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REVIEW ARTICLE

What factors do health professionals view as influencing the success of otitis media detection programs for First Nations children? A scoping review and synthesis of qualitative research

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ABSTRACT

Objective: Targeted early detection programs for otitis media exist for First Nations populations across several countries, with variable success reported. Health professionals are in a unique position to evaluate factors that may impact on programme success. This research therefore aims to understand: "What factors do health professionals view as influencing the success of otitis media detection programs for First Nations children?"

Design: A scoping review, including a systematic search and synthesis of qualitative research on this topic, was conducted using adapted PRISMA and JBI guidelines. Articles were critically appraised using tools to assess their methodological quality and cultural safety.

Study Sample: Seven sources published between 2003 and 2022 met the review inclusion criteria.

Results: Two major themes of Health Resource Access and Person and Family Centred Care were identified. Health Resource Access was further explored through three sub-themes examining Client, Practitioner and Service access. Subthemes related to Person and Family Centred Care included Cultural Safety, Health Service Collaboration, Health Education and Consumer Partnerships.

Conclusions: The voices of health professionals are largely missing from conversations on otitis media detection for First Nations children. Health professionals can provide unique insights into service delivery that compliment those of parents and care-givers.

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Introduction

First Nations children in high income countries tend to experience significantly higher rates and disease burden from OM when compared to non-First Nations children, as a result of colonisation (World Health Organization 2021). Studies from Australia, Canada and the United States of America have documented this as a pervasive and persistent health inequity among First Nations children in comparison to non-First Nations children within the same regions (Langag et al. 2007; Singleton et al. 2018; Veselinović et al. 2022). In contrast, recent studies did not reveal significantly higher rates of acute OM (AOM) or grommet insertion for OM with Effusion (OME) in Maori children in New Zealand when compared to New Zealand European or non-Maori children respectively (Becker et al. 2023; Johnston et al. 2018). There is a general trend for First-Nations children to be disproportionately afflicted and affected by OM when compared to their non-First Nations peers in some, but not all, high-income countries.

In recognition of this health inequity between First Nations and non-First Nations children in several high income countries, some countries have developed OM primary health care pathways specifically for First Nations children. Typically, these systems include OM prevention activities, early detection programs, diagnostic hearing and ear health services and intervention, rehabilitation and management pathways (Leach et al. 2021). The detection phase, where families typically begin to proactively engage with the OM care pathway, is particularly significant.

OM detection programs have been frequently quantitatively evaluated. Typically, numbers of children seen, positive test results obtained and referrals to further services are reported. Qualitative analyses of program success are less common. While numerical data are important to justify program funding, planning and resourcing, qualitative studies can support an understanding of why trends in numerical data have arisen, and more comprehensively investigate cultural and contextual influences on programme success.

While attention has justifiably been directed towards First Nations parent and care-giver perceptions of OM and associated programs, health professionals working within these programs are largely under-represented. Health professionals that staff OM

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detection programs for First Nations children are a professionally diverse workforce who often practice in complex settings and circumstances. Insights from health professionals can compliment those gained from parents, caregivers educators and administrative stakeholders, to give a more holistic viewpoint. Their position on the frontline of health care gives them unique and valuable insights into factors contributing to programme success, such as internal systems, workplace culture and relationships with other organisations (Shand et al. 2021). Involving health professionals in research can also facilitate knowledge transfer and service improvement via their engagement with the project (Chalmers et al. 2023).

When qualitatively examining indicators of programme success for First-Nations children with chronic and acute health conditions, health professionals have identified a range of factors as being crucial to program success across primary and secondary healthcare settings. In high-income countries such as Australia, Canada, New Zealand, and the United States of America, these included cultural safety, cost, accessibility, staffing, facilities and evidence-based models of care (Harfield et al. 2024). These additional considerations may also be applicable to the success of OM detection initiatives that engage with First Nations children and families.

Given that health professionals are an important, yet underrepresented group in the literature on OM detection within First Nations populations, this article will identify, review and scope the qualitative findings in published literature that contribute to understanding the salient features of service delivery that health professionals perceive as influencing the success of OM detection programs.

Materials and methods

The methods used to undertake this scoping review were guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) statement and JBI guidelines for synthesis of qualitative research (Lockwood, Munn, and Porritt 2015; Tricco et al. 2018).

Search strategy

Scoping searches were performed using the International prospective register of systematic reviews (PROSPERO), the Cochrane Database of Systematic Reviews, and the JBI Systematic Review Register to identify any reviews that were in progress or completed on this topic. None were identified. Further scoping searches helped determine key concepts, including: "First Nations", "Health Professionals", "Otitis Media" and "Perceptions". A comprehensive list of alternate search terms was identified for each concept as displayed in Table 1 and adapted into a master search strategy in Ovid Medline. The search strategy was then translated to Scopus, CINAHL, Web of Science Core Collection, ProQuest (Education, Health and Medicine and Social Science collections), PsycINFO, Indigenous Collection (Informit) and Proquest Dissertations and Theses Global. Details of the master search strategy may be found in Appendix A.

Inclusion criteria

The inclusion and exclusion criteria for this review are documented in Table 2.

Researcher involvement

Two researchers (LC, LN) completed article screening, data extraction, critical appraisal and data analysis independently. Where conflicts arose, attempts were made to achieve consensus through discussion between reviewers. If consensus was not achieved through discussion conflicts were escalated to a third, experienced, independent, reviewer (JS) for resolution. The researchers conducting data collection and analysis were non-Indigenous Australian women, including an audiologist (LC), research assistant (LN) and senior researcher (JS). A female audiologist (SH) and male ENT surgeon (EO) provided clinical input into the interpretation of the findings. These researchers had varying degrees of experience working with Australian First Nations peoples across clinical and research settings. Given the focus of the research was on First Nations children's ear and hearing health, and the likelihood of a high proportion of First Nations professionals in the included studies, it was imperative the research team also included Aboriginal and Torres Strait Islander leadership (PS), to ensure the findings were inclusive ofFirst Nations notions of health and well-being.

Article screening

All searches were conducted on 4 January 2024. Results were imported into Endnote 20 and duplicates removed. Unique sources were imported from Endnote to Covidence. Articles were screened against the inclusion criteria, first by title and abstract, then by full text. Articles not meeting the inclusion criteria were removed from the process. Reference lists of articles selected for inclusion were searched for further, relevant sources. No automation tools were used in this process.

Data extraction

Data were extracted from all articles in Covidence, using a modified version of the JBI Qualitative data extraction tool (Lockwood et al. 2024). One additional field was added to capture the aim of each paper, and prompts were added to support capturing richer information on each field. The adapted data extraction tool may be found in Supplementary File B. Themes, theme definitions and quotes were the primary units for analysis. Where a clear thematic structure was absent or quotes were not included, sections of text that represented the views of health professionals were included. Where studies included additional participant types (e.g. parents, teachers), findings were only included when it was clear or reasonably inferred that they arose from health professionals.

Critical appraisal

Critical appraisals were conducted simultaneously with data extraction. Critical appraisal tools included the JBI Critical Appraisal Checklist for Qualitative Research, the CONSIDER Statement for research impacting First Nations Peoples and the Aboriginal and Torres Strait Islander Quality Appraisal Tool (QAT), designed for use with Australian Indigenous populations (Harfield et al. 2020; Huria et al. 2019; Lockwood et al. 2024).

Table 1. Logic grid of search concepts and terms.

Health Professionals	First Nations	Otitis Media	Perceive
"Health worker*"	Indigenous	"Otitis Media"	Perceive*
"Health professional*"	Aboriginal	"Ear Disease*"	Perception*
"Healthcare professional*"	"Torres Strait Islander"	"Ear Infection*"	Evaluat*
"Health care professional*"	"First Nations"	"Ear Health"	Perspective*
"Healthcare worker*"	Native	"Hearing loss"	Insight*
"Health care worker*"	Maori	"Hearing impair*"	View*
"Health personnel"	Inuit	"Conductive hearing loss"	Thought*
Screener*	"American Indian*"		Feeling*
Facilitator*			Barrier*
Audiologist*			Benefit*
Practitioner*			Asset*
GP			Challenge*
GPs			Opinion*
Provider*			Feedback
Clinician*			Attitude*
Nurse*			Interview*
"Speech therapist*"			"Focus Group*"
"Speech pathologist*"			Qualitative
"Speech-language pathologist*"			Survey*
			Questionnaire*

Table 2. Study inclusion and exclusion criteria.

Inclusion Criteria	Exclusion Criteria
• Participants are health professionals • Qualitative method/s used • Involves screening/detection of OM in First Nations children	• Parent, teacher, administrator or researcher perspectives only • Not focussed on OM • Focussed on prevention, management or treatment of OM • Focussed on adults • Quantitative/clinical data only • Reports on newborn hearing screening program/s • Involves screening/detection of OM in Non-First Nations Peoples

Data analysis

Findings were examined in NVivo using a thematic analysis process (Braun and Clarke 2006). The findings were read several times prior to coding. Next, the meaning of each finding was extracted and tagged with a code. The codes and findings were then examined for conceptual similarities, with similar codes, grouped together to create categories. The categories were further examined for broader conceptual agreement and unified into synthesised findings.

Results

Article screening

The database searches returned 370 references. 185 duplicates were removed through Endnote and Covidence. Title and abstract screening excluded 155 references. One of the 30 remaining articles could not be sourced, despite requests to publishing organisation. The full text of 29 articles were reviewed, with seven articles meeting the inclusion criteria. Hand-searching reference lists of the included articles did not reveal any further relevant sources. Given the small number of studies identified for inclusion, all studies were grouped together for synthesis. Please see Figure 1 for a visual representation of the study screening process.

Study characteristics

A variety of sources were included in this review. Four were journal articles (Eikelboom et al. 2003; Elliott et al. 2022; Howard and Hampton 2006; Sargison et al. 2022), one was a programme evaluation (Clements 2005), one was a project report (McDonald 2013), and one was a thesis (Doyle 2007). Six sources reported on research within Australia (Clements 2005; Doyle 2007; Eikelboom et al. 2003; Howard and Hampton 2006; McDonald 2013; Sargison et al. 2022). The remaining study was conducted in Canada (Elliott et al. 2022). Five studies used interviews to collect data (Clements, 2005; Elliott et al. 2022; Howard and Hampton 2006; McDonald 2013; Sargison et al. 2022). Two studies used mixed methods questionnaires, of which only qualitative data were included in analyses (Doyle 2007; Eikelboom et al. 2003).

Several health professions were represented across studies including Aboriginal health-care students (Eikelboom et al. 2003), Hearing Health Workers (Clements 2005), Aboriginal Health Workers (Doyle 2007; Howard and Hampton 2006), Nurses (Doyle 2007; Elliott et al. 2022; McDonald 2013), General Practitioners (Elliott et al. 2022; McDonald 2013) and Allied Health Professionals (Sargison et al. 2022). Two studies included solely health professionals (Eikelboom et al. 2003; Elliott et al. 2022), while five studies also included parents (Clements 2005; Howard and Hampton 2006; Sargison et al. 2022), educators (Doyle 2007), community members (McDonald 2013) or administrative stakeholders (McDonald 2013). Four studies did not specify data analysis techniques (Clements 2005; Eikelboom et al. 2003; Howard and Hampton 2006; McDonald 2013). The remaining studies used Braun and Clarke's 2006 thematic analysis (Elliott et al. 2022; Sargison et al. 2022) and Taylor and Bogdan's 1998 thematic analysis (Doyle 2007). A summary of each article is included Table 3.

Critical appraisal tools

The majority of articles scored poorly in the JBI Qualitative Critical Appraisal Checklist. Three articles did not meet any of the ten criteria (Clements 2005; Eikelboom et al. 2003; McDonald 2013). The remaining four met between two and seven criteria. Low scores were also obtained on the CONSIDER

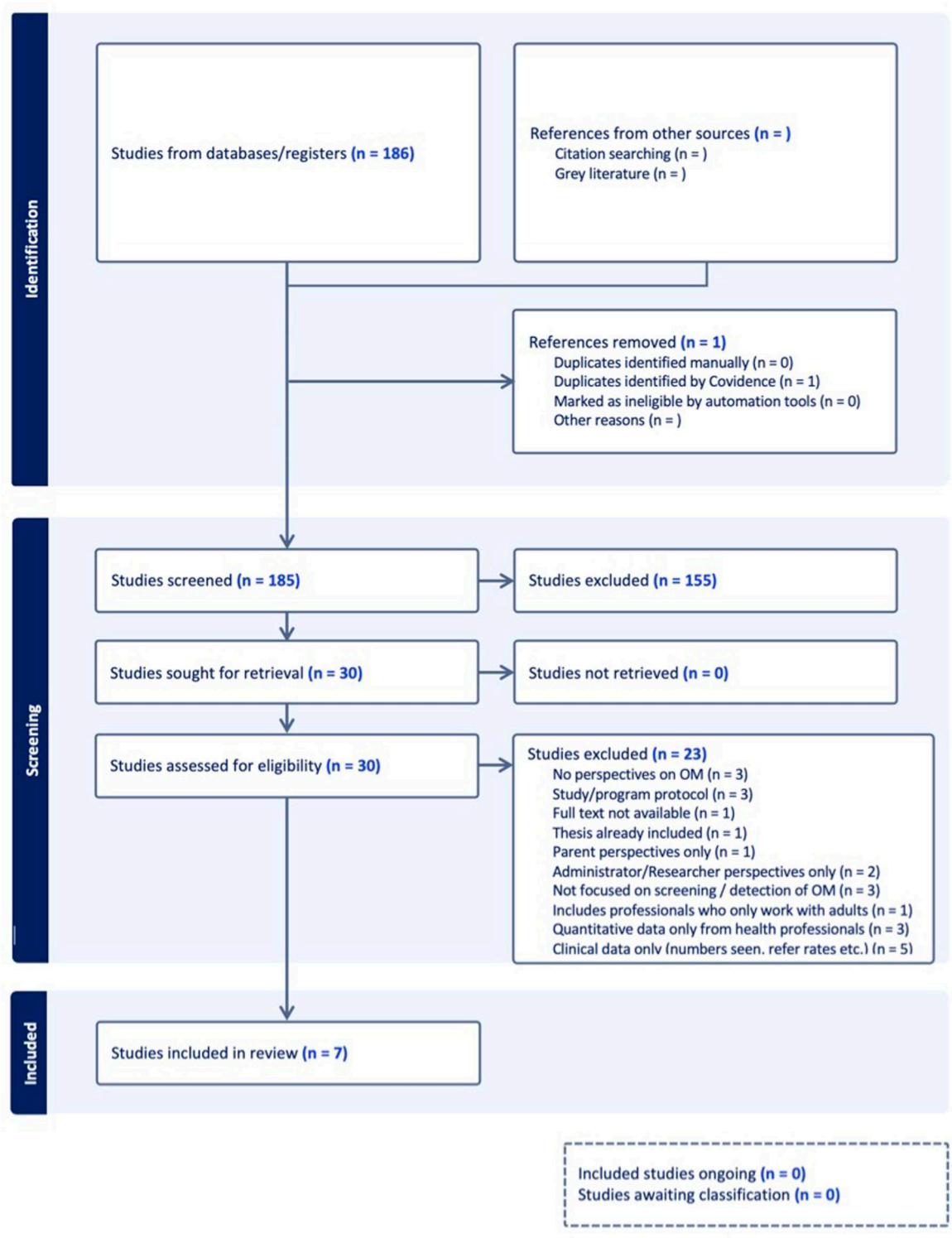

Figure 1. PRISMA diagram documenting article screening and selection process. Figure created in Covidence.

Statement checklist (between one and seven out of 17) and the Aboriginal QAT (between one and six out of 14), noting that half points were applied when a criterion was partially met. Of note, a high proportion of ratings fell in the "Unclear" category on the Aboriginal QAT. Given these ratings, there is a clear need for further culturally safe, theoretically informed and methodologically sound research on this topic.

Given the small number of sources meeting the inclusion criteria, critical appraisal ratings were not used to exclude sources, but rather to examine trends in research quality and reporting. Areas of consistent deficit included documenting the researcher/s' philosophical, cultural and theoretical positioning, describing cultural and intellectual property agreements and reporting opportunities for First Nations capacity development and research governance. Common strengths included evidence of First Nations community engagement and partnerships, representation of participant voices and study teams that were experienced in First Nations research. Critical appraisal ratings may be found in Appendices C-E.

Table 3. Scoping review article summaries ($n = 7$).

Author/s, (Year) and Country	Aims	Qualitative Methods Used	Participants	Data Analysis	Themes	Strengths	Limitations
Eikelboom et al., (2003), Australia	To describe and evaluate a tele-otology course for primary providers.	Qualitative/ open-ended questionnaire.	The course was taken by 30 aboriginal health-care students from the Marr Mooditj Foundation.	Technique not stated.	Training of Aboriginal Health Workers and Practitioners, Evaluation of a tele-otology course.	Partnered with an Aboriginal training institution.	Methodologyand analyses not described.
Clements (2005), Australia.	To evaluate the Hearing Health Program.	Interviews (Unspecified).	Aboriginal and Torres Strait Islander children, parents of children who were screened, relevant stakeholders, including a Hearing Health Worker.	Technique not stated.	Evaluation of an OM detection program.	Partnered with Aboriginal Community Controlled Health Service.	Methodologyand analyses not described.
Howard & Hampton, (2006), Australia.	To investigate the proposition that conductive hearing loss has an effect on family life.	Interviews (Unspecified).	Five Aboriginal mothers, three Aboriginal Health Workers (AHWs) and two nurses working in Aboriginal communities.	Technique not stated.	Parent and health professional observations regarding the social and familial consequences of OM.	Consistent inclusion of primary data.	Methodologyand analyses not described.
Doyle, (2007), Australia.	To identify what ear health programs have been implemented in the Goldfields South East health region, and their perceived benefits and barriers.	Qualitative/ Open-ended questionnaire.	62 health and education stakeholders involved with children in kindergarten to year three.	Thematic Analysis, (Taylor and Bogdan).	Teacher and health professional perceptions of benefits and barriers of ear health programs.	Covers several hearing health programs, structured data analysis.	Small survey response rate, inconsistent inclusion of quoting.
McDonald, (2013), Australia.	To report outcomes surrounding dissemination and uptake of National OM Guidelines.	Interviews (Unspecified), Reference groups.	Service providers and Indigenous and non-Indigenous community members.	Technique not stated.	Project report on the uptake of OM guidelines in OM detection programs.	Wide variety of health services included, used a program logic model and framework.	Difficult to determine source of information in some cases. Methodologyand analyses not described.
Elliott et al., (2022), Canada.	To understand whether and how health education tools could be adapted for Indigenous communities.	Interviews (Semi-structured, 1:1, online).	18 healthcare professionals (physicians, registered nurse, and licenced practical nurse).	Thematic Analysis (Braun and Clark).	Sought the views of health professionals on knowledge translation tools for Indigenous communities.	Structured collection and reporting of data and analyses.	Few participants self-identified as Indigenous.
Sargison et al., (2022), Australia.	To explore parent/carer and health professional experiences and perceptions of accessing the Family Centred Consultation Model (FCCM).	Interviews (Semi-structured, in depth, yarning style).	11 parents/ carers of Aboriginal and Torres Strait Islander children using the FCCM; and 3 health professionals providing the service.	Thematic Analysis (Braun and Clark).	Evaluation of a new multi-disciplinary service model for Aboriginal and Torres Strait Islander families.	Higher scores on Critical appraisal tools. Collaborated with an Aboriginal researcher.	Small number of participants.

Synthesis findings

Overall, two major themes were identified from the synthesis of qualitative literature: Access and Person and Family Centred Care.

Theme I: access to healthcare resources

Health professionals reported access to primary healthcare services and resources as key drivers of the success of OM detection programs for First Nations children (Clements 2005; Doyle 2007; Eikelboom et al. 2003; Elliott et al. 2022; McDonald 2013; Sargison et al. 2022). Resource access was discussed in terms of (i) Clients (ii) Health Services and (iii) Clinicians.

Subtheme i: client access to healthcare resources (Doyle 2007; Elliott et al. 2022; Sargison et al. 2022). Health professionals commented that First Nations children and families across urban, rural and remote areas had challenges in accessing OM detection services (Doyle 2007; Elliott et al. 2022; Sargison et al. 2022).

> *"… accessing healthcare isn't as easy, especially if they don't have a physician or a nurse in their community…" - Canada, urban and rural (19 p. 5).*

Proposed barriers to accessing OM detection services were a lack of suitable transport (Elliott et al. 2022), busy work and family lives (Sargison et al. 2022) and absences from school (Doyle 2007).

> *"… the Inuit people I work with don't have cars" Canada, urban and rural (19 p. 6).*

> *"The AHPs (Allied Health Professionals) also reflected how the brevity of the service suited the busy lives of working parents/carers…" Australia, urban (20 p. 172).*

> *"Children's lack of attendance at school and transience of students were identified as barriers…" - Australia, rural and remote (23 p. 40).*

Health professionals acknowledged access to health services and resources as an important factor in the success of OM detection programs for First Nations children.

Subtheme ii: health service access to healthcare resources (Clements 2005; Doyle 2007; Elliott et al. 2022; McDonald, 2013). Health professionals consistently noted the importance of health services being adequately resourced to implement OM detection programs. Staff turn-over was reported to be high in studies conducted in urban, rural and remote areas, resulting in insufficient numbers of trained staff, and increased workloads for remaining staff (Clements 2005; Doyle 2007; Elliott et al. 2022; McDonald 2013).

> *"Sometimes recruitment of staff is difficult, so positions are not filled leaving other staff with heavy workloads" - Australia, rural and remote (23 p. 56).*

Limited access to suitable equipment and testing environments to perform OM detection activities was also reported (Doyle 2007; McDonald 2013).

> *"Many participating PMPs (Private Medical Practices) and some AMSs (Aboriginal Medical Services) did not have the recommended equipment and planned to use practice incentive funding to purchase this equipment" - Australia, urban, rural and remote (22 p. 14).*

Health professionals noted the importance of adequate staffing, equipment and infrastructure to deliver successful OM detection programs to First Nations children.

Subtheme iii: clinician access to professional development (Clements 2005; Doyle 2007; Eikelboom et al. 2003; McDonald 2013; Sargison et al. 2022). Health professionals appeared to value training and professional development opportunities (Eikelboom et al. 2003; McDonald 2013).

> *"Many individual Maternal Child Health nurses were very motivated and participated in the training offered" - Australia, urban, rural and remote (22 p. 20).*

However, some health professionals felt they had insufficient training to accurately detect OM in children (Clements 2005; Doyle 2007; McDonald 2013).

> *"… many participants (doctors and nurses) reported not receiving sufficient (or any) practical experience in examining children's ears as part of their initial training" - Australia, urban, rural and remote (22 p. 14).*

Health professionals recommended a variety of professional development strategies including mentoring, reflective practice, consistent and flexible training delivery and using local personnel to deliver tailored training (McDonald 2013; Sargison et al. 2022).

> *"AH1and AH2 found that using structured reflective practice was an effective way to develop and grow their skills…" - Australia, urban (20 p. 172).*

Health professionals viewed practical, consistent, professional development as crucial to the success of OM detection programs to First Nations children.

Theme II: person and family centred care

Health professionals highlighted the importance of involving children and families in their care and providing services that account for their personal, social, cultural, linguistic, geographic and community contexts (Doyle 2007; Elliott et al. 2022; Howard and Hampton 2006; Sargison et al. 2022; McDonald 2013). Subthemes related to (i) cultural safety, (ii) health education, (iii) health sector collaboration and (iv) consumer partnerships.

Subtheme i: cultural safety (Doyle 2007; Elliott et al. 2022; Sargison et al. 2022). Health professionals in Australia and Canada highlighted the importance of being able to provide children and families with culturally appropriate OM detection services. Some health professionals identified that services lacked "… culturally appropriate resources" to support their activities (19, 23 p. 56). Health professionals also promoted culturally appropriate communication including translating information into local Indigenous languages and including culturally familiar representations in resources and facilities (Elliott et al. 2022; Sargison et al. 2022). In an Australian context, yarning was purported to be a culturally appropriate communication style.

> *"It's about that yarning, tell me your story, let the kid tell me their story" - Australia, urban (20 p. 172).*

Community consultation was also suggested to be an important mechanism for establishing cultural safety across both Australian and Candian contexts.

> *"… talking to rural communities and seeing their perspective on things and getting like an idea from a kid about how they actually access the healthcare services" - Canada, urban and rural (19 p. 5).*

Health professionals noted the benefits of cultural safety when conducting OM detection activities with First Nations children.

Subtheme ii: child and family health education (health education) (Doyle 2007; Elliott et al. 2022; McDonald 2013; Sargison et al. 2022). Health professionals felt that high-quality health education improved the efficacy of OM detection programs for First Nations children (Doyle 2007; Elliott et al. 2022; Sargison et al. 2022).

> *"Knowledge and skill development was identified by four CHN (Community Health Nurses) who reported that the children gained acceptance and knowledge of the ear health program" - Australia, rural and remote (23 p. 39).*

Health education was found to be a consistent feature of clinical interactions, when health professionals were supported to do so (McDonald 2013; Sargison et al. 2022).

> *"Staff from PMPs and AMSs who engaged well in program activities reported that OM education was routinely provided to families during consultations in their workplace" - Australia, urban, rural and remote (22 p. 24).*

Effective health education was suggested to include the use of plain language, less formal communication styles and channels, and visual representations to supplement text and dialogue (Elliott et al. 2022; Sargison et al. 2022).

> *"I think there's many resources that could be dwindled down on their information or make it more like clear and concise, so it's easy for them to kind of absorb and not feel frightened about the information … " - Canada, urban and rural (19 p. 5).*

Health professionals acknowledged the impact of communication style, content and format on the effectiveness of OM health education with First Nations children and families.

Subtheme iii: health sector collaboration (Doyle 2007; McDonald 2013; Sargison et al. 2022). Collaboration within the health sector was felt to be an important element of successful OM detection programs. Co-location of services was viewed positively by health professionals as enhancing the family's experience of care (Sargison et al. 2022).

> *"… the AHPs perceived that it was beneficial to have the service co-located with other Aboriginal and Torres Strait Islander general and specialist medical services. This simplified referrals and links between medical and AH, and saved families from repeating themselves (AH2)" - Australia, urban (20 p. 173).*

Clinicians also appeared to be supportive of coordinated inter-professional and inter-agency collaboration (McDonald 2013; Sargison et al. 2022).

> *"Working inter-professionally in the session was perceived as advantageous to families and enjoyable for the AHPs" - Australia, urban (20 p. 171).*

Conversely, a lack of reporting back from other health services appeared challenging for health professionals (Doyle 2007).

> *"CHNs and AHWs commented that obtaining feedback from other health professionals and agencies to whom they had referred the children was a barrier" - Australia, rural and remote (23 p. 40).*

Health professionals appreciated collaboration between health services and practitioners but were divided about whether this was occurring effectively in practice.

Subtheme iv: consumer partnerships (Doyle 2007; Howard and Hampton 2006; Sargison et al. 2022). Some health professionals found adopting a family-centred model of care to be beneficial and recognised the need for flexibility within their care pathway (Sargison et al. 2022).

> *"You still need to be open [to modifying your approach] if you truly are being responsive (AH2)" - Australia, urban (20 p. 172).*

Conversely, a lack of parental involvement and the associated challenges with gaining parental consent for ear health screening and referral activities to occur, were sometimes seen as barriers to children accessing services (Doyle 2007).

> *"Parental support was also mentioned by a CHN as parents didn't follow up on the referrals from the CHN" - Australia, rural and remote (23 p. 39).*

Community health professionals also reported that they observed significant effects of OM outside of clinical encounters, that often appeared to occur in conjunction with undesirable social situations (Howard and Hampton 2006).

> *"When they had the school play you see all the kids who aren't singing and doing what the class are doing, and they're all the ones on our list (to check ear disease) … " - Australia, remote (18 p. 10).*

Health professionals valued consumer partnerships and noted their importance to the success of OM detection activities for First Nations children.

Discussion

This scoping review is the first to synthesise findings from published studies that have examined the factors that health professionals perceive as being related to the success of OM detection programs for First Nations children. The findings for each subtheme are described below, alongside recommendations for research and practice.

Access

Health professionals in this scoping review suggested that clients' access to health resources can influence the success of OM detection programs for First Nations children. Consistent access to primary health services reduces morbidity and mortality for First Nations people across many chronic health conditions (Zhao et al. 2014). The high financial cost of health services and limited access to physical resources, such as transport, health professionals and health services may also be significant barriers First Nations people accessing care, particularly those living in rural and remote areas (Woodland et al. 2024). In urban areas where healthcare services are more preponderant, cultural safety may more strongly influence accessibility. OM detection programs for First Nations children are suggested to incorporate methods to provide transport and services at no or low cost to clients.

A strong theme of under-resourcing, particularly under-staffing of primary healthcare services in urban, rural and remote settings emerged from the synthesis from both Australian and Canadian sources. Ethically, health initiatives for First Nations people, should consider the sustainability of their ventures; however, a recent systematic review identified that improvements to the psychometric and practical qualities of many sustainability tools are required for them to be optimally effective (Hall et al. 2022). Suggested staff retention strategies include advanced training and practice opportunities, employing staff from rural backgrounds and fostering student placements in rural and remote areas, while financial and immigration incentives did not show clear evidence of effectiveness (Russell et al. 2021). OM detection programs for First Nations people may consider implementing sustainability frameworks, advanced training opportunities,

additional student placements and employing local health workers to improve their organisational stability and capacity.

Health professionals appeared to value training in OM detection techniques, but often felt the training was insufficient to improve their clinical confidence and competence. Where courses designed to improve OM detection skills have been evaluated, participants appeared to show improvements in knowledge and skills within the training setting (Rosenkranz et al. 2012). Only assessing skills in a training environment makes it challenging to determine whether training benefits are sustainable and transferrable to the clinical setting. Research has suggested that online training, organisational support and strong relationships with training organisations can facilitate improved access to professional development (McFarlane et al. 2018). Further research could examine the transferability of practical OM detection skills to clinical settings. Further, training organisations are encouraged to address the seemingly unmet demand for consistent, practical, training opportunities for health professionals working in this domain.

Person and family-centred care

Health professionals noted the importance of culturally safe practice in the success of OM detection programs. Key elements of cultural safety include effective communication, strong patient-provider relationships, involvement of family and elders and responsiveness to cultural values (Muller et al. 2024). Cultural safety has been understandably found to be an important facilitator of effective healthcare for First Nations people (Harfield et al. 2024). Strategies suggested to improve cultural safety for First Nations people include employing First Nations health workers, using interpreters and cultural liaisons, implementing mandatory cultural safety training for clinicians and embedding cultural safety tools in program planning and evaluation (Muller et al. 2024). Health services are recommended to implement culturally safe practice and collaborate with First Nations researchers and consumers to further quantify the benefits of cultural safety strategies on health outcomes.

Health professionals viewed collaboration between primary healthcare services positively, including multi-disciplinary models of care, co-location of services and clear communication and referral channels. Other research has suggested that effective collaboration should extend beyond the health sector, and into the education and community services sectors (Stroud et al. 2020). One proposed strategy to support both collaboration and cultural safety is employing local First Nations health service staff as case coordinators, which has been shown to improve health indicators for First Nations people with chronic conditions (McDermott et al. 2015). This strategy may be implemented relatively quickly and efficiently to support First Nations children and families in navigating ear and hearing health pathways. Health services are recommended to consider collaborating with other sectors and services to streamline referral pathways and consider how to embed case coordinators and continuity of care strategies in their local context.

Health professionals noted the benefits of effective health education for First Nations children and families. Their recommendations for clear, simple messaging, use of visual representations, community engagement and translation of resources into local First Nations languages aligned closely with general best practice guidelines for health education (Canberra Health Literacy Hub 2024). One approach which has gained support for use in health services in Australia is clinical yarning, which uses story-telling and imagery to build rapport and share information across the clinical encounter (Lin et al. 2023). However, little attention was paid to the role of online health education practices, which may be an effective way of communicating health information with First Nations people. Further research could develop and evaluate online OM health education tools and examine the efficacy of various clinical communication styles, that are informed by First Nations understandings of knowing, being and doing, on patient satisfaction and health outcomes.

Health professionals reported valuing family participation in their OM detection programs. This also reflects the views of First Nations families and caregivers, who desire to be active participants in their child's ear care (Campbell et al. 2022). While the views of health professionals and families appear aligned, it is important to ensure that consumer and family participation goes beyond simple attendance and compliance by families. Care givers and families of First Nations children experiencing OM report significant additional stressors, including frustration in navigating the health system, guilt for not identifying their child's condition sooner, financial pressure from the cost of appointments and needing to take time off work to attend them, judgement from other families and culturally inappropriate health services (Campbell et al. 2022). While cultural safety was identified by health professionals as an important factor in the success of OM detection programs, many of the financial, emotional and practical constraints experienced by care givers and families were absent from the insights provided by health professionals. This demonstrates the importance of actively collaborating with families in service design, implementation and evaluation, to ensure their voice are heard and their needs are met. First Nations community health workers can be important facilitators of these partnerships through their cultural knowledge, relationships with families and encounters with families outside of the clinical setting.

Limitations

Firstly, there was a general paucity of literature on this topic from which to draw insights. There was also significant diversity in the age of included studies. Therefore, some findings may not reflect current perceptions of health professionals working to detect OM in First Nations children. Given that most studies met few critical appraisal criteria, low methodological quality and cultural safety of the research may have reduced the veracity of some findings. As the majority of articles originated from Australia, there may be limited applicability of this information outside of the Australian context. None of the studies appeared to include a comprehensive range of health professionals involved in OM detection activities with First Nations children, limiting the applicability of results to some health professionals involved in this area.

Strengths

This review has uncovered a significant gap in the literature, by demonstrating that the voices of health professions appeared to be missing from many conversations on OM detection programs for First Nations children. Additional strengths of this review included a unique and clinically relevant research question, a comprehensive and well-designed search strategy and a rigorous and transparent study selection process. The thematic diversity across the research questions and aims of the studies selected

and the variety of article types included contributed to the robust nature of this review.

Recommendations

Overall, OM detection programs for First Nations children could consider methods to offer transport to families, deliver low/no cost services, ensure sustainable organisational capacity to support service delivery and explore ways to offer consistent, practical, training opportunities for staff. These services may also implement and evaluate mechanisms to support cultural safety, consider extending support networks within and beyond the health sector, offer case coordination roles to local First Nations clinicians in the first instance and adhere to best-practice guidelines for health education and consumer collaboration.

Further research should aim to use culturally and methodologically sound techniques to investigate the experiences, perceptions and needs of health professionals involved in the detection of otitis media with First Nations children, particularly around resourcing and training. Additional studies may investigate the transferability of OM detection skills from training to clinical settings, quantify the benefits of culturally safe care, examine the efficacy of culturally appropriate clinical communication styles and evaluate the effectiveness of online health education tools for First Nations children and families.

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