessed as at risk were first time referrals, indicating effectiveness of the tool for identifying young people at risk who were not identified by standard practice. Franck (2020) reported significant improvement in the social and emotional skills of remote-dwelling Aboriginal students in years 7–9 following a 10-session social and emotional learning program. Skerrett (2018) found a significant decrease in suicidal ideation in Aboriginal youth following a group-based intervention at an urban youth mental health service. Kuo (2009) assessed cost-effectiveness of school-based screening for mental health conditions among Caucasian, African American, Asian, American Indian and Hispanic sixth-grade students in an urban school district in the United States (Stathis, 2006). Screening costs ranged from $8.88US to $13.64US per enrolled student with costs pr screening decreasing as the proportion of students who screened positive increased (Stathis, 2006). The authors concluded that such economic information could assist with resource allocation in school districts.

The provision of some program or service to provide support and/or treatment for Indigenous children and youth with mental health concerns was described in 60 % of the interventions reported in the reviewed studies. Clark et al. (2014) found significant improvements in the social and psychiatric functioning of culturally-diverse New Zealand youth with mild to moderate mental health problems following a free counselling support intervention, as well as reduced risk of clinically significant mental health concerns and reductions in the use and impact of drugs and/or alcohol (Peters, 2015). In qualitative feedback, participants and family/whañau expressed appreciation, and participants reported that interventions were safe and appropriate, that counselling and groups gave young people a voice, and that they appreciated counsellors using creative engagement strategies. However, "talking therapy" was not always appropriate, with some young people feeling uncomfortable sharing personal feelings and some participants feeling like there was not enough time to develop a trusting relationship and cover all their issues (Clark, 2014). Coffin (2019) observed improvements in the self-regulation, self-awareness and socialisation skills of West Australian Aboriginal youth following six weeks of equine-assisted learning. Parents and teachers also reported changes in behaviour, self-regulation and socialisation skills. Skerrett (2018) reported improved social and emotional literacy and acceptance of help-seeking in Aboriginal and Torres Strait Islander youth who attended a group based intervention at a youth mental health service. Stathis et al. (2006) described increased uptake and completion of a mental health and substance use service delivered in a Queensland-based Australian youth detention centre (Hinton, 2015). Feedback from participants indicated that some felt vulnerable in group sessions which caused difficulties sharing information about themselves. In their second paper, Stathis et al. (2007) reported that the involvement of an Indigenous Health Worker in the program increased program acceptability and utilisation among Indigenous young people, and that the program achieved equality of access in screening and treatment for Indigenous young people compared to non-Indigenous youth (Stathis, 2007).

4. Discussion

We completed a systematic scoping review of the literature to explore the availability of the literature about screening, management and referral pathways to promote the wellbeing and mental health of Indigenous children and youth from CANNZUS countries. This review has revealed a limited- literature base on this topic. We located only 14 studies (reported in 15 papers) conducted on interventions to improve the identification and treatment of wellbeing and mental health concerns among Indigenous children and youth. We found no studies conducted in Norway and only one study conducted in the US.

There was considerable heterogeneity with regard to intervention strategies, settings, and aims, and of study types and methodologies. The limited findings and the heterogeneity of results makes it difficult to draw any definitive conclusions about best practice approaches and/or intervention effectiveness. However, the review does provide some indication of the efforts that are being made to improve wellbeing and

mental health screening, management and referral for Indigenous children and youth in CANNZUS countries and has some value in guiding the development of interventions in other sites. Strategies were documented that aimed to enhance systems through cross-service collaboration, improve services through professional education and specialist clinical consultation, improve the quality and appropriateness of interventions, and improve direct client pathways through implementing improved screening, referral, counselling and treatment, and follow up. The approaches occurred in PHC, educational, juvenile justice and community settings. There is insufficient evidence to determine whether any one approach works better than others; and it seems likely that attention to all are optimal for ensuring a holistic and appropriate response to the wellbeing and mental health needs of Indigenous children and youth.

Evidence demonstrated that system-level fragmentation and a lack of coordination between services and sectors is a principle barrier to effective, integrated mental health care (Whiteford, et al., 2014; McDaid, 2007), there was promising evidence for the effects of cross-sectoral collaboration between mental health, alcohol and other drugs, PHC, education, and justice services in this review (Mushin, 2003; Stathis, 2007; Clark, 2014; Goodyear-Smith et al., 2016). Intersectoral linkages also hold promise for addressing the sociocultural determinants of health which may explain much of the disparity in rates of mental health concerns between Indigenous children and youth compared to their non-Indigenous peers (Greenwood and de Leeuw, 2012; Azzopardi, 2018; Gillies, 2017; Crengle, et al., 2012). For example, intersectoral linkages have been associated with increased housing stability, reduced involvement with juvenile justice and recidivism rates, and improved vocational outcomes (Whiteford, et al., 2014).

There is a wealth of evidence demonstrating the need for service-level interventions to increase the capacity of health practitioners in the identification and treatment of mental health concerns. GP's have been found to rarely use screening tools and clinical protocols (Fleury, 2012), lack confidence utilising treatment options beyond medication (Alexander and Fraser, 2008), and have low levels of contact with resources in the mental health sector (Fleury, 2012) and low levels of understanding of mental health specialists and what they can offer to their patients (Sutherland et al., 2018). What is missing is training and upskilling GP's to improve their knowledge, attitudes and confidence so they are better able to manage patient mental health (Forbes and King, 2015; Ambresin, 2017; Coppens, 2018). Four interventions included strategies of providing training or other professional development opportunities to Indigenous staff (Mushin, 2003; Stathis, 2007; Volpe et al., 2014; Coffin, 2019). Considering the essential role that Indigenous people play in assuring the cultural appropriateness of mental health services and interventions (Williamson, 2010), more interventions should strive to train and up-skill Indigenous health practitioners in mental health care.

Collaboration with and support from mental health specialists to improve GP's mental health treatment capacity can facilitate knowledge sharing and the development of expertise (Fleury, 2012; Aoun, 1997). Interestingly, in the reviewed studies which utilised the strategy of clinical consultation, this was predominantly undertaken with health and social service practitioners only (Lipton, 2008; Volpe et al., 2014). Implementing clinical consultation programs where mental health specialists and GP's jointly provide screening and treatment services to Indigenous youth is a potentially promising approach which warrants further attention.

The most common intervention quality strategy were efforts to assure or improve the cultural appropriateness of interventions. Culturally inappropriate services and cultural misunderstandings and mistrust between Indigenous children, youth and communities, and non-Indigenous professionals and services is recognised as a major barrier to Indigenous youth accessing mental health services (Westerman, 2004), and was a barrier mentioned in 40 % of included studies. One important way to assure the cultural appropriateness of interventions is through the use of screening and assessment instruments that have been shown to be valid and reliable with Indigenous youth. Ways to assure cultural appropriateness included the use of Indigenous developed or otherwise culturally appropriate screening and assessment tools (Young, 2016; Goodyear-Smith et al., 2016; Sabbioni, 2018; Stathis, 2012), the involvement of and guidance from Indigenous staff (Young, 2016; Allen et al., 2004; Mushin, 2003; Stathis, 2006; Stathis, 2007), and cultural competency training to non-Indigenous staff and/or a two-way learning process that occurred between non-Indigenous mainstream mental health specialists and Indigenous workers (Mushin, 2003; Stathis, 2007; Volpe et al., 2014). Such approaches demonstrate innovative ways to create needed culturally safe environments and culturally competent workforces where both clinical and cultural competencies are integrated (Hinton, 2015; Westerman, 2004).

Screening was one of the most common strategies, with 73 % of the interventions reported in reviewed studies undertaking screening with participating Indigenous children and youth. Yet, there are still many missed opportunities for mental health and wellbeing screening and management in PHC (Langham, 2017). Short consultation times and patient reluctance to disclose information have been recognised as barriers to the identification and treatment of mental health concerns among youth in PHC (Alexander and Fraser, 2008; Harris, 2015; Kilian, A. and A. Williamson, What is known about pathways to mental health care for Australian Aboriginal young people A narrative review. International Journal for Equity in Health, 2016). With Indigenous youth, there is a particular need for time to build relationships and trust (Kilian and Williamson, 2016). Sabbioni et al. (2018) reported the use of simple measurement instruments to record clients' perceptions of the therapeutic relationship. Computerised pre-visit screening, such as that used in the study by Goodyear-Smith et al. (2016) Goodyear-Smith et al. (2016) is another promising approach (Harris, 2015) to increase doctor responsiveness and engagement and improve discussion of mental health concerns (Gadomski, 2015). Youth have also reported higher levels of honesty and comfort when screening via an electronic device in comparison with paper screens (Jasik, 2016).

Although referrals are recognised as a fundamental part of mental health care pathways for Indigenous young people (Langham, 2017; Hutt-MacLeod, 2019; Kilian and Williamson, 2016; Harriss, 2018; Hepworth, 2015), there is surprisingly little research evidence on the role and effectiveness of different referral approaches in overall mental health care pathways. There is a need for further research to compare different approaches and their impacts on levels of service access and utilisation. Similarly, there is little evidence of the effectiveness of treatment programs. More targeted literature reviews might be necessary to better understand the different approaches identified in this review.

Finally, the publications found in this review reflect primarily Western paradigms of wellbeing and mental healthcare. More recent studies focussed on the holistic, Indigenous conceptualisations of mental health (Hutt-MacLeod, 2019; Skerrett, 2018; Coffin, 2019; Etter, 2019). However, 40 % of the publications were focused on addressing mental health concerns (Mushin, 2003; Lipton, 2008; Volpe et al., 2014; Young, 2016; Clark, 2014; Goodyear-Smith et al., 2016) and 40 % on substance use problems (Stathis, 2006; Stathis, 2007; Stathis, 2012; Bohanna, 2014; James and Moore, 1997). Methodologies to generate the evidence were primarily based on Western research methodologies – these are currently being critiqued heavily in critical cultural research studies and Indigenous data sovereignty agendas. It was not clear to what extent the studies were authored by Indigenous people. Current research representation and methodologies need to be further decolonised if solutions are to be found, especially for Indigenous youth.

5. Limitations

The primary limitation of this review stems from the nature of the literature itself. As has been found in a similar review (Kilian and

Williamson, 2016), the lack of clarity in use of terms applied to different interventions and paucity of specific, relevant evidence about the screening, management and follow up of wellbeing and mental health care for Indigenous children and youth meant that articles with a wide range of research questions, samples, methodologies were reviewed. We did not exclude any article on the basis of methodological rigour – this enhanced the breadth of the review but made it more challenging to draw clear conclusions about intervention effectiveness. Despite this inclusivity, we found few evaluations of interventions, and those interventions that were evaluated were by no means homogeneous. The lack of properly reported evaluations along with the inappropriate study designs utilised in many intervention evaluations resulted in limited evidence for intervention impacts, so we could not define with certainty what worked to support the wellbeing and mental health of Indigenous children and youth. This heterogeneity together with the dearth of available evidence complicated the assessment of best practice and therefore limits the utility of this review to inform future evidence-based intervention.

More broadly, there are important critiques of systematic reviews themselves to represent the evidence for the effectiveness of certain types of interventions – particularly social interventions which are employed in and heavily affected by different contexts and population groups. For example, systematic reviews do not account for the tailored context of the intervention, yet this is critical in Indigenous health. Furthermore, inherent biases present in bibliographic databases (that exclude authors/evidence from non-dominant cultures/discourses) may mean that there is an underrepresentation of Indigenous perspectives on their own situations and interventions.

6. Conclusion

The small number of studies found in this systematic scoping review of the literature about screening, management and follow up care for Indigenous children and youth wellbeing and mental health suggests that this research niche area is still in development, with few evaluations of interventions. As well, there was little explanation in the available studies of the extent to which the research was led or governed by Indigenous people and paradigms, or whether the research findings provided benefit. The reviewed studies reported intervention strategies aimed at improving the identification and treatment of wellbeing and mental health concerns among Indigenous children and youth across intersectoral systems, service-level professional development and workforce strategies, intervention-level quality and appropriateness, and direct client care pathways. While the results have some value for guiding the development of further interventions, there is a clear need for further investigation of Indigenous-led research to promote the wellbeing and mental health of Indigenous children and youth.

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Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

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