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Allied health students as service providers in Aboriginal and Torres Strait Islander early childhood education programs: Perceptions of parents and educators

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Abstract

Early childhood education programs contribute significantly to children's health and educational outcomes. Responsive service delivery approaches that support Aboriginal and Torres Strait Islander children and families to access allied health services in the early years are needed to reduce the health/education equity gap in Australia, particularly given the high prevalence of otitis media in this population. This study investigated perspectives of parents and early childhood educators regarding speech pathology and occupational therapy student-delivered services in Aboriginal and Torres Strait Islander early childhood settings. Thirteen early childhood educators and nine parents participated in focus groups or interviews following delivery of interprofessional services. Data were analysed using descriptive qualitative analysis. Findings suggest parents and early childhood educators perceived allied health student-delivered services to be effective, and enabled conceptualisation of a community-centred model for allied health service delivery in Aboriginal and Torres Strait Islander early childhood settings. This model supports communities to directly and collaboratively influence the provision of allied health services, and highlights approaches that involve relationship-building and respectful collaboration.

I INTRODUCTION

The positive contribution of early childhood education programs to child/school outcomes is widely recognised (Elliott, 2006). Increasing Aboriginal and Torres Strait Islander children's access to these services is an Australian Government priority (Council of Australian Governments [COAG], 2008). Aboriginal and Torres Strait Islander children's development of skills for school and early learning experiences may be influenced by a range of factors, including socio-political, cultural, family, and health issues (Webb & Williams, 2018). In particular, the higher rates of otitis media, with associated conductive hearing loss, experienced by young Aboriginal and Torres Strait Islander children (Couzos at al., 2001) may have a significant negative impact during a critical developmental period for communication, learning, and social and emotional development (Aithal et al., 2008; Brouwer et al., 2005; Couzos et al., 2001; Williams & Jacobs, 2009).

Increased involvement in young Aboriginal and Torres Strait Islander children's health and education by allied health clinicians may help to address the impacts of this health disparity (Indigenous Allied Health Australia [IAHA], 2015). However, compared to their non-Indigenous peers, Aboriginal and Torres Strait Islander children have reduced representation in some mainstream childhood health care services, including occupational therapy (Nelson & Allison, 2004) and speech pathology services (Graham & Byrne, 2017).

Addressing the social determinants of health, such as access to health care, is seen as a key approach in responding to health inequalities (Commission on Social Determinants of Health [CSDH], 2008). A culturally responsive health system is a key contributor to improved access for Aboriginal and Torres Strait Islander people, one that supports Indigenous leadership, works in partnership and responds appropriately to the unique attributes of people, families and communities (IAHA, 2019). Elements that may enable this include delivering programs in accessible locations, like Aboriginal and Torres Strait Islander health or educational settings (DiGiacomo et al., 2013); utilising approaches that are holistic, integrated, flexible and collaborative (DiGiacomo et al., 2013; McCalman et al., 2017; Nelson et al, 2017); and health practitioners listening and communicating respectfully, self-reflecting on practice and building trusting relationships with community members (Jennings et al., 2018).

Trialling and evaluating innovative allied health practice models that incorporate the above elements and responsive approaches is imperative to increase the accessibility of evidence-based and effective services (Nelson et al., 2017). One method to address access issues may be to increase the number of allied health student placements in Aboriginal and Torres Strait Islander settings. Such placements allow allied health students to learn clinical skills and simultaneously develop culturally responsive and sustainable practices (Davidson et al., 2013; McDonald et al., 2018; Nelson et al., 2013). Locating allied health student placements in early childhood education settings may promote the additional benefit of allied health clinicians, educators and families working collaboratively to prevent and address the impacts of early childhood health issues (DiGiacomo et al., 2013).

The value of locating health services in local Aboriginal and Torres Strait Islander community settings has been highlighted in health consumer feedback in remote areas of Australia (Valery et al., 2010). Similarly, healthcare workers and caregivers of First Nations children in Canada identified the importance of early childhood programs being located in community organisations, and of service providers building relationships and providing flexible and responsive program delivery (Gerlach, 2017). However, more needs to be understood regarding Aboriginal and Torres Strait Islander peoples' perspectives of allied health services in Australia, and more specifically, those delivered in early childhood education settings. Whilst some Australian research has highlighted allied health clinical educators' perceptions that student placements in such settings promote student learning of cultural responsiveness (Davidson et al., 2013; Hill et al., 2017; Nelson et al., 2013), community views of services delivered by allied health students also requires investigation (Hill et al., 2017).

The aim of this study was to investigate the perceptions of parents and early childhood educators who had experienced allied health student-delivered services provided in Aboriginal

and Torres Strait Islander early childhood education settings for children with/at risk of otitis media and associated developmental impacts. The research questions were: (1) how do parents and educators perceive the allied health student-delivered services in relation to accessible service provision, and (2) what elements do they perceive make allied health student-delivered services accessible.

II METHOD

A *Ethics approval*

Ethical clearance was obtained from the ethics review committee of Children's Health Queensland, The University of Queensland and Griffith University (reference number HREC/15/QRCH/31; AHS/39/15/HREC; #2015000906). Informed written consent was obtained from all participants.

B *Study design*

This study employed a qualitative description methodology (Sandelowski, 2000), with semi-structured interviews and focus groups conducted to gain in-depth perceptions and experiences of the participants.

C *Study setting*

This study was conducted in two early childhood education programs, where some allied health services had historically been provided by the hearing health service, which aims to reduce the rates and impacts of otitis media and conductive hearing loss for Aboriginal and Torres Strait Islander children. To assist in meeting this aim, a workforce development approach was employed, including the establishment of an interprofessional allied health student placement process involving speech pathology (SP) and occupational therapy (OT) students.

Two metropolitan early childhood education programs in Queensland, subsequently referred to as 'Preschool A' and 'Preschool B', were selected as the sites for the study. Each of these early childhood education programs enrolled a high percentage of Aboriginal and Torres Strait Islander children. The two preschools offered different services: Preschool B operated two classrooms, while Preschool A operated one, along with community support services. The children attending were aged between three - five years and there were approximately 20 children and two early childhood educators per classroom. Both preschools had previously hosted hearing health service student-led allied health student placements. Services were not delivered when students were not on placement.

D *Service delivery*

Eleven SP and OT students and five clinical educators worked in six teams (three interprofessional [SP/OT], three SP only) at two preschools across three university semesters, with one student team at each early childhood program per semester, totalling six student placement periods. Eight of the students were in the second year of their graduate entry masters degree and three students were in the third or fourth year of their undergraduate degree. Placements were typically one - two days per week for a period of 10-12 weeks and aligned with a population health framework. Whole-of-class programs were developed and delivered by the students following comprehensive classroom observations at commencement of the placement, and ongoing consultation with early childhood educators. The latter typically occurred as a regular pre-session check-in and post-session consultation, to access feedback and revisit current priorities. Programs addressed broad priorities identified by the early childhood educators, such as improving child and parent awareness and prevention of otitis media through customised nose-blowing programs, and also addressed areas of child development impacted by otitis media, such as auditory processing skills, attention, behaviour, speech and language (Williams & Jacobs,

2009). Individual support was also provided by speech pathology students for children identified with communication difficulties by early childhood educators and parents. This included observations, dynamic communication assessment and intervention within the preschool context, collaborative identification of appropriate home strategies, and assistance with referral to local community speech pathology services as required. Students were supported to develop relationships with early childhood education program staff and school community by engaging in Preschool-led family activities, participating in targeted activities like the preschool 'bus run' (where children were transported to/ from preschool) and regularly sharing information and resources with families. Further information regarding the service is reported elsewhere (Sargison et al., 2020).

Student learning was supported by a comprehensive orientation program and within-placement tutorials focussed on key practice topics, including otitis media management, contextualized and responsive assessment and intervention, population-health, family-centred and interprofessional practice. Students' clinical educators modelled family-centred practice and working in partnership with parents and early childhood educators. This involved consulting the parents and educators regarding their concerns and priorities for the children, referencing these priorities in ongoing conversations, and ensuring responsive strategies were incorporated into student-delivered programs. Each week clinical educators facilitated student team reflections, provided individual supervision, and encouraged individual written reflections. Students reflected on their: development of responsive child/family/community-centred care, experience of practising within a population health framework, and discipline specific delivery of clinical services.

E *Participants*

There were two groups of participants, early childhood educators and parents across both Preschools. All early childhood educators involved in a student placement during the study period were invited, and thirteen were available to participate. Early childhood educator participants included classroom teachers, co-educators, administrators, and community support staff. Their demographic information is listed in Table 1. Eight early childhood educators were of Aboriginal and/or Torres Strait Islander origin, five of whom reported degree or diploma qualifications, while three had vocational qualifications.

Nine parents of children who attended the early childhood education programs and received SP or OT services during the study period also participated. The children were all of Aboriginal and/or Torres Strait Islander origin. Parents were invited to participate using an information flyer shared with them by early childhood educators. Those who were interested and available at the time attended. A proportion of parents also identified as being of Aboriginal and/or Torres Strait Islander origin. Three parents had previous experience with SPs, one with both SP and OT, while five had limited or no previous experience with either profession. Student and clinical educator perspectives of the placements were also sought, and these findings are reported elsewhere (Sargison et al., 2020).

Table 1
Early Childhood Educator demographic information

Participant demographic categories	Number of Educators
Qualification: degree or diploma	8
Qualification: vocational	5
Years of employment at early childhood education program: <2 years	6
Years of employment at early childhood education program: 2-5 years	2
Years of employment at early childhood education program: 6-10 years	3
Years of employment at early childhood education program: 10+ years	2
Identify as being of Aboriginal &/or Torres Strait Islander origin	8

F *Data Collection*

Data were collected over the six student placement periods, each of which was 10-12 weeks. Early childhood educators and parents participated in either a focus group or individual interview following completion of each student placement, with allocation determined by their availability and preferences. Focus groups and interviews were conducted by two members of the research team. Both were from the hearing health service, and one identified as being of Aboriginal and Torres Strait Islander origin. The interviewers had established relationships with Preschool A and B but were not involved in delivery of the services or the student placements. These relationships were regarded as significant in increasing the likelihood that participants would feel comfortable to share their experiences and perceptions. Focus groups and interviews were conducted in a yarning style (Brewer et al., 2019) to enable rich data to be gained through a comfortable conversation with participants.

Participants attended either a focus group or an individual face-to-face or phone interview. All face-to-face focus groups and interviews were conducted at the Preschools. Some participants engaged in interviews or focus groups on two or three occasions, having been involved in the early childhood program over two or three placement periods. Their recurrent inclusion enabled data collection as the placement process evolved across the placement periods. Information regarding participant engagement is provided in Table 2. As an acknowledgement of their participation, parent participants were offered a 'Kid's Preschool pack', containing activities to share with their child.

Table 2
Participant engagement in data collection across three cycles

Number of participants	Number attending a face to face interview	Number attending a phone interview	Number of attendances at a focus group	Number of cycles participation occurred
Early childhood educators = 13 (5 PreA, 8 PreB)	1	0	18 (8 attended once, 2 attended twice, 2 attended 3 times)	3
Parents = 9 (4 PreA, 5 PreB)	0	3	8 (6 attended once, 1 attended twice)	3

Each focus group was 16-36 minutes in duration, and individual interviews were 14-38 minutes in duration. Participants were asked questions which reflected the study aims to determine their perceptions of the student services provided and the elements that made allied health services accessible. Specifically, participants were asked about the effectiveness of the service in meeting their needs, and for recommendations related to: students' collaborative practice with early childhood educators, family-centred practice, whole-of-class programs, and knowledge and skills they gained as a result of the student placement and/or services delivered.

Focus groups and interviews were audio-recorded and transcribed verbatim. Low inference summaries of the transcripts were returned to participants for member checking (Creswell, 2014). Summarised content was confirmed by available early childhood educator participants, and no comments were provided by parent participants.

G *Data Analysis*

Transcripts were inductively analysed to produce a descriptive qualitative analysis (Stanley, 2015) by an independent research consultant. Two phases of analysis occurred. In the first phase, data were analysed separately for each group of participants using the same process of reading the transcripts and then coding by hand and reorganising the data so that answers to similar questions and emerging themes were collated together. In the second phase of analysis, the coded data for each group were combined and further analysed and qualitatively reduced by

integrating codes into broader categories. Categories were then combined into themes with a clear focus distilled for each. During both the first and second phases of data analysis, findings were cross-checked with all members of the research team.

III RESULTS

Two major themes emerged from the data relating to parents' and early childhood educators' perspectives on the allied health student-delivered services. All names referred to in quotations are pseudonyms. Quotations are attributed as follows: Parent 2, Preschool A = Parent2A.

A *Effectiveness of the student placements*

Overall, the allied health student placements were perceived by the parents and early childhood educators as helpful and fitting in with the early childhood education program and community. Within this theme, two categories were identified: effectiveness of the student placements from (1) the parent perspective and (2) the early childhood educators' perspective.

Parents' perspectives on the effectiveness of the student placements.

Parents reported a positive impression of the students and the additional services they provided that built on the daily early childhood education program. One parent noted that the students fitted in "easily … I'm popping in and out a lot, and the kids would sit down and, you know, talk with [the students] … I saw [the students] sit with the teachers and get involved" (Parent1B). One parent expressed that the students' involvement helped reassure them that all was well with their child. "I love it. Like I love what [the student placement] has done for my son, I'm not so worried anymore about sending him to school" (Parent5B).

Parents identified several benefits of the student placement program. They perceived that the whole-of-class programs promoted school readiness, as exemplified in one parent's comment: "A lot of kids start school not ready … so having a program like this that helps them get ready for school is awesome" (Parent3B). Other comments related to the acquisition of additional important skills during the student placements: "Mason knows how to blow his nose. … so they must be doing something here for him to have picked it up as confident as he is now." (Parent4B)

The parents of the children who received individual therapy greatly valued the students' assistance. Parent4A described how the allied health students' support enabled her child to more fully participate in the early childhood education program routine:

> … I'm really happy that he has the time with the students and lets them help him through "the ways" [program] with the kindy [early childhood education program]. He's talking more, he's putting more words in a sentence…he's following more instructions now than before he started the kindy [early childhood education program].

Early childhood educators' perspectives on the effectiveness of the student placements.

The early childhood educators reported that the students' work was "quality" (Educator1B) and that they engaged well with the children. They identified that the students "fitted in" well, due partly to the education and support provided by the hearing health clinical educators. "I think with Kylie's [hearing health SP] support behind it yeah, just that encouragement from her … what we do within the classroom, she gives that orientation …" (Educator2A).

The early childhood educators also praised the students' flexibility: "no issues if we had functions … [or if something] was 'sprung on us' at the last minute, they just said 'we can work around that'. Didn't faze them, which was great" (Educator2A). They appreciated that the students' whole-of-class programs built upon the early childhood educators' work with the children.

> I think they fit in really, really well, with the kids and families. And what they did was, they just like built on the program I already had, so to reinforce that learning which was great because it was supporting my programs. (Educator2A)

The early childhood educators reported that the student placement allowed access to services and "adds a layer that otherwise we wouldn't get from our places or that the parents would have to go outsource and that potentially in this [local community] area that wouldn't happen very often" (Educator1B). The placements also provided specialised knowledge for individual children who required it. "And I suppose from a Speechie/OT point too, it was good to get that specialised knowledge about those types of children that were needing that assistance" (Educator1B). Educators also believed that parents appreciated the students' advice about where they could go to access further assistance for their children: "I think like Tyson's mum was saying it was good that she had one on one with the [students] because they were able to give her that help now and after [refer on for further assistance]" (Educator2A).

B *Developing responsive child/family/community-centred care*

Within this theme, two categories were identified: (1) building relationships; and (2) power sharing and collaboration. Overall, the early childhood educators considered that the students engaged well in listening, observing, reflecting, and learning about the Aboriginal and Torres Strait Islander early childhood program community context and how to collaborate in child/family/community-centred ways. The impact of this learning on the students' practice was summed up by one early childhood educator:

> And [it's just about] what you do and how you deal with that and how you talk to and treat families. How you have that respect for them is an important thing and I believe that that's something that the students have been able to learn. (Educator1A)

Building relationships.

Parents emphasised the need for students to take time to connect and engage in order to gradually build relationships with the children. They valued that students took time to introduce themselves and greet parents. "They made sure that … if I was in then they would introduce themselves and say 'hello'" (Parent1B). Early childhood educators saw the value of students taking a gentle and friendly approach to establish connections with the children. Early childhood educators suggested that students make contact with families as early as possible in their placements to engage them in the intervention: "Parents get involved then if you've got connection … Because they've met them, they're approachable and its easy access for the families … Yeah, the sooner the better" (Educator3A).

On some of the placements, the students joined the bus run that collected and returned children to/from the program. This was seen as a positive action from the perspective of both early childhood educators and parents. The early childhood educators considered it a good opportunity for the students to learn more about the families' contexts and introduce themselves to parents who did not regularly visit the preschool. One parent commented: "If we can't come in at least we can meet them on the bus … at least we know … the names and [have] met them before" (Parent3A).

Early childhood educators reported that pamphlets promoting the student-run activities in the early childhood program were sent home to increase parental awareness. Some of the early childhood educators reported on the benefits of online platforms such as Storypark and Facebook to alert parents to the presence of the students and post stories and photos about the students' interaction with the children. "Putting a face to the name helps too. Like when they've seen photos of them interacting with their children it makes a difference" (Educator1B). Early childhood educators also told families about the benefits of the student placement: "… so that the parents could see … how it had benefited them from a teacher's perspective" (Educator1B).

Parents noted that the students used a variety of means to sustain communication/engagement with the families and provide updates across their placements: "Well they would always be ringing me … and letting me know how Tyson went, how he's going with the kindy [early childhood education program] and … telling me all the feedback" (Parent4A).

Despite these efforts, there appeared to be variable awareness among parents about the student placements – one parent perceived that "some parents just didn't realise who they were …" (Parent4B). Parents and early childhood educators expressed a desire for earlier and more ongoing information exchange and education, using face-to-face, written and online modalities. Parents suggested several ways in which this could occur, including via a morning tea meeting or other regular early childhood education program events.

The early childhood educators perceived that the students' investment in building relationships and getting to know the children enabled a thorough understanding of them and their context, which enabled more holistic and flexible service provision.

> I think that staying with the child, or children, and talking to them in their own environment…has more benefit to the child, the families and even to the students because I think it makes it more holistically how they plan for the next week's activities, what needs they see and … I just think the reality of the children being relaxed in their own environment is different to coming to a clinical room in another building. (Educator1A)

Hence, learning about the children and their participation in preschool activities enabled development of programs that were strengths-based and customised, but also flexible and able to be adapted if the routine changed.

Power sharing and collaboration

The early childhood educators felt that, when the students collaborated with them, the children benefitted greatly, and by working together, both their own and the students' practice were considerably enhanced.

> … we worked as a team … So having the student working alongside the teacher together on something meant that the children were that much more interested and that much more comfortable … And the children loved it. (Educator2B)

Early childhood educators noted that students consulted about, reflected on, and jointly planned their service delivery with them, adapting their approach following early childhood educator feedback. "I did notice they made an effort through reflecting, like before they started and at the end. And they reflected with us as well as with each other, and that influenced how they would work" (Educator2B). Early childhood educators reported explicitly teaching students about the context, but they also felt that the relationship was reciprocal as students contributed resources and skills. "We are teaching these young ones [allied health students] about Aboriginal culture. We are teaching them parts of different language skills; we're teaching them our way of life sort of thing" (Educator3A). "… I think these parents then are valuing the information that your people are coming with. So then it's not seen as a one-sided relationship" (Educator3A).

Learning about the classroom routine and early childhood educators' and parents' priorities at the beginning of the placement, and negotiation regarding what student service delivery would look like, was seen to support the children's learning and enable students, early childhood educators and parents to work together. "I think because we had a negotiation and we had discussions beforehand and observation days, I think we were able to work quite well together" (Educator1A). The importance of discussion was also highlighted by Parent5B – "Yeah I did get a call from Lainey asking what kind of improvements I would like for Jordan".

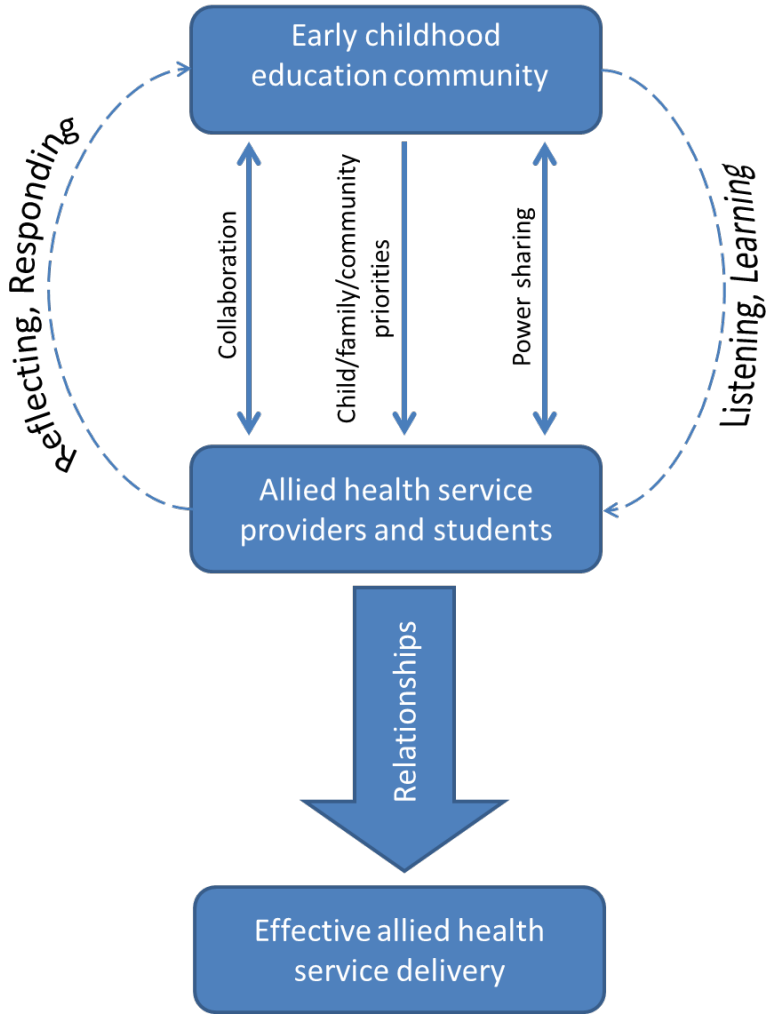
IV DISCUSSION

This study explored parents' and early childhood educators' perceptions of interprofessional allied health services delivered through a student placement process in Aboriginal and Torres Strait Islander early childhood education settings for children with/at risk of otitis media and associated developmental impacts. Overall, the services delivered by the students were regarded as effective by both early childhood educators and parents. The outcomes of this research align with those reported in other studies, highlighting factors that support responsive child/family/community-centred service delivery and enhance accessibility for Aboriginal and Torres Strait Islander children and families (IAHA, 2015) in an early years education context. In

particular, features of accessible service delivery in the current study have been reported by other authors. Specifically, the interprofessional nature of the allied health student services (Nelson et al., 2017), their delivery in an Aboriginal and Torres Strait Islander educational setting (DiGiacomo et al., 2013; Nelson & Allison, 2004), and attention to child/family/community priorities (DiGiacomo et al., 2013; McCalman et al., 2017) were reported as contributing to parent and early childhood educator perceptions of effectiveness.

To promote improved early childhood outcomes and increase accessibility of evidence-based and effective allied health services (Nelson et al., 2017), collaborating with early childhood programs to trial and evaluate new approaches is essential. Themes identified in this study have enabled conceptualisation of an allied health practice model (Figure 1) to illustrate the key elements involved in effective service provision in this early childhood education community context.

Figure 1
EarlyChildhood Education Community-Centred Model for Allied Health Service Delivery



The Early Childhood Education Community-Centred Model for allied health service delivery for Aboriginal and Torres Strait Islander children highlights the importance of a responsive child/family/community-centred approach. In this model, "community" refers to service recipients and co-design collaborators within the early education setting: in this study, parents and early childhood educators. The delivery of responsive services is based on a complex interplay of learning and respectful communication that occurs between the early childhood education community and students/service providers. Hence, the early childhood education community priorities provide direction for service delivery through which: (1) *collaboration* and *power sharing*

is enabled, and (2) service providers *listen* to community needs, *learn* about their unique contexts, *reflect* and then *respond.* This in turn supports the development of (3) *relationships* based on trust and respect and is the foundation from which (4*) effective service delivery* can occur. This model provides a means by which cultural responsiveness, a key element underpinning accessibility of allied health services, may be enabled. Elements of the model will provide a framework for discussion of the outcomes of this study.

A *Collaboration and power sharing*

The early childhood educators noted the important contribution of power sharing and collaboration to effective delivery of a co-created program. This was enabled through observation of the classroom routine, consultation, negotiation and ongoing adaptation of student service delivery. Through explicit teaching about the context, the existing program and the children's needs, the early childhood education community provided direction for the allied health service delivery. Previous research has reported that when the delivery of services is flexibly managed according to recipients' needs, there is a shift in the distribution of power towards service consumers (Gerlach et al., 2017). The centrality of families as important partners within the early childhood setting has been acknowledged (Hedges & Lee, 2010; Singh & Zhang, 2018) and attention to the power differential between a community and service providers is critical for true collaboration (Jennings et al., 2018; Thackrah & Thompson, 2013).

B *Service providers listen to community needs, learn about their unique contexts, reflect and then respond.*

Both parents and early childhood educators referred to the importance of allied health student service providers taking the time to connect early and regularly to engage and sustain communication with families. Parents recommended that communication occur in a range of ways such as information sessions and face-to-face meetings. Varied communication methods have also been recommended to address barriers to accessing disability services (DiGiacomo et al., 2013). Appropriate, respectful, reciprocal communication has previously been identified as essential for establishing relationships with Aboriginal and Torres Strait Islander community members (DiGiacomo et al., 2013; Jennings et al., 2018).

Early childhood educators recognised their contribution as a learning resource for the students, along with the two-way learning that occurred between the students and the early childhood education community. They identified that the students consulted, reflected, jointly planned, sought their perspectives on priorities, and adapted their approach following feedback. In these ways, early childhood educators considered that the students engaged in learning about the Aboriginal and Torres Strait Islander early childhood program community context and child/family/community-centred care to assist them in responding to families in empathetic and respectful ways. The importance of service providers demonstrating understanding and respect for Aboriginal and Torres Strait Islander cultural differences and subsequently adapting service provision has been previously reported (McBain-Rigg & Veitch, 2011).

C *Relationships based on trust and respect*

Respectful relationships between student service providers and the parents and early childhood educators were considered fundamental to the service provision. Building relationships takes an investment of time and is the responsibility of all stakeholders (Grace & Trudgett, 2012; Singh & Zhang, 2018). Key placement outcomes for the students in this study were building respectful relationships with the early education community and learning to be truly child/family/community-centred. These outcomes represented an important attainment for the community in terms of developing a suitably trained allied health workforce.

D *Effective allied health service delivery*

This study suggests that when respectful and trusting relationships are established in the early childhood education context, effective service delivery can occur. Both parents and early childhood educators shared their perceptions regarding the benefits of the allied health services, including school readiness and increased participation in the early childhood program. This perceived effectiveness was linked to the way the student team 'fitted in' to the early childhood education program. These findings echo those of other studies suggesting that community members' views of health service effectiveness are inherently linked with trusting service provider and client relationships (Graham & Byrne, 2017; McBain-Rigg & Veitch, 2011). Early childhood educators valued the quality of the students' work, their flexibility and the support provided by clinical educators. The value of providing flexible service delivery approaches to support access for Aboriginal and Torres Strait Islander families is well documented (Graham & Byrne, 2017; Nelson & Allison, 2007). Both parents and educators also referred to the importance of student placements being promoted in a variety of ways to optimise engagement. Previous studies have also promoted the need to intentionally increase community awareness of availability and benefits of services for Aboriginal and Torres Strait Islander families to optimise engagement and effectiveness (DiGiacomo et al., 2013; Graham & Byrne, 2017).

E *Limitations and future directions*

This study was conducted in conjunction with two Aboriginal and Torres Strait Islander early childhood education programs in one urban context. Further research is required to determine the effectiveness of this practice model and service delivery approach in more early childhood education programs, and in other geographical locations. Furthermore, it is important to investigate the accessibility of the Early Childhood Education Community-Centred Model compared with other community-centred developmental and educational approaches. Finally, it was beyond the scope of this study to investigate outcomes for individual clients following participation in the student-delivered service. As there is little current evidence to demonstrate health outcomes as a result of health professional practice with Aboriginal and Torres Strait Islander people (Francis-Cracknell et al., 2019), this is an important area for future research.

V CONCLUSION

This study has described a child, family and community-centred interprofessional student-led approach for delivery of allied health services in Aboriginal and Torres Strait Islander early childhood education settings, for children with/at risk of otitis media and associated developmental impacts. The outcomes have informed an Early Childhood Education Community-Centred Model for Allied Health Service Delivery, which supports early childhood education community priorities, encompasses collaboration and power sharing, and involves service providers listening, learning, reflecting and responding. This approach supported the development of respectful, trusting relationships which were perceived to enable effective service delivery.

This paper contributes to the existing body of literature regarding effective and accessible allied health service delivery approaches for young Aboriginal and Torres Strait Islander children and their families. It highlights the potential for allied health students to be agents for the provision of effective services and to facilitate increased accessibility of responsive child/family/community-centred services. Further research is recommended to explore possible applications and outcomes of the Early Childhood Education Community-Centred Model for Allied Health Service Delivery and its potential to guide future partnerships with communities in building a responsive, child/family/community-centred workforce.

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Appendix A. Focus Group Interview Questions

Questions for Parents

- Did your kids yarn about the students or Uni friends at home?

  Prompt questions:

  - Did your child bring anything home from the Uni friends? What did you think of it?
  - Have you heard other parents talking about the Uni friends?

- If you met the Uni friends, how did you feel about the way they were working here in the kindy?

  Prompt questions:

  - How do you think the Uni friends were fitting in with the kindy?
  - How do you think the Uni friends went getting to know and understand the kindy families and community?
  - What sorts of things did they do? What did you think about that?
  - Tell me what you thought about the Uni friends working with your kids.
  - Did anything change at home because of the Uni friends?
  - Was it what you expected?

- How do you think the Uni friends could work better within the kindy?
  - Tell me your thoughts about what else the Uni friends could do at kindy.
  - How do you think this could happen?

- Just to finish up now, is there anything else that you would like to share that hasn't come up yet?

Questions for Educators

- Did the kids yarn about the students or Uni friends on the days that they were not at the Kindy?

  Prompt questions:

  - Did the kids take anything home from the Uni friends? What did you think of it?
  - Have you heard parents talking about the Uni friends?

- When you worked with the Uni friends, how did you feel about the way they were working here in the kindy?

  Prompt questions:

  - How do you think the Uni friends were fitting in with the kindy?
  - How do you think the Uni friends went getting to know and understand the kindy families and community?
  - What sorts of things did they do? What did you think about that?
  - Tell me what you thought about the Uni friends working with the kids?
  - Did anything change at Kindy because of the Uni friends?
  - Was it what you expected?

- How do you think the Uni friends could work better with in the kindy?
  - Tell me your thoughts about what else the Uni friends could do at kindy.
  - How do you think this could happen?

- Just to finish up now, is there anything else that you would like to share that hasn't come up yet?