

## Working together to improve the mental health of indigenous children: A systematic review



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### ABSTRACT

**Objective:** This review analyses the available literature that underpins intersectoral service integration processes and tools designed to improve mental healthcare for Indigenous children.

**Method:** 10 databases and 12 grey literature sources were searched for publications in English and published between 1 January 2008 and 31 December 2017 that evaluated or measured primary health care interventions that focussed on the intersectoral integration of services, service partnerships, or action across at least two sectors to improve children's mental health, and that included Indigenous children 4–17 years old in one of the five CANNZUS countries (Canada, Australia, New Zealand, Norway and/or the United States). The five sectors considered were PHC, specialist mental health, education, child protection, and juvenile justice. Study characteristics were extracted and reported aims, strategies, enablers, and outcomes were identified and analysed.

**Results:** Eleven studies were included: five were Australian; four Canadian; one from the USA; and one from New Zealand. Nine key strategies for service integration were: intervention delivery through community workers and external workers, interdisciplinary delivery, staff and organizational capacity building, engaging community, empowering families, individual counselling, adaption of care to Indigenous sociocultural specificities, and strengthening culture and identity. Six enablers of implementation were: involvement of community, access and cost, collaborative multidisciplinary health services, strong relationships, cultural sensitivity, and organizational and staff capacity. Six outcomes were: health and human services collaboration, psychosocial functioning and stress management, health service & organizational empowerment, development and promotion of appropriate health policy and protocols, linkage of health services, and community and family empowerment.

**Discussion and conclusion:** The evidence for intersectoral interventions addressing Indigenous child mental health is in the early stages of development, but suggests potential for improving health outcomes for Indigenous children, their families and communities, as well as the satisfaction and utilization of healthcare and community services. Further research surrounding cost evaluation, impact on the social determinants of health, extent of consumer engagement, and Indigenous voice is needed.

### 1. Introduction

Compelling global evidence indicates that making a positive difference to children's mental health requires community-driven systems-level integration to address the determinants of mental health (Allen, Balfour, Bell, & Marmot, 2014; Burns, Schoenwald, Burchard, Faw, & Santos, 2000; Lifehack, 2017; Ungar, Liebenberg, Dudding, Armstrong, & van de Vijver, 2013). Primary healthcare services (PHC) can play leadership roles in such systems-level integration approaches through linking physical and mental health programs within PHC, linking with

intersectoral service partners, engaging community members and advocating at policy levels (McCalman et al., 2018). Such linkages are needed because whilst PHC provide mental health promotion, prevention, screening and management, clinical care contributes only 10–20% to mental health outcomes in prevention and treatment (Booske, Athens, Kindig, Park, & Remington, 2010; McGinnis, Williams-Russo, & Knickman, 2002). Social, economic, cultural and behavioural factors such as education, family income, housing and discrimination determine more than half of the contribution. (Australian Health Ministers' Advisory Council, 2017).

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Integration requires a coherent set of methods and models to create connectivity, alignment and collaboration across the health and social service sectors through funding, administrative, organizational, service delivery and clinical levels. “The goal of these methods and models is to enhance quality of care and quality of life, consumer satisfaction and system efficiency for patients ... cutting across multiple services, providers and settings. (Where) the result of such multi-pronged efforts to promote integration (lead to) the benefit of patient groups (the outcome can be) called ‘integrated care’” (Kodner & Spreeuwenberg, 2002). Despite the urgent need for new responses to the high and increasing rates of Indigenous children's mental health problems and illnesses calls for integrated approaches in many Canadian, Australian, New Zealand, Norwegian, and United States (CANNZUS nations') mental health policy documents (The Lowitja Institute, 2018), we know little about how services work together intersectorally to manage and deliver health services “so that the clients receive a continuum of preventative and curative services, according to their needs over time and across different levels of the health system” (Waddington & Egger, 2008).

Globally, 75% of global mental illness manifests by age 24 (McGorry, Purcell, Hickie, & Jorm, 2007). Childhood (defined in this review as those of school-age - 4-17 years) provides a window of opportunity for promoting mental health, preventing the onset of mental illness, and reducing its progression (McGorry et al., 2007). But in Canada, 14.1% of primary caregivers of First Nations Canadian children living on-reserve aged 3 to 11 reported their child experienced more emotional or behavioural problems during the previous six months than other boys and girls of the same age (Atkinson, 2017), and 33.8% of female and 17.2% of male First Nations Canadian adolescents (15–24 years) living on-reserve reported sadness or depression over two weeks or more (Atkinson, 2017). Similarly, in Australia, by the age of 15+, 30% of Indigenous adolescents reported high/very high levels psychological distress compared to 11% of their non-Indigenous adolescents counterparts (Australian Institute of Health and Welfare, 2015), and 31.6% reported its sequelae of mental illness (Mission Australia & Black Dog Institute, 2017). Suicide was the main cause of death for Indigenous Australian 15–24 year olds between 2011 and 2015 (ABS, 2016). In New Zealand, Māori had a higher 12-month prevalence of mental disorder and serious disorder (Oakley Browne, Wells, & Scott, 2006) and twice the suicide rate of non-Māori youth (Mental Health Commission, August, 2011). Since ethnicity is not registered in Norway, relatively little is known about mental health but studies indicate that whilst Sami children and adolescents have just as good mental health as their majority peers (Bals, Turi, Skre, & Kvernmo, 2010; Kvernmo, 2004), suicide rates may be higher (Kvernmo & Rosenvinge, 2009). Finally, in the United States, American Indian/Alaskan Native children and adolescents have the highest rates of lifetime major depressive episodes and highest self-reported depression rates than any other ethnic/racial group (American Psychiatric Association, 2017). Primary healthcare services (PHC's) are concerned about these very high levels of difficulties, distress, mental illness and suicide in their communities, but alone, have struggled to improve outcomes.

As the first point of contact to the health system, PHCs are in a position to drive “integrated early intervention efforts that support families and children across a range of sectors” (World Health Organization, 2008; National Mental Health Commission, 2017, p. 21). PHC have a key advocacy role at all levels of government to support and resource improvements to the broader determinants of Indigenous children's mental health (Labonte, 1999). Global strategies for addressing the social and cultural determinants of mental health include: 1) community engagement in service delivery and advocacy; 2) coordinating and aligning sectors to improve governance for health; and 3) promoting health through a well-performing system (World Health Organization, 2016). Ideally, PHC should work towards providing children with the right kind and amount of care at the right moment in time through a child-friendly environment and empowering approach

(Leichsenring, 2004). Standardised screening tools; systems to record counselling; and referrals to external services with requisite information, care and support should be coordinated seamlessly through partnerships (Leichsenring, 2004).

But analyses have found considerable scope for improvement in PHC mental healthcare pathways for Indigenous children. We know little about how Indigenous children access mental healthcare access because of significant gaps in the availability of health information, but a general lack of appropriate and engaging mental health services is documented for Indigenous children from all CANZUS countries (Boksa, Jooper, & Kirmayer, 2015; Oakley Browne et al., 2006). For example, only 17% of Indigenous Australian adolescents (10–24 years) from 114 Australian PHC's were screened for social and emotional wellbeing (SEWB); of those screened, concerns were identified for 21% (Langham et al., 2017). Audits of these PHC's found deficiencies in client records and health summaries, recording of risk factors and brief interventions, treatments, hospitalisation and discharge, investigations, follow-up of abnormal results, and health centres. The poorest scoring of the these components (considered as critical to best practice) was the enhancement of links with community, other health services and other services and resources (Baillie et al., 2015). In Norway, Sami youth with conduct problems had a lower probability of using a psychologist/psychiatrist than non-Sami youth with conduct problems (Bals et al., 2010). In Canada, New Zealand and the United States, mental health service utilization rates for Indigenous youth are low (Boksa et al., 2015; Oakley Browne et al., 2006; Substance Abuse and Mental Health Services Administration, 2016). The evidence suggests that because of a combination of factors, including stigmatization of mental health, lack of culturally trained providers, and lack of available primary healthcare services many Indigenous children either cope without service intervention or utilize schools (mainly through guidance counsellors), specialist mental health services (particularly for more serious diagnoses), child welfare (also for more serious diagnoses) and juvenile justice services (Burns et al., 1995; Labonte, 1999). Those most at risk often use multiple services (Burns et al., 1995; Ungar et al., 2013).

Mental health promotion “involves actions to create living conditions and environments that support mental wellness across the lifespan and allow people to adopt and maintain healthy lifestyles” (World Health Organization, 2016). This requires intersectoral action across home, school and community environments, through culturally safe, strengths-based, family and community-oriented mental health promotion programs, services and policies that promote healthy emotional and social development in childhood and adolescence and support those at risk of mental disorders. When it comes to prevention and treatment of mental illness, responsibility thus rests not only with PHC, but also with schools, specialist mental health, child welfare and juvenile justice services (Burns et al., 1995). Canadian and New Zealand studies found that adolescent users who experienced such services as respectful, empowering, and encouraging of their agency had improved resilience and wellbeing; those that had negative or inconsistent experiences did not (Sanders, Munford, Liebenberg, & Ungar, 2014; Ungar et al., 2013). Conditions that enable the integration of services across sectors include: the availability of funding and willingness to share resources; a broad focus that includes individual, family, organizational and community levels; shared organizational goals and understandings of the problem; and trained staff with clearly defined responsibilities (Fawcett, Schultz, Watson-Thompson, Fox, & Bremby, 2010; Heyeres, McCalman, Tsey, & Kinchin, 2016). Yet, there is currently limited evidence for how to implement systems-level interventions or measures of change (Kilian & Williamson, 2018; McCalman et al., 2018).

Reviews of community efforts that strengthen local capacity for systems-level interventions in mental health have found some positive effects (Heyeres et al., 2016; Jongen, McCalman, Bainbridge, et al., 2018; Kinchin, Tsey, Heyeres, & Cadet-James, 2016). Three broad improvements were found for children; satisfaction with services (Heyeres et al., 2016); **resilience, pro-social identity and leadership** (Lifehack,

2017; Ungar et al., 2013); and a number of behavioural outcomes. Behavioural improvements were seen in engagement and participation in school and community (Lifehack, 2017; Ungar et al., 2013) and school performance, child and family functioning (Burns et al., 2000), recidivism rates, involvement with the juvenile justice sector (Whiteford et al., 2014), instances of running away from home, aggressive behaviour and arrests (Burns et al., 2000). Service improvements were found in: workforce motivation and retention (Heyeres et al., 2016; Lifehack, 2017), access to and quality of services (Heyeres et al., 2016; Kinchin et al., 2016; Lifehack, 2017; Whiteford et al., 2014), interagency communication, collaboration and innovation, a reduced demand for mental health services and non-health sector services (Atkinson, 2017), and cost efficiency (Heyeres et al., 2016; Kinchin et al., 2016; Whiteford et al., 2014). Mechanisms included: 1) joint planning and interagency information exchange, formal collaborative agreements and/or information-sharing using a single client tracking system and/or shared case records; 2) a single multiagency care plan for each client and/or administration by a single lead agency; 3) staff training, including joint training; 4) blended funding; 5) delivery through multiagency teams; and 6) co-location (Whiteford et al., 2014).

Intersectoral integration is poorly understood in its application to improving mental health service delivery for Indigenous children's mental health. This review analyses the available knowledge that underpins intersectoral service integration processes and tools to improve mental healthcare for Indigenous children. The aim is to review studies that describe or evaluate efforts to integrate mental healthcare for Indigenous children across sectors. Intersectoral service integration was considered broadly as including individual, organizational, or inter-organizational levels of collaboration or coordination between PHC and a categorically different education, mental health, juvenile justice and/or child protection service to provide more comprehensive support to address mental health or an (explicitly identified) determinant of Indigenous children's mental health.

## 2. Methods

A written protocol for the review was developed and circulated to the research team to ensure consensus on the purpose, definitions, and methods for the search, screening, extraction and analysis of the literature.

### 2.1. Search strategy

Papers were included in this review only if they were in English and electronically available. Years searched were from 1 January 2008 (to coincide with the seminal international report of the Commission on the Social Determinants of Health) and 31 December 2017. Searches of the grey literature were limited to the websites of relevant organizations in each of the five CANNZUS countries. Any literature was included if it evaluated or measured PHC interventions that focussed on the intersectoral integration of services, service partnerships, or action across at least two sectors (one of which was a PHC) to improve children's mental health, and that included Indigenous children 4–17 years old/their families/caregivers. The five sectors were PHC, specialist mental health, education, child protection, and juvenile justice. Fig. 1 reports the search strategy.

### 2.2. Study identification and selection

The combined searches yielded 2048 peer reviewed references, 89 grey literature publications and 197 references from five reviews. References were imported into a bibliographic citation management software, EndNote X8 and their titles and abstracts/executive summaries screened by XX and a research support worker (XX1) to remove articles that were irrelevant to the review. This screening resulted in

2255 publications being excluded from the review. A detailed inclusion/exclusion criterion assisted in the full-text assessment of the remaining 79 publications, which was conducted by blinded screeners (6 × XX). Resulting disagreements were resolved by discussion until 100% agreement was achieved on the inclusion of 11 publications. A Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)(Moher, Liberati, Tetzlaff, & Altman, 2009) in Fig. 2 details the process used for study inclusion.

## 3. Results

### 3.1. Characteristic of studies

Eleven publications were included. Five were published in the last four years (2014–2018). Five of the 11 publications were Australian; four Canadian; one from the USA; and one from New Zealand. Nine out of the 11 publications stated their setting, with a spread between urban (3/11), rural (2/11), remote (4/11), and unstated (2/11) (Supplementary file).

In order of frequency, study participants were: Indigenous children, parents/caregivers, community members, and community health workers. In order of frequency, program providers were community health workers, external health workers, community members including elders and social workers, national health organizations, and researchers. The diversity of clients and those delivering programs was related to the holistic and integrative nature of the included interventions.

### 3.2. Study design

There were six program, health service, and intervention description and evaluation studies. Of the six program descriptions/evaluations, one was correlational, one was a pre-post evaluation, one was consultative, one was a six year field study, and two were first person accounts from intervention deliverers (Auclair & Sappa, 2012; Clark et al., 2014; Hillin et al., 2008; Lessard, Fournier, Gauthier, & Morin, 2015; Malone & Stanley, 2013; Tousignant, Vitenti, & Morin, 2013). The remaining five studies were participatory action interventions and analyses (Hinton, Kavanagh, Barclay, Chenhall, & Nagel, 2015; Kowanko et al., 2009; Liu et al., 2016; Lucero & Bussey, 2012; McCalman et al., 2009).

### 3.3. Mental health issues

Studies addressed general mental health issues (Auclair & Sappa, 2012; Clark et al., 2014), young people's health and well-being (Hillin et al., 2008), Indigenous people at risk of depressive illness (Hinton et al., 2015), and family wellness, including family violence, substance abuse, trauma, anger management, and addiction (Kowanko et al., 2009; Lucero & Bussey, 2012; Malone & Stanley, 2013). One study addressed cultural and spiritual identity (McCalman et al., 2009), and three addressed common mental disorders (Lessard et al., 2015), mental health, alcohol, and drug conditions (Liu et al., 2016), and suicide (Tousignant et al., 2013).

### 3.4. Key elements of intersectoral service integration

The aim of each study was to promote effective intersectoral service integration that improves Indigenous adolescent mental health. In nine of the 11 studies, this aim was explicitly stated, in one it was inferred, and in one evaluation-based intervention, it was intended but not achieved (see Table 1).

### 3.5. Strategies of service integration interventions

Nine key strategies were identified (see Table 1). These were:

**A: Electronic database search.** In consultation with an expert librarian (MK), an exploratory search was carried out in the databases Scopus/Elsevier and PubMed Clinical and selected references were downloaded. A comprehensive search was then completed in: 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-ATSI / Informit; AIATSIS: Indigenous Studies Bibliography/ Informit. Searches in The Campbell Library and PAIS databases did not retrieve any relevant studies. The Medline search is reproduced in full in the supplementary table. Searches were completed from 16-26 February 2018.

**Search terms:** The databases were searched with the terms below (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 child\* OR teen\* OR juvenile\* OR whanau OR student OR pupil OR family
3. wellbeing OR wellness OR mental health OR health OR resilien\* OR empower\* OR control OR flourish\*
4. integrat\* OR coordinat\* OR collaborat\* OR link\* OR partner\* OR cross-refer\* OR wrap-around OR intersector\* OR inter-sector\* OR inter-organi?ation\* OR interagency OR inter-agency OR multi-agency OR multiagency OR alliance\* OR share\* OR connect\* OR client-centred OR family-centred OR patient-centred OR "joint service" OR "joint training" OR multidisciplin\* OR co-location OR non-clinical
5. Australia OR Canada OR USA OR New Zealand OR Norway
6. AND/1-5.

**B. Websites and clearinghouses searched:** a research support worker manually searched grey literature sources, such as of reports and conference proceedings:

Google Scholar and 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.

**Norway:** No relevant sites in English were found.

**C. Grey literature search terms:** terms were tailored to specific sites, but included:

1. Indigenous OR First Nation\* OR Inuit OR Metis OR Aborigin\* OR Torres Strait Island\* OR Maori OR Iwi OR Tangata Whenua OR Native American\* OR Native Alaskan\* OR Native Hawaiian\* OR Indian OR tribal AND
2. adolescen\* OR family OR youth OR juvenile OR whanau OR teen OR student OR pupil AND
3. Integrat\* OR coordinat\* OR collaborat\* OR cooperat\* OR link\* OR partner\* OR cross-refer\* OR wrap around OR wrap-around OR intersector\* OR inter-organization\* OR participa\* OR alliance\* OR engage\* OR share\* OR connect\* OR inter-sector\* OR inter-organisation\* OR client-centred OR family-centred OR patient-centred.

The reference lists of literature reviews were also manually searched.

Fig. 1. Search strategy.

Intervention delivery through community workers, delivery through external workers, interdisciplinary delivery, staff and organizational capacity building, engaging community, empowering families, individual counselling, adaption of care to Indigenous sociocultural specificities, and strengthening culture and identity. Strategies for each study varied, with many employing more than one.

### 3.5.1. Intervention delivery via community workers

All eleven studies explicitly described or evaluated the provision of health interventions by Indigenous community workers. In each publication, having a community member involved provided first-hand knowledge of community challenges, which added strength to the interventions. Collaboration between community programs (Lucero & Bussey, 2012), local health services (McCalman et al., 2009), police, school teachers, and elders (Tousignant et al., 2013), promoted locally based multidisciplinary care, community ownership, and local governance of care institutions.

### 3.5.2. Intervention delivery via external workers

All eleven studies explicitly described or evaluated the provision of health interventions by external health workers. In some interventions, having an external member to the community was beneficial when dealing with sensitive patient information (Auclair & Sappa, 2012; Hillin et al., 2008). Delivery by external workers also benefitted the image of some interventions by giving the impression that Aboriginal health issues were a priority and concern for non-Aboriginal people as well (Hillin et al., 2008).

### 3.5.3. Interdisciplinary delivery

Six studies explicitly employed or supported interdisciplinary health evaluation via integration of varying health specialities and sectors (Auclair & Sappa, 2012; Clark et al., 2014; Hinton et al., 2015; Lessard et al., 2015; Lucero & Bussey, 2012; Malone & Stanley, 2013; Tousignant et al., 2013). This took place through multifaceted health teams and centres, interdisciplinary referral evaluation, and inter-sectoral evaluation of health interventions (Lessard et al., 2015; Lucero

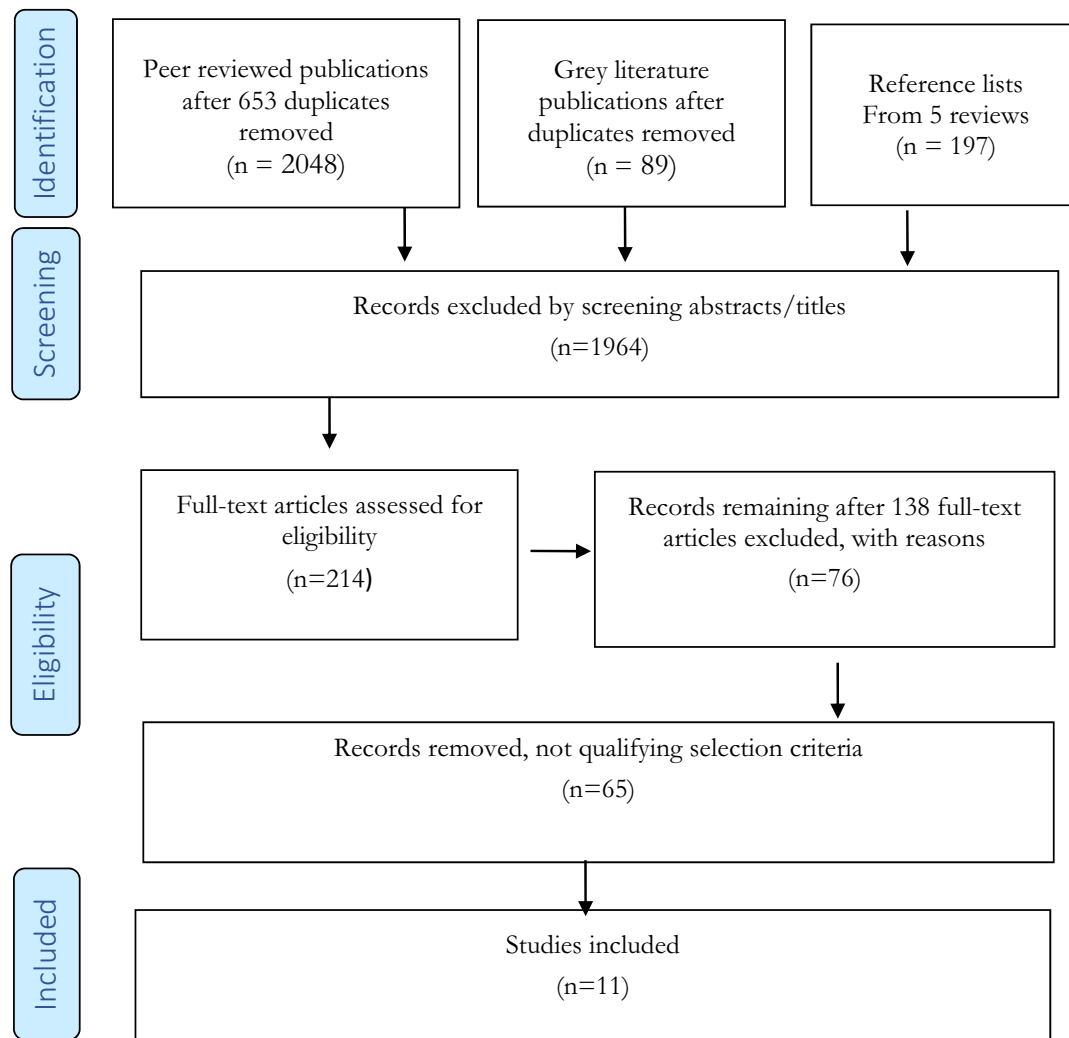


Fig. 2. Flowchart representing the selection process for included publications.

& Bussey, 2012). For example, to evaluate health referrals, Clark et al. (2014) described a multidisciplinary team made up of nurses, public health experts, general practitioners, psychiatric specialists, and social workers. In another study, a mental health training course was delivered by a clinician, an educator and Aboriginal stakeholders (Hillin et al., 2008). For a mental health promotion intervention developed in the remote Canadian village of Atikamekw, partnership were developed with the educational sector, pre-schools, primary schools, and secondary schools (Tousignant et al., 2013).

#### 3.5.4. Staff and organizational capacity building

Eight studies reported employment, training, and capacity building of staff and organizations (Auclair & Sappa, 2012; Hillin et al., 2008; Hinton et al., 2015; Kowanko et al., 2009; Lessard et al., 2015; Liu et al., 2016; Lucero & Bussey, 2012; Malone & Stanley, 2013). This strategy took place through workforce development, training, improvement of data collection, improvement of evaluation, consultation with community, cultural sensitivity awareness, staff retention efforts, and referral optimization (Auclair & Sappa, 2012; Kowanko et al., 2009; Lessard et al., 2015; Lucero & Bussey, 2012; Malone & Stanley, 2013). For example, Hillin et al., 2008 described a model for consultation with Aboriginal stakeholders in the development of a training course to improve service integration and staff knowledge. Lessard et al. (2015) evaluated breaks in the continuum of care to identify where delays and interruptions occurred. Interventions to improve the cultural

responsiveness of health providers and provide cultural sensitivity training for mental health case workers were also utilised (Lucero & Bussey, 2012).

#### 3.5.5. Engaging community

All 11 interventions explicitly reported the engagement of community members in health service integration as a key strategy. Involvement of community workers, translation services, participatory frameworks, cultural immersion, formal and informal discussions, and community oversight were used to support community engagement (Auclair & Sappa, 2012; Hillin et al., 2008; Liu et al., 2016; Lucero & Bussey, 2012; Malone & Stanley, 2013). For example, a family wellness program and anger management workshop included community participation, elder support, group sharing circles, and home visits (Malone & Stanley, 2013). In other interventions, community language speakers served as important cultural brokers in health delivery (Auclair & Sappa, 2012). Evaluators were also encouraged to learn about Indigenous communities from members of the community themselves, which often took place through cultural activities in the community (Lucero & Bussey, 2012) and informal “yarning” circles (Liu et al., 2016).

#### 3.5.6. Empowering families

Five studies highlighted family empowerment as a strategy to drive effective service integration (Clark et al., 2014; Kowanko et al., 2009;

**Table 1**  
Strategies.

First Author, Year	Aim	Strategies													
		Effective Intersectoral Service Integration	Intervention Delivery via Community Workers	Intervention Delivery via External Workers	Interdisciplinary Delivery	Staff and Organizational Capacity Building	Engaging Community	Empowering Families	Individual Counselling	Addressing Indigenous Sociocultural Specificities	Strengthening Culture & Identity				
Auclair & Sappa, 2012	X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X
Clark et al., 2014	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X
Hillin et al., 2008	✓	✓	✓	X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hinton et al., 2015	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Kowanko et al., 2009	✓	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Lessard et al., 2015	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X
Liu et al., 2016	✓	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X
Lucero & Bussey, 2012	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Malone & Stanley, 2013	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tousignant et al., 2013	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
McCalman et al. (2009)	-	✓	✓	X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Lucero & Bussey, 2012; Malone & Stanley, 2013; McCalman et al., 2009). Intensive case management helped parents and caregivers become more capable of meeting their children's mental health needs (Lucero & Bussey, 2012). Interventions also provided culturally appropriate strategies to enhance the safety and well-being of Aboriginal families (Kowanko et al., 2009). Malone and Stanley (2013) account of a family wellness program in a rural Albertan Cree Community focused on empowering Indigenous families and teenage parents. Promoting holistic fatherhood in terms of responsibility for family, community, and land, as well as promoting family cultural identity were employed to restore a sense for the future (McCalman et al., 2009).

**3.5.7. Individual counselling**

Four studies directly referenced individual counselling as a strategy involved in interdisciplinary care for Indigenous children (Clark et al., 2014; Lessard et al., 2015; Lucero & Bussey, 2012; Malone & Stanley, 2013). Clark specifically described the need for accessible, culturally appropriate, and free personal counselling in unison with other integrative strategies. In another study, where sensitive matters were concerned, Indigenous mothers preferred individual counselling for children's mental health issues over group empowerment sessions (Lucero & Bussey, 2012). An important aspect of Malone's family wellness programs and anger management workshops were individual counselling sessions in unison with psycho-education, sharing circles, and cultural teachings.

**3.5.8. Adaption of care to Indigenous sociocultural specificities**

Eight interventions took into account the social determinants of health as they relate to Indigenous children, and the cultural and historical contexts of Indigenous communities (Auclair & Sappa, 2012; Hillin et al., 2008; Hinton et al., 2015; Kowanko et al., 2009; Lucero & Bussey, 2012; Malone & Stanley, 2013; McCalman et al., 2009; Tousignant et al., 2013). Studies sought to adapt interventions to the regional sociocultural specificities and consider the unique complexities associated with Aboriginal families and communities (Auclair & Sappa, 2012; Kowanko et al., 2009). For example, Lucero's intervention recognized the importance of children maintaining strong connections with their cultures and extended family networks, while others found it imperative to consider the colonial histories of Indigenous communities in intervention strategies (Malone & Stanley, 2013). Care approaches were designed to be culturally adaptive (Tousignant et al., 2013), and historically based in order to promote reconciliation, healing inter-generational trauma, and understanding of colonial realities (McCalman et al., 2009).

**3.5.9. Strengthening culture and identity**

Five studies made direct reference to strengthening culture and empowering identity of Indigenous children (Auclair & Sappa, 2012; Clark et al., 2014; Hillin et al., 2008; Hinton et al., 2015; Kowanko et al., 2009; Lessard et al., 2015; Liu et al., 2016; Lucero & Bussey, 2012; Malone & Stanley, 2013; McCalman et al., 2009; Tousignant et al., 2013). Services and interventions included activities to strengthen cultural involvement, provide cultural teachings, involve elders, share traditional knowledge, and teach respectful listening (Lucero & Bussey, 2012; Malone & Stanley, 2013). The inclusion of family and community were specifically targeted towards strengthening traditional cultural protocols in Indigenous communities that support well-being (Tousignant et al., 2013). For example, the Aboriginal Family and Community Healing Program involved activities that sought to address the social, cultural, and spiritual aspects of wellbeing for family and community (Kowanko et al., 2009). In Yarrabah, a small community in Northern Queensland, Australia, an Aboriginal men's group sought to strengthen social, cultural, and spiritual identity (McCalman et al., 2009).

**Table 2**  
Enablers.

First Author, Year	Enabling Conditions					
	Involvement of Community	Access and Cost	Collaborative Multi-Disciplinary Health Services	Strong Relationships	Cultural Sensitivity	Organizational/ Staff Capacity
Auclair & Sappa, 2012	√	–	√	–	–	√
Clark et al., 2014	√	√	√	X	√	√
Hillin et al., 2008	√	√	–	√	X	–
Hinton et al., 2015	√	X	√	√	√	√
Kowanko et al., 2009	√	√	√	√	√	√
Lessard et al., 2015	–	√	–	X	X	√
Liu et al., 2016	–	√	√	√	√	√
Lucero & Bussey, 2012	–	X	√	–	√	√
Malone & Stanley, 2013	√	X	√	X	√	√
Tousignant et al., 2013	√	√	X	√	√	X
McCalman et al. (2009)	√	–	X	X	–	–

### 3.6. Enabling factors

Six enablers to service integration were identified (see Table 2). These were: involvement of community, access and cost, collaborative multidisciplinary health services, strong relationships, cultural sensitivity, and organizational and staff capacity. Enablers for each study varied, with many identifying more than one. The barriers to intersectoral service integration were the opposite of the enablers i.e. poor community involvement, poor access to services and high cost, lack of collaborative multi-disciplinary health services, absence of strong relationships, cultural insensitivity and poor organizational/ staff capacity.

#### 3.6.1. Involvement of community

Nine studies explicitly referenced service integration effectiveness as a result of community inclusion (Auclair & Sappa, 2012; Clark et al., 2014; Hillin et al., 2008; Hinton et al., 2015; Kowanko et al., 2009; Liu et al., 2016; Malone & Stanley, 2013; McCalman et al., 2009; Tousignant et al., 2013). In remote Canadian Nunavuk, community health workers played a key role in driving health care delivery (Auclair & Sappa, 2012). Hillin describes a mental health training course developed through consultation with community Aboriginal stakeholders. Interdisciplinary collaborative approaches and professional interactions produced integrated community responses (Malone & Stanley, 2013), while inclusion of community elders complemented knowledge sharing (Liu et al., 2016). Policy alone was deemed insufficient without the involvement of community members in each stage of care (Tousignant et al., 2013).

#### 3.6.2. Access and cost

Six studies reported accessibility and cost effectiveness as enabling factors for health service integration (Clark et al., 2014; Hillin et al., 2008; Kowanko et al., 2009; Lessard et al., 2015; Liu et al., 2016; Tousignant et al., 2013). Improving organizational funding, time availability, cost, and the capacity to provide more forms of therapy were all enablers of effective integrated care (Hillin et al., 2008; Kowanko et al., 2009; Lessard et al., 2015; Liu et al., 2016). Strategic and creative deployment of funding streams for community health services were important when resources were limited (Kowanko et al., 2009). For example, the School-Link Training program was free of charge to all participants, increasing participation (Hillin et al., 2008). Pairing free of charge programming with collaborative approaches reduced family negotiation with multiple services (Clark et al., 2014). Interventions also noted the importance of availability of specific therapies deemed useful by community, such as psychotherapy (Lessard et al., 2015), and other culturally sensitive mental health services (Liu et al., 2016), as key enablers for effective intersectoral responses to

anxiety and depression.

#### 3.6.3. Collaborative multi-disciplinary health services

The presence of collaborative multidisciplinary health services and workers was perceived as beneficial in eight studies (Auclair & Sappa, 2012; Clark et al., 2014; Hinton et al., 2015; Kowanko et al., 2009; Lessard et al., 2015; Liu et al., 2016; Lucero & Bussey, 2012; Malone & Stanley, 2013). Discussing mental health cases between doctors, nurses, pharmacists, social workers, and community health workers helped formulate holistic intervention plans (Auclair & Sappa, 2012; Clark et al., 2014). Integration of mental health services between health sectors, practices promoting system level collaboration, and exchange of information across health sectors enabled successful care (Kowanko et al., 2009; Lucero & Bussey, 2012; Malone & Stanley, 2013). All studies stressed the need for systematic change in delivery to promote flexibility, integration, and collaboration between health services.

#### 3.6.4. Strong relationships

Five studies cited the importance of strong relationships as an enabler of service integration (Hillin et al., 2008; Hinton et al., 2015; Kowanko et al., 2009; Liu et al., 2016; Tousignant et al., 2013). For example, the School-Link mental health training intervention gave considerable time to develop respectful relationships between trainers and Aboriginal stakeholders, while other interventions created space for regular meetings (Kowanko et al., 2009), fostering a genuine partnership, a sense of walking the path together (Hillin et al., 2008), and consumer trust (Liu et al., 2016).

#### 3.6.5. Cultural sensitivity

Seven interventions reported cultural sensitivity as an important enabler of partnership to improve the mental health of Indigenous children (Clark et al., 2014; Hinton et al., 2015; Kowanko et al., 2009; Liu et al., 2016; Lucero & Bussey, 2012; Malone & Stanley, 2013; Tousignant et al., 2013). Knowledge of intergenerational trauma and the specific historical contexts of Indigenous children was an essential aspect promoting sensitive integration (Malone & Stanley, 2013). Effective early intervention for child well-being required an understanding of Indigenous well-being perspectives, respectful communication, and consideration of cultural values (Hinton et al., 2015).

#### 3.6.6. Organizational and staff capacity

Eight studies explicitly noted organizational and staff capacity as enabling factors, or in the case of their absence, disabling factors (Auclair & Sappa, 2012; Clark et al., 2014; Hinton et al., 2015; Kowanko et al., 2009; Lessard et al., 2015; Liu et al., 2016; Lucero & Bussey, 2012; Malone & Stanley, 2013). In many cases, gaps between the needs of the population, service capacity, and available resources

**Table 3**  
Outcomes.

First Author, Year	Outcomes					
	Health and Human Services Collaboration	Psychosocial Functioning and Stress Management	Health Service & Organizational Empowerment	Development and Promotion of Health Policy and Protocols	Linkage of Health Services and Community	Family & Community Empowerment
Auclair & Sappa, 2012	X	-	-	-	-	X
Clark et al., 2014	-	✓	✓	X	✓	✓
Hillin et al., 2008	X	✓	✓	✓	✓	X
Hinton et al., 2015	✓	-	✓	✓	✓	-
Kowanko et al., 2009	✓	✓	✓	✓	✓	✓
Lessard et al., 2015	✓	✓	✓	✓	✓	X
Liu et al., 2016	✓	X	-	-	✓	X
Lucero & Bussey, 2012	-	-	-	-	-	✓
Malone & Stanley, 2013	-	-	X	✓	✓	✓
Toussignant et al., 2013	-	X	X	✓	✓	-
McCalman et al. (2009)	-	✓	✓	X	X	✓

were noted (Auclair & Sappa, 2012; Kowanko et al., 2009; Lessard et al., 2015). High staff turnover, lack of training, funding, burn out, and lack of cultural sensitivity were all barriers to implementation (Liu et al., 2016). Best practices provided training, funding, and resources in terms of staff and time. For example, bolstered commitment from a Health and Wellness Centre in a Cree Canadian community resulted in the employment of more full-time staff, increasing capacity to address community mental health needs (Malone & Stanley, 2013).

3.7. Outcomes

Six key outcomes of intersectoral interventions were identified (see Table 3). These were: health and human services collaboration, children's psychosocial functioning and stress management, health service and organizational empowerment, development and promotion of health policy and protocols, linkage of health services, and community and family empowerment. Outcomes for each study varied, with many having more than one.

3.7.1. Health and human services collaboration

Four studies reported or suggested improved collaboration between health and human services (social workers) as a finding (Hinton et al., 2015; Kowanko et al., 2009; Lessard et al., 2015; Liu et al., 2016). For example, the Aboriginal Family and Community Health Program in Australia reported increased opportunities to link health and human service providers for the benefit of clients (Kowanko et al., 2009). Other evaluation based interventions suggested that health professionals such as nurses, doctors, and psychologists, as well as social workers, be targeted first to improve care for individuals (Lessard et al., 2015). Reorganization of fragmented services be into culturally responsive, 24/7 accessible (Liu et al., 2016), and multifaceted care were key results (Hinton et al., 2015).

3.7.2. Children's psychosocial functioning and stress management

Five studies reported improvements in children's psychosocial functioning, stress management, and individual empowerment (Clark et al., 2014; Hillin et al., 2008; Kowanko et al., 2009; Lessard et al., 2015; McCalman et al., 2009). Improved self-expression, coping strategies, and social skills were reported, as well as psychiatric functioning (Clark et al., 2014; Hillin et al., 2008; Kowanko et al., 2009). Other studies reported successful practices such as telepsychology for remote communities, educational interventions, and self-care tools as ways to empower individuals with anxiety and depression (Lessard et al., 2015). In another intervention, clients reported improved communication and conflict resolution skills through participation in an Aboriginal Family and Community Healing Program (Kowanko et al., 2009). In an Aboriginal Australian men's empowerment program, young people gained greater confidence, social cohesion, and overall individual empowerment (McCalman et al., 2009).

3.7.3. Health service and organizational empowerment

Six studies reported improved health access, utilization, and strengthened organizational capacity as outcomes of interventions promoting intersectoral collaboration (Clark et al., 2014; Hillin et al., 2008; Hinton et al., 2015; Kowanko et al., 2009; Lessard et al., 2015; McCalman et al., 2009). For example, Kowanko et al., 2009 found that close collaboration between medical services and Aboriginal Family and Community Healing program components supported holistic and timely care for clients. In the discrete Indigenous Australian community of Yarrabah, a men's group received five external funding grants (McCalman et al., 2009). External funds and expertise reduced pressure on existing staff and resources (Kowanko et al., 2009). Lessard et al. (2015) identified breaks and delays in the continuum of mental health care. Addressing these breaks drove improvement in service effectiveness. Services that were perceived as easy and friendly significantly increased buy-in by young Indigenous peoples, their families and



communities (Clark et al., 2014).

### 3.7.4. Development and promotion of health policy and protocols

Six studies recommended improved health policy and protocols to drive effective intersectoral service integration (Hillin et al., 2008; Hinton et al., 2015; Kowanko et al., 2009; Lessard et al., 2015; Malone & Stanley, 2013; Tousignant et al., 2013). Better training, policy support, targeted education, and ongoing promotion were recommended as findings to support stronger intersectoral partnership. Kowanko specifically recommended systematic data collection and improved information management protocols across sectors. Transdisciplinary practices informed culturally relevant policies for service provision (Malone & Stanley, 2013), while proposed changes in child/youth protection, housing, and justice policies were recommended to prevent Indigenous youth suicide (Tousignant et al., 2013).

### 3.7.5. Linkage of health services and community

Greater collaboration between health services and community was reported in eight studies (Clark et al., 2014; Hillin et al., 2008; Hinton et al., 2015; Kowanko et al., 2009; Lessard et al., 2015; Liu et al., 2016; Malone & Stanley, 2013; Tousignant et al., 2013). Key components of these linkages were small health centres, community based services, local community stakeholders such as elders, cultural activities, community workers, and families (Hillin et al., 2008; Hinton et al., 2015; Liu et al., 2016; Tousignant et al., 2013). Interventions included local leaders, government, police, elders and mental health professionals in service delivery (Malone & Stanley, 2013; Tousignant et al., 2013). Effective partnership with Aboriginal people (Hillin et al., 2008), involvement of social workers, nurses (Lessard et al., 2015), and collaboration between clinicians and community workers (Liu et al., 2016), were reported (Hillin et al., 2008; Lessard et al., 2015; Liu et al., 2016).

### 3.7.6. Family and community empowerment

Five studies (45%) reported the empowerment of families, communities, and the individuals within them as intervention outcomes (Clark et al., 2014; Kowanko et al., 2009; Lucero & Bussey, 2012; Malone & Stanley, 2013; McCalman et al., 2009). Evaluation of a model for urban Native families showed success in preventing out-of-home placement of Native youth, improving parental capacity and child safety (Lucero et al., 2012). Creation of local employment, improvement of communication strategies, increased social cohesion, and family buy-in were positive outcomes (McCalman et al., 2009; Malone & Stanley, 2013; Clark et al., 2014).

## 4. Limitations

This literature review found that the evidence base for intersectoral service integration to improve mental healthcare for Indigenous children is in a stage of early development, with few impact evaluation studies or longitudinal studies found. The literature reported mostly descriptive studies in relation to the conditions that enabled intersectoral service integration and strategies for doing so, but there was a dearth of rigorous evaluations of their impact. These findings highlight the need for further research and evaluation to build a repertoire of strategies that are demonstrated to be effective in supporting improvements in intersectoral mental healthcare for Indigenous children. Despite an inclusive search strategy, it is possible that we may have missed some studies or misclassified a study for inclusion. However, consensus among the screeners on included articles through blind review suggests that the included studies represent exemplars of integrated care.

## 5. Discussion

This review describes the available knowledge that underpins intersectoral service integration processes and tools to improve mental

healthcare for Indigenous children. As is common in other reviews of Indigenous health interventions (Paul et al., 2010; Sanson-Fisher et al., 2006), we found few impact evaluations. Most studies provided program descriptions and process evaluations which explored the concepts and issues described in the interventions and the formative, intermediate, and future goal oriented outcomes. This is likely due to intersectoral approaches to Indigenous mental health being a field in its beginning stages, meaning not enough time has elapsed for follow-up studies and limiting knowledge of the full long-term impact of interventions.

The best evidence available suggests intersectoral interventions can improve the mental health of Indigenous children, their families, and their communities as a whole. Two studies rated of strong quality (Lessard et al., 2015; Lucero & Bussey, 2012) found individual outcomes of improved psychosocial functioning for Indigenous children who experienced at least one episode of care associated with a chronic mental disorder (Lessard et al., 2015) and promise in preventing out-of-home placement of Native children, while at the same time improving parental capacity, family safety, child well-being, and the family environment (Lucero & Bussey, 2012). One study rated of moderate quality also found individual youth empowerment in terms of cultural identity, confidence, and involvement in community (McCalman et al., 2009).

Two studies rated of strong quality found service-related outcomes included community employment and involvement in community driven interventions (Clark et al., 2014) and the valuing of collaboration between clinicians and workers (Liu et al., 2016). Other studies rated of moderate quality also suggested service related outcomes such as improved collaboration and stronger linkages between health and human service providers (Kowanko et al., 2009), prioritisation of integrated care and development of shared written protocols for screening and assessment (Hinton et al., 2015), community engagement (Hillin et al., 2008), early intervention for wellbeing concerns as a priority in Indigenous communities; service providers confirmed the usefulness of having a defined, written protocol for screening and assessment() Interventions which integrated cultural sensitivity, trained their staff on Indigenous sociocultural specificities dealing with colonization and intergenerational trauma (Malone & Stanley, 2013) and the social determinants of health (Auclair & Sappa, 2012), and involved community in each step of care (Liu et al., 2016), were associated with higher consumer satisfaction, greater collaboration, and more effective intersectoral care.

Another major theme of intersectoral interventions was policy support in the areas of housing, juvenile justice, child/youth protection, education (Tousignant et al., 2013), and development of more culturally sensitive (Hinton et al., 2015) and integrative protocols relating to training, primary care referral evaluation, and overall mental health evaluation (Lessard et al., 2015). However, it was noted that policy alone, without an integrated community response, was insufficient (Tousignant et al., 2013).

A key gap in the evidence was consumer voice. Intersectoral care is based on the principle of collaboration, integrating health services, and community involvement (Auclair & Sappa, 2012; Clark et al., 2014; Hillin et al., 2008; Hinton et al., 2015; Kowanko et al., 2009; Liu et al., 2016; Malone & Stanley, 2013; McCalman et al., 2009; Tousignant et al., 2013) yet there were no studies highlighting the voices of consumers, families, or Indigenous children and youth. Few studies reported the extent to which Indigenous children, their families and communities, engaged in intersectoral interventions. Rather, they described intervention components of a community, family, and individual empowerment approach, with outcomes being discussed in terms of satisfaction, retention, acceptability, costs, and feasibility. This finding suggests that there is an important opportunity for families and youth to lead the development of models of Indigenous care, carried out by health professionals, and not the other way around. There is also a need for interventions that are evaluated by Indigenous consumers

themselves, promoting Indigenous voice.

No studies provided evidence of the costs of providing intersectoral mental healthcare for Indigenous children, or suggested that costs were offset by the benefits. Paucity of economic evaluations is a weakness that suggests a need for cost-effective driven interventions and more robust cost evaluation, especially given that many studies cited costs and resources as limitations (Hillin et al., 2008; Kowanko et al., 2009; Lessard et al., 2015; Liu et al., 2016).

## 6. Conclusion

Intersectoral interventions addressing Indigenous child mental health produced outcomes of improving childhood well-being, cultural identity, the capacity of families, accessibility of local and mainstream services, health service and organizational capacity, policy recommendations, health service collaboration, and consumer satisfaction. The 11 studies evaluated or described the required conditions for implementing intersectoral care, which were involvement of community, accessibility and cost, collaboration between health disciplines, strong relationships between providers, consumers, and community, cultural sensitivity, and the capacity of organizations and health services to provide sufficient care. Strategies were diverse and included intervention and service delivery by both community and external workers, delivery across disciplines, building the capacity of staff and organizations, engaging the community, empowering families, individual counselling, and adaption of care to Indigenous social determinants of health, histories, and sociocultural specificities. However, the evidence base is in early development, with few impact evaluation studies found. Furthermore, there was insufficient explanation of how and where children and families engaged in interventions, primary care, and local services, and whether interventions were able to impact the social determinants of Indigenous children's mental health rather than just behavioural and lifestyle outcomes. There is also a need for improved cost evaluation research, and greater inclusion of Indigenous voice in evaluation. This scoping review informs the development of an intersectoral care intervention addressing Indigenous children's mental health.

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## Availability of data and materials

The data supporting the findings is provided in Appendices 1–4. A database of the search strategy records is available on request from the corresponding author.

## Ethics approval and participation consent

Not applicable.

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## Declaration of Competing Interest

The authors declare that they have no competing interests.

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## Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.childyouth.2019.104408>.

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