Footprints in Time: The Longitudinal Study of Indigenous Children (LSIC) Early Childhood Report

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* These authors shared the leadership of this Report.

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Aboriginal and Torres Strait Islander peoples are advised that this publication may include photographs of deceased persons.

Footprints in Time:

The Longitudinal Study of Indigenous Children (LSIC)

Early Childhood Report

2025

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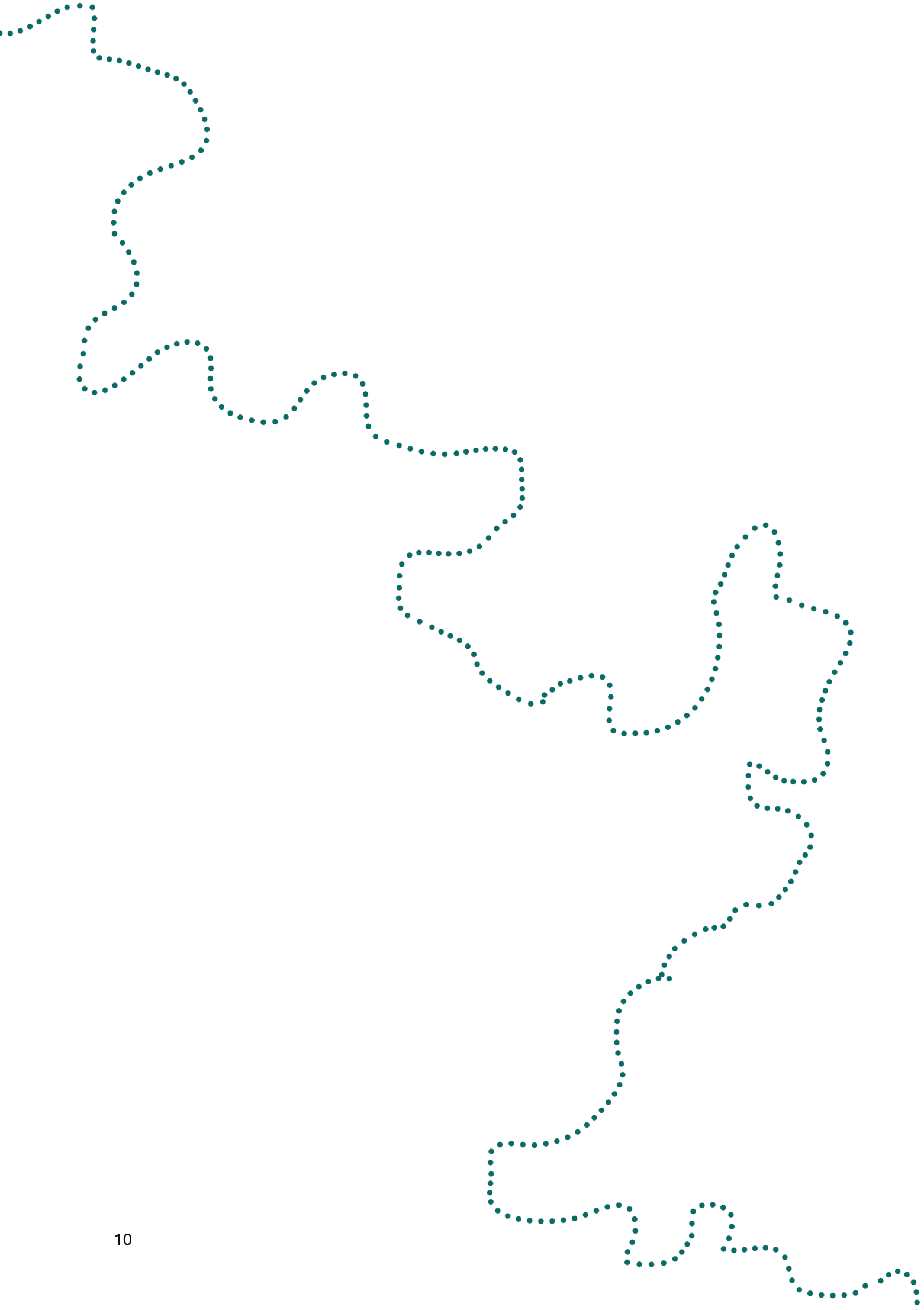
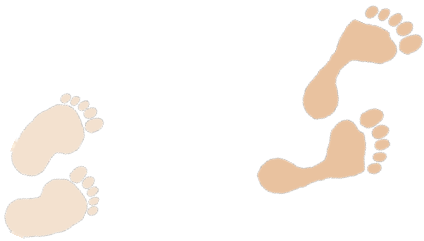


Executive Summary

Introduction

This Executive Summary of the LSIC Early Childhood Report shares what we learned about how Aboriginal and Torres Strait Islander children grow up strong. It includes stories from families and community members who took part. Knowing more about what helps children from their early years right through to their teenage years means communities can feel stronger, and services can be better planned and supported. These are the main things we found:

- Where children grow up (geographic location) shapes their developmental experiences, during early childhood and the years beyond.
- Early connections to culture, Country, language, and feeling proud and strong in identity, and belonging to Mob are important for kids' wellbeing as they get older.
- When parents feel good and have support, their kids grow up stronger.
- Going to pre-school or playgroup, and time spent interacting with family (e.g., reading, playing, and singing together) helps children learn important early skills like talking (language), writing and drawing, and paying attention. These early skills help children do better in school as they grow.
- Good relationships with teachers and feeling confident about classroom learning in the early school years helps kids stay connected and interested in school, right through primary school and into high school.
- Having safe, early access to technology and the internet at home helps kids feel confident and skilled with technology as they get older.



Many of these learnings are part of "Ty's" own story of growing up strong, shared by Ty and his family over the years through the Footprints in Time (LSIC) study.

'Ty' is an Aboriginal and Torres Strait Islander boy born to a mother and father who are both Aboriginal and Torres Strait Islander people, who live with Ty and their other children. From when Ty's a baby, his mum knows that to grow up strong Ty will need to not just understand his culture but also use it. Ty's mother is proud of both her Aboriginal and Torres Strait Islander cultures, especially resilience in maintaining cultural protocols. Before Ty goes to school, he learns about culture at home, in his community, and at daycare. His knowledge of culture comes through dancing, singing, attending community functions, and speaking language every day. With culture as a basis for growing up strong, by the time he's a teenager, Ty's mother knows he has all the mentors and family supports that he needs to make the right choices about his future. Still speaking language every day, Ty knows he'll continue to grow up strong by being educated, having his family's support, being respectful, getting a good job, and knowing culture.

About *Footprints in Time:* The Longitudinal Study of Indigenous Children (LSIC)

This study follows the development of more than 1,700 Aboriginal and Torres Strait Islander children and their families living in cities, regional towns, and remote communities across Australia. Since 2008, children, families, and teachers have shared their stories and experiences each year as part of the Footprints in Time (LSIC) study.

The information used in this LSIC Early Childhood Report (the Report) was collected between 2008 and 2021.

To help tell the story, we grouped the information across these 14 years into four key stages of children's development:

- **Pre-school**: The years before children started their first year of formal school, from the child's birth until 5 years of age.
- **Early school years**: The initial two years of primary school (Foundation and Year 1), when children were 5-to-7-years-old.
- **Middle childhood:** The final two years of primary school (Years 5 and 6), when children were 10-to-12-years-old.

Adolescence: Three years during secondary school (Years 8, 9, and 10), when adolescents were 14-to-16-years-old.

Children's experiences were different depending on where they lived

The Report shows that the experiences of Aboriginal and Torres Strait Islander children and families were often shaped by where they lived.

Some experiences were more common for children living in remote and very remote areas, like those illustrated in Figure 1. Children in these more remote areas were more likely to take part in cultural activities, stay connected to Country, speak an Indigenous language, and feel strong in their identity and connection to Mob.

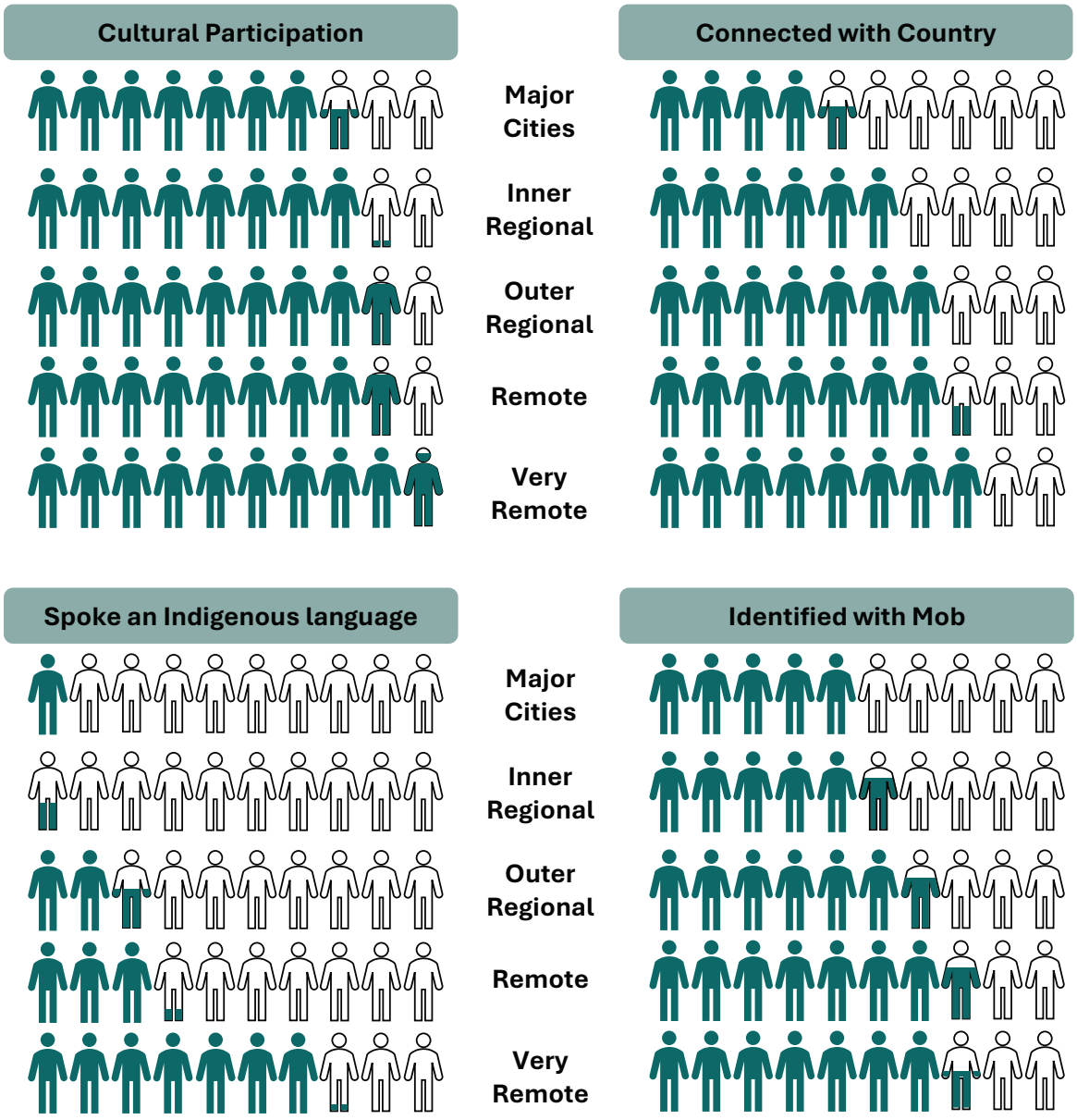


Figure 1. *Proportions of children whose parents said they had various cultural connections during early childhood, shown by how remote their family's home was (each coloured figure represents 10%).*

Other things were more common for children living in major cities and inner regional areas, like going to playgroup before school and attending pre-school in the year before starting school (see Figure 2).

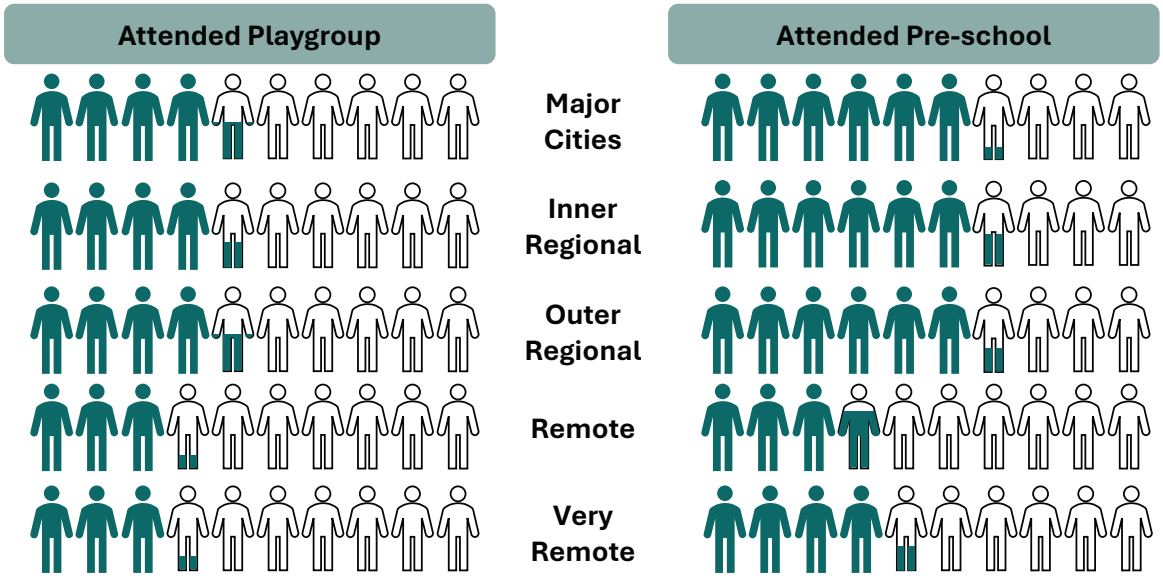


Figure 2. *Proportion of children who went to playgroup before school, and to pre-school in the year before school, depending on how remote their location was (each coloured figure represents 10%).*

Why does this matter?

- These are important differences between regions for communities, policy makers, and service providers to understand.
- We need to recognise that each place is different, and may need particular approaches to help Aboriginal and Torres Strait Islander children grow up strong.

Early childhood cultural connections matter for later wellbeing

Throughout the Report, we show that early cultural experiences – like connection to Country and speaking an Indigenous language – are linked with stronger social and emotional wellbeing as children grow into middle childhood and adolescence.

What does stronger social-emotional wellbeing look like?

We used an adapted model (Dinku et al., in press) of social-emotional wellbeing (Dudgeon et al., 2025; Gee et al., 2014; Figure 3) to understand how children:

- **Connect to their body** – having healthy habits, good physical health, and taking care of the body.
- **Connect to their mind and emotions** – feeling safe, mentally well, and having a positive outlook.
- **Connect to their family and kin** – having strong relationships with family and loved ones.
- **Connect to their community** – feeling a sense of safety and belonging in the community.
- **Connect to their culture, Country, Ancestors, and spirit** – having strong ties to culture, identity, and feeling proud to be an Aboriginal and/or Torres Strait Islander person.

- Where children's data showed high scores across all five of these areas, we considered them to have **strong social-emotional wellbeing**.
- Where data showed high scores on two or fewer of these areas, we considered children to have **lower overall social-emotional wellbeing**.

Figure 3. *Social and Emotional Well-Being model (source: Dudgeon et al., 2023).*

Growing up strong through culture

'Allira' is a Torres Strait Islander girl with a non-Indigenous mother and a Torres Strait Islander father, who live together with their children in a large city in Australia. When she's young, her mum knows Allira will grow up strong if she understands her cultural heritage and can contribute to her Torres Strait Islander community. By the time she's four years old, Allira's dad is taking her to shows and exhibits to teach her about Aboriginal and Torres Strait Islander cultures.

Before starting school, 3 out of 4 children (76%) had been to an Aboriginal or Torres Strait Islander cultural event, about half (54%) had learned cultural arts, painting, or dance, and half (51%) had taken part in cultural practices like fishing or hunting.

More than 88% of children in regional and remote areas took part in these cultural activities, compared to 76% of children living in cities.

LSIC children who had these early cultural experiences were more likely to have strong social and emotional wellbeing later on, during middle childhood and adolescence.

Why does this matter?

- For children who do not have regular access to family members who can share traditional knowledge and practices, it's important to create more opportunities for cultural connection – like cultural events run by community groups and early learning centres.
- These opportunities may need to be adapted for children living in cities, where fewer kids are taking part in cultural activities.

Growing up strong through connection to country

'Layla' is an Aboriginal girl born to an Aboriginal mother, who's a single parent of three children living in a remote part of Australia. From the time Layla's a baby, her mother knows that Aboriginal culture will help her grow up strong by knowing her identity. Although their Country isn't near where they live, Layla's visited by the time she's 9 months old, creating a link to her people and Country.

Overall, 2 out of 3 parents (64%) said their child had a connection to Country in the years before starting school. This depended on where families lived. Children in the most remote areas had the highest connection levels (80%), while children in major cities were the least likely to be connected to Country (46%).

When we looked at this over time, we saw that most LSIC children connected to Country at some stage during their childhood or teen years.

Having a connection to Country early in life was linked to stronger social and emotional wellbeing as children grew into middle childhood and adolescence.

Why does this matter?

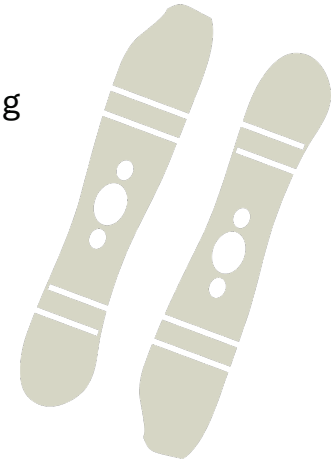
- While most children experience some connection to Country from their early years, all children and families can benefit from more chances to build and keep those connections strong.
- This can happen through Indigenous-created resources – like books, videos, and performances – that share stories of Country and culture
- Initiatives to foster connection to Country must consider the locations of children and families. Innovative approaches may be necessary in places such as major cities, where connections to Country are not as likely.

Growing up strong through language

'Tegan' is born on Country, a place far away from any of the big cities. The daughter of an Aboriginal mother and father, Tegan has four older brothers and sisters. Before she starts school, Tegan's is surrounded by her Mob's language. She uses it for yarning, singing, dancing, drawing, and playing. Tegan's mum knows that language and other aspects of their culture will help Tegan grow up strong. Over time, the family grows and moves, but their use of language remains constant. By the time she's sixteen years old, Tegan's still speaking her Mob's language.

One in 4 LSIC children (27%) spoke an Indigenous language before starting school, and this rose to almost one in 3 (30%) by the first two years of primary school.

Where children lived made a big difference: less than 10% of children in major cities and inner regional areas spoke an Indigenous language, while over 70% of children in very remote areas did. When we compared children who spoke language to those who didn't, either before school or in their early school years, we found that children who spoke an Indigenous language:



- Had stronger social and emotional wellbeing during both middle childhood and adolescence.
- Maintained steady and strong wellbeing as they grew, from middle childhood through to their teen years.
- Felt a deeper connection to culture, Country, Ancestors, and spirit during middle childhood and adolescence.

Almost 60% of children who spoke an Indigenous language before school were still speaking it during middle childhood, but this dropped to 46% by adolescence.

This shows that adolescence is a key time to support Aboriginal and Torres Strait Islander young people to keep learning and speaking language, including through opportunities at school.

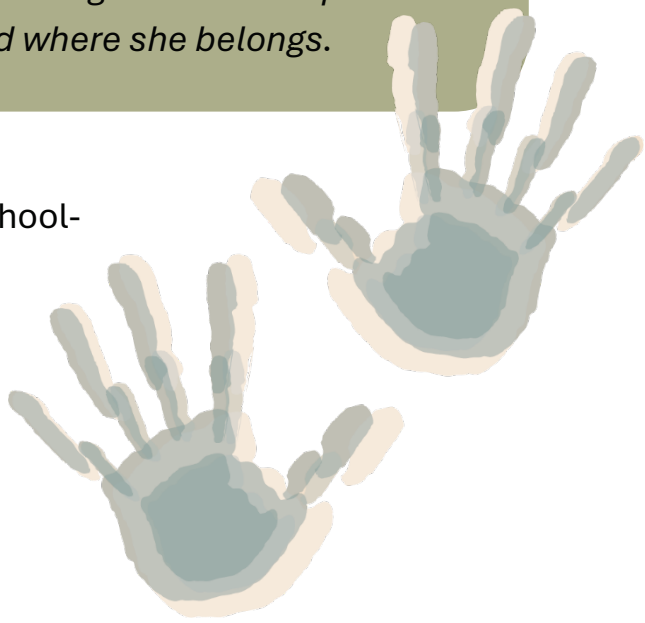
Why does this matter?

- The strong link between speaking an Indigenous language in early childhood and better social and emotional wellbeing later on highlights the importance of language revival, revitalisation, and keeping language strong.
- It also shows the value of including Indigenous language programs in early learning centres and schools across Australia.

Growing up strong through identity and belonging

'Mahalia' is an Aboriginal girl, born to an Aboriginal mother who's a single parent of two children living in a town not far from a big city. Mahalia's mum is proud to be Aboriginal and wants Mahalia to be too. She wants Mahalia to be confident in herself and know her Mob. By the time she's fourteen years old, Mahalia wants this too, knowing that growing up strong will involve making use of all the knowledge that's been passed to her, being proud of who she is and where she belongs.

Two in 3 LSIC parents (63%) said their preschool-aged child identified with at least one Mob (Nation or language group). This was most common for children living in remote areas (over 75%), and less common for those in inner regional areas (57%) and major cities (49%).



When we looked at children who identified with their Mob (or Mobs) before starting school, compared to those who didn't, we found they were more likely to have:

- Stronger social and emotional wellbeing during both middle childhood and adolescence.
- Stronger connection to culture, Country, Ancestors, and spirit as they grew into middle childhood and adolescence.

Why does this matter?

- Early childhood learning centres, schools, and community organisations have an important role to play in helping children feel safe and confident to share who they are as Aboriginal or Torres Strait Islander youth.
- Increasing opportunities for children to share and be proud of their Aboriginal and/or Torres Strait Islander identity within education should be a key priority.

Parent support and wellbeing makes a difference

'Logan' is an Aboriginal boy living with his Aboriginal father, non-Indigenous mother, and his siblings in a town not far from a big city. Before he starts school, Logan's mum recognises the importance of a strong sense of family and community in Aboriginal culture, which means Logan's part of a large network that'll support him to grow up strong. As he grows, his family connects Logan to Aboriginal culture. He spends time with his Aunties, who tell him stories, and he learns through painting and attending cultural events.

In their child's early years (before they started school), LSIC parents were asked if they had family or friends from whom they could seek advice about parenting. Half (47%) of parents said they had family or friends from whom they could seek advice before their child started school, while 53% said they did not have family or friends who could provide such support.

Children whose parents had family and friends from whom they could seek parenting advice during these early years were more likely to:

- Manage their emotions and learning well in the classroom during the early school years.
- Be more engaged in school during middle childhood.
- Achieve higher academic results in Year 5 and Year 9 National Assessment Program – Literacy and Numeracy (NAPLAN) testing.
- Have strong thinking and problem-solving skills (executive functioning) during adolescence.
- Show stronger overall social and emotional wellbeing during middle childhood.
- Be stronger in key wellbeing areas – including connection to mind and emotions, community, and culture, Country, Ancestors, and spirit – during middle childhood.

LSIC parents also reported on their levels of wellbeing during their child's

pre-school years, including their levels of resilience and distress. Most parents reported strong wellbeing, indicating high resilience and low distress.

Parents with stronger wellbeing were more likely to:

- Spend more time doing home learning activities with their children, like reading, playing, and singing.
- Feel more confident in their parenting.
- Show more warmth and care in their interactions with their children.
- Use less harsh discipline.

When parents had stronger wellbeing during their child's early years, it was linked to a range of positive outcomes for their child as they grew, including:

- Better overall health for children during pre-school, early school, and middle childhood.
- Stronger early learning skills before school, including understanding language and writing skills (using pencil and paper).
- Better reading comprehension and stronger attentional skills, managing emotions, and learning in the classroom during the early school years.
- Higher school engagement through middle childhood and into adolescence.
- Fewer social and emotional difficulties, and lower distress during middle childhood and adolescence.

Why does this matter?

- These findings show that stronger parental wellbeing and social support from family and friends impact children's learning and social-emotional outcomes, and how children grow and learn, including their thinking, learning, and social-emotional development.
- Giving families more access to culturally safe playgroups and parenting programs could help build stronger support networks for parents and lead to more positive outcomes in children's development.

Early childhood learning experiences matter for later school engagement

When LSIC parents were asked about their child's school engagement – like how well children managed their schoolwork, made friends, stayed organised, and enjoyed school – parents reported high levels of engagement in both middle childhood and adolescence.

We explored what early childhood experiences were linked to stronger engagement at school:

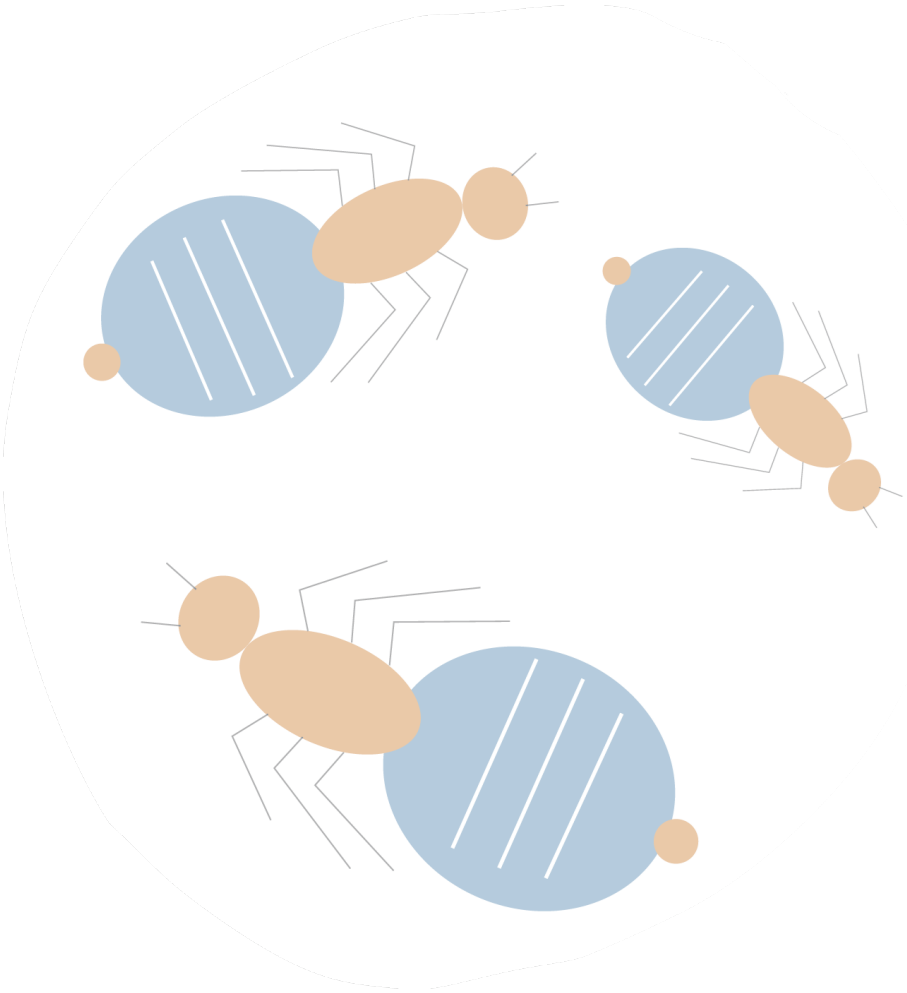
- Children who went to playgroup (community-based groups for children and parents prior to school) were more engaged with school in middle childhood than those who did not attend playgroup. Going to playgroup helped build self-regulation skills, which supported stronger engagement at school later on.
- Children who had a close relationship with their teacher in the early school years were more likely to be engaged in school during both middle childhood and adolescence.
- Compared to these children, children who had more conflict with their teacher in the early years were less engaged in school as they got older.

In those early school years, parents told us about their child's attentional

self-regulation (like staying focused on activities), and teachers described classroom self-regulation (like working independently and sticking with tasks). Children who showed strong self-regulation in the early years were more likely to stay engaged at school through middle childhood and into their teenage years.

Why does this matter?

- Overall, these findings show how important it is for children to have positive early learning experiences and a strong start, when they begin school.
- Learning how to manage emotions, focus, and build good relationships with teachers in the early years helps set kids up to stay engaged with school as they grow. These early experiences lay the groundwork for better learning and success later on, through middle childhood and into the teenage years.



Pathways to academic achievement and thinking skills

Figure 4 shows the pathways we identified between strong early childhood experiences and later learning outcomes. Positive early experiences helped build early skills and supported children's ability to focus and learn during the early school years. This, in turn, led to stronger academic results later on, including in Year 5 NAPLAN reading and numeracy.

We also found similar pathways linking early experiences and skills to the development of cognitive abilities in adolescence – known as executive functioning. This includes skills like being able to maintain attention, remember information, manage behaviour, being flexible, and planning ahead. These skills are key for later success in learning, employment, and wellbeing throughout life.

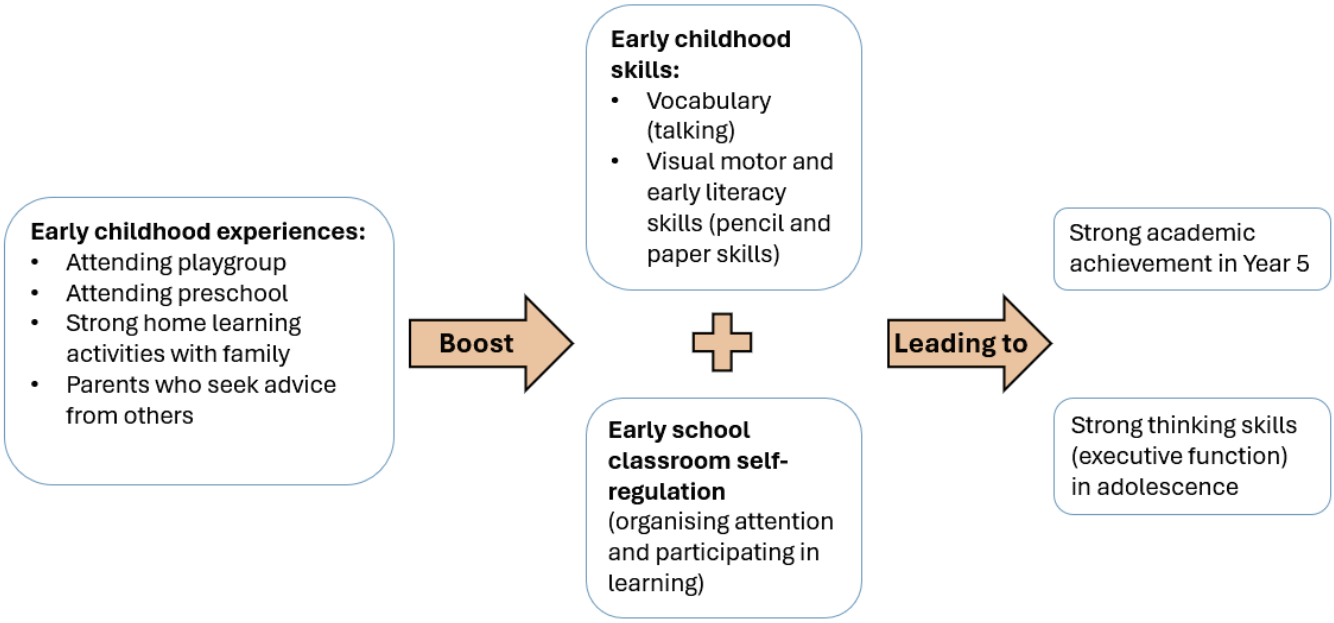


Figure 4. *Pathways from early experiences to strong later thinking skills and academic achievement.*

Why does this matter?

- Overall, our findings show that high-quality early childhood experiences help build key skills, like self-regulation, visual-motor abilities, and early literacy. These early skills are closely linked to how well children do in school later on, and also their development of thinking and problem-solving skills (executive functioning) during adolescence.
- Going to playgroups and formal pre-school programs plays an important role in supporting children's early brain development and learning.

Early childhood technology use

Indigenous digital inclusion means making sure Aboriginal and Torres Strait Islander communities have fair access to digital tools, internet services, and the skills needed to use them. Without this access, families may miss out on important social, education, and work opportunities in today's connected world. The Australian Government has taken steps in recent years to improve digital inclusion for Indigenous communities.

In this Report, we looked at three key areas of digital inclusion – access, affordability, and ability – for LSIC children. Here's what we found:

Digital access: In the early school years (based on 2011-2013 data), 37% of parents said their children used the internet at home.

Digital affordability: Home internet use was higher in major cities (56%) and much lower in very remote areas (9%), showing that where children lived made a big difference to digital access.

Digital ability:

- Children who used the internet at home had stronger early skills, including pencil and paper, and classroom self-regulation skills, and better reading comprehension.
- These children went on to have more confidence using technology in middle childhood and adolescence, felt safer online, and used mobile phones for more tasks.
- They also had higher executive functioning skills in adolescence compared to those who didn't use technology early on.

Why does this matter?

- Digital inclusion is now part of everyday life, from finding a job or booking a doctor's appointment, to accessing education, Centrelink, and Medicare services.
- Giving children safe and early access to technology helps build the skills they need to take part fully in today's world, and supports their learning, confidence, and development as they grow.

What does “grow up strong” mean to children?

The LSIC Early Childhood Report highlights ways to support the social and emotional wellbeing of Aboriginal and Torres Strait Islander children as they grow – from early childhood into their teenage years.

The poem that follows is woven from the voices of children who took part in LSIC during middle childhood and adolescence, sharing in their own words what has helped them grow up strong.

When you are older you are brave and smart.
Growing up mentally strong and get through any problem in life.
Having a well supported family, having good mates,
Being confident, knowing what to do and help people,

I think it means to be strong in life.

Being healthy and making good decisions,
Growing up healthy with a strong mind.
Good relationships. Confident, independent, and reliable.

Respect my Elders and culture,
Being kind hearted, helping and looking after people.
Getting a good education, keep growing strong.
Being resilient and persistent. Getting better at something.

You have learnt how to be a good person and be safe. Strong and brave.

Recommendations and policy alignment

EARLY CHILDHOOD EDUCATION AND CARE SERVICES

Recommendation	Alignment with Closing the Gap Strategy	Alignment with National Aboriginal and Torres Strait Islander Early Childhood Strategy
1. Celebrate Aboriginal and Torres Strait Islander children's identity and embed opportunities for cultural learning and engagement in cultural activities, such as arts and dance, and Indigenous language learning.	**Outcome 3:** Children are engaged in high quality, culturally appropriate early childhood education in their early years. **Outcome 15:** People maintain a distinctive cultural, spiritual, physical, and economic relationship with their land and waters. **Outcome 16:** Cultures and languages are strong, supported and flourishing.	**Goal 2.** Aboriginal and Torres Strait Islander children are supported to thrive in their early years. **Goal 3.** Aboriginal and Torres Strait Islander children are supported to establish and maintain strong connections to culture, Country and language.
2. Provide high quality early childhood education and care services that use evidence-based strategies to promote early self-regulation skills and build the foundation for learning and school success.	**Outcome 4:** Children thrive in their early years. Focussing on these early skills with have a direct impact on the associated target of children being developmentally on track in all five domains of the Australian Early Development Census.	**Goal 2.** Aboriginal and Torres Strait Islander children are supported to thrive in their early years.
3. Prioritise enriching children's oral language and literacy skills, visual-motor, and self-regulation skills to set them up for the best start in school.		

SCHOOLS AND EDUCATORS

Recommendation	Alignment with Closing the Gap Strategy	Alignment with National Aboriginal and Torres Strait Islander Early Childhood Strategy
4. From the early school years, focus on promoting positive student-teacher relationships and reducing student-teacher conflict, to build a strong foundation for students' engagement with and enjoyment of school.	**Outcome 5:** Students achieve their full learning potential. Setting the foundation for school engagement will have a direct impact on the associate target of increasing proportion of individuals achieving a Year 12 qualification.	**Goal 2.** Aboriginal and Torres Strait Islander children are supported to thrive in their early years.
5. Through co-design with Aboriginal and Torres Strait Islander communities, develop school-based initiatives for promoting identity and belonging in classrooms, and fostering positive cultural identity.	**Priority Reform 1:** Formal partnerships and shared decision-making. **Outcome 15:** People maintain a distinctive cultural, spiritual, physical, and economic relationship with their land and waters. **Outcome 16:** Cultures and languages are strong, supported and flourishing.	**Goal 3.** Aboriginal and Torres Strait Islander children are supported to establish and maintain strong connections to culture, Country and language. **Goal 5.** Aboriginal and Torres Strait Islander children, families and communities are active partners in building a better service system.

EDUCATION POLICY

Recommendation	Alignment with Closing the Gap Strategy	Alignment with National Aboriginal and Torres Strait Islander Early Childhood Strategy
6. Expand the Indigenous early childhood education, care, and school workforces, to further embed the adoption and teaching of Aboriginal and Torres Strait Islander cultural practices in education.	**Outcome 8:** Strong economic participation and development of people and their communities.	**Goal 3.** Aboriginal and Torres Strait Islander children are supported to establish and maintain strong connections to culture, Country and language.
7. Increase opportunities for access to Aboriginal and Torres Strait Islander language programs within Australian early childhood education and care services, primary and secondary schools.	**Outcome 16:** Cultures and languages are strong, supported and flourishing.	
8. Ensure all children across Australia have access to high quality pre-school programs in the year prior to starting formal schooling.	**Outcome 3:** Children are engaged in high quality, culturally appropriate early childhood education in their early years.	**Goal 2.** Aboriginal and Torres Strait Islander children are supported to thrive in their early years.

COMMUNITY RESOURCES

Recommendation	Alignment with Closing the Gap Strategy	Alignment with National Aboriginal and Torres Strait Islander Early Childhood Strategy
9. Increase access to culturally responsive playgroups and parent support groups to build parents' self-efficacy and social capital and to support children's early development.	**Outcome 4:** Children thrive in their early years. **Outcome 14:** People enjoy high levels of social and emotional wellbeing.	**Goal 2.** Aboriginal and Torres Strait Islander children are supported to thrive in their early years. **Goal 3.** Aboriginal and Torres Strait Islander children are supported to establish and maintain strong connections to culture, Country and language. **Goal 4.** Aboriginal and Torres Strait Islander children grow up in safe nurturing homes, supported by strong families and communities. **Goal 5.** Aboriginal and Torres Strait Islander children, families and communities are active partners in building a better service system
10. Establish resources and settings in the community, especially in urban areas, for parents and other caregivers to facilitate children's engagement with cultural activities, including traditional practices and arts, prior to children starting school. Such settings could include cultural events run by community organisations or early learning centres. These events can be settings for supporting children's connections to language, Country, and Mob, and to their Indigenous identity.	**Outcome 15:** People maintain a distinctive cultural, spiritual, physical, and economic relationship with their land and waters.	
11. Expand community Indigenous Language and Arts programs to support the revival of Indigenous languages.	**Outcome 16:** Cultures and languages are strong, supported and flourishing.	

Future research directions

- The longitudinal data gathered in *Footprints in Time* provides a vital opportunity to hear Aboriginal and Torres Strait Islander children's and families' views on what is needed to help children grow up strong, including this examination of how children's early experiences relate to their developmental outcomes into middle childhood and adolescence. Further follow-up of the LSIC participants will afford opportunities to examine how these young people transition through adulthood.
- This LSIC Early Childhood Report analysed data from early childhood through to adolescence, establishing how strong social-emotional wellbeing in early childhood is associated with strong wellbeing in middle childhood and adolescence. As future waves of LSIC data become available, further research could examine whether this association continues into adulthood.
- Future research could seek to identify factors that may contribute to fluctuations in children's connections to Country, culture, and learning of Indigenous language over time. Research could explore avenues for further supporting these connections in early childhood and throughout development.
- Further research could enhance existing understandings of ways that connection to language promotes social and emotional wellbeing, and how these connections can be promoted alongside attempts to revive, revitalise, and preserve Aboriginal and Torres Strait Islander languages.

- This LSIC Early Childhood Report demonstrates the value of integrating multiple methods of inquiry, including through working at the interface of Indigenous and Western knowledge systems. This approach involved using storying approaches to centre the experiences of children and families and using this to inform quantitative analysis of longitudinal data. Future research could consider adopting these and other innovative methods so participants' experiences can guide analysis. Aboriginal and Torres Strait Islander children, families, and communities are best placed to lead solutions that ensure strong developmental outcomes.
- The strengths-based approach underpinning *Footprints in Time* provides a model for future research projects. This LSIC Early Childhood Report benefited from the availability of rich qualitative responses recorded verbatim from participants to questions that emphasised their capabilities, positive attributes, and strengths.
- As the early childhood experiences of children described in this Report were gathered from participants between 2008 and 2015, there is a need for new longitudinal studies that measure experiences of growing up as an Aboriginal and/or Torres Strait Islander person today – particularly in areas that are characterised by marked change (e.g., digital access, affordability, and ability).

How we conducted this research

In producing the Report, our team of Aboriginal researchers (Jessa Rogers, Stuart Ekberg, and Tirritpa Ritchie) and non-Indigenous researchers (Emma Carpendale, Kate Williams, Donna Berthelsen, Lauren Piltz, and Kristin Laurens) committed extensive time to whole-team discussion, learning, reflection, and debate to ensure that we privileged Aboriginal and Torres Strait Islander ways of knowing, being and doing, in our work. Our analyses used a strengths-based approach centred on the wellbeing of Aboriginal and Torres Strait Islander children.

The Report used both qualitative and quantitative data provided by participants. Led by our Aboriginal team members, two Indigenous research methodologies – based on **storying** or **yarning over time** and **Indigenous poetic inquiry** methods – were used to bring to life the experiences of LSIC participants. By building narratives around key pieces of information collected across 14 years of data collection, the team developed stories that explored similarities and differences in children's experiences of growing up strong as an Aboriginal and/or Torres Strait Islander young person. Multiple stories were developed to illustrate variations in experience across geographic, cultural, and familial contexts. These stories feature prominently in our Report, and guided areas of inquiry for quantitative analysis. The Report finishes with a series of poems about growing up strong as an Aboriginal and/or Torres Strait Islander young person, developed using direct quotes from LSIC parents and Study Youth. Throughout the Report, artworks by Kylie Monteleone provide contemporary Aboriginal representations of the findings in this Report, inspired by the many places that LSIC participants call home.

Preface

Acknowledgement of Country and contributions

The authors acknowledge the Traditional Custodians of Country throughout Australia, and their continuing connection to community, land, and waters. We pay our respects to these peoples and cultures, and to their Elders past, present, and emerging. We also acknowledge the participants of *Footprints in Time*: The Longitudinal Study of Indigenous Children (LSIC), including the children and their families, communities, and educators, for their ongoing contributions to this landmark Australian study. We acknowledge the LSIC Steering Committee and colleagues in the Department of Social Services for their leadership of the study, and the guidance, feedback, and collaboration they offered in the development of this Report.

Introducing our team and work

The authors of this Report are a team of Aboriginal (Rogers, Ekberg, Ritchie) and non-Indigenous researchers (Carpendale, Williams, Berthelsen, Piltz, and Laurens) who, through respectful engagement with the rich data available in *Footprints in Time,* sought to provide new information on what helps Aboriginal and Torres Strait Islander children to thrive in their early years, so that they grow up strong into middle childhood and adolescence.

Our team included authors who worked together previously in producing the Primary School Report for *Footprints in Time* (Rogers, Williams, Berthelsen, Carpendale, and Laurens), with other authors (Ekberg, Ritchie, and Piltz) enriching the team for our work on this Report.

Co-leadership of the work was provided by Indigenous lead Rogers and non-Indigenous lead Laurens, with extensive time committed to whole-team discussion, learning, reflection, and debate to ensure that we privileged Aboriginal and Torres Strait Islander peoples' ways of knowing, being, and doing in our work. Rogers guided the team in Indigenous research methodologies and, with Ekberg and Ritchie, brought cultural

perspectives and lived experiences to the research topic, with our non-Indigenous authors bringing their knowledge of child development and statistical analyses. Our use of the terms “we” and “our” in this Report encompass our experiences as both Aboriginal and non-Indigenous researchers.

Within this work, we sought to represent and reflect the diversity of experiences of Aboriginal and Torres Strait Islander children and their families. When reporting findings for the children in the study as a whole, we refer collectively to Aboriginal and Torres Strait Islander children, but acknowledge that each Aboriginal and Torres Strait Islander community has their own cultures, perspectives, beliefs, histories and values.

Introducing and positioning authors

Associate Professor Jessa Rogers, University of Melbourne

Jessa is a Wiradjuri woman with a deep commitment to Indigenous education and research. She is a mother of three sons – one in Early Childhood Education, one in high school, and one who has graduated from university. Jessa has had an extensive career in education, having served as a school Principal, executive teacher, and a lecturer teaching pre-service teachers in education degrees since 2013. Jessa's research in Indigenous education focuses on Indigenous research methods that give students greater voice in research that looks at their experiences.
Jessa is a Board Member of the Australian Children's Education and Care Quality Authority (ACECQA), that works with the Commonwealth, state, and territory governments to improve outcomes for children from birth to 13 years of age. The Board, comprising members nominated by each state, territory, and the Commonwealth, is accountable to Education Ministers.
Jessa's contribution to this Report was to lead the development of Indigenous research practices and principles, establish underpinning frameworks, and embed Indigenous research methodologies in every aspect of the work. Her leadership in this space was supported by Indigenous colleagues Tirritpa and Stuart who, together, ensured that this Report was grounded in culturally responsive and community-driven Indigenous research approaches.

Associate Professor Stuart Ekberg, Flinders University

Stuart is descended from the Western Arrernte people of Central Australia and migrants from Britain, Sweden, and Germany. He is the father of three children, currently in early and middle childhood. He was born and raised on Barngarla Country and completed university training on Kaurna Country. Following university, he worked in the United Kingdom for several years, followed by over a decade living and working on Jagera and Turrbal Country. More recently, he has returned to live and work on Kaurna Country. Stuart specialises in social science research examining wellbeing, health, and healthcare. His contribution to this Report focussed on adapting storying methods to make them suitable for use with LSIC data. This resulted in an Indigenous research method that uses Aboriginal and Torres Strait Islander ways of knowing, being, and doing to tell stories about ways children can grow up strong. Stuart also contributed to Indigenous research leadership with Jessa Rogers and Tirritpa Ritchie.

Tirritpa Ritchie, Flinders University

Tirritpa is a Kaurna man with cultural ties to Narrunga, Ngarrindjeri, Adnmaytha, Kokatha, Wirangu and Dunghutti. He was born and raised on Kaurna land while also spending time on Narrunga and Wirangu lands. He is a father of a boy and a girl in middle childhood. Tirritpa worked as an Occupational therapist in remote, rural, and urban settings focusing on adolescent health. He returned to university as a lecturer and early career researcher. His research interests are adolescent health, social and emotional wellbeing, and anti-racist health practice. Tirritpa's contribution in this Report focused on using Indigenous methodologies for the adaptation of storying methods of LSIC data. This highlighted the ways in which Indigenous children and

families can convey narratives of their experiences in growing up strong. Tirritpa also contributed to Indigenous research leadership with Jessa Rogers and Stuart Ekberg.

Dr Emma Carpendale, Queensland University of Technology

Emma is a non-Indigenous researcher from the School of Psychology and Counselling at Queensland University of Technology. She was born and raised on Turrbal land and continues to live and work there today. Emma's research centres around childhood social and emotional wellbeing and mental health promotion, particularly within the education context. Although Emma conducts her research using predominantly Western quantitative methods, her work in this Report was guided by the stories and perspectives generously shared by LSIC children and families. Under a strengths-based approach, she investigated the role that child, family, and teacher factors play in supporting children's development over time.

Professor Kate Williams, University of the Sunshine Coast

Kate is a non-Indigenous quantitative researcher who grew up on the land of the Quandamooka people, and has lived and worked during her adult life on the lands of the Turrbal, Jagera, and Gubbi Gubbi peoples. Across her career as an early childhood and parenting health and social services clinician and leader, and as a researcher, Kate has learned, and continues to learn, a great deal from working alongside Aboriginal and Torres Strait Islander individuals and communities. For this Report, Kate helped to identify important early childhood constructs, and developed longitudinal models related to academic and executive function outcomes. Kate has also contributed to ensuring the presentation of Report findings are meaningful, relevant, and accessible to our audience. Kate currently works at the University of the Sunshine Coast.

Adjunct Professor Donna Berthelsen, Queensland University of Technology

Donna is a non-Indigenous researcher who has lived most of her adult life on the lands of the Jinibara and Turrbal people, north-west of Brisbane; and has worked primarily on Turrbal land, at the Queensland University of Technology, across her career. She is currently an Adjunct Professor in the School of Education. Donna has extensive experience in design and implementation of longitudinal research and intervention studies. For this Report, Donna has supported the development of the longitudinal modelling focused on early childhood predictors of academic skills in middle childhood and development of executive function across childhood to adolescence. It is important that these Report findings are meaningful to professionals working with families, as well as for teachers in diverse educational contexts.

Lauren Piltz, Queensland University of Technology

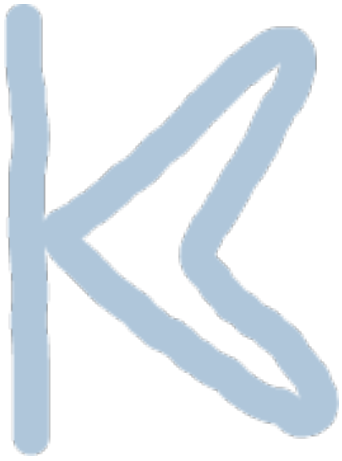
Lauren is a non-Indigenous researcher based in the School of Psychology and Counselling at Queensland University of Technology. She was born on the traditional lands of the Giabal and Jarowair peoples and raised on the lands and waters of the Taribelang Bunda, Gooreng Gooreng, Gurang, and Bailai peoples. Her research focuses on addressing and reducing school exclusions and police contact among

children. In her contributions to this Report, Lauren prioritised the inclusion of Indigenous voices and visual storytelling by ensuring that Indigenous artwork was prominently featured, reflecting the richness and diversity of the communities and stories represented. Her role also involved enhancing the accessibility of the Report by presenting the content and analyses in ways that are clear, engaging, and understandable for all readers.

Professor Kristin Laurens, Queensland University of Technology

Kristin is a researcher of European heritage, trained in Western quantitative methods, who works in the School of Psychology and Counselling at Queensland University of Technology. Born on Jagera land, Kristin grew on Yugambeh (early childhood), Mamu (middle childhood), and Jagera (adolescence) lands, and lives and works today on Turrbal land. She is the mother of a daughter in middle childhood. Her research seeks to identify ways to foster mental health and wellbeing among children and young people. To centre Indigenous worldviews in her work for this Report, Kristin's quantitative analyses drew directly on the knowledges shared in the stories and poems – crafted from participants' ideas about what is needed to grow up strong as an Aboriginal or Torres Strait Islander person – to show early childhood experiences that support strong social-emotional wellbeing into middle childhood and adolescence.

Introducing our artist



Kylie Monteleone, a proud descendant of the Western Arrernte people (central desert region, Alice Springs), is an Indigenous artist sharing stories handed down through generations. As an Interior Designer and Colour Specifier, colours inform her work to elicit memories, moments and emotions. Her practice of sharing stories with a contemporary lens is intuitive and informed by an active connection to culture.

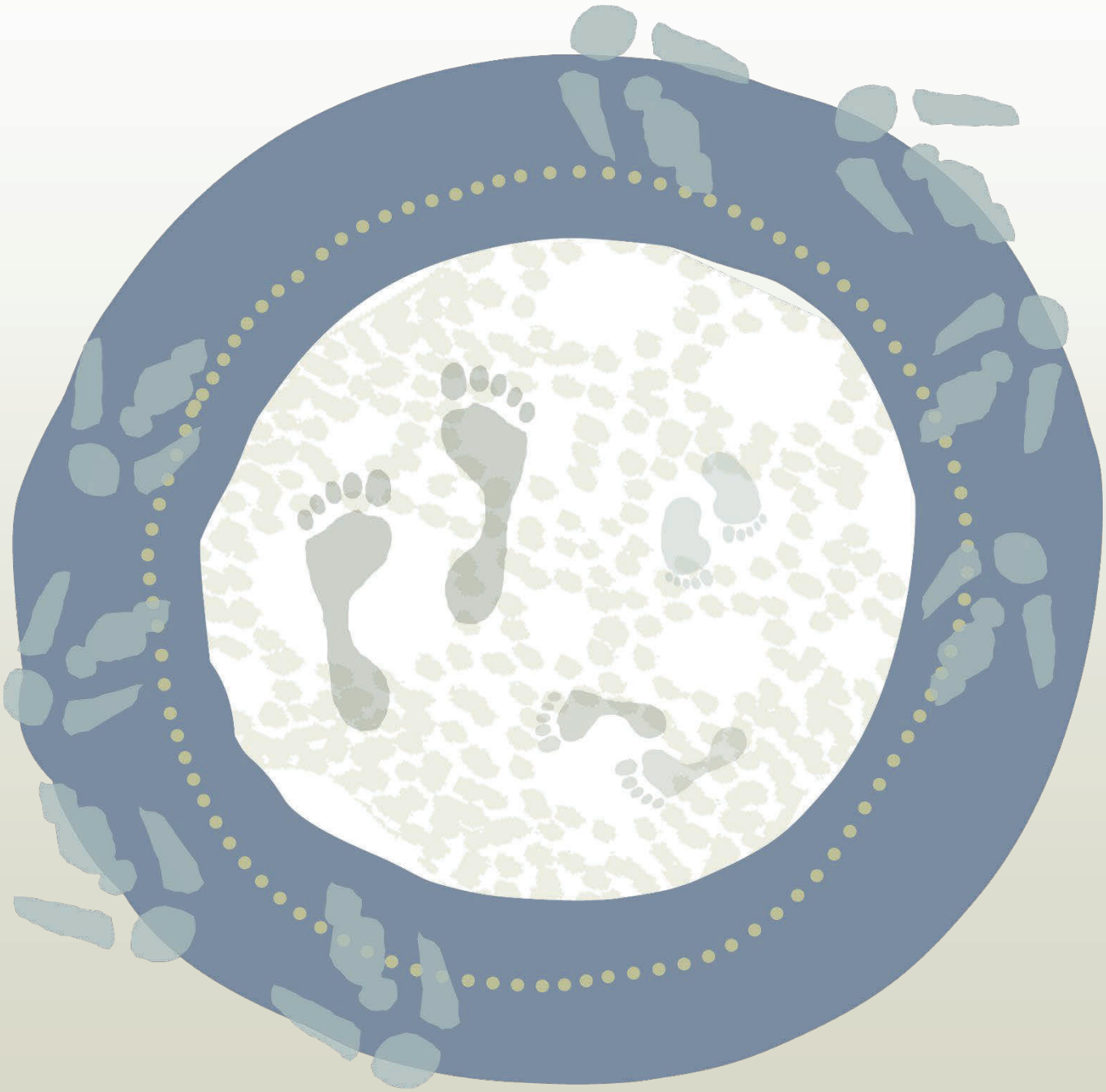
The cover artwork for this Report (and the cover artwork for the associated Summary Report) brings together visual elements that represent the journeys, reflections, and learnings of the LSIC participants. Each of these elements features as an illustrative motif reflecting the contents of each chapter in this Report. The colours within this piece are inspired by the landscapes of the many places we call home, all featured within this Report. Colours have the power to surface memories, moments and the emotional landscapes of our lives. The journey lines in this artwork symbolise the diversity of participant experiences and form the foundation of the data 'waves' collected throughout the study. Footprints echo the research, representing movement, growth and legacy, standing together, and leaving a deeper mark with time. The practice of telling these contemporary stories of the LSIC participants is an intuitive practice, as Kylie is guided by Country, ancient culture and the traditional way of Ancestors.

Kylie's contribution is not only artistic but personal. Her great-grandmother was taken from her family at a very young age. The tenacity and strength implored to forge a path for her children is the reason Kylie is able to honour her culture. To have the privilege of being able to connect with her lineage through cultural practice that has endured unthinkable challenges is both cathartic and an honour, as is being a part of the outcomes of this research project.

Artist Interpretation: Eagle's tracks show a strong and tenacious spirit, representing the strength in the data and the recommendations offered in these findings for the participants and beyond. Footprints get bigger and darker, representing strength in the imprint they leave behind as people during their development.

Chapter 1:

Growing up strong. Stories from *Footprints in Time*: The Longitudinal Study of Indigenous Children



Chapter 1: Growing up strong. Stories from *Footprints in Time*: The Longitudinal Study of Indigenous Children

When they place the baby in her arms for the first time, they know how this little one will grow up strong. From this moment, 'Ash' is part of a tradition that runs deep in time and the Country that nurtures them. As in many other Indigenous families living across the continent, stories help Ash – from a young age – learn about their body, mind, family, community, culture, Ancestors, and Country. As they get older, the stories continue, and Ash's connections become stronger and stronger. Often this means being confident with people who are quite different from Ash's mob. Things get tough sometimes, but Ash is proud and filled with the strength that's been passed to them. By the time they're a teenager, Ash knows they're growing up strong by making use of all the knowledge they've been gifted. They know who they are, where they belong, and what they should do.

The early childhood period (spanning birth to 8 years of age, with a particular emphasis on the first five years) is a critical time for laying the foundation for children's healthy development and wellbeing into the years ahead. This Early Childhood Report for *Footprints in Time:* The Longitudinal Study of Indigenous Children (LSIC) has been produced to provide information on what helps Aboriginal and Torres Strait Islander children to thrive in their early years, so that they grow up strong into middle childhood and adolescence. This Report delivers new insights, grounded in the voices of Aboriginal and Torres Strait Islander children and their families, about what children need in their early years to set them up for longer term

strength and resilience in social-emotional wellbeing, health, learning, and culture. These insights can be used to inform the design and provision of holistic, integrated, and culturally safe services for Aboriginal and Torres Strait Islander children and their families during early childhood, that help them to flourish in their early years, and beyond into middle childhood and adolescence.

About *Footprints in Time*: The Longitudinal Study of Indigenous Children (LSIC)

Footprints in Time: The Longitudinal Study of Indigenous Children is the only longitudinal study of Aboriginal and Torres Strait Islander children of its kind. The study is funded by the Australian Government and managed by the Department of Social Services, under the guidance of an Indigenous-led Steering Committee, comprised of Indigenous and non-Indigenous academic and community experts, with a majority Aboriginal and Torres Strait Islander membership. The Steering Committee oversees the design, development, and implementation of the study. Centred on Aboriginal and Torres Strait Islander voices and grounded upon Indigenous worldviews, LSIC provides culturally centred understandings regarding what Indigenous children need to grow up strong (Walter, Martin, and Bodkin-Andrews, 2017).

LSIC has six key research questions, which were formulated and revised (in June 2020) by the LSIC Steering Committee. This Early Childhood Report was designed to provide responses that speak to each of these questions (with the exception of question 5, which focuses on outcomes that extend beyond the period for which LSIC data are currently available):

1. *What do Aboriginal and Torres Strait Islander children and young people need to grow up strong?*
2. *What helps Aboriginal and Torres Strait Islander children and young people to stay on track or become healthier, more positive and strong?*
3. *What is the importance of family, extended family and community in adolescence and emerging adulthood?*
4. *How can services and other types of support make a difference to the lives of Aboriginal and Torres Strait Islander children and young people?*
5. *How do Aboriginal and Torres Strait Islander children and young people transition into and through adulthood?*
6. *What does it mean to be a young Aboriginal and/or Torres Strait Islander growing up in the 21st century?*

LSIC involves annual ‘waves’ of data collection, commencing in 2008, with 14 waves of data currently available (collected between 2008 and 2022). The total LSIC sample comprises 1,759 children (1,672 children recruited in 2008, and an additional 88 children recruited in 2009). Children were recruited into LSIC from specific urban, regional, and remote sites located across Australia (Figure 1.1), in places where there were high levels of representation of Aboriginal and Torres Strait Islander children. These were: Darwin, Katherine, Galiwin’ku, and Alice Springs, including Hermannsburg (Northern Territory), South East Queensland, including Brisbane, Gold Coast and Toowoomba, and Mount Isa, Mornington, Doomadgee, Normanton, Torres Strait and Northern Peninsula Areas (Queensland), Western Sydney, Dubbo (New South Wales), Greater Shepparton, including Wangaratta, Seymour, and Bendigo (Victoria), Derby, Fitzroy Crossing and Broome (Western Australia) and Adelaide, including Port Augusta (South Australia) (Walter, Dodson, and Barnes, 2017, p. 24).

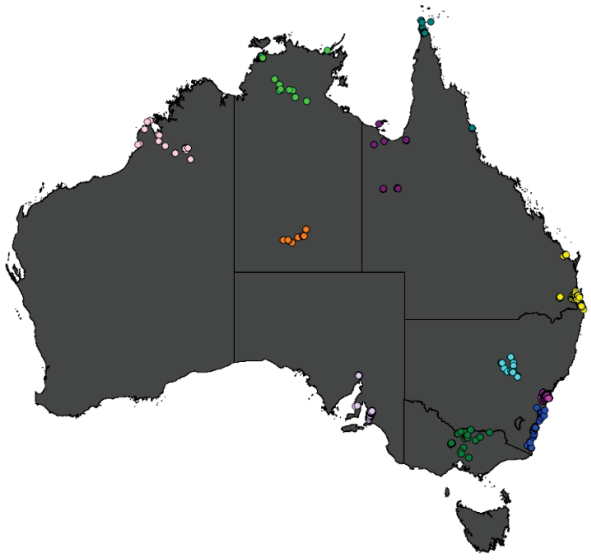


Figure 1.1. *LSIC participants’ locations at study entry. LSIC continues to collect data from children and their families as they move across the country.*

LSIC follows the development of two cohorts of Aboriginal and Torres Strait Islander children – a Baby (B) cohort who were aged between 6 months and 2 years at Wave 1, and a Kindergarten (K) cohort who were aged between 3 years 6 months and 5 years at Wave 1.

Data collection with children and their families is conducted by locally employed Aboriginal and Torres Strait Islander Research Administration Officers (RAOs). Educators of the children are also sent questionnaires if parents consented to this happening. The term 'LSIC Study Child' is used within LSIC to identify the child who is participating in the study, all of whom were identified by their parents or carers as an Aboriginal and/or Torres Strait Islander person. In this Report, we refer simply to 'children' when discussing these study participants.

Information is collected primarily from verbal interview data and direct assessments, with a self-complete section for study youth included from Wave 14. For this Report, children's self-reports were the predominant source of information about their experiences during middle childhood and adolescence. We also make extensive use of interview information provided by 'Parent 1 (P1)' – the primary carer of the Study Child – particularly about children's early childhood experiences. Most commonly, primary carers for children were a biological parent, while other primary carers included kinship or foster carers, or legal guardians, who identified as knowing the LSIC Study Child best. Almost nine in ten of these parents (87%) identified as Aboriginal

and/or Torres Strait Islander at Wave 1 of LSIC; 93% were the child's biological mother; 3% their grandmother; 2% their biological father; 1% an Aunty; and the remaining 1% were the child's adopted parent, stepparent, or other relative. In subsequent waves, RAOs interviewed the same primary carer, if they were available and caring for the child; and if not, the person who knew the Study Child best, at the time of interview.

Interviews are also completed annually with 'Parent 2 (P2)', who is Parent 1's partner or another adult with a parent or carer relationship to the Study Child. In most cases this is the biological father, as well as a number of stepfathers. To enhance the capacity of the LSIC data to showcase the positive role of fathers in supporting their Aboriginal and Torres Strait Islander children to grow up strong (e.g., Prehn et al., 2021, 2022), from Wave 4, interviews were redesigned to focus on 'Dads' (i.e., fathers or men performing a father-like role in a Study Child's life). In more recent waves of LSIC (subsequent to the 14 waves used in this Report), 'Parent 2' has once again broadened, from 'Dads', to include an adult with a parent or carer relationship to the Study Child.

The LSIC data collection also includes linked data on children's achievement in the national standardised school-based assessment program of literacy and numeracy (NAPLAN), which is supplied by state/territory governments, if permission had been provided by a parent/guardian. This Report makes use of these linked data, and the questionnaire reports provided by the children's educators, where available.

Our approach to the LSIC Early Childhood Report

This Early Childhood Report uses qualitative and quantitative data, collected during the first 14 waves of LSIC, to explore early childhood experiences, and the ways these experiences relate to later outcomes (during middle childhood and adolescence) for Aboriginal and Torres Strait Islander children and their families. Topics covered by LSIC are broad, including health, learning and development, culture, Country, identity, language, schooling, family and community, housing, computer and internet use, values and aspirations, experiences of racism, and work and further education. Families participating in LSIC indicate that this research has provided opportunities to "tell our story" (Thurber et al., 2018). Honouring this intention, this Report incorporates stories of how Aboriginal and Torres Strait Islander children grow up strong, during early childhood and beyond.

Preparing data for this Report

This Report uses LSIC data to show how early childhood experiences relate to later life outcomes for Indigenous youth. In LSIC, not all questions are asked of study participants at each wave. In all analyses undertaken for this Report, the research team strived to include all available responses from the LSIC participants, to ensure diversity in LSIC Aboriginal and Torres Strait Islander young people's experiences were reflected in the Report. To do this, our team restructured the LSIC data from the annual waves of collection into four developmental stages of interest that each incorporated data from multiple waves. This allowed us to examine the experiences of LSIC children, across the B and K cohorts, at equivalent developmental stages.

The **four key developmental periods**, represented in these analyses, are:

Pre-school

The years before children started their first year of formal school, covering birth to approximately 5 years of age.

For some analyses, this period was further separated into two age groupings: ≤36 months (participants mostly from the B cohort) and 37-60 months (from both B and K cohorts)

Early school

The initial two years of primary school (Foundation and Year 1), covering children who are 5-7 years of age (across both B and K cohorts)

Middle childhood

The final two years of primary school (Years 5 and 6), covering children who are 10-12 years of age (both B and K cohorts)

Adolescence

Three years of secondary school (Years 8, 9, and 10), covering adolescents who are 14-16 years of age (both B and K cohorts)

Measuring early childhood experiences and their relationship to later outcomes

The United Nations defines early childhood as the developmental period spanning from birth to age 8 years of age (Committee on the Rights of the Child, 2005). This period represents a critical window of opportunity for shaping the trajectories of children's holistic development and to build the foundations for their future. Early Childhood Australia (2016), the national peak body for children aged 0-8 years, foregrounds the rights of all children to thrive, learn and play at home, in the community, within early learning settings, and through the early years of school.

Policy and programming for the early years in Australia (e.g., the Early Years Strategy 2024-2034) focusses more specifically on the provision of support to children and families in the period prior to starting school (from birth to 5 years of age), to give children the best possible start in life and to maximise their opportunities to learn, grow, and thrive (Department of Social Services, 2024). The National Aboriginal and Torres Strait Islander Early Childhood Strategy (2021), developed in partnership by the National Indigenous Australians Agency (NIAA) and SNAICC (the Secretariat of National Aboriginal and Islander Child Care), similarly focuses on these first five years, and outlines five goals:

1. Aboriginal and Torres Strait Islander children are born healthy and remain strong.
2. Aboriginal and Torres Strait Islander children are supported to thrive in their early years.
3. Aboriginal and Torres Strait Islander children are supported to establish and maintain strong connections to culture, Country and language.
4. Aboriginal and Torres Strait Islander children grow up in safe nurturing homes, supported by strong families and communities.
5. Aboriginal and Torres Strait Islander children, families and communities are active partners in building a better service system.

In this Report, we delineate a pre-school period and an early school period within our examination of 'early childhood' experiences. The pre-school period (birth through age 5 years) provides a primary focus of much of our enquiry, given its direct alignment with the National Aboriginal and Torres Strait Islander Early Childhood Strategy (2021). We supplement these data with additional information on experiences from the early school period (i.e., the first two years of formal schooling – Foundation and Year 1). This is an especially important transition period, providing many new experiences for children which are key to later learning and wellbeing, and to thriving through middle childhood and adolescence.

This Report describes the diversity of experiences reported by LSIC children and families during early childhood (the pre-school and early school periods), and how children's experiences relate to later wellbeing, learning, and other outcomes in middle childhood and adolescence. After reconstructing the LSIC data collection into the four developmental periods, information was available for 1,610 children in the pre-school period, 1,508 children in the early school period, 1,387 children during middle childhood, and 1,228 children during adolescence. The Technical Appendix (Section 1.0) to this Report provides further information about the age of children, and the number of waves of data collection represented, within each developmental period (Table A1.1).

When considering the findings presented in this Report, it is important to remember that the data used in the Report were collected in the context of a longitudinal study. Thus, across the B and K cohorts, the information provided about children's pre-school and early school experiences was reported for most children in waves of data collection that were conducted between the calendar years 2008 and 2015. If the same information about the early childhood experiences of Aboriginal and Torres Strait Islander children were gathered today, the proportions of children represented in each of the different types of experiences might be different.

Figure 1.2 shows the distribution of children in LSIC according to remoteness within each of the four developmental periods, demonstrating the strong representation of children and families from across these five remoteness areas for all four developmental periods.

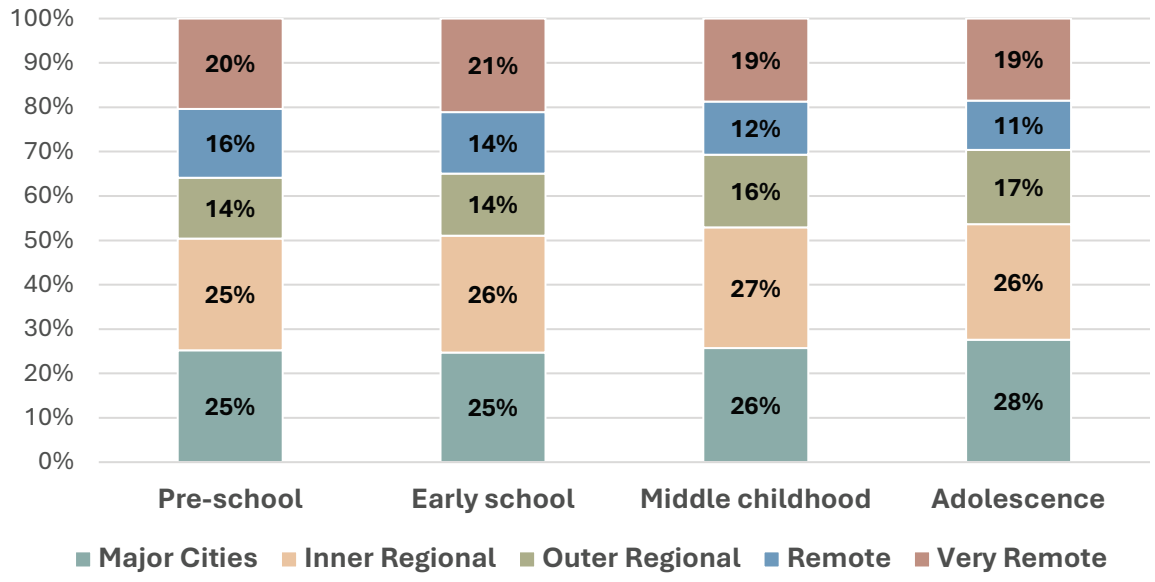


Figure 1.2. *Proportion of LSIC children residing in each remoteness area for each of the four developmental periods examined in this Report.*

Our guiding principles for this Report

From its inception, LSIC has been conceptualised and developed by Indigenous scholars (Walter et al., 2017), ensuring that Aboriginal and Torres Strait Islander ways of knowing, being, and doing are prioritised (Martin, 2003). Our research builds on this foundation, adopting a strengths-based approach rather than reinforcing deficit narratives that have historically characterised research on Aboriginal and Torres Strait Islander peoples. By centring Indigenous worldviews, we focus on what supports and strengthens Aboriginal and Torres Strait Islander families. Our work is guided by ethical principles of Indigenous self-determination, leadership, and sustainable impact, in accordance with the AIATSIS Code of Ethics for Aboriginal and Torres Strait Islander Research (2020).

In producing this Report, our team examined current Indigenous analytic frameworks and noted how the framework described by Prehn (2024) resonated with the aims for this Report. Prehn's Indigenous strengths-based theoretical framework served as the foundation for our team's 'guiding principles'. Prehn's (2024) six core principles for strengths-based Indigenous research are (p. 5):

1. **Celebrate diversity**: Recognise and honour the strengths within Indigenous communities, including cultural wisdom, connection to Country, resilience, storytelling, kinship, and art.
2. **Embrace growth**: Acknowledge and support the potential for strength, resilience, and growth, particularly in the face of adversity, turning challenges into opportunities for development.
3. **Empower aspirations**: Promote personal and collective growth in Indigenous contexts by supporting self-determination and valuing the aspirations, goals, and visions of Indigenous individuals, families, and communities.
4. **Foster self-determination and collaboration**: Strengthen self-determination by providing resources and valuing Indigenous voices. Recognise the importance of collaboration by acknowledging Indigenous expertise, knowledge, and decision-making authority, and empower through meaningful partnerships.
5. **Utilise resources**: Leverage Indigenous resources such as cultural knowledge, traditional practices, land, networks, support systems, and cultural strengths to collaboratively address challenges.
6. **Cultural grounding**: Ensure that the strengths-based approach is rooted in Indigenous culture, respecting worldviews, knowledge systems, cultural protocols, values, and ways of being. Engage in culturally appropriate interventions aligned with these values and cultural safety.

We summarise these six core principles in diagrammatic form in Figure 1.3.

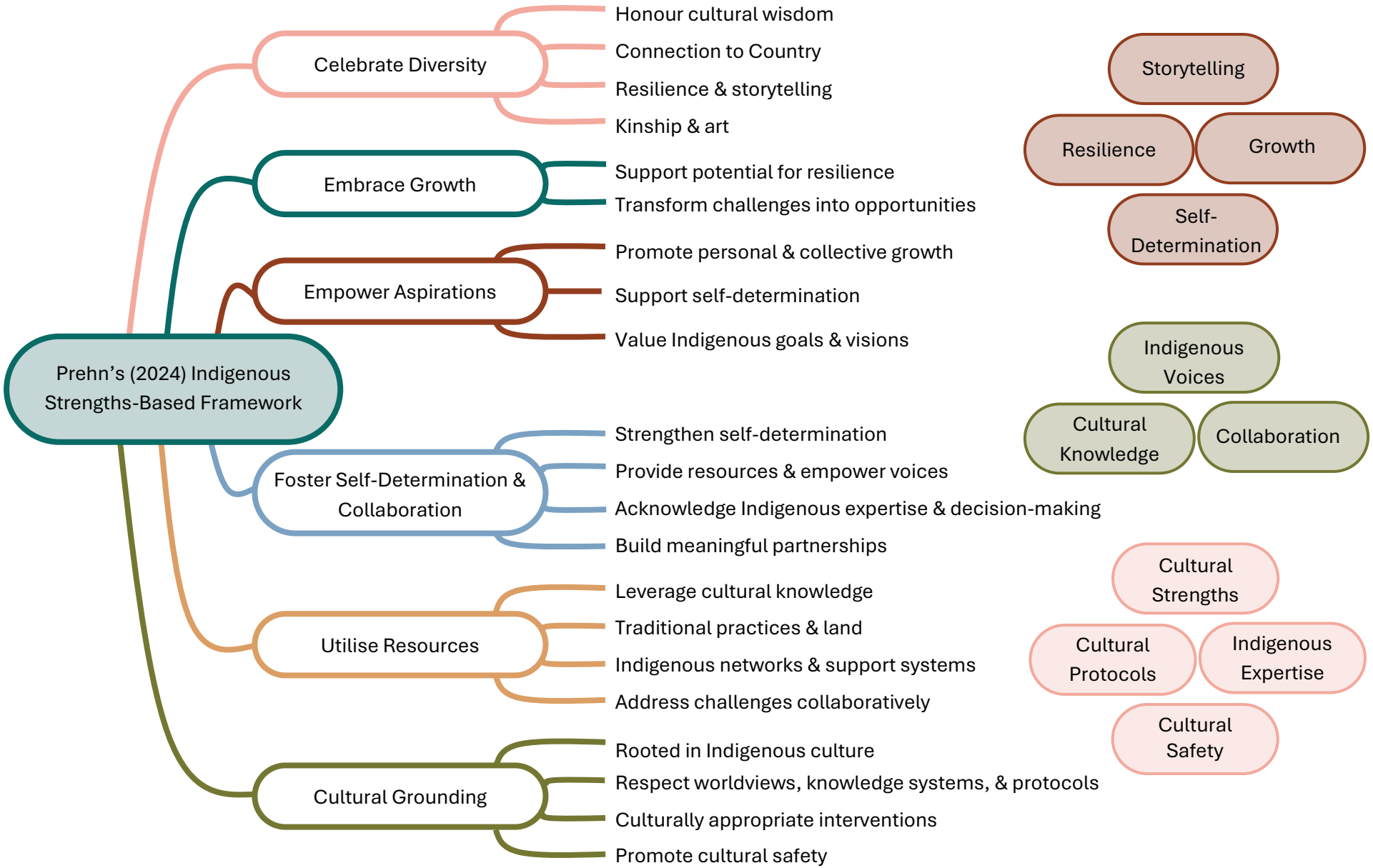


Figure 1.3. *Our diagram of Prehn's (2024) Indigenous Strengths-Based Theoretical Framework.*

Building upon a shared frame of reference that is prevalent across many Indigenous communities in Australia, we adapted Prehn's (2024) framework to create our own guiding principles model, drawing on the stories of Gurgurmin (Wiradjuri), also known as the 'Emu in the Sky'. The Emu in the Sky holds deep significance for numerous Aboriginal peoples across Australia, making it a fitting model for our work with the LSIC, given the diverse Mobs represented among the participants.

We explored how the emu, a culturally significant and widely recognised animal across Aboriginal nations, is intrinsically linked to Sky Country, which has long served as a guide for Indigenous people. In particular, we reflected on how the position of Gurgurmin in the sky signals to the Wiradjuri people the ideal time for gathering emu eggs. The stars – and the Emu in the Sky – are profoundly connected to us as Country, shaping our cultural practices and informing our collaborative efforts through storytelling, inherited knowledge, protocols, and expertise. By following these protocols, Aboriginal and Torres Strait Islander peoples maintain safety and wellbeing, enabling Indigenous people to thrive and grow with resilience, regardless of challenges encountered.

This understanding is reflected in our Guiding Principles: Gurgurmin Diagram (Figure 1.4). Working together as a team of Indigenous and non-Indigenous researchers, we used Gurgurmin as a visual reminder of how cultural strengths, principles and protocols could guide our methods, analysis and writing of this Report, especially in the creation of stories that draw on multiple voices.

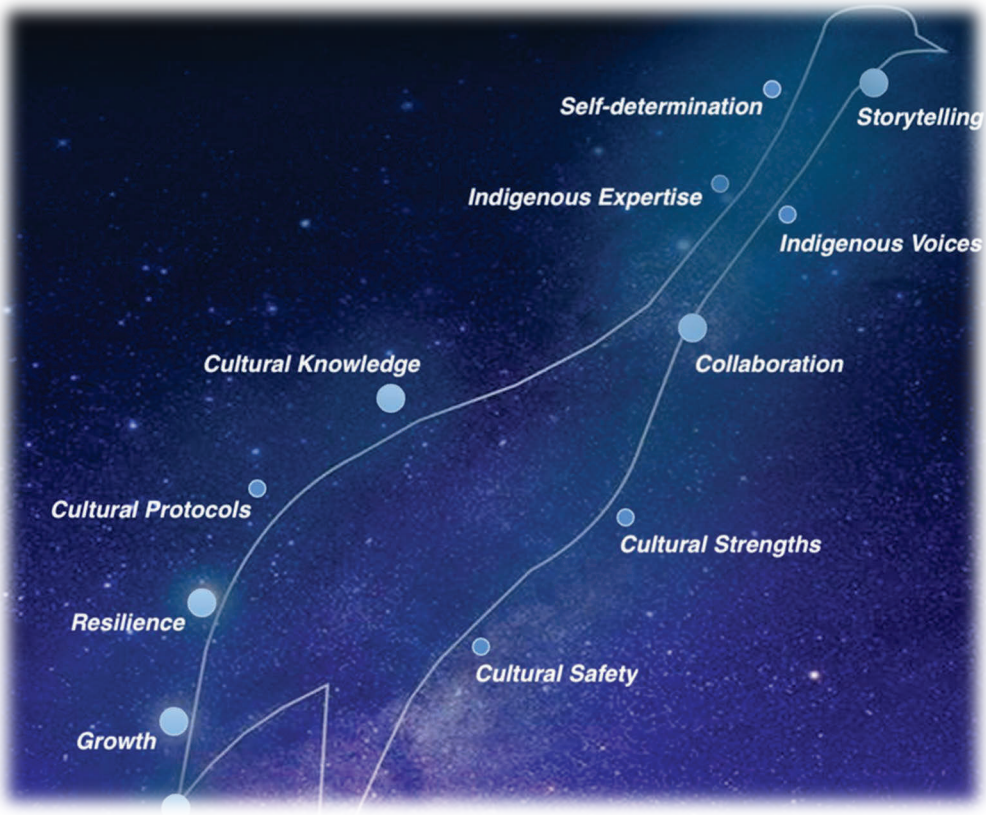


Figure 1.4. *Our guiding principles, informed by Gurgurmin, and condensed from Prehn's (2024) Indigenous Strengths-Based Theoretical Framework.*

In Figure 1.5, we summarise how the Gurgurmin model guided various aspects of our work, summarised as five areas of guidance/principles:

1. Storytelling and Cultural Knowledge
2. Cultural Protocols and Cultural Safety
3. Resilience and Cultural Strengths
4. Self-Determination and Indigenous Knowledges
5. Indigenous Expertise, Collaboration, and Growth

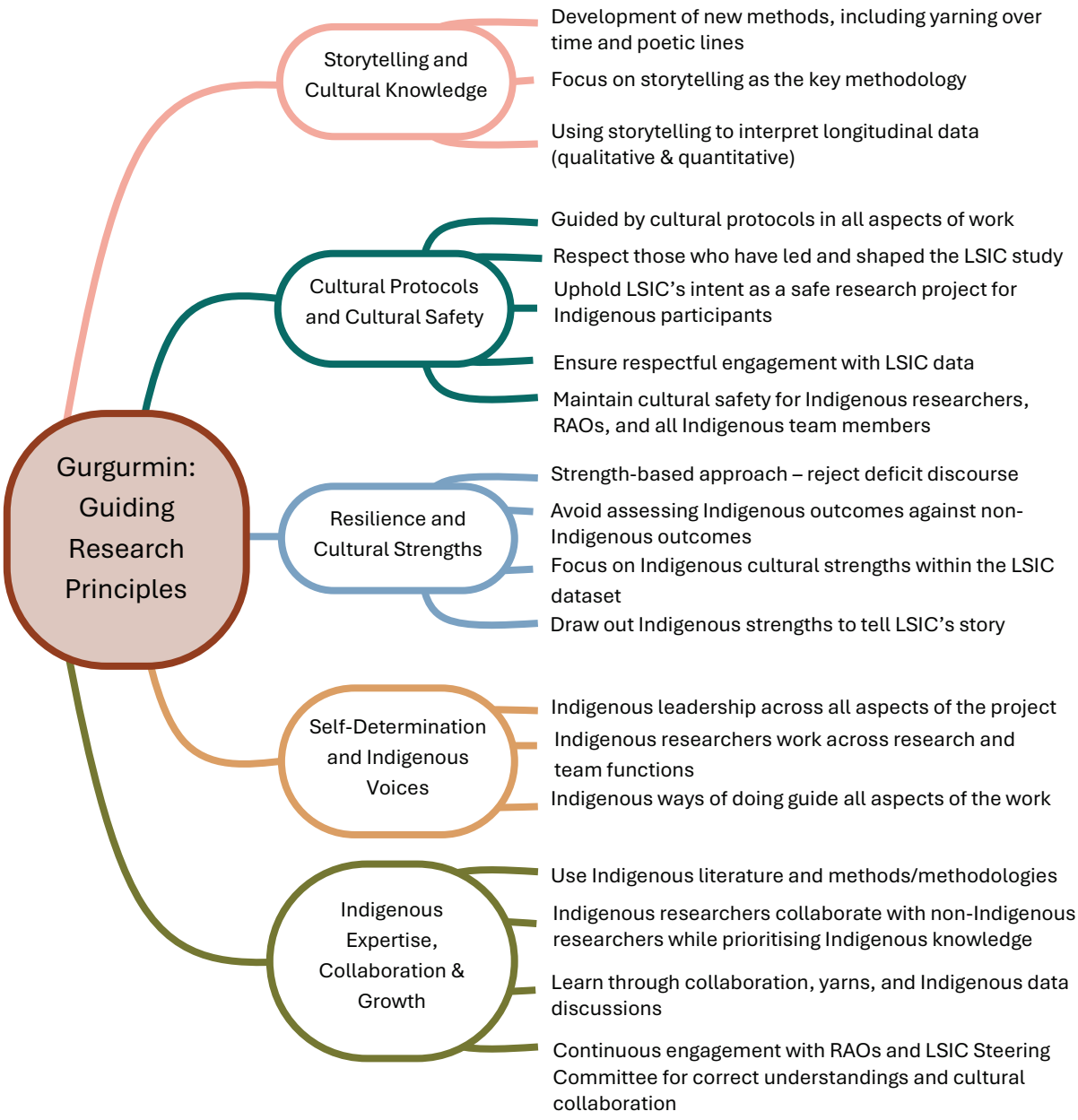


Figure 1.5. *Gurgurmin: Guiding Research Principles, adapted from Prehn (2024).*

Conceptual and methodological underpinnings of our approach

Conducted at the interface of Indigenous and Western systems of knowledge (Ryder et al., 2020), this Report adopts a strengths-based approach (Prehn, 2024), centred on the wellbeing of Aboriginal and Torres Strait Islander children. In this section, we briefly describe the model of wellbeing that underpinned our work on this Report, and the various qualitative and quantitative analytical approaches we employed in conducting our research, including two methodologies – 'yarning over time' and 'poetic lines' – which were developed and applied by our team to deeply engage with the available longitudinal data, to identify early

childhood experiences that support Aboriginal and Torres Strait Islander children to grow up strong into middle childhood and adolescence.

A strengths-based framework: Social and emotional wellbeing

Indigenous knowledges are foregrounded in our Report through a model of Social and Emotional Well-Being (SEWB) developed in relation to Aboriginal and Torres Strait Islander peoples (Dudgeon et al., 2025; Gee et al., 2014). This SEWB model (Figure 1.6) provides a holistic and strengths-based framework that embeds the person's sense of self within interdependent and connected networks of: body and behaviours; mind and emotions; family and kinship; community; culture (including language); Country and land; and spirit, spirituality and Ancestors. The model links these seven dimensions, also recognising the concurrent and cumulative influence of social, political, cultural, and historical determinants of health and development. Information collected within the LSIC study spans these seven dimensions.

The diversity of cultures and histories among Aboriginal and Torres Strait Islander people influence specific expressions and experiences of SEWB, which vary between and within individuals. The SEWB model is not restricted to specific stages of life, recognising that the nature of connections can vary across the lifespan (Gee et al., 2014). This provides an important way to interpret the stories within the LSIC data for a range of Indigenous young people living across Australia in unique, vibrant communities, each with their own identity and cultural context.

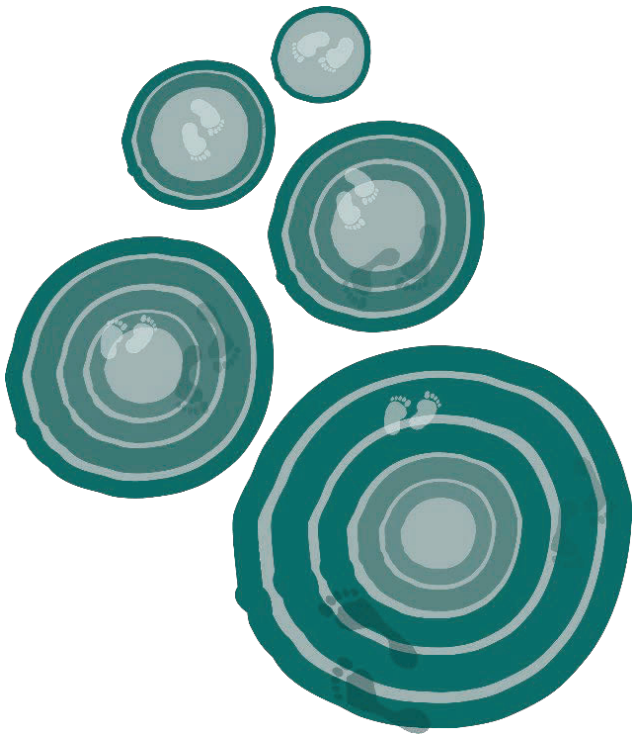


Figure 1.6. *Social and Emotional Well-Being (SEWB) model (source: Dudgeon et al., 2023).*

Yarning over time: *A storying approach to analysing LSIC data*

Yarning is a well-established Indigenous research method that fosters knowledge sharing in a culturally appropriate and relational manner (Bessarab & Ng'andu, 2010; Kennedy et al, 2022). As both a conversational practice and a research methodology, it centres Indigenous voices and ways of knowing (Barlo et al., 2020). In this study, we employed yarning over time as a re/storying method to analyse LSIC responses within the framework of SEWB (Dudgeon et al., 2025). This yarning process was primarily undertaken by two Indigenous scholars – Tirritpa Ritchie and Stuart Ekberg – with guidance from a third Indigenous scholar – Jessa Rogers – and collaboration with the non-Indigenous scholars who also worked on this Report. By tracking responses across multiple waves, we constructed life narratives – or 'stories' - that reflect the evolving experiences of Indigenous children as they grow.

Storytelling is fundamental to Indigenous ways of knowing, serving as a means of preserving knowledge, fostering identity, and transmitting culture. Previous research by Thurber et al. (2015) highlighted that many LSIC families remained in the study because it provided opportunities to share their stories. Recognising the importance of storytelling, we adopted 'storying' as an analytic approach, drawing from Phillips and Bunda (2018), who describe storying as the process of making and remaking meaning. While Indigenous methods such as yarning generate rich, detailed first-hand qualitative data (Bessarab & Ng'andu, 2010), LSIC and other large qualitative and quantitative datasets offer a different kind of storytelling opportunity. Rather than collecting singular, in-depth stories, LSIC gathers small yet significant pieces of information from a large number of participants over time. Bringing this information together provides a storytelling opportunity across time and place. As Phillips and Bunda (2018) remind us, storying transforms fragmented data points into coherent, meaningful narratives. This approach aligns with Indigenous understandings of knowledge as relational and collectively held – where the stories within the data are not owned by an individual but are shared and understood collectively. This framework guided our creation of 'stories over time', where data from multiple waves were interwoven to form coherent life narratives.

The team developed these stories by collating qualitative and quantitative information obtained across 14 waves of data collection currently available for analysis, using these data to tell stories that explored similarities and differences across experiences. As described earlier in this chapter, the design and conduct of LSIC is guided by a series of key research questions, which includes an emphasis on understanding ways Aboriginal

and Torres Strait Islander children can grow up strong. Most of the data used for storying were consistent with this focus, enabling the telling of stories about growing up strong.

Guided by the SEWB model and starting with waves of data collected during the pre-school period, our initial focus for analysis were responses provided by family members to one question asked about children in Wave 1: *"What is it about Aboriginal and Torres Strait Islander culture that will help (Study Child) grow up strong?"*. Our analysis included responses from the B cohort (840 responses; children aged newborn to 2.8 years) and the K cohort

(456 responses; children aged 2.8 to 5.0 years). Detailed qualitative examination of individual instances, followed by content analysis applied to all responses from the K cohort, identified that responses to this question overwhelmingly corresponded to one or more dimensions of the SEWB model (Figure 1.6; Dudgeon et al., 2025; Gee et al., 2014). At this point, other questions asked across the available waves of LSIC data were considered for information they could contribute to telling stories about Aboriginal and Torres Strait Islander children growing up strong from early childhood and beyond.

Questions generating either quantitative or qualitative data were considered. Many related to one or more dimensions of the model of SEWB, or provided demographic information. Through this process, we yarned over time – integrating waves of data from individual participants over many years into short stories. Box 1.1 illustrates how this method was used to integrate LSIC responses to tell a story of growing up strong. Further detail is available in Section 1.1 of the Technical Appendix to this Report.

Although the data were different from that elicited by yarning as a method of inquiry, other key principles were retained. For instance, data were analysed in and through a process known as “collaborative yarning” (Bessarab & Ng’andu, 2010). Guided by a principle that the quality of stories can be appraised by checking if the stories resonate with others (Phillips & Bunda, 2018), collaborative yarning was used to determine the best approach to storying and which stories to incorporate into this Report. Working collaboratively in this way enabled us to explore different perspectives, while being aware of the distinctive perspectives that each of us brought to the process from our unique socio-cultural positions (Walter et al., 2019). As described further below, collaborative yarning also included engagement with key stakeholders, such as the RAOs who meet with children and families to collect LSIC data, ensuring respectful and culturally sensitive engagement with participants’ data.

Box 1.1. An example showing how LSIC data were used to tell a child's story of growing up strong.

Story	Data and Analysis
'Mason' is an Aboriginal boy born to a non-Indigenous mother and an Aboriginal father in a regional town. Living with his mother, father, and siblings, Mason lives close to Country and his Mob. When he's a baby, Mason's mum knows that Aboriginal culture will help him grow up strong by connecting him to family, spirituality, and ability to live on Country. Although his parents sometimes disagree about cultural practices, from a young age Mason's connected to culture eating local foods like kangaroo and magpie geese, being taken to meetings and events, and spending time on Country. Mason's dad knows that practices like camping and fishing on Country will help Mason know where he comes from. These practices help Mason to know his Mob, their history, and cultural practices. By the time he's a teenager, Mason's mum knows he'll grow up strong by knowing right from wrong and being responsible and respectful. Mason agrees that being focused and knowing what You're doing – and not getting caught up with other people if they are doing wrong – will help him be strong.	Pseudonym used to protect child's identity. Questions about Indigenous status, gender, etc. (Wave 1) Questions about location and family (Wave 1). Questions about connection to Country and if it is nearby (Wave 1). Question about tribe/language group/clan (Wave 1). Based on mother's response to question about growing up strong asked in Wave 1 (recorded response: "family, spiritual stuff, out bush will have survival skills"). Based on mother's response to question about challenges passing on culture (Wave 3): Details not reported to protect participant anonymity and following cultural protocols (e.g., Men's Business). Based on mother's response to question about 'bush tucker' (Wave 4). Original response did not specify type of goose – 'magpie geese' used to foreground native food in story. Based on father's response to things he does with 'Mason' to pass on culture (asked in Waves 4 and 5). Based on mother's response to question about what 'growing up strong' means to her (Wave 13). Based on study youth's response to question about what 'growing up strong' means to him (Wave 13).

Our ‘yarning over time’ approach follows a structured methodology, building narratives around key data points collected consistently across waves. This approach ensures that stories remain grounded in empirical data while honouring the original intent of participating families – to share their experiences (Thurber et al., 2018). However, a formulaic approach presents inherent challenges. One limitation is that these narratives may not fully capture the diversity of Indigenous experiences. For instance, Mason’s story (Box 1.1) reflects a childhood spent on Country, whereas many Indigenous children in the LSIC do not share this experience. To address this, multiple stories were developed to illustrate variations across geographic, cultural, and familial contexts. Moreover, while our structured approach ensures fidelity to participants’ responses and minimises researcher interpretation, it also risks oversimplifying the complexity of Indigenous lived experiences. To ensure the authenticity of these stories, we engaged with LSIC RAOs, who played a crucial role in validating the narratives. Our research team had the privilege of meeting with these RAOs to test both our methodologies and the stories shared in this chapter. Their feedback was overwhelmingly positive, with the stories (and the accompanying poems, described in the next section) evoking both happiness and deep emotional responses. This validation process was particularly significant as we worked with secondary data. By sense-checking both our methods and the resulting narratives with the RAOs who had direct

engagement with participants, we ensured that our approach remained appropriate and respectful.

Throughout the 'yarning over time' process, ethical considerations were paramount. The research team engaged in ongoing discussions with LSIC's RAOs to ensure the narratives were both respectful and representative. Where necessary, adjustments were made to maintain participant anonymity, particularly when responses contained culturally sensitive information (e.g., Box 1.1).

Drawing on insights from Indigenous scholarship (Price & Hartt, 2023), the research team also explored whether a single, more universal story could encapsulate key themes emerging across multiple individual narratives. A 'bird's eye view' story would integrate recurring elements from stories about individual LSIC participants, weaving them into yarns over time that reflect broader, collective experiences of growing up strong. This led to the development of 'Ash's story' – told at the beginning of Chapter 1 – a 'composite' yarn over time, designed to reflect common elements of Indigenous childhood experiences.

Phillips and Bunda (2018) emphasise that stories should not only convey information but also resonate as lived experiences for both Indigenous participants and broader audiences. By developing both multiple individual stories and a singular composite narrative, we were able to achieve a balance – capturing specificity while enabling broader resonance. Ultimately, we believe these stories not only bring LSIC participant voices to life in research dissemination but also contribute to a richer, more nuanced understanding of Indigenous childhood as represented in the LSIC data.

Poetic lines: ***Bringing to life the stories, experiences, and emotions of LSIC participants***

Poetic inquiry is an emerging research methodology that aligns with yarning and storytelling, privileging the oral traditions shared within Aboriginal and Torres Strait Islander cultures (Harkin, 2019; Saunders, Sherwood & Usher, 2015). Through poetic inquiry, Indigenous scholars bring forward stories, experiences, and emotions that might otherwise be lost in academic discourse, embracing relational, affective, spiritual, and culturally embedded ways of knowing. Here, we describe how we developed a method termed "poetic lines", drawing on our own form of poetic inquiry – rooted in Indigenous traditions of yarning and storytelling – to amplify direct Indigenous voices from the LSIC qualitative datasets.

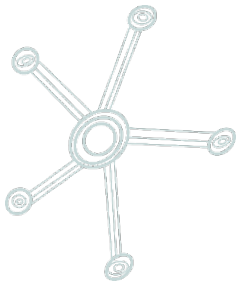
Cooms and Saunders (2024) examine poetic inquiry as a means of engaging in Indigenous storytelling, arguing that it aligns with yarning as an interactive, relational research approach that prioritises voice, rhythm, and embodied expression. "Poetic inquiry allows us to write and share knowledge in ways that are familiar to Indigenous peoples – through rhythm, sound, repetition, and feeling" (Cooms & Saunders, 2024, p. 78). As a form of research representation, poetry echoes the call-and-response nature of Indigenous storytelling and song: "Like the songlines that carry our history, poetic inquiry maps knowledge across generations, ensuring that our ways of knowing remain dynamic and alive" (Cooms & Saunders, 2024, p. 112). This framing of poetic inquiry as an extension of songlines highlights its ability to weave Aboriginal voices together across time and space in ways that are both familiar and culturally appropriate.

Our approach used data spanning many years and voices, guided by an Indigenous method that ensures

accuracy in both information and feeling. To honour this, we sought to maintain as much as possible the direct words of those who shared their LSIC stories. This process is what we term “poetic lines”. Using only the words of participants, author Jessa Rogers wove together responses collected over multiple waves, focusing on the ideas, themes, and spiritual resonances that emerged. The practical process of poetic lines involved carefully reading and sitting with recurring themes – often found across hundreds of short LSIC responses – before copying and pasting participants’ words to create short poems that collectively express their voices. The poetic lines method is designed to capture the essence and emotional depth of the data while preserving the authenticity of participant voices. Figure 1.7 presents a snapshot of the dataset used by Rogers, illustrating how text was directly extracted and carefully arranged to form poems that reflect the lived experiences and sentiments of participants. These poems feature in the final chapter of our Report.

"What is it about Aboriginal and/or Torres Strait Islander culture that will help (Study Child) grow up strong? [Parent 1]"	*"What is it about Aboriginal and/or Torres Strait Islander culture that will help (Study Child) grow up strong? [Parent 2]"*
Family closeness, learning our culture and knowing our culture, respect for elders and other peoples	
close knit family	
positive things like getting Aboriginal lawyers and drs there's nothing else that should set us back from being up there. I had one kid ask me why we're second best - I said we're not	
the close family bonds	
It's always about family: family oriented and he'll have that	knowing the beliefs
he has a culture	
learning about our culture	
Know culture, who her people are	to know where she come from
knowing her culture and tribes	knowing her history and background

Figure 1.7 *A selection of short responses, including some which were copied and pasted together, in our process of poetic inquiry that we have termed* 'Poetic Lines'.



Extending poetic lines to include visual data

Building upon the Poetic Lines approach, we incorporated visual data sets gathered from children during early childhood. Originally, these drawings served as a valuable research tool within LSIC data collection, enabling children to express their ideas, experiences, and identities in ways that transcend linguistic barriers. Within our research framework – working with an existing LSIC data set where we do not have the opportunity to hear the artists' stories first-hand – we prioritise respecting children's agency and the cultural context of their artwork. Allowing the images to speak for themselves as much as possible becomes a meaningful method for amplifying their voices.

Indigenous artistic expression has existed on bodies, landscapes, tools, implements, and culturally significant objects for time immemorial. Analysing LSIC young children's drawings – created in response to the prompt, *"Draw a picture of you and your family"* – builds upon Rogers' (2018) work, which emphasises the importance of visual storytelling and yarning in research with students and young people. Indigenous research methodologies highlight the need to centre first-hand data, ensuring that research remains grounded in community voices. In the context of LSIC children's drawings, this means recognising their visual narratives as primary data sources rather than treating them as supplementary material requiring adult interpretation. By

incorporating LSIC children's artwork within our Gurgurmin framework, we acknowledge these images as self-contained expressions of the children's perspectives, embedded within their cultural and social realities. This approach aligns with Indigenous research principles of respect and relationality. Rather than applying Western visual analysis techniques or imposing external interpretations, we honour these drawings as legitimate sources of knowledge. Embracing these visual narratives allows children's perspectives to be seen, heard, and valued in our research.

The LSIC data we examined consisted of 301 images drawn by participants from the B cohort at Wave 6 (when children were aged 5.5 to 7 years). Using the Gurgurmin framework, we extended upon our Yarning over Time and Poetic Lines methodologies to integrate this secondary visual data into our research. Although still in its early stages, incorporating children's drawings alongside the textual elements of Poetic Lines as a method draws on Western research traditions that integrate children's illustrations. Angell, Alexander, and Hunt (2015) examine the methodological application of drawing in research with children through the 'draw and write' approach. This creative method has been extensively used to explore children's perspectives, emphasising drawings as a means of expression. Initially introduced in health education research during the 1970s, the 'draw and write' method enables children to convey thoughts through illustrations accompanied by text. This technique offers "a relatively non-threatening means of eliciting ideas, even when it relates to a subject they might find difficult to discuss" (Angell et al., 2015, p. 20). It has been effectively applied in studies with children on topics such as sun safety (McWhirter et al., 2000), children's perceptions of health (Pridmore & Bendelow, 1995), and nutrition (Caraher et al., 2004). The literature highlights the method's inclusivity, facilitating participation from children with diverse literacy levels, disabilities, or language barriers (Box & Landman, 1994; Pridmore, 1996).

Although there is little literature on Indigenous children using drawing as a research method, Duncan's (2013) research on children's drawings underscores the idea that children's artwork is a powerful means of communication, capable of conveying abstract ideas, emotions, and social understandings. Her Four-Step Approach to Semiotic Analysis (4-SASA) offers a structured framework that could be applied to drawing-based research in future waves of LSIC, once children have completed their drawings. The steps include:

a) Isolation of Signs – Identifying distinct visual elements within a drawing.
b) Documentation of Understanding – Recording children's explanations of their drawings.
c) Categorisation of Signs – Analysing elements such as mode, size, colour, and salience.
d) Synthesis of Perspectives – Integrating these findings to construct a comprehensive interpretation (Duncan, 2013).

Duncan found that children's responses varied depending on whether the drawing activity was spontaneous or researcher-directed. She highlights the importance of researchers being attuned to these nuances to avoid imposing adult perspectives onto children's work. These are just some of the considerations for incorporating drawings into LSIC data collection in future waves. Additionally, the questions posed to children influence the outcomes. In

early waves, children were asked to draw their home and themselves with their family. Different prompts could elicit richer insights, particularly in areas of LSIC where direct representation of children's voices would be most valuable.

By extending Poetic Lines to include visual data, we recognise the power of children's artistic expression as a form of knowledge production, ensuring that their voices remain central to our research. We feature images created by the children throughout this Report, and in the final chapter, we present our reflections on the images available in the visual LSIC data collection, highlighting the recurring themes that emerge when viewed in the context of both Indigenous families and the LSIC study.

Supplementing storying with strengths-based quantitative approaches

Many of the following chapters in this Report have been structured to foreground the findings that emerged from qualitative analysis of the LSIC data via our storying approach. Where possible, these stories are supplemented by related findings that emerged from quantitative analyses.

In keeping with the Indigenous quantitative methodology described by Walter, Martin, and Bodkin-Andrews (2017), our approach to the analysis of quantitative data from LSIC sought to epistemologically prioritise Aboriginal and Torres Strait Islander voices and worldviews, with the team weaving Indigenous ways of knowing, being, and doing into our application of Western statistical techniques to the analysis and interpretation of data.

Our team of Indigenous and non-Indigenous researchers engaged regularly in collaborative yarning about specific questions to be prioritised (or not) for analysis and interpretation. Mindful of the National Aboriginal and Torres Strait Islander Early Childhood Strategy (2021), we prioritised quantitative analyses that could inform the design and provision of holistic, integrated, and culturally safe supports and services for Aboriginal and Torres Strait Islander children and their families during early childhood, which can support positive development into middle childhood and adolescence. As such, we foreground what is changeable in society, policy, systems delivering services to children and families, and communities themselves.

As with our storying approach to the analysis and interpretation of qualitative LSIC data, the holistic and strengths-based SEWB model (Gee et al., 2014; Dudgeon et al., 2025) provided a focus for many of the quantitative analyses conducted for this Report. This is because the model recognises that the nature of the connections between a person's sense of self and each domain of wellbeing "vary across the lifespan according to the different needs of childhood, youth, adulthood, and old age" (Gee et al., 2014, p. 58).

For this Report, our team were able to leverage recent work undertaken by researchers at the Centre for Indigenous Policy Research (at POLIS: The Centre for Social Policy Research, Australian National

University [ANU]), in producing the LSIC: Social and Emotional Wellbeing Report on behalf of the Commonwealth Department of Social Services (Dinku et al., in press). In their Report, Dinku and colleagues used exploratory factor analysis and structural equation modelling techniques to identify and test which LSIC quantitative variables expressed holistic social and emotional wellbeing, through an interconnected set of domains that were consistent with the SEWB model (Gee et al., 2014).

Based on the availability of survey items in LSIC (taken predominantly, but not exclusively, from the Waves 11 and 12 assessments in LSIC, when the B cohort was aged ~10.5 to 12 years [middle childhood], and the K cohort was aged ~13.5 to 15 years [adolescence]), Dinku and colleagues identified items that represented the interconnectedness of five social-emotional wellbeing domains: **Connection to body** [cf. Connection to body and behaviour in Gee and colleagues' SEWB model]; **Connection to mind and emotions**; **Connection to family and kinship**; **Connection to community**; and **Connection to culture, Country, spirituality, and Ancestors** (this last domain bringing together concepts that are delineated into three domains within Gee's SEWB model, namely: Connection to culture; Connection to Country and land; and Connection to spirit, spirituality, and Ancestors).

For quantitative analyses of SEWB outcomes in the middle childhood and adolescent periods, we used the items identified by Dinku and colleagues in their Report to construct a composite measure of overall SEWB (across all five interconnected domains) in middle childhood and in adolescence. We also created separate measures of each of the five domains contributing to this overall SEWB composite measure.

Box 1.2 provides a brief summary of our approach to constructing these categorical and continuous variables measuring overall SEWB, and each of the five domains, for use in quantitative analyses to examine middle childhood and adolescent SEWB outcomes of early childhood experiences. Further detail on the construction of these quantitative variables is provided in the Technical Appendix (Section 1.2), including a summary of the specific items comprising each domain (Table A1.3).

Box 1.2. *A brief description of our approach to constructing categorical and continuous* ***measures of overall SEWB,*** *and each of the* ***five SEWB domains, for quantitative analyses***.

A total of 59 quantitative items were used in constructing our measure of overall SEWB for this Report, with between 6 and 17 items contributing to each one of the five SEWB domains represented within overall SEWB. All but one of these five domains – **Connection to mind and emotions** – was made up of at least two subdomains (with a range of two to four subdomains comprising each domain). These same 59 items were used to measure SEWB in the middle childhood period, and again in the adolescent period.

The score on each of these 59 items was typically the minimum rating recorded to the item on any of the waves of data collection contributing to that specific developmental period (i.e., the minimum across all middle childhood waves, and the minimum across all adolescent waves). All exceptions to this use of the minimum rating noted are in **Table A1.3** of the Technical Appendix.

To create **continuous measures** of each of the five subdomains and of overall SEWB, we first standardised the scores on each of the 59 individual variables in order to distribute their scores on the same scale, and then averaged together the scores of all items contributing to a subdomain. The subdomain scores were likewise then standardised to a common metric, and the average of these scores then computed for each domain. These yielded approximately normally distributed continuous measures of each of the five domains (Connection to mind and emotions, having no subdomains, was computed as the average of the 17 items contributing to this domain). Finally, we computed the average of the scores on the five subdomains to measure overall SEWB. Again, we did this in each of the middle childhood and the adolescent periods.

For both middle childhood and adolescence, we also derived a **categorical measure** of overall SEWB, and **dichotomous indicators** of connection on each of the five SEWB domains. The latter were created first, by visually examining the distribution of scores on the continuous domain score and applying a threshold that distinguished

approximately the highest scoring 70-90% of children (who were considered to have connection on that domain) from the lowest scoring 10-30% of children (who were considered to not have a connection on that domain). **Table 1.1** reports the proportion of children connected on each of the five SEWB domains in each of middle childhood and adolescence, respectively.

Finally, the categorical measure of overall SEWB was created by counting the number of domains on which children had an above-threshold connection, and then categorising these connection counts into four levels:

1. all five of the SEWB domains connected (or, if data on one domain was missing, all four of the remaining SEWB domains connected),
2. four of the five SEWB domains connected (or, if data on one domain was missing, three out of the four SEWB domains connected),
3. three of the five SEWB domains connected, and
4. two or fewer domains connected.

Children who were missing data on more than one of the five domains were excluded from analyses using this variable. The proportions of children in each category of this variable are summarised in **Table 1.2**, for the middle childhood and adolescent periods respectively.

Finally, we also created a 'longitudinal' categorical measure of the **stability of SEWB** across the middle childhood and adolescent periods. Here, we grouped the 953 children in LSIC for whom we had the overall SEWB variable available in both of these developmental periods into three categories:

1. children with **strong** overall SEWB in **both** middle childhood and adolescence;
2. children with **strong** overall SEWB in **either** middle childhood or adolescence; and
3. children who had **lower** overall SEWB in **both** in middle childhood and adolescence

Children in the first group had all five, or four of the five, SEWB domains connected in **both** developmental periods. Children in the second group had all five, or four of the five, SEWB domains connected in **either** of these two developmental periods. Children in the third group had three or fewer of the SEWB domains connected in both periods.

Proportions of children with connections on the SEWB domains

As summarised in Table 1.1, somewhere between 70% and 90% of children in LSIC indicated a connection to the five SEWB domains during middle childhood and during adolescence.

Table 1.1. *Proportions (and numbers) of children during middle childhood and during adolescence who had connection to each of the five SEWB domains*

SEWB domain	Subdomains included in the domain	Middle Childhood (*n*=1,279 with data on at least four of five SEWB domains) % (*n*)	Adolescence (*n*=1,091 with data on at least four of five SEWB domains) % (*n*)
Connection to body	• Healthy habits • Good physical health • Not needing assistance for a health condition • Not requiring hospital treatment	71% (912)	78% (850)
Connection to mind and emotions		90% (1,085)	90% (878)
Connection to family and kin	• Family relationships • Relationships with mum • Talking with family	79% (998)	80% (865)
Connection to community	• Youth opinions on community • Primary carer's opinions on community	87% (865)	87% (940)
Connection to culture, Country, Ancestors, and spirituality	• Learning about being Aboriginal and/or Torres Strait Islander • Being Aboriginal and/or Torres Strait Islander in class • Experience of culture	80% (957)	80% (866)

As shown in Table 1.2, on our categorical measures of overall SEWB during middle childhood and during adolescence, approximately three quarters of children had connections on all five, or on four of the five, SEWB domains.

Table 1.2. *Proportions (and numbers) of children during middle childhood and during adolescence according to the number of SEWB domains connected*

Overall SEWB	**Middle Childhood** (*n*=1,279 with data on at least four of five SEWB domains) % (*n*)	**Adolescence** (*n*=1,091 with data on at least four of five SEWB domains) % (*n*)
Connections on all of the SEWB domains	40% (515)	48% (521)
Connections on all but one of the SEWB domains	36% (457)	28% (310)
Connections on three SEWB domains	13% (168)	14% (157)
Two or fewer SEWB domains connected	11% (139)	9% (103)

Stability of overall SEWB across development: Among the 953 children who had SEWB information available for both middle childhood and adolescence, the categorical measure of the stability of overall SEWB across these periods indicated that:

- 34% of children had stable and strong overall SEWB during **both** middle childhood and adolescence.
- another 62% of children had strong overall SEWB during **either** middle childhood or adolescence.
- fewer than 5% of children had lower overall SEWB in **both** in middle childhood and adolescence.

For analyses, we examined which early childhood experiences related to strong SEWB in both or either of these developmental periods (categories i and ii), each compared to lower SEWB in both these periods (category iii).

Other middle childhood and adolescent outcomes of interest: In addition to the analyses focused on these SEWB outcomes in middle childhood and adolescence (as defined according to Dinku and colleagues' implementation of the SEWB model by Gee and colleagues), the team also undertook other quantitative analyses of middle childhood and adolescent outcomes, including other health, learning, and developmental outcomes. Our approach to these quantitative analyses similarly foregrounded Indigenous ways of knowing, being, and doing to the design of research questions that applied Western statistical techniques to the analysis and interpretation of data.

The accompanying Technical Appendix to this Report provides further detail regarding how we derived measures from quantitative variables for use in our analyses. We typically provide only brief descriptions of the measures within the text of this Report, and direct readers to the Technical Appendix for comparative description of key variables.

Artist Interpretation: Three meeting places represent the developmental stages that children grow through. Each person within the meeting place starts small and gets bigger, representing growth and development. The dotted path represents the journey and the capture of information through this progression for the participants, through a cultural lens.

Chapter 2:

Mapping LSIC children's experiences by developmental stage

Chapter 2: Mapping LSIC children's experiences by developmental stage

In this chapter, we present a snapshot of LSIC children's experiences during early childhood (the pre-school and early school years) and, for some experiences, how the prevalence of these change as children mature into middle childhood and adolescence. These experiences help to contextualise the findings presented in subsequent chapters of this Report. Though the LSIC sample are drawn from diverse areas across Australia, the experiences of the sample are not necessarily representative of the broader population of Aboriginal and Torres Strait Islander children across Australia (Walter, Martin, Bodkin-Andrews, 2017).

It is also important to remember that the data reported here about children's pre-school and early school experiences reflect information that was collected between the calendar years 2008 and 2015. If these data were gathered again today, different proportions of Aboriginal and Torres Strait Islander children and families might report these experiences.

We provide information on a diversity of factors that policy makers and service providers might want to know when designing and implementing holistic, integrated, and culturally safe supports and services for Aboriginal and Torres Strait Islander children and their families during early childhood, to help them to flourish during the early years, and beyond into middle childhood and adolescence.

Home environment

From Wave 4, LSIC parents provided information on the family members who were living in the household with the Study Child – for example, a mother, father, sister, brother, grandmother, and so on. For this Report, we looked at whether the child had lived with these various family members during the early childhood (pre-school or early school), middle childhood, and adolescent developmental periods (see Figure 2.1).

In each period, almost all LSIC children were living with their mother and at least one sibling. Greater than half of study children also lived with their father. Approximately one fifth lived with grandparents, approximately one quarter with other relatives (such as an aunt, uncle, or cousin), and around one in twenty with a non-relative.

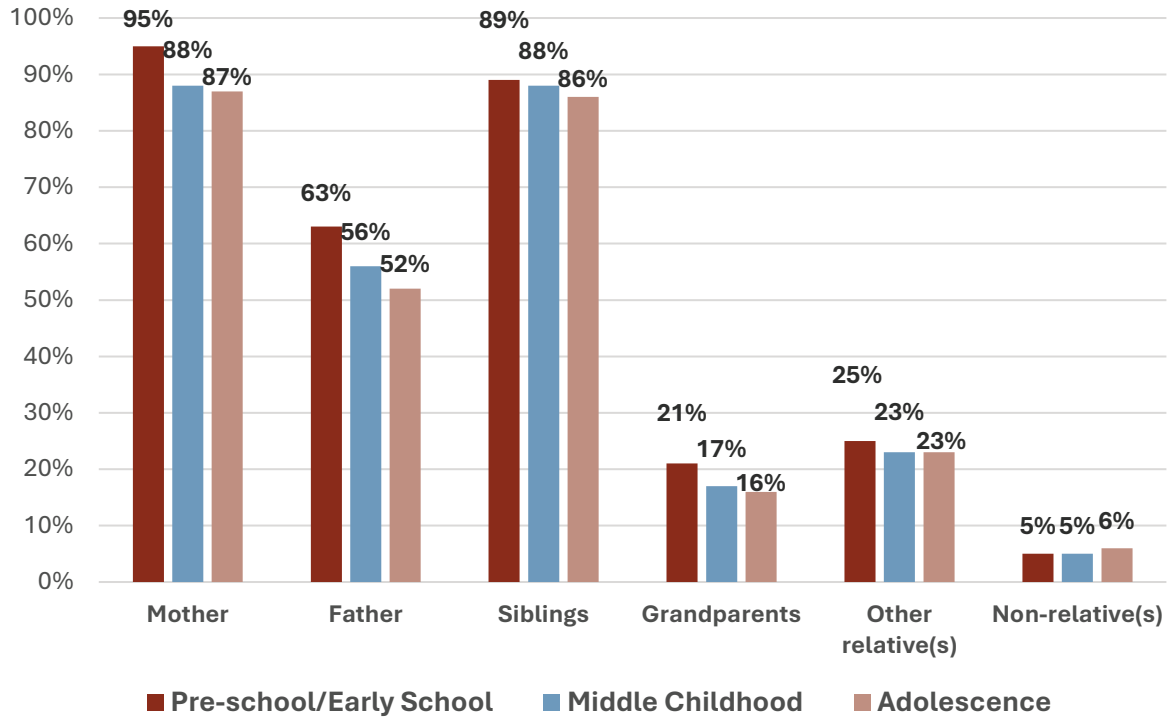


Figure 2.1. *Proportion of children living with each type of family member, during each developmental period.*

Parents also reported the total number of people living in the household with their child. We computed the maximum of this variable for each developmental period, as shown in Figure 2.2.

During the pre-school period, the most frequently reported maximum number of people in the household was four, but this rose to five during all other developmental periods. A small number of children (<10%) were residing in households that accommodated greater than 10 people.

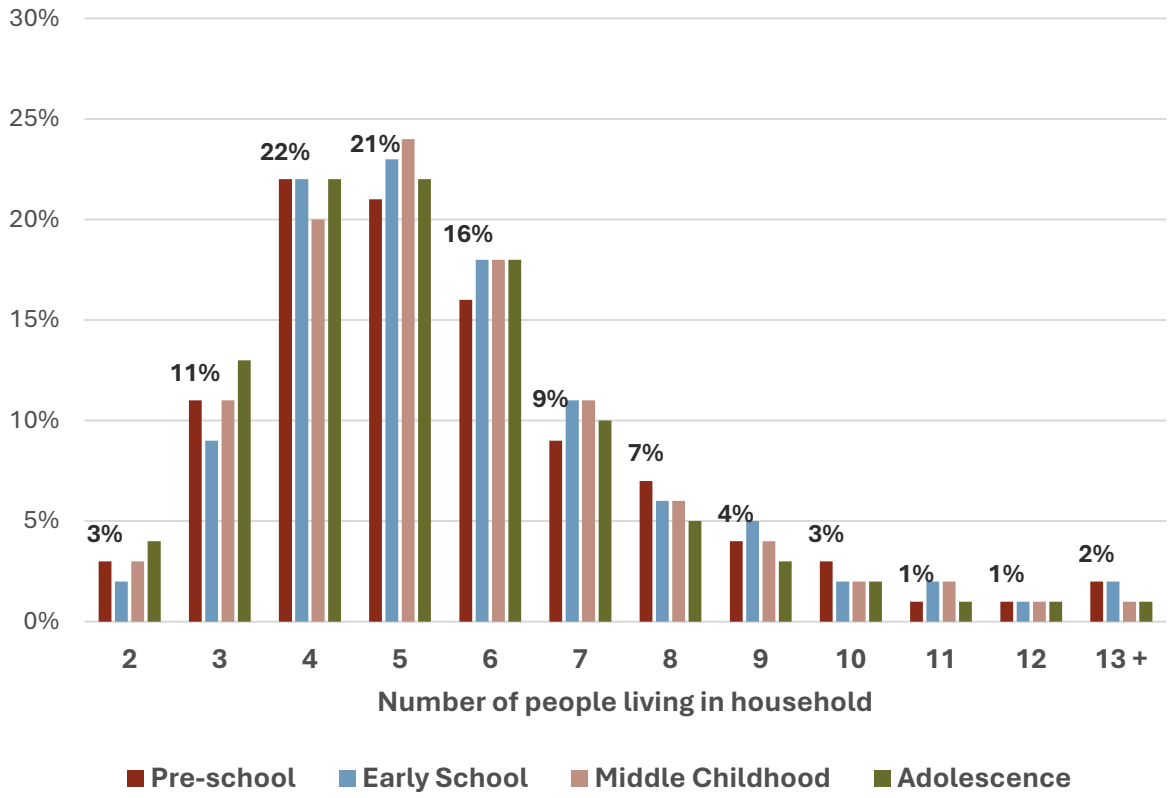


Figure 2.2. *Proportion of children in each developmental period, according to the number of people living in the house with the child. Within the Figure, the percentages detailed in text refer to the pre-school period.*

Socio-economic factors

The Index of Relative Indigenous Socio-Economic Outcomes is derived from information on the employment, education, income, and housing characteristics of Aboriginal and Torres Strait Islander communities from Indigenous Regions across Australia (Biddle, 2009). This variable ranges from 1 to 10 (deciles) where higher numbers reflect higher socioeconomic outcomes.

Figure 2.3 describes the relative number of children in the LSIC sample, within each developmental period, ranked within each decile of advantage. In each of the four developmental periods, approximately two-thirds of LSIC children (62-64%) were from the middle four decile ranks (4th–7th), with roughly equivalent proportions of children represented from the deciles above and below this middle range.

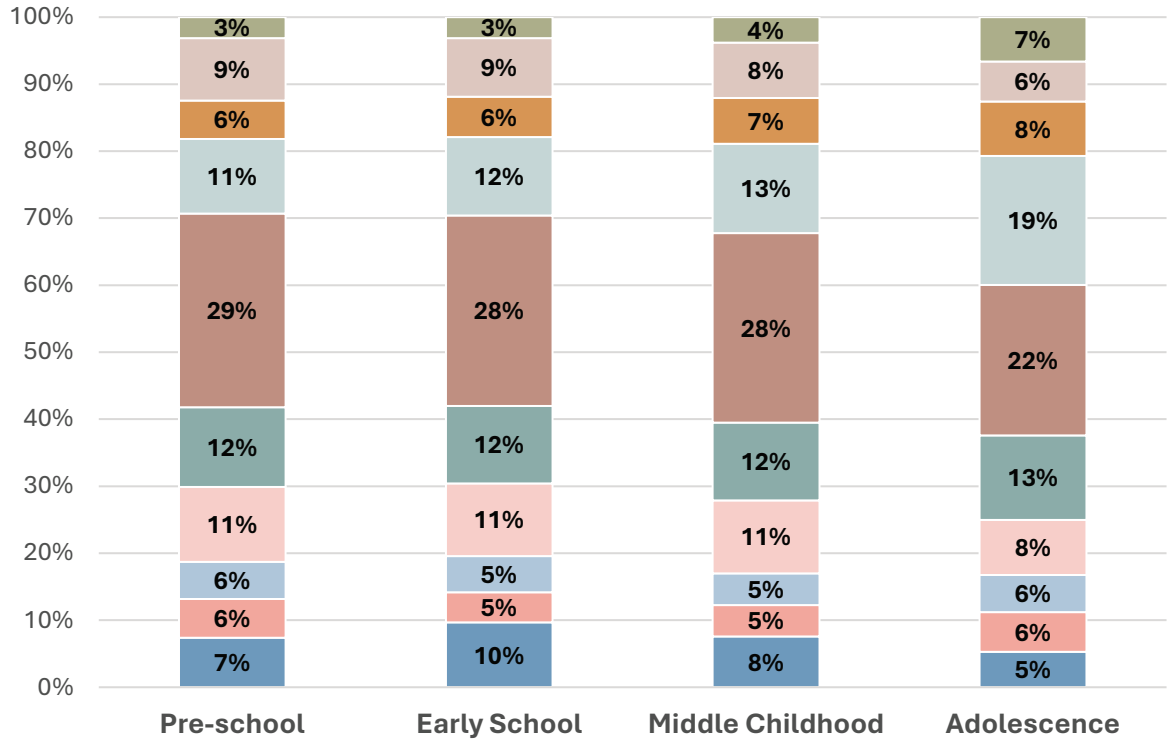


Figure 2.3. *Proportion of children in the LSIC sample, within each developmental period, represented in each decile of socio-economic advantage/disadvantage (deciles appear vertically from the relatively most disadvantaged at the base of the figure, to the relatively most advantaged at the top).*

Another factor that is often used to represent children's socio-economic environment during childhood is the level of education attained by their parent/caregiver(s). In Figure 2.4, we summarise the educational level attained by the primary caregiver (Parent 1) of the LSIC children in each developmental period. These data show that many LSIC primary caregivers were taking part in further education as their children grew, as the proportion of primary caregivers of children educated beyond secondary school (Year 12) increased from under a third during early childhood to almost two-thirds by adolescence.

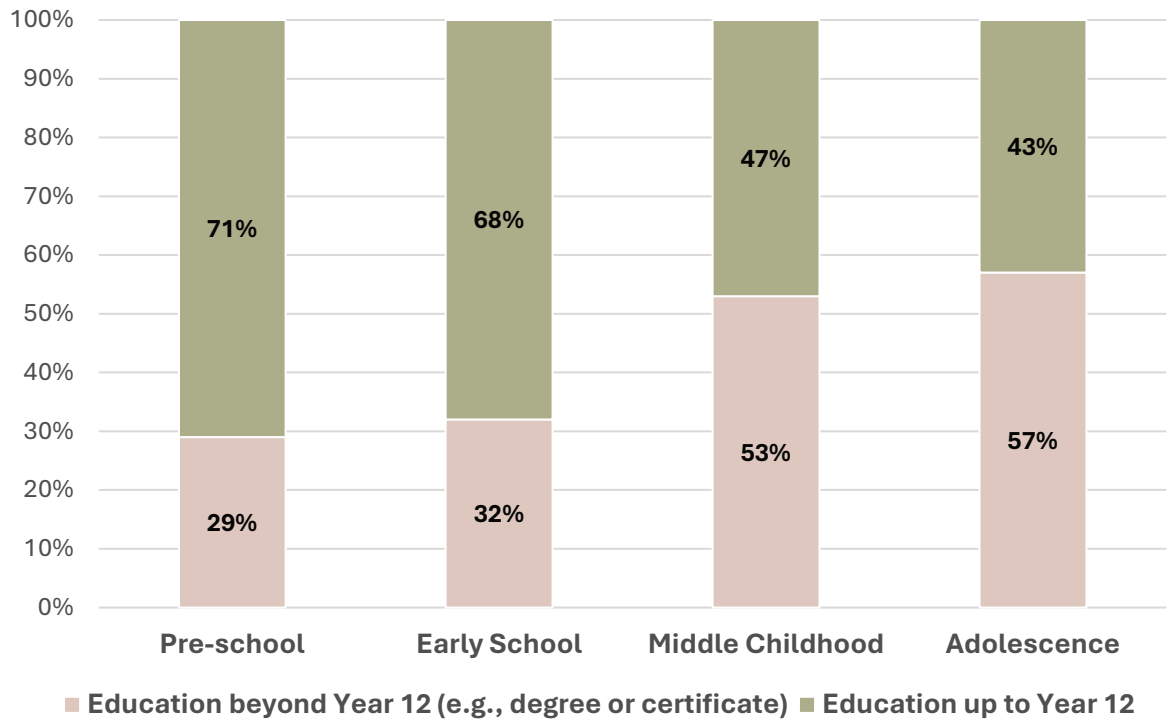


Figure 2.4. *Proportion of primary caregivers of children with education beyond Year 12, and up to and including Year 12, within each developmental period.*

Early childhood education and care and education experiences

The next series of figures provides a snapshot of the early childhood care and education and care experiences of children in LSIC during the pre-school period (under 5 years of age), with this information provided according to remoteness area.

Prior to starting school, a majority (55%) of children in LSIC received informal childcare from family, family friends, and/or neighbours (*n* = 886), a third (34%) accessed both informal and formal childcare (*n* = 548), 3% of children received formal childcare only (*n* = 54), and the remaining 8% did not participate in these types of childcare (*n* = 122). The distribution of children across these childcare types, according to remoteness, is presented in Figure 2.5. The figure demonstrates that children in remote and very remote areas were least likely to be cared for in formal childcare settings (see Technical Appendix Table A2.1 for detail regarding statistically significant differences between remoteness areas).

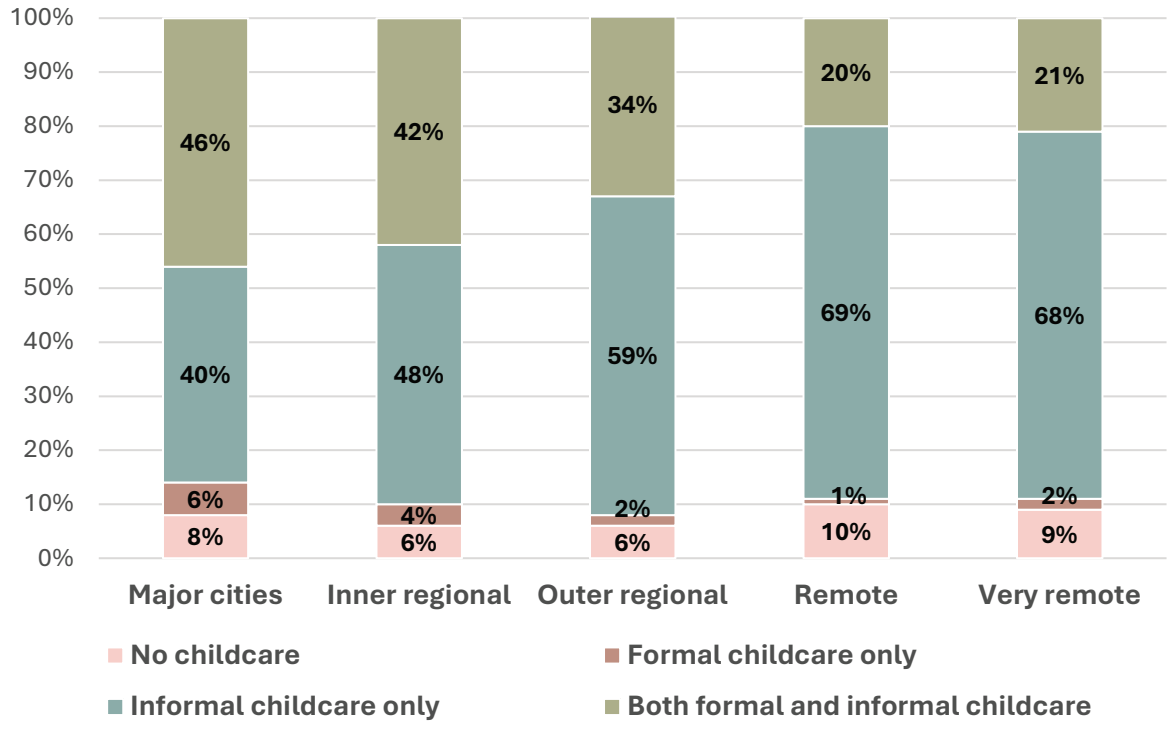


Figure 2.5. *Proportion of children receiving different types of childcare during the pre-school period, according to remoteness area (data available for 1,610 children).*

LSIC parents also reported on playgroup attendance among their children. Playgroups are regular group gatherings of children and their parents / caregivers in community settings that aim to support parenting, child development, and community connections. At some stage prior to starting school, 40% (*n* = 626) attended a playgroup. Figure 2.6 reports percentages of children, according to remoteness categories, who attended a playgroup (see Technical Appendix Table A2.2 for detail regarding statistically significant differences between remoteness areas). Though playgroup attendance was less common in remote and very remote communities, one-third of the children in these areas had attended a playgroup.

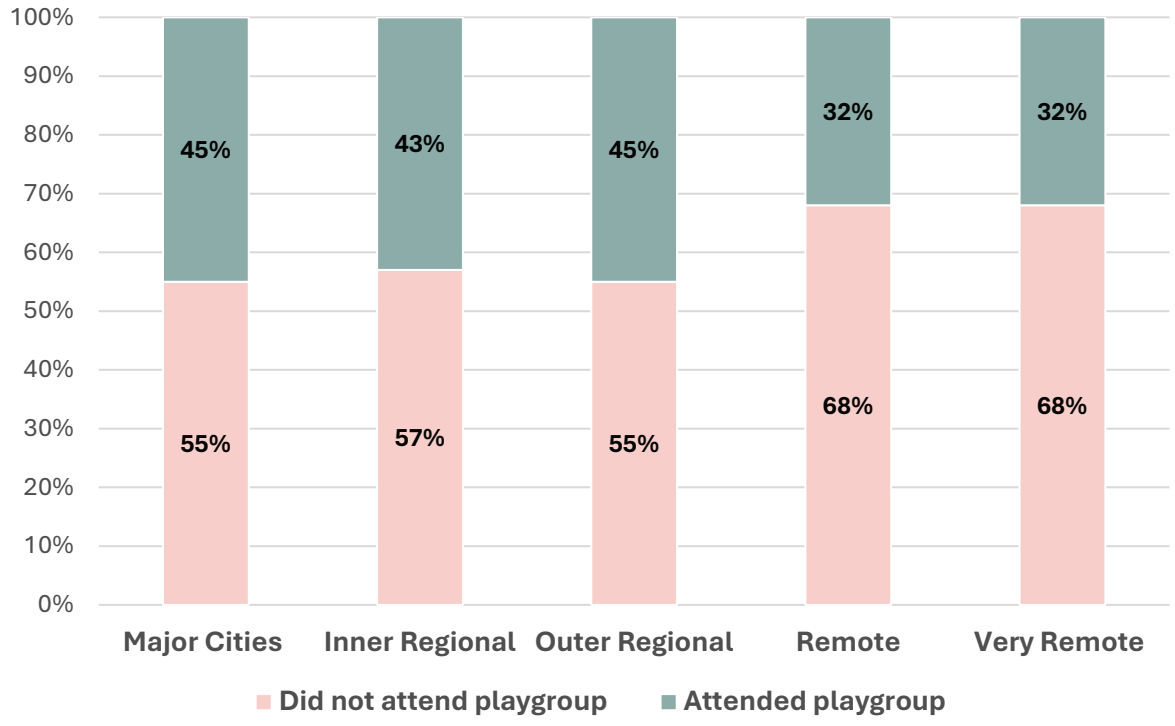


Figure 2.6. *Proportion of LSIC children attending playgroups in pre-school period, according to remoteness area (data available for 1,576 children).*

Greater than half of LSIC children (55%; *n* = 878) had attended a formal pre-school program in the year before fulltime schooling. Figure 2.7 reports percentages of children, within each of the five remoteness categories, who attended and did not attend pre-school in the year before fulltime schooling. Approximately two-thirds of children in major cities, inner regional, and outer regional areas attended pre-school. Attendance was least common in remote communities, where 37% of children had attended pre-school, and slightly more prevalent (43%) in very remote communities (see Technical Appendix Table A2.3 for detail regarding statistically significant differences between remoteness areas).

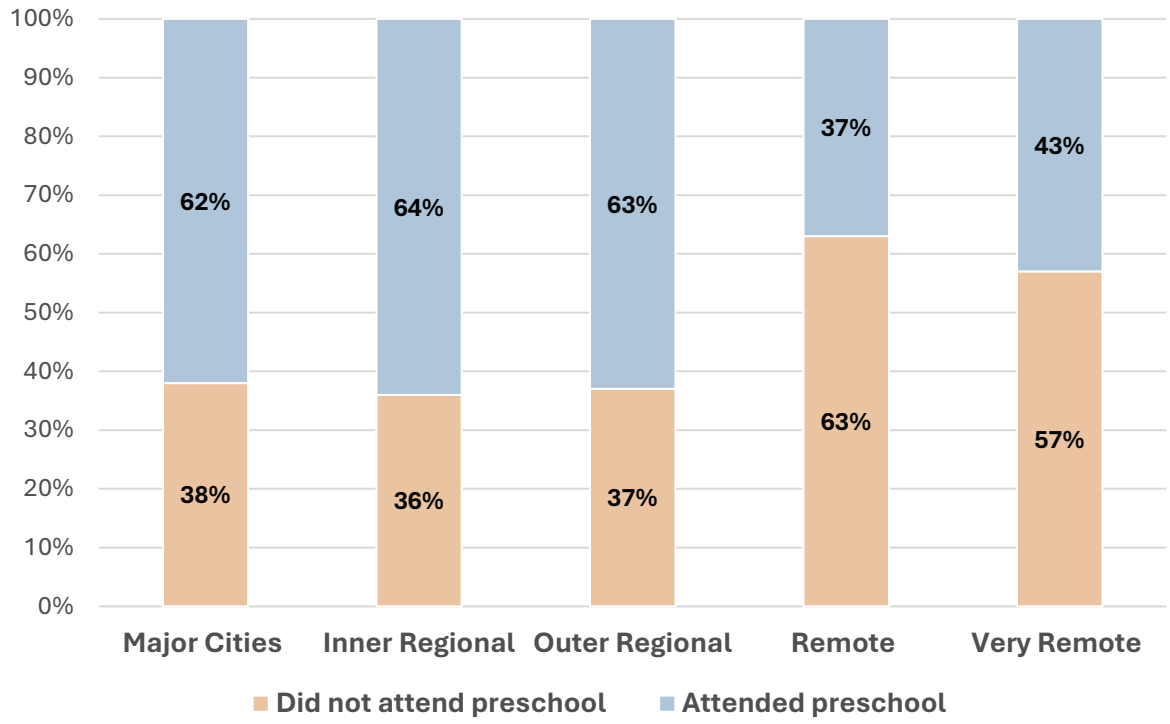


Figure 2.7. *Proportion of LSIC children attending a pre-school program in the year before fulltime schooling, according to remoteness area (data available for 1,576 children).*

Home learning activities

Parents were also asked to report on a range of activities they engaged in with their child during early childhood (pre-school and early school). These data are presented in Figure 2.8 (activities parents engaged in with children during the past week in the period prior to starting school), and Figure 2.9 (reading at home with the child during the past week, according to the pre-school and early school periods).

Most experiences in Figure 2.8 were typical of the majority of families in LSIC (>85%), with fewer families engaged in going to a playground (70%) or going swimming (46%).

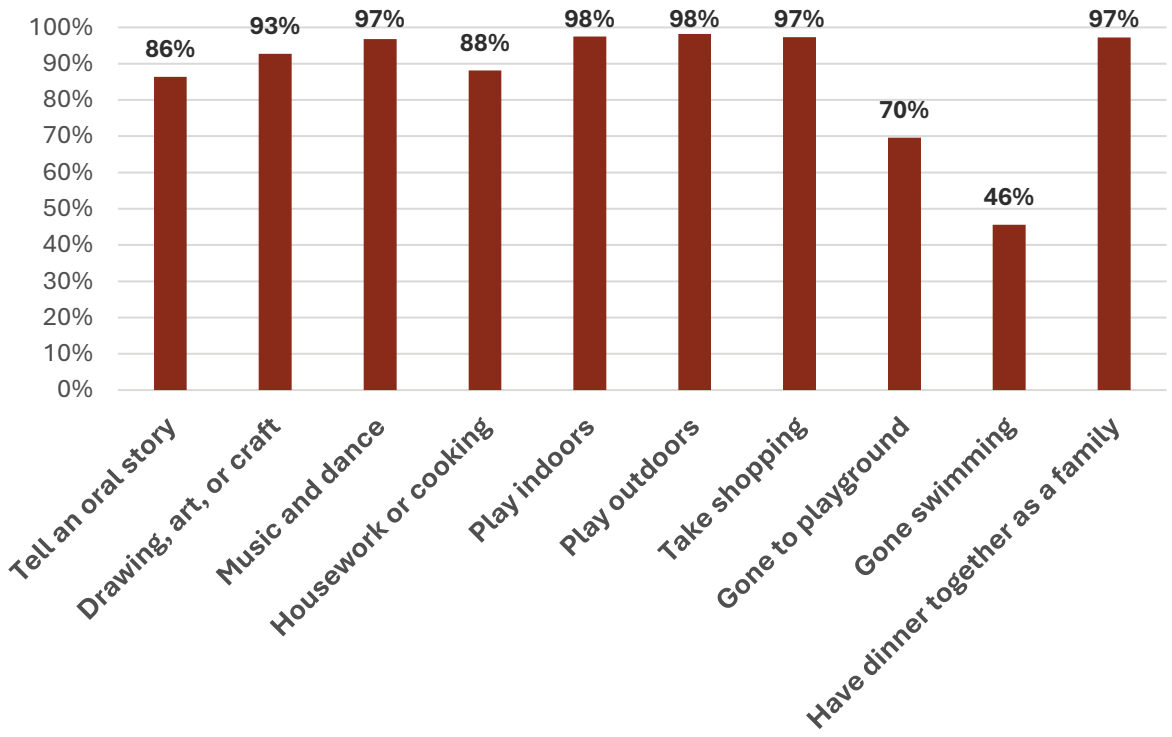


Figure 2.8. *Proportion of LSIC children whose family engaged in home learning activities in the past week during the pre-school period.*

Parents listening to their children read in the past month was common during both the pre-school (77%) and early school periods (89%).

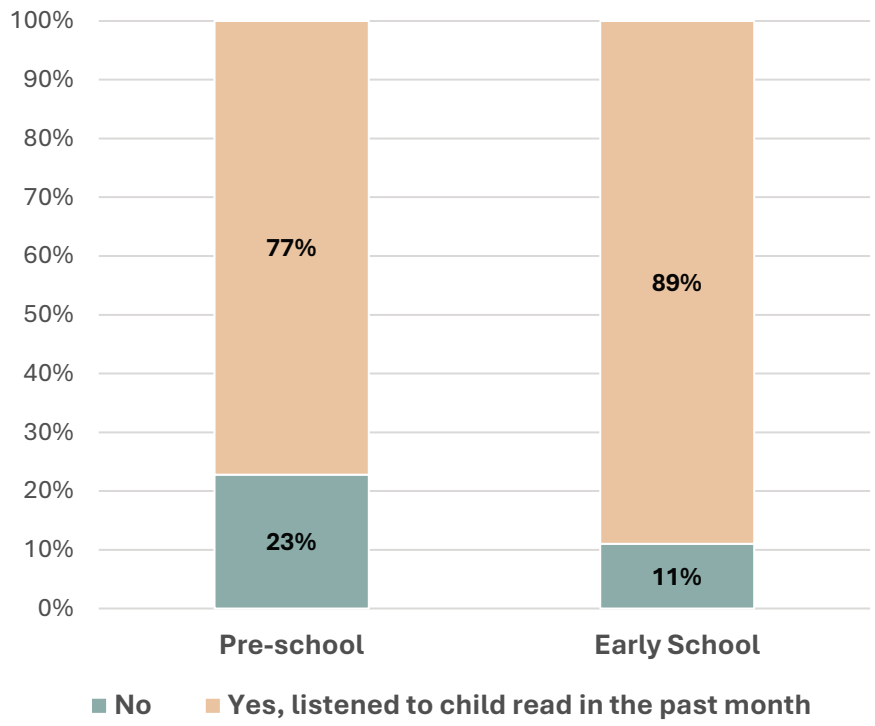


Figure 2.9. *Proportion of LSIC children whose parents reported listening to them read in the past month (vs. not) at some point during the pre-school and early school periods.*

Global health of the child and primary caregiver, and the child's physical activity

Primary caregivers (Parent 1) in LSIC providing ratings of their child's global health (excellent, very good, good, fair, or poor) and of their own global health.

Most of the children in LSIC were reported (by their parents) to have very good or excellent health – this included 57% of children during pre-school, 62% during early school, 70% during middle childhood, and 56% during adolescence (see Figure 2.10). A progressively greater number of children were reported to have very good or excellent health as children matured from pre-school into early school and middle childhood, but rates of very good/excellent health reverted in adolescence to be equivalent to the pre-school period.

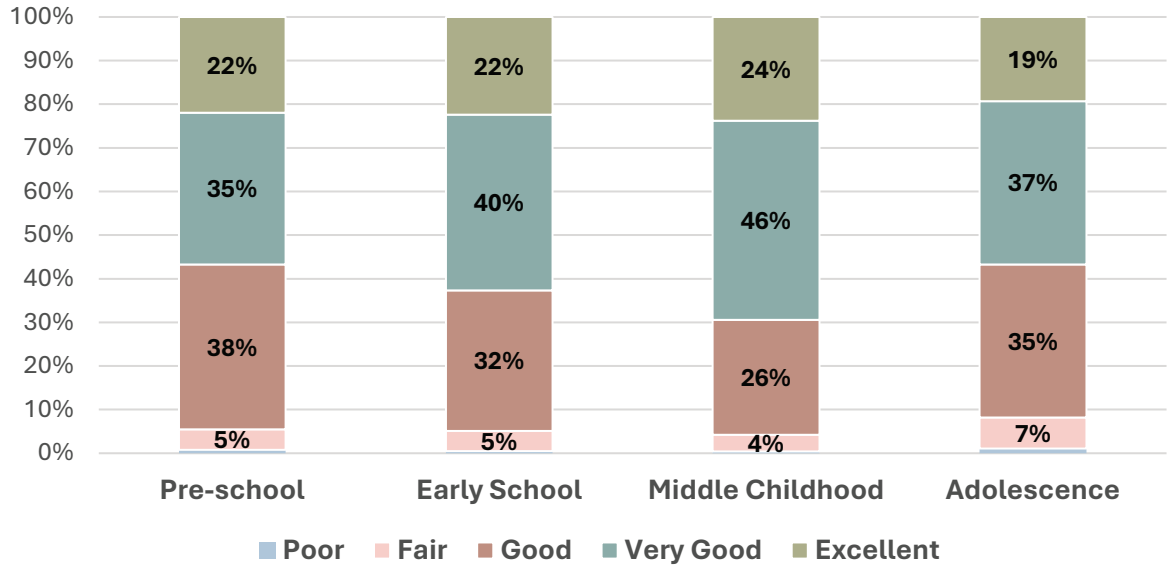


Figure 2.10. *Proportion of children with poor, fair, good, very good, or excellent global health, as reported by the child's primary caregiver, according to developmental period.*

Within each of these four developmental periods, approximately half of LSIC primary caregivers rated their own global health as good (Figure 2.11). The proportion of parents with poor or fair health was relatively stable during the pre-school (22%), early school (19%), and middle childhood (22%) periods, but increased during adolescence (28%).

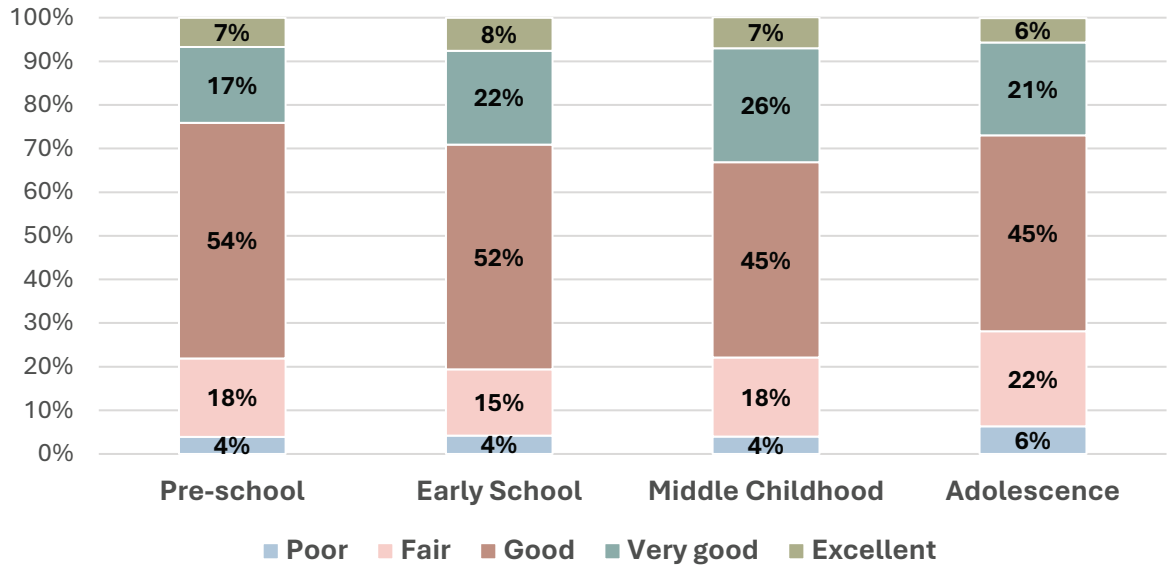


Figure 2.11. *Proportion of primary caregivers with poor, fair, good, very good, or excellent global health, according to developmental period.*

Parents also reported on children's enjoyment of and engagement in physical activity during the pre-school period (prior to starting school). Almost all parents (95%) reported that their child liked physical activity a lot (see Figure 2.12). When asked whether or not their child gets involved in their sport or exercise (e.g., watching them play or training with them), four in five parents (79%) reported that their child got involved in their exercise.

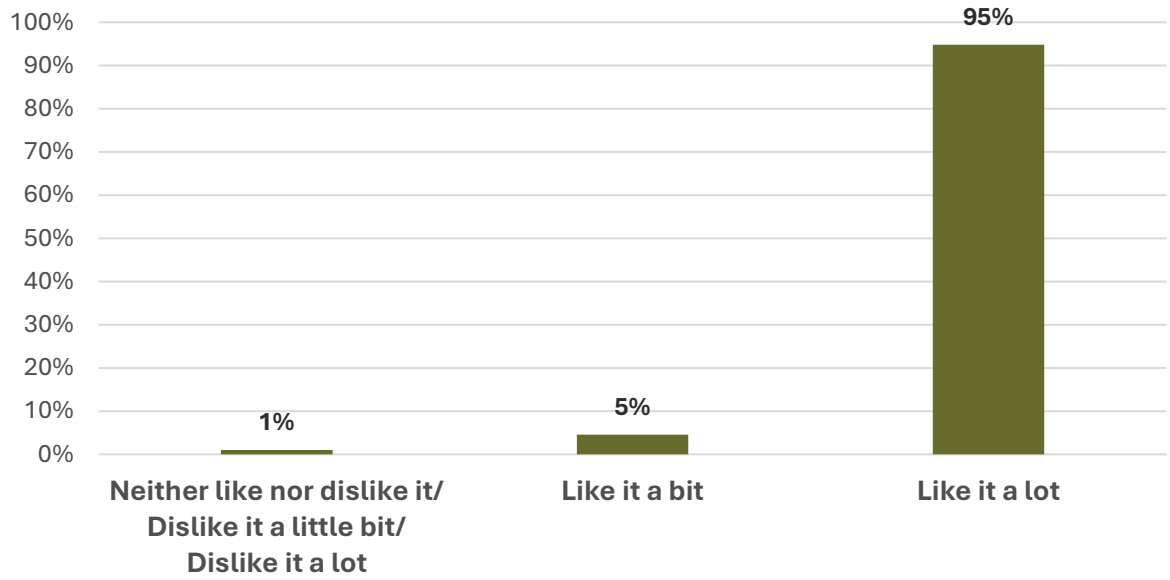


Figure 2.12. *Proportion of children according to their attitudes towards physical activity during the pre-school period.*

When asked about their child's preferences for quiet or active activities during the pre-school period, 70% of parents said their child preferred active things, like running, playing chasey, dancing, or sport (Figure 2.13).

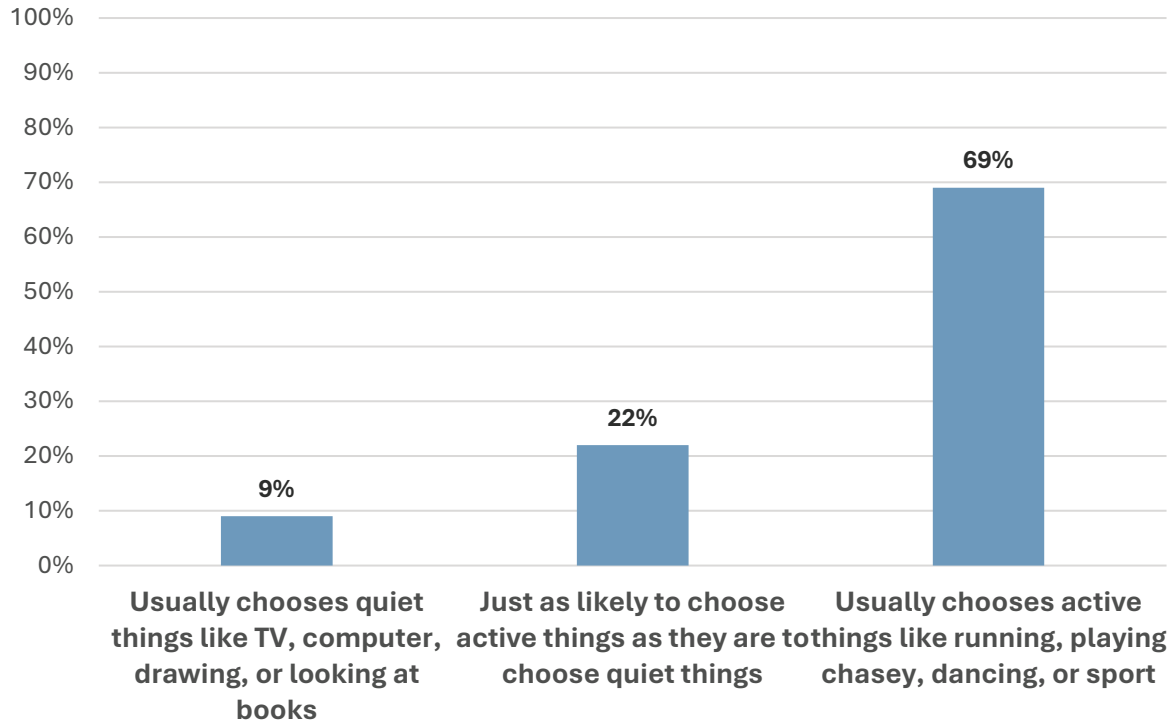


Figure 2.13. Proportion of children according to parental report of their preferences for quiet or physical activities.

Cultural or native food

Among the qualitative items analysed by the Report team as part of our 'storying' approach to describing LSIC participants' experiences were the primary caregivers' responses to the question "*What types of bush tucker does (Study Child) eat?*", which was asked as part of the wave 4 assessment.

As will be apparent later in this Report – in the stories of 'Mason' (p. 97) and 'Sam' (p. 138) – eating cultural or native foods feature as practices that help LSIC children to grow up strong in culture, and identity as an Aboriginal and/or Torres Strait Islander person.

Many LSIC children were engaging with their culture by eating cultural or native food (Figure 2.14). During the pre-school period, half of LSIC children were eating this food (49%), but this rose to around 70% by middle childhood and adolescence.

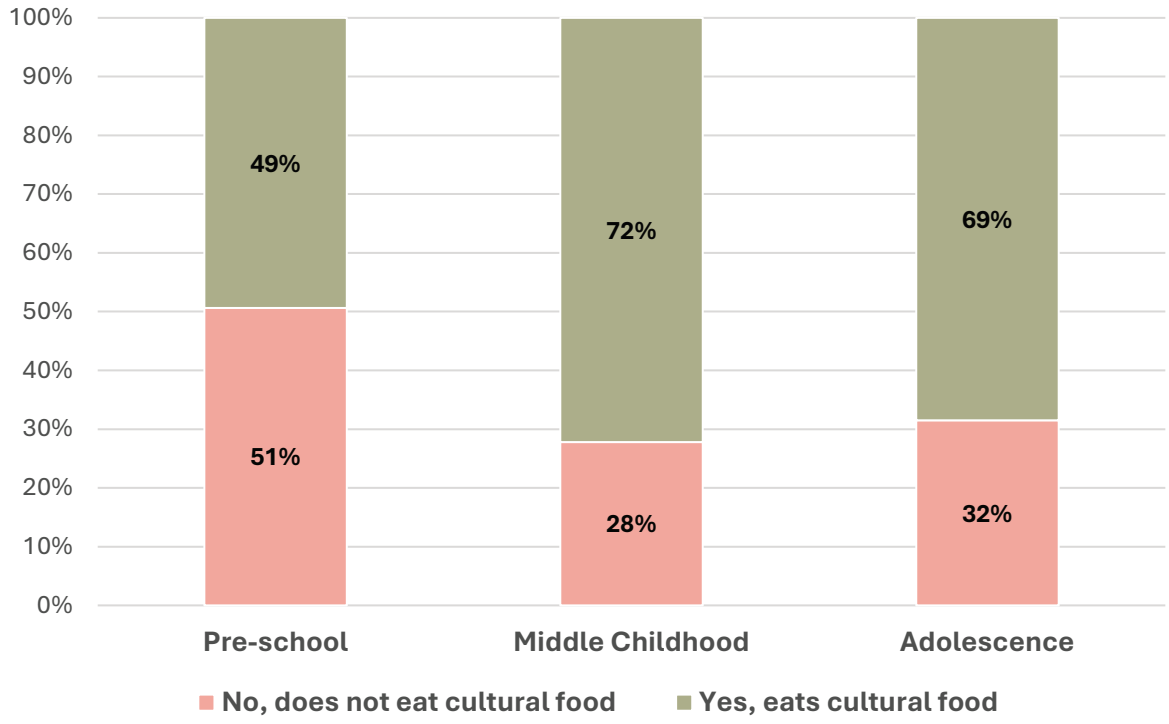


Figure 2.14. *Proportion of children who eat cultural food, according to developmental period.*

Experiences of racism

LSIC parents also reported on their child's and their own experiences of racism, discrimination, or prejudice.

Figure 2.15 presents the proportion of children whose parents reported that they were bullied or treated unfairly at school because they were Indigenous, within each of the early school, middle childhood, and adolescent periods. The proportion of children experiencing racism at school was consistent, at around one in ten within each of these periods (9% to 11%).

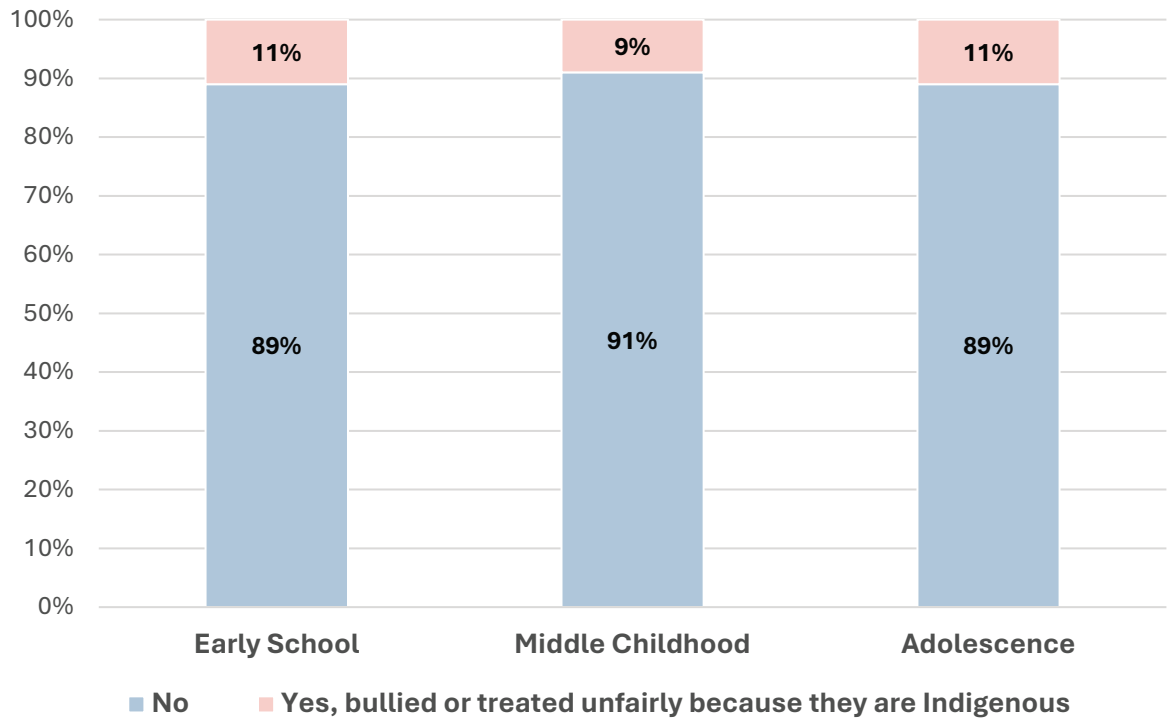


Figure 2.15. *Proportion of LSIC children who experienced bullying or unfair treatment at school because they were Indigenous, within each developmental period.*

Figure 2.16 presents the proportion of LSIC children according to the frequency of racism, discrimination, or prejudice experienced by their family, as reported by parents across the early school, middle childhood, and adolescent periods. As LSIC children grew, the frequency of families' racism experiences increased – whereas almost 70% of parents reported "never" or "hardly ever" during early school, this reduced to 50% by adolescence.

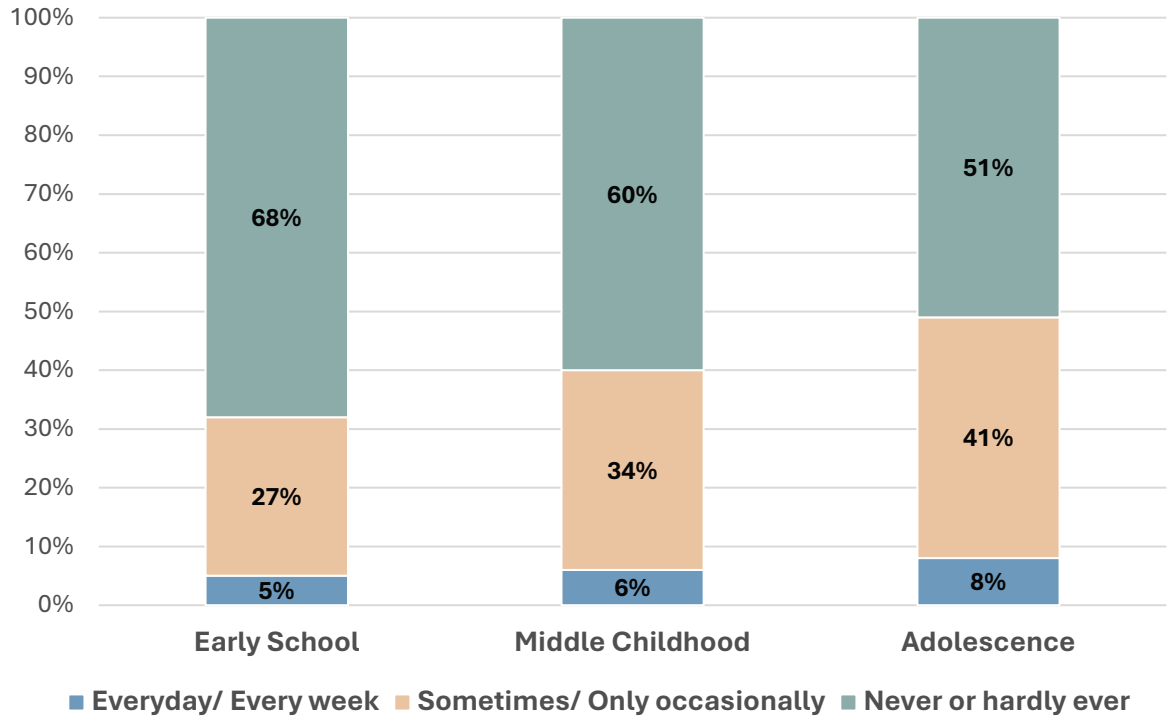


Figure 2.16. *Proportion of LSIC children according to the frequency of racism, discrimination, and prejudice experienced by the family during each development period.*

Qualities parents want to pass on to LSIC children

Parents were asked to identify five qualities that they found most important for teaching their child at home. Figure 2.17 presents the percentage of parents who identified these qualities as being important to them in the pre-school period. The most frequently reported quality was "tolerance and respect for others" (89%), followed by "independence" (82%), "feeling of responsibility" (69%), and "hard work" (53%).

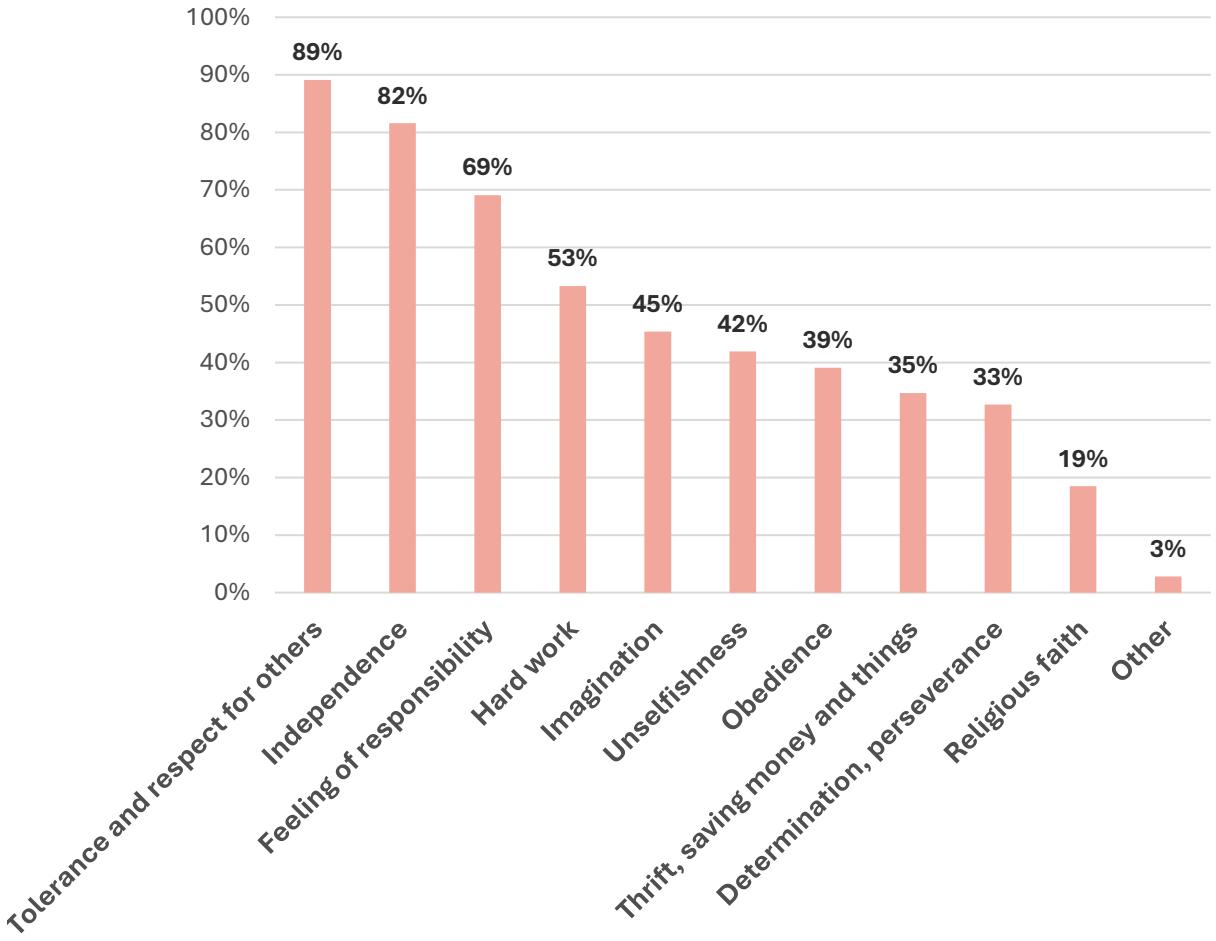


Figure 2.17. *Proportion of parents who, in the pre-school period, consider specific qualities to be important to pass on to their child.*

During the early childhood period, parents were also asked to identify five aspects of Aboriginal and Torres Strait Islander culture that they would most like to pass on to their child. Figure 2.18 displays the percentages of parents that identified each aspect as important to them. The most frequently reported aspect of Indigenous culture that parents reported wanting to pass on to their child was “family history” (64%), followed by “showing respect” (63%), “pride in identity” (58%), and “knowing country” (54%).

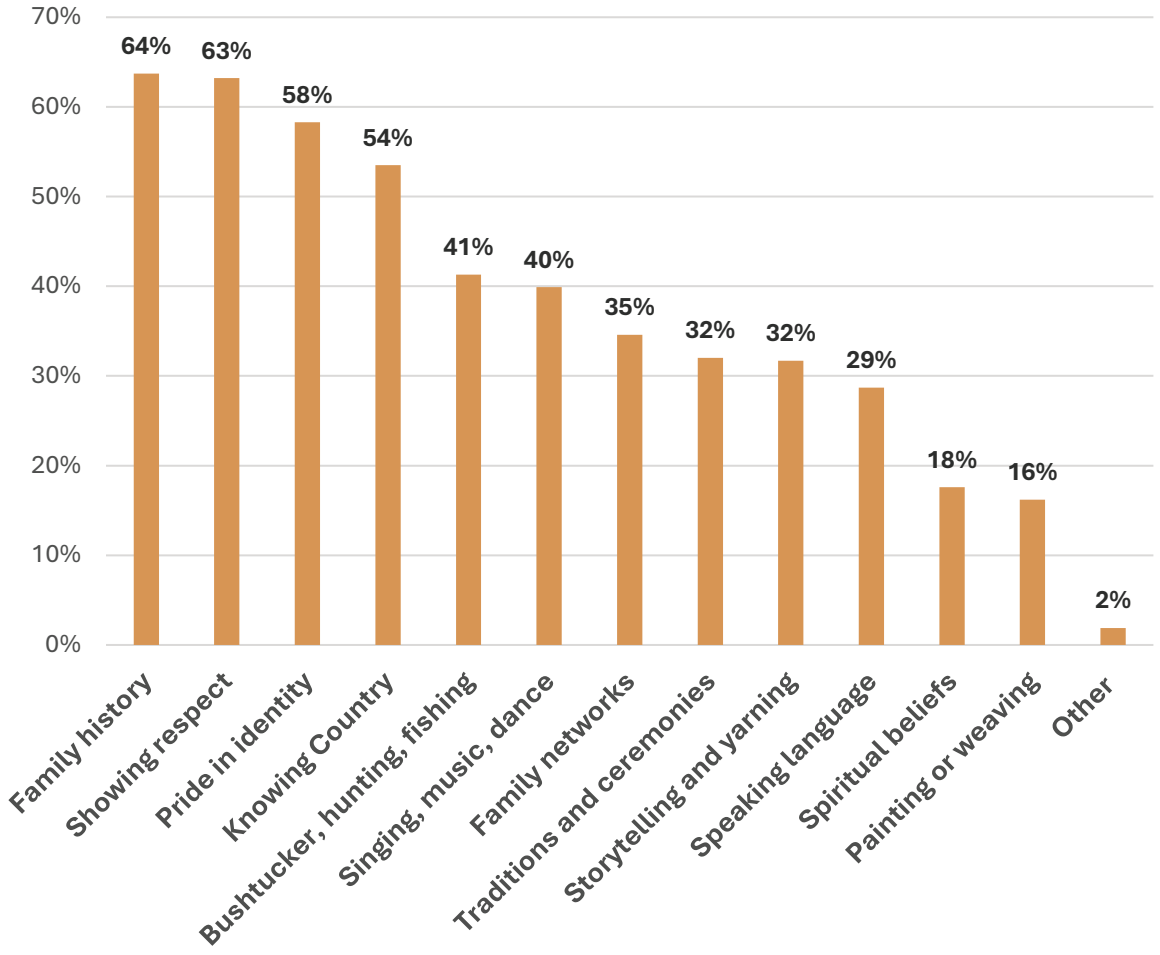
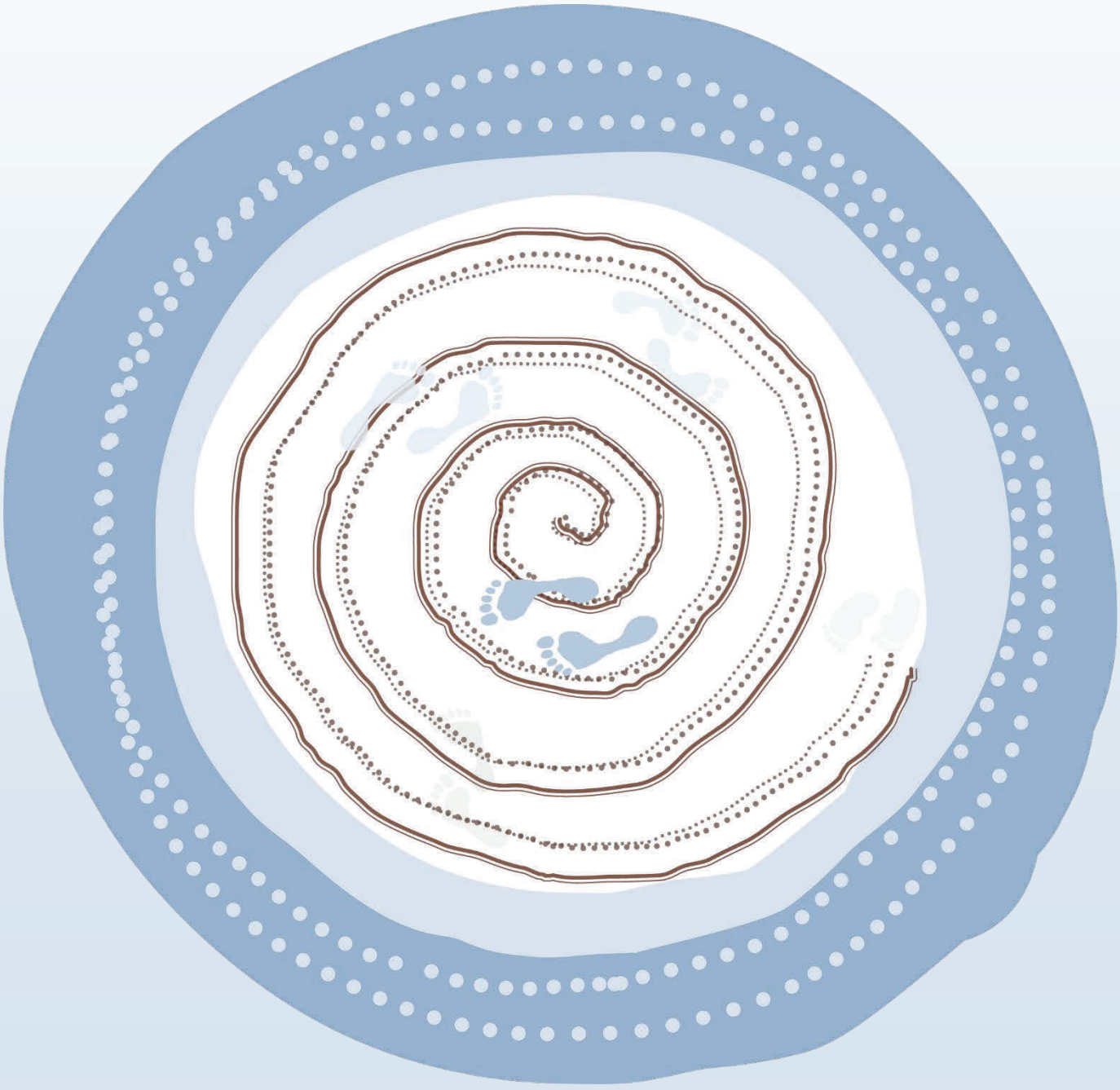


Figure 2.18. *Proportion of parents who, in the pre-school period, want to pass on this aspect of Aboriginal and Torres Strait Islander culture onto their child.*

Artist Interpretation: The spiral represents self-awareness and the expansion of one's spiritual and cultural journey. It is often used to portray healing, and in this story represents the awareness, exposure and participation in culture for the participants. The human footprints represent their growth and development when they walk with culture as part of their lives.

Chapter 3:

Growing up strong knowing one's culture

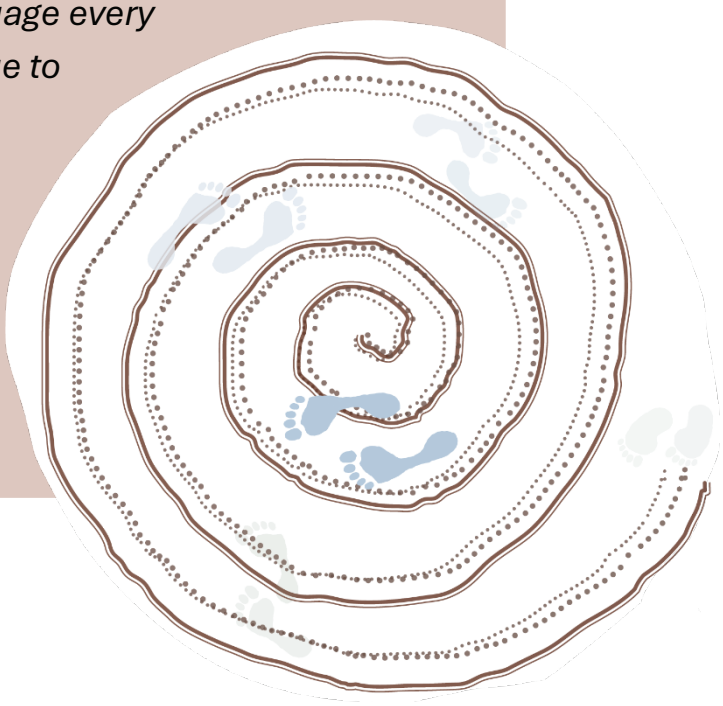


Chapter 3: Growing up strong knowing one's culture

LSIC participants describe knowing culture as helping children to grow up strong

'Allira' is a Torres Strait Islander girl with a non-Indigenous mother and a Torres Strait Islander father, who live together with their children in a large city. When she's young, her mum knows Allira ***will grow up strong if she understands her cultural heritage*** *and can contribute to her Torres Strait Islander community. Living in the city,* ***Allira's mum is aware that growing up away from the Torres Strait means connection to culture will depend on opportunities through places like school and community groups****. By the time she's four years old,* ***Allira's dad is taking her to shows and exhibits to teach her about Aboriginal and Torres Strait Islander cultures****. Through her family's teaching, Allira learns about her clan and the stories of her family history. By the time she's 13 years old, both Allira and her dad believe she'll grow up strong as a part of her family and* ***by learning her culture.***

'Ty' is an Aboriginal and Torres Strait Islander boy born to a mother and father who are both Aboriginal and Torres Strait Islander people, who live with Ty and their other children. ***From when Ty's a baby, his mum knows that to grow up strong Ty will need to not just understand his culture but also use it. Ty's mother is proud of both her Aboriginal and Torres Strait Islander cultures, especially resilience in maintaining cultural protocols. Before Ty goes to school, he learns about culture at home, in his community, and at daycare. His knowledge of culture comes through dancing, singing, attending community functions, and speaking language every day. With culture as a basis for growing up strong, by the time he's a teenager, Ty's mother knows he has all the mentors and family supports that he needs to make the right choices about his future.*** *Still speaking language every day, Ty knows he'll continue to grow up strong by being educated, having his family's support, being respectful, getting a good job,* ***and knowing culture.***



Though residing in different settings (a large city and a town, respectively), Allira's and Ty's stories illustrate how opportunities to engage with cultural activities – for example, through art, dance, and stories – are recognised by their parents as providing important ways of connecting their Aboriginal and Torres Strait Islander children with culture and supporting them to grow up strong. In their SEWB framework, Gee and colleagues (2014) highlight the importance of Connection to culture for Aboriginal and Torres Strait Islander peoples, as follows:

> *Connection to culture … refers to Aboriginal and Torres Strait Islander peoples' capacity and opportunity to sustain and (re)create a healthy, strong relationship to their Aboriginal or Torres Strait Islander heritage. This includes all of the associated systems of knowledge, law and practices that comprise this heritage. Culture is, of course, a complex concept to try and define or articulate…* (but constitutes) …. *a body of collectively shared values, principals, practices and customs, and traditions.* (Gee et al., 2014, p. 61)

These experiences of LSIC families – as reflected in Allira's and Ty's stories – align with prior findings obtained from content analysis of LSIC fathers' responses to the question *"What is the best thing about being your child's father?"* asked in Wave 5 (when the B cohort were aged 4.5 to 6 years and the K cohort 7.5 to 9 years). In that study (Prehn et al., 2022), fathers identified the sharing of culture with their children as a positive and direct contributor to their children growing up strong. Analysis of Indigenous father's responses taken from the assessment completed a year prior (Wave 4) indicated the top three ways fathers passed on culture was through collecting foods, yarning and stories, and teaching Indigenous knowledge and culture (Prehn et al., 2021).

Previous research using LSIC data by Fatima and colleagues (2022) used information collected from the K cohort at Wave 8 (when children averaged 9.3 years of age) to identify cross-sectional relationships between cultural knowledge (measured using three items, including the child's knowledge of clan/tribe, of their people, and of their family stories/history) and children's social-emotional difficulties on the Strengths and Difficulties Questionnaire (Goodman, 1997). These results indicated that Indigenous children with strong cultural knowledge were less likely to experience social and emotional problems than their less culturally knowledgeable peers.

LSIC children's early childhood experiences of participating in culture

Parents in LSIC reported on children's participation in different types of cultural experience during the pre-school period, with responses regarding three specific cultural activities available for 1,572 children. Ratings from parents indicated whether their children had participated in these events. Ratings indicating participation in the activities (occasionally, often, or very often) were combined and compared with ratings by parents who indicated that their children had "never" participated in such events.

Overall, parent responses indicated that most LSIC children had participated in the following cultural experiences:

- 76% had attended an Indigenous cultural event.
- 54% had experience in learning traditional arts, painting, and/or dance.
- 51% had participated in traditional Indigenous practices, including fishing and/or hunting.

A high percentage of children (85%) had participated in at least one of these three cultural experiences by the time they started school. However, children's opportunities to participate in such cultural activities, prior to school, differed according to their residential location.

Figure 3.1 illustrates the proportion of children within each remoteness area who participated in at least one of the three cultural activities. Children living in more remote

areas of Australia had the highest participation rates, with 97% of children living in very remote areas and 88% of children living in remote areas participating in at least one of these cultural activities, prior to school. Participation in cultural activities, in the pre-school period, was lower for among children residing in urban areas, with 81% in inner regional and 76% in major cities participating. Nevertheless, these rates are still quite high. Technical Appendix Table A3.1 details the statistically significant differences between remoteness areas in rates of cultural participation during the pre-school period.

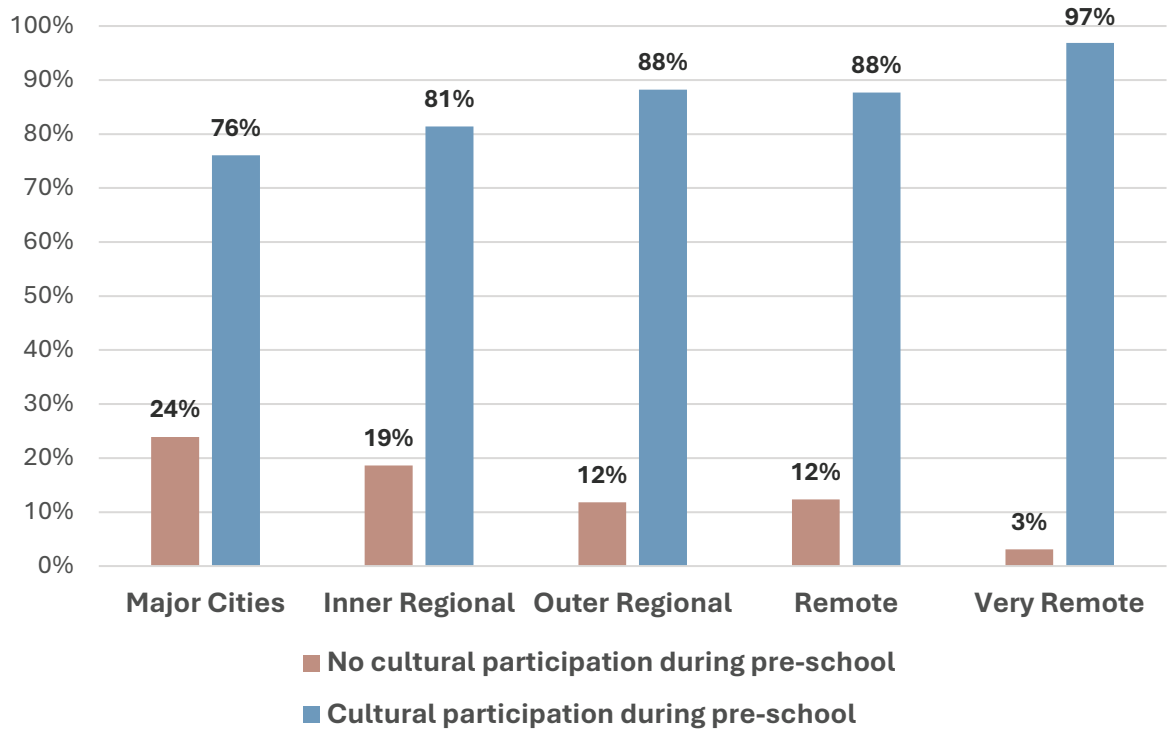


Figure 3.1. Variation in the proportion of children participating in cultural experiences during the pre-school period, according to remoteness area.

How does early childhood cultural participation relate to later SEWB?

We examined whether children who participated in cultural experiences during the pre-school period had significantly stronger overall SEWB, during middle childhood and during adolescence, than children who did not participate during the pre-school period. As described in Chapter 1, an overall measure of SEWB was calculated according to connections on the five SEWB domains represented in quantitative variables. For these analyses, data on overall SEWB during middle childhood was available for 1,151 children, and during adolescence for 970 children, who also had information on pre-school participation in cultural activities.

As illustrated in Figure 3.2, a combined total of 78% of children who had participated in cultural activities during the pre-school period had stronger overall SEWB profiles in middle childhood – as reflected in strong connections on all five SEWB domains (42%) or strong connections on all but one of the SEWB domains (36%). Comparatively, a combined total of 66% of children who did not participate in cultural activities during the pre-school period also had similarly strong overall SEWB profiles.

To understand whether participation in cultural activities across the pre-school period was likely to be associated with a strong SEWB profile during middle childhood, we compared two groups of children – those who had participated in cultural activities and children who did not participate in cultural activities during the pre-school period. In these analyses, we compared the likelihood of children having: (i) connections on all SEWB domains; (ii) on all but one of the SEWB domains; and (iii) connections on three of the five SEWB domains, to a group of children (iv) with connections on two or fewer of the five SEWB domains. Detail of the effect sizes obtained from these multinomial regression analyses, which compared each of the three levels of stronger SEWB connections against the lowest level of SEWB connections, are reported in the Technical Appendix (Table A3.2), with the findings illustrated in figures within this chapter.

Children who participated in cultural experiences were significantly more likely to have connection on all SEWB domains, or on all but one of the SEWB domains, than to be connected on just two or fewer of the five domains during middle childhood. This is illustrated by symbols in Figure 3.2, which contrasts the filled circles relative to the unfilled circle (see Technical Appendix Table A3.2 for effect sizes). As signified by the absence of the filled circle above the “three SEWB domains connected” bar, the likelihood of having connections on three SEWB domains relative to two or fewer domains did not differ significantly for children who did and did not participate in cultural activities during the pre-school period.

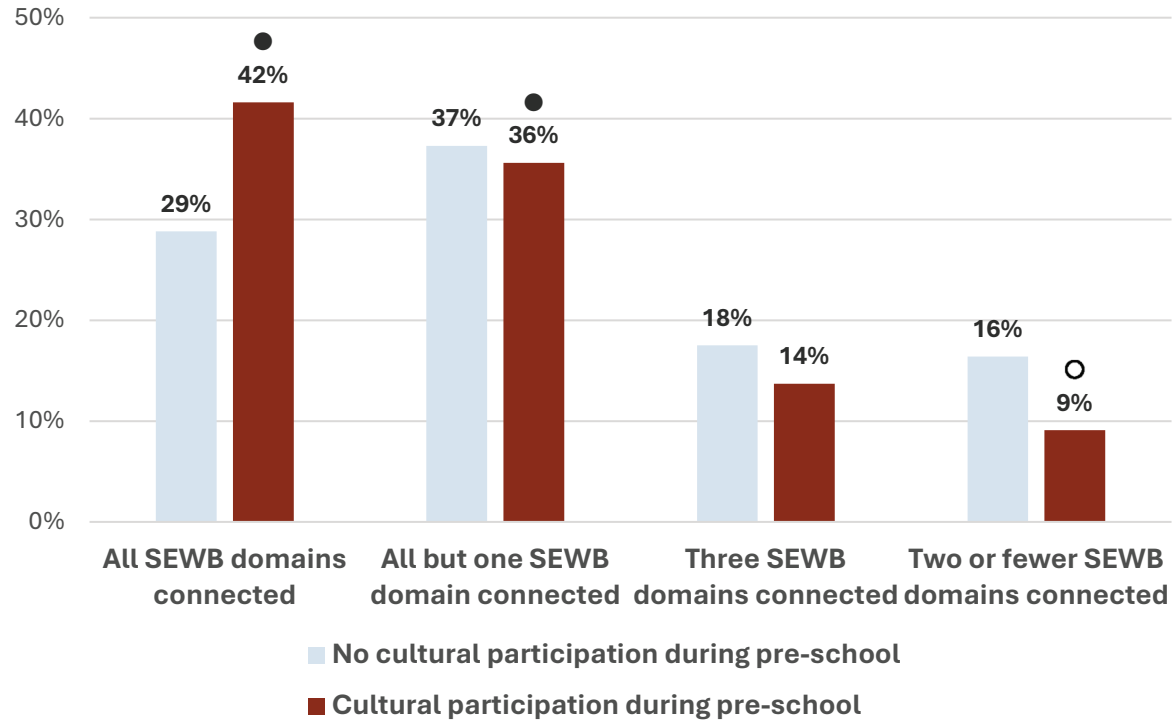


Figure 3.2. *Overall SEWB during middle childhood (reflected in the number of connected SEWB domains) for children who participated and did not participate in cultural activities during the pre-school period. The filled circles indicate where children who participated in cultural activities were significantly more likely than children who did not participate to show stronger overall wellbeing than low overall wellbeing (i.e., relative to the reference condition of two or fewer domains connected, denoted by the unfilled circle).*

Further analyses showed mostly similar effects for adolescence. As illustrated in Figure 3.3 (and see Technical Appendix Table A3.2 for effect sizes), more than half of children (51%) who participated in cultural activities during the pre-school period had the strongest overall SEWB (connections on all SEWB domains) during adolescence. Comparatively, among children who did not participate in cultural experiences during the pre-school period, a third of children (35%) also had the strongest overall SEWB (all domains connected) during adolescence.

As indicated by the filled circle relative to the unfilled circle, during adolescence, children who participated in cultural experiences during the pre-school period were significantly more likely than children who did not

participate to have connections on all five SEWB domains than to have connections on two or fewer of the five domains. The other levels of SEWB connection did not differ significantly for children who participated in cultural activities in the pre-school period and children who did not participate in cultural activities in the pre-school period.

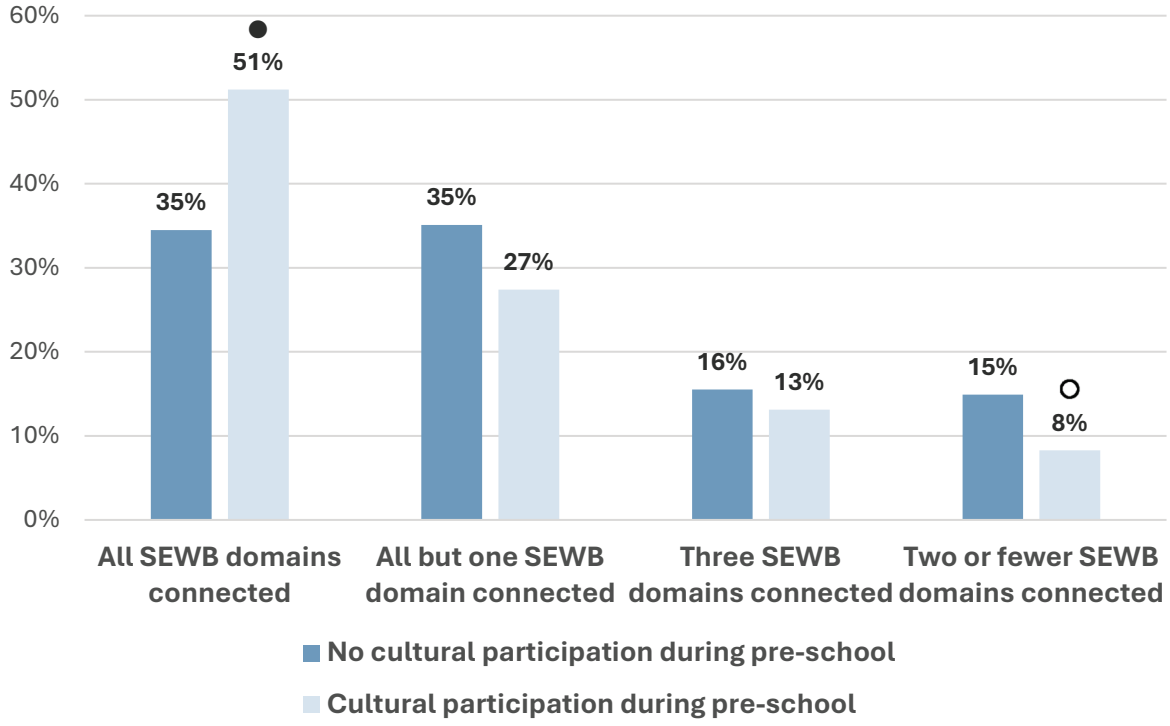


Figure 3.3. *Overall SEWB during adolescence (reflected in the number of connected SEWB domains) for children who participated and did not participate in cultural activities during the pre-school period. The filled circle indicates where children who participated in cultural activities were significantly more likely than children who did not participate to show stronger overall wellbeing than low overall wellbeing (i.e., relative to the reference condition of two or fewer domains connected, denoted by the unfilled circle).*

We further examined the **stability** of overall SEWB across middle childhood and adolescence among children who did and who did not participate in cultural activities during the pre-school period. This analysis used data from 853 children who had SEWB information available during both of these developmental periods as well as information on pre-school participation in cultural activities. As described in Chapter 1 (and further in the Technical Appendix) this analysis compared – for children who did and did not participate in cultural activities during pre-school – the likelihood of children having stable strong overall SEWB across **both** middle childhood and adolescence, and the likelihood of children having stronger overall SEWB in **either** of these periods, each relative to having stable lower overall SEWB across both periods.

As illustrated in Figure 3.4 (and see Technical Appendix Table A3.3 for effect sizes from the multinomial regression analysis), a third of children (35%) who participated in cultural activities during the pre-school period had consistently strong SEWB across both middle childhood and adolescence (i.e., these children had connections on all, or all but one of, the SEWB domains in **both** developmental periods). About a quarter of children (27%) who did not participate in cultural activities during the pre-school period had consistently strong SEWB across both middle childhood and adolescence. Another two-thirds of children had stronger SEWB profiles in **either** of the middle school or adolescence period – this was 61% of children who participated in cultural activities in the pre-school period and 65% who did not participate in cultural activities in the pre-school period.

Analyses indicated that children who participated in cultural activities during the pre-school period were

significantly more likely, relative to their peers who did not participate, to have strong SEWB connections in **both** or **either** of the middle childhood and adolescent periods than they were likely to have lower SEWB connections during both these periods. That is, having stable connections on all, or all but one, of the SEWB domains during **both or either** of the middle childhood and adolescent periods was more likely for children who participated in cultural activities during the pre-school period (relative to non-participating children) than was having connections on three or fewer of the five SEWB domains across both middle childhood and adolescence. These significant differences are illustrated in Figure 3.4 by the filled circles relative to the unfilled circles.

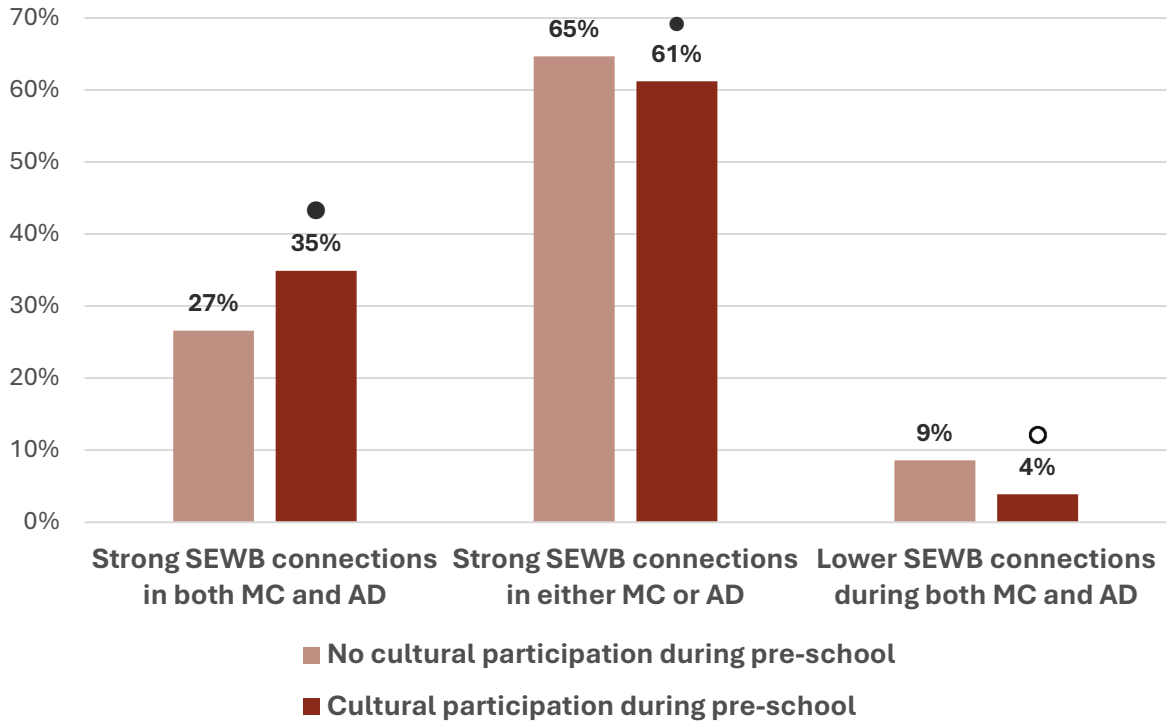


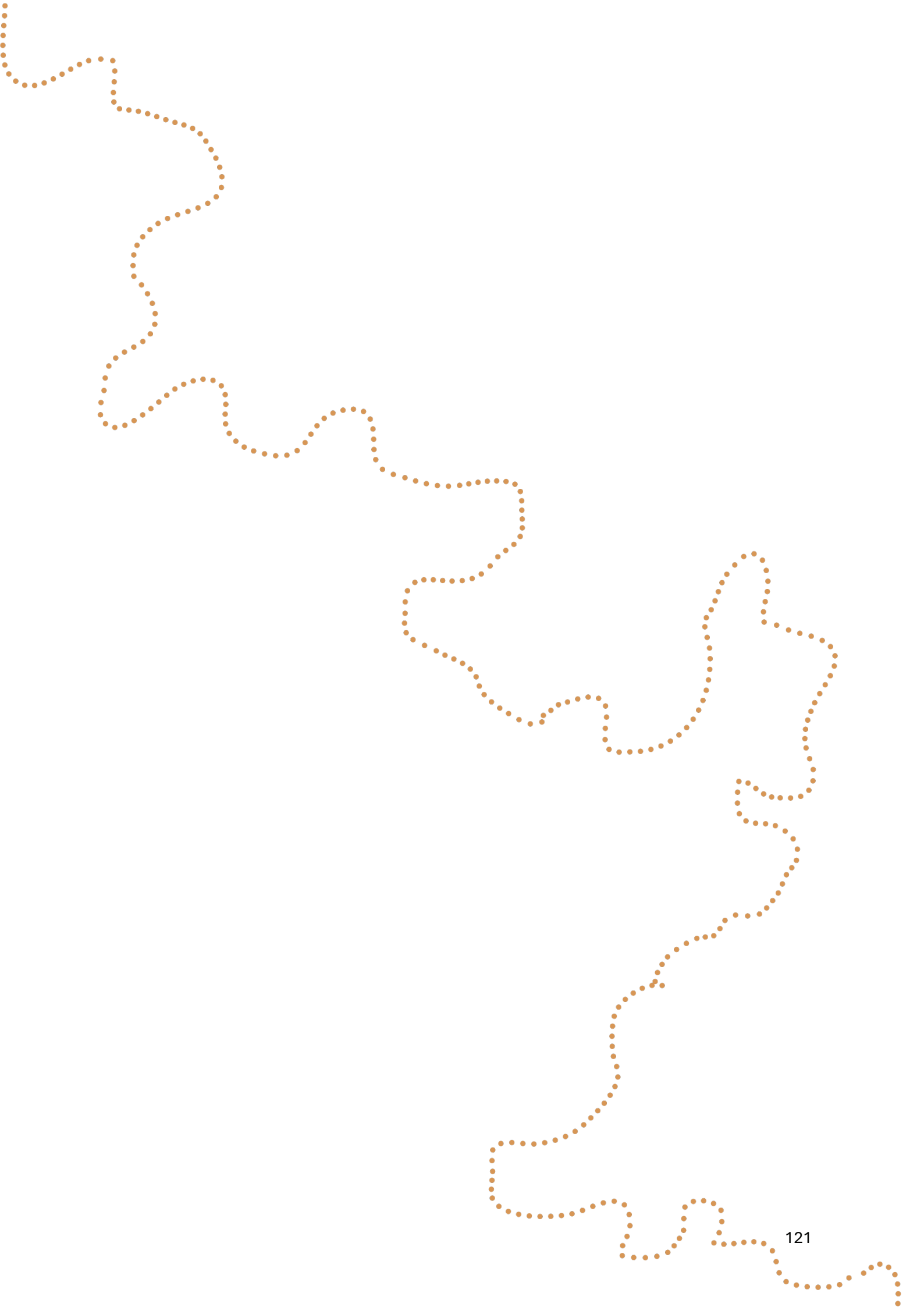
Figure 3.4. *Proportions of children who did and did not participate in cultural activities during the pre-school period who later had stronger SEWB connections in both, either, or neither of the middle childhood (MC) and adolescent (AD) periods. The filled circles indicate that children who participated in cultural activities were significantly more likely than children who did not participate to show stable stronger SEWB connections across both developmental periods than stable lower SEWB connections during both periods (the reference condition, denoted by the unfilled circle).*

What are our key findings?

- Participants in LSIC identified children's opportunities to understand and engage with their culture by learning traditional practices and participating in cultural events as being important ways to help their Aboriginal and Torres Strait Islander children to grow up strong.
- Prior to starting school, almost all children in LSIC (85%) participated in at least one of the three types of cultural activity examined in this chapter – that is, they went to an Indigenous cultural event; learned traditional practices, fishing, and/or hunting from their parent; and/or learned traditional arts, painting, and/or dance from their parent.
- Participation in these activities was especially high among children residing in very remote areas of Australia (97%); but, even in major cities where participation in these activities was lowest, 76% of children participated in these activities prior to starting school.
- Most children experienced strong overall SEWB during middle childhood and during adolescence (vs. lower overall SEWB during these periods), but strong overall SEWB was significantly more likely among children who participated in cultural activities during the pre-school period, relative to children who did not participate.
- Children who participated in cultural activities during the pre-school period were also more likely than their peers who did not participate to maintain stable strong connections on the SEWB domains across both of the middle childhood and adolescent periods (cf. stable lower SEWB connections in both of these periods).
- The findings provide further evidence that Indigenous cultures can be a resource for addressing disadvantage, rather than a contributing factor (Dockery, 2020).

What needs to be done?

- As key providers of teaching to their children, giving parents (and other caregivers) opportunities and support to facilitate their child's engagement with cultural activities, including traditional practices and arts, prior to starting school, is important.
- For children who have limited access to parents and other caregivers who can pass on cultural knowledge, supporting learning opportunities through cultural events hosted by community organisations and early learning centres will ensure that access to cultural activities are available to all Aboriginal and Torres Strait Islander children.
- Expanding the Indigenous early childhood education and care and school workforces would help to facilitate children's engagement with cultural activities, as would further embedding the learning of Aboriginal and Torres Strait Islander cultural practices in the Early Years Learning Framework (birth to five years) and Australian Curriculum (school-age).
- Tailored opportunities and support are likely to be needed in major cities and inner regional areas of Australia, where there were fewer children who had any participatory experience in the cultural activities explored prior to school.
- Large cultural institutions in metropolitan areas – including, art galleries, museums, and performing arts centres, among others – should be encouraged to produce – under Aboriginal and Torres Strait Islander leadership – cultural activities that focus on Aboriginal and Torres Strait Islander children.
- Findings from this Report indicate the proportion of children who participated in cultural activities during early childhood. Further research could examine the frequency and quality of these experiences, to determine scope to further enhance connection to culture during early childhood.



Artist Interpretation: Bush medicine and bush tucker is a way of connecting to the physical land we call Country. Understanding its healing properties brings us wellbeing and connection to community and our ancestors.

Chapter 4:

Growing up strong through connection to Country

Chapter 4: Growing up strong through connection to Country

LSIC participants describe connection to Country as helping children to grow up strong

'Mason' is an Aboriginal boy born to a non-Indigenous mother and an Aboriginal father in a regional town. Living with his mother, father, and siblings, ***Mason is close to his Country*** *and his Mob. When he's a baby, Mason's mum knows that Aboriginal culture will help him grow up strong by connecting him to family, spirituality,* ***and ability of live on Country****. Although his parents sometimes disagree about cultural practices, from a young age Mason's connected to culture eating local foods like kangaroo and magpie geese, being taken to meetings and events,* ***and spending time on Country****. Mason's dad knows that* ***practices like camping and fishing on Country will help Mason know where he comes from****. These practices help Mason to know his Mob, their history, and cultural practices. By the time he's a teenager, Mason's mum knows that he'll grow up strong by knowing right from wrong and being responsible and respectful. Mason agrees that being focused and knowing what you are doing – and not getting caught up with other people if they are doing wrong – will help him grow up strong.*

Sophie's an Aboriginal girl who lives in the city with her mum. ***She's not born near her Country, but her mum takes her to visit when she's old enough****. Her mum helps Sophie to stay connected by teaching her their language. Her mum's family is spread across the continent. She connects Sophie with extended family members and community in the city to support Sophie's growing sense of self and identity. She says the best way to learn about culture is to 'live the culture'. As she grows, Sophie's mum teaches her more about her connection with community, Country and culture. This teaches Sophie her responsibilities to* ***land****, culture and community. Sophie's mum encourages her to learn about the diversity of each community and how they are different and have their own cultures and languages. She knows that Sophie will be strong culturally, be able to develop ties and connect, while building her own resilience to be herself.*

Mason's and Sophie's stories each highlight the importance of their connection to Country – whether established through living on or visiting Country, and/or learning about Country through stories – as an important source of their strength, identity, and belonging as Aboriginal and Torres Strait Islander children. In their SEWB framework, Gee and colleagues (2014) highlight this importance of Connection to Country and land among Aboriginal and Torres Strait Islander peoples, as follows:

> *Country or land has been described as an area to which people have a traditional or spiritual association, and the sense of connection as a deep experience, belief, or feeling of belonging to Country. Connection to Country and land extends beyond traditional cultural contexts, however, and the SEWB literature documents the importance of Country across the whole spectrum of diverse Aboriginal and Torres Strait Islander cultural groups around Australia.* (Gee et al., 2014, pp. 60-61)

This broad definition is accommodated by questions asked in LSIC, such as *"Does (Study Child) have a connection to Country or place?"* (Wave 1).

LSIC data have previously been used to demonstrate that a connection to Country or place may be associated with better health outcomes for Aboriginal and Torres Strait Islander children. In quantitative analyses, Dockery (2020) demonstrated a positive relationship between connection to Country or place (measured from items collected during early childhood Waves 3 and 4 for the B cohort [ages 2.5 to 5 years], and Waves 1 and 3 for the K cohort [ages 3.5 to 7 years]) and better global health at subsequent waves (ages 5 to 9 years for the B cohort and 4 to 9 years for the K cohort, which spans from early into middle childhood). This chapter extends this work by examining whether connection to Country or place during early

childhood is associated with stronger SEWB outcomes during middle childhood and adolescence.

LSIC children's early childhood experiences of connection to Country or place

Parents in LSIC reported about their children's connection to Country or place during the pre-school period by responding "yes" or "no" to the question *"Does (Study Child) have a connection to Country or place?"*. This information was available for 1,531 children. From parental report, there were 64% of children who had a connection to Country or place. In two subsequent questions, parents also reported that 65% of children had visited their Country (or a place they are otherwise connected with) or lived near this Country or place (60%).

Figure 4.1 illustrates the proportion of children within each remoteness area for whom parents reported having a connection to Country or place. This connection followed a gradient of increasing connection to Country or place, from children residing in major cities through to those residing in very remote areas. Children residing in the most remote areas of Australia had the greatest levels of connection (80%) and children living in major cities were least likely to have connection (46%). In inner-regional areas, 59% of children had a connection to Country or place, compared to children in outer regional areas (70%) and remote areas (74%). Technical Appendix Table A4.1 details the statistically significant

differences between remoteness areas in rates of connection to Country or place during the pre-school period.

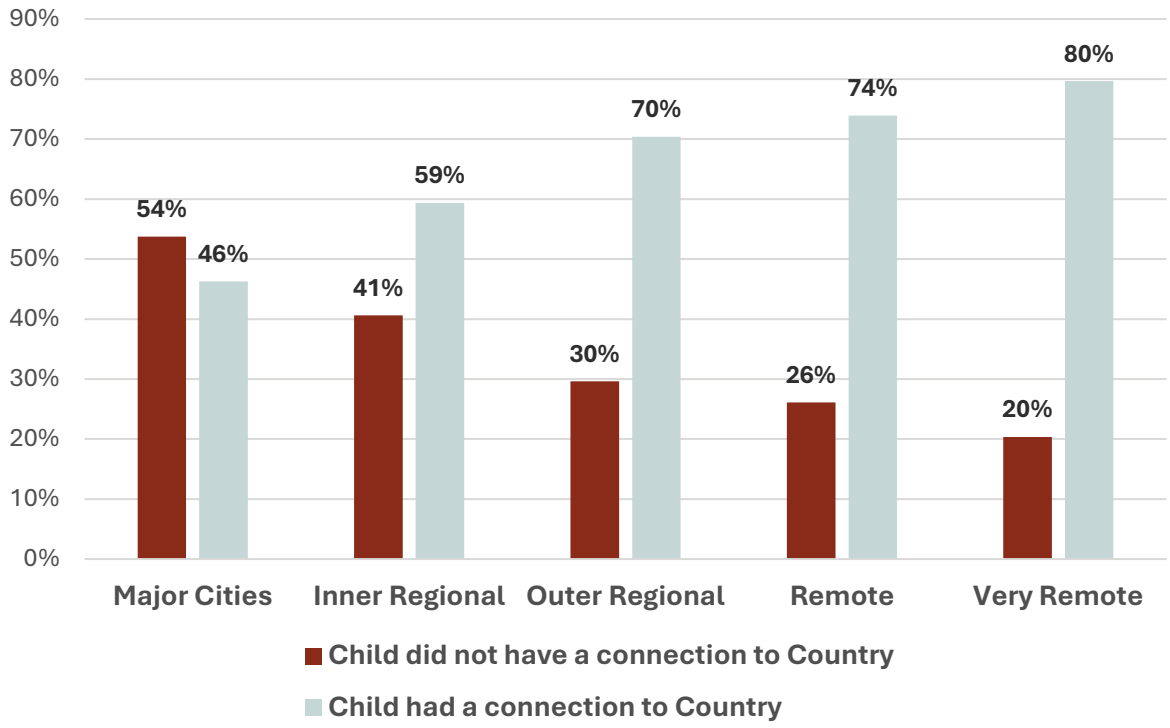


Figure 4.1. *Variation in the proportion of children with a connection to Country or place during the pre-school period, according to remoteness area.*

Developmental patterns of connection to Country or place among LSIC children

We examined the longitudinal patterns of children's connection to Country or place over development, by drawing on parent responses to this item in each of the pre-school, middle childhood, and adolescent periods. Only a small subset of 150 children in LSIC had responses to this item available in all of these three periods, so results may not generalise well to the larger sample.

Among these 150 children, two-thirds (64%) were reported by parents to be connected to Country or place prior to school. Figure 4.2 illustrates the pathways of children's reported connection to Country or place over the three developmental periods. Most children were stably connected over all three developmental periods (80%), with only 6% of children who were connected to Country or place in early childhood no longer being

connected in either middle childhood or adolescence (the remaining 14% were connected in either one of these later periods).

Conversely, only a third (33%) of children who were not connected to Country or place in early childhood remained not connected in both middle childhood and adolescence (cf. 28% who subsequently had a connection to Country or place in both periods, and 39% in either of these later periods). While based on a small subset of children in LSIC, this suggests that a majority of children who initially lack a connection with Country or place may later connect with Country as they grow.

These findings highlight the need for research into factors that support children to establish a connection to Country or place, as well as factors that may relate to fluctuation in connection over development.

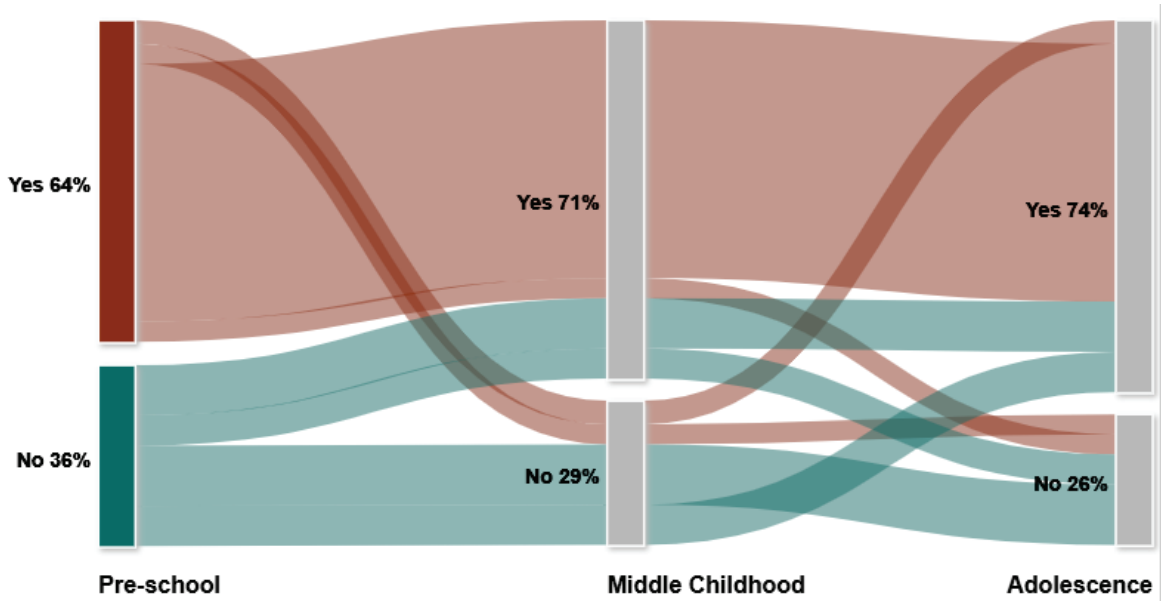
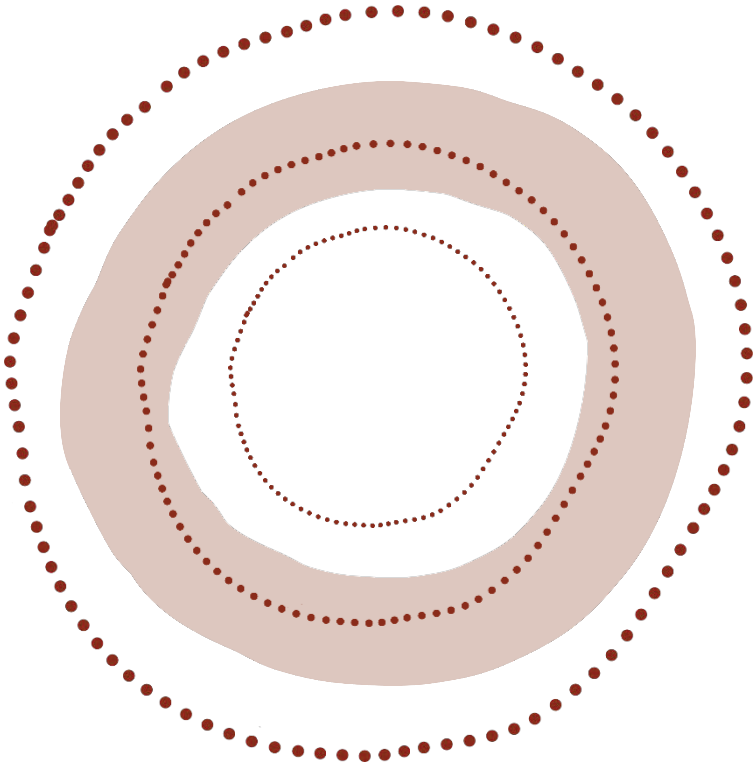


Figure 4.2. *The longitudinal pattern of parent's reports of children's connection to Country or place over the pre-school, middle childhood, and adolescent periods. The brown colour shows the pathways of children who were connected to Country or place during pre-school, and teal shows the pathways of children who were not connected to Country or place during pre-school.*

How does an early childhood connection to Country or place relate to later SEWB?

We examined whether children who had a connection to Country or place during the pre-school period had significantly stronger overall SEWB (as reflected in connections across all, or all but one, of the five SEWB domains) during middle childhood and adolescence than children who did not have a connection to Country or place. Data on overall SEWB was available for 1,127 children during middle childhood, and 944 children during adolescence, who also had information on connection to Country or place during the pre-school period. As in Chapter 3, these analyses examined whether children who had a connection to Country or place prior to school were more likely than those who did not to be socially and emotionally connected during middle childhood and adolescence. Specifically, we assessed whether they were more likely to be (i) connected on all SEWB domains, (ii) connected on all but one SEWB domain, or (iii) connected on three of five SEWB domains, than to be (iv) connected on two, or fewer, of the five SEWB domains.

As illustrated in Figure 4.3, a combined total of 80% of children with a connection to Country or place in the pre-school period had either all, or all but one, connections with the five SEWB domains during middle childhood, compared to a combined total of 69% of children without a connection to Country or place. Only 8% of children with connection to Country or place during the pre-school period had two or fewer connections on the five domains of the SEWB profile during middle childhood (i.e., lower overall SEWB



Having a connection to Country or place during the pre-school period was associated with stronger overall SEWB in middle childhood (see Technical Appendix Table A4.2 for the effect sizes from these multinomial regression analyses). As indicated by the filled circles relative to the unfilled circle in the Figure, children who had a connection to Country or place prior to starting school were significantly more likely (relative to children who did not have a connection to Country or place) to have connections on all, or on all but one, of the five SEWB domains in middle childhood (i.e., stronger SEWB) than they were to have connections on two or fewer of the five SEWB domains (i.e., lower SEWB).

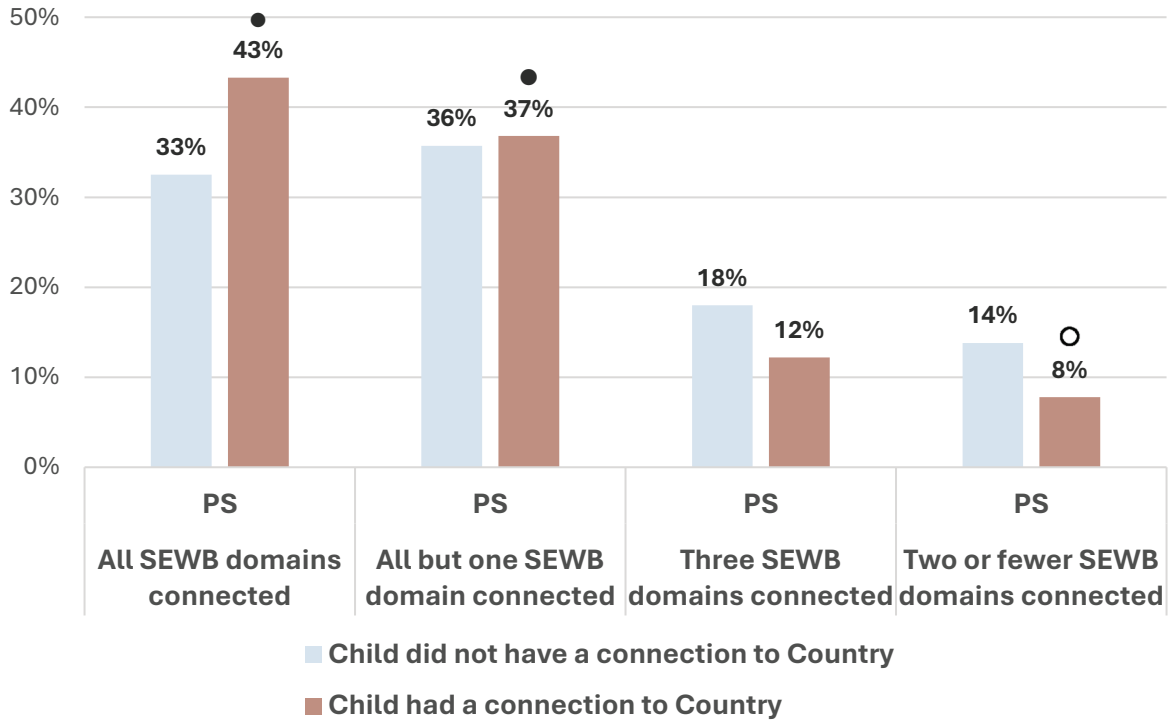


Figure 4.3. *Overall SEWB during middle childhood (reflected in the number of connected SEWB domains) for children who had a connection to Country or place and children who did not have this connection during pre-school. The filled circles indicate where children who had a connection to Country or place were significantly more likely than children who did not have this connection to show stronger overall wellbeing than low overall wellbeing (i.e., relative to the reference condition of two or fewer domains connected, denoted by the unfilled circle).*

These same patterns were apparent also in adolescence, as indicated in Figure 4.4. There were a combined total of 82% of children with a connection to Country in the pre-school period who had stronger SEWB

(i.e., connections, on all, or all but one, of the five SEWB domains) during adolescence. This compared to a combined total of 69% of children without a connection to Country or place who had similarly stronger SEWB in adolescence. In comparison, only 7% of children with a connection to Country or place during the pre-school period had two or fewer connections on the domains of the SEWB profile (i.e., lower SEWB) during adolescence.

As indicated by the filled circles relative to the unfilled circle in the Figure, children who had a connection to Country or place, prior to starting school, were significantly more likely (relative to children who did not have a connection to Country or place) to have connections on all, or all but one, of the five SEWB domains during adolescence than to have connections on two or fewer SEWB domains (Technical Appendix Table A4.2 reports the effect sizes from the multinomial regression analysis).

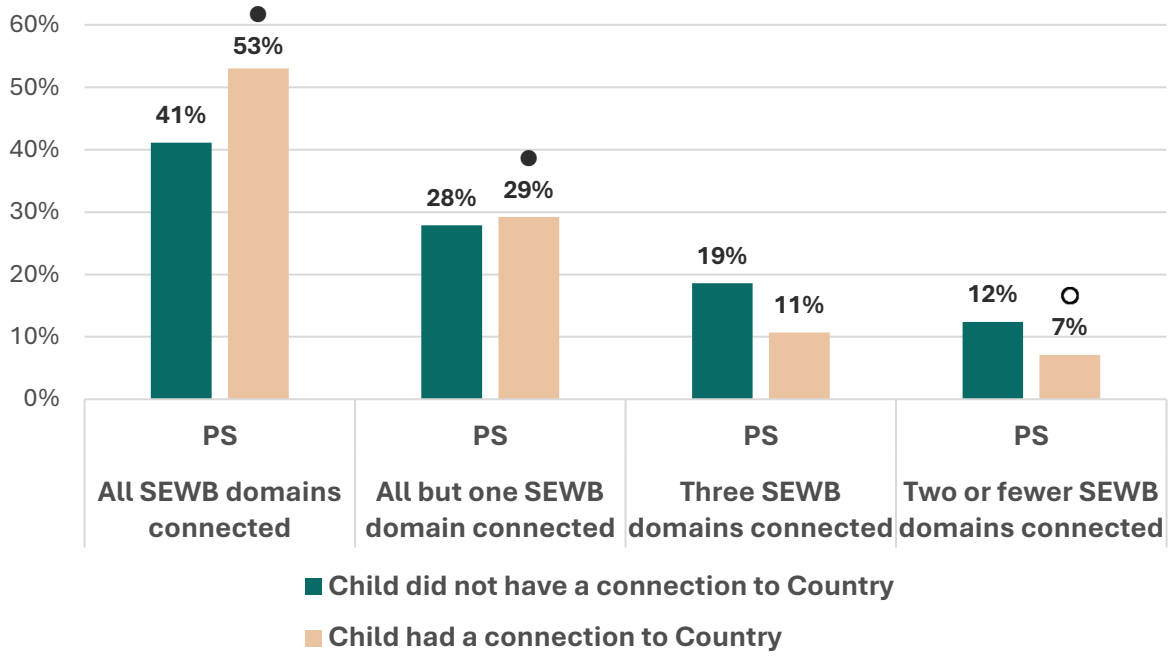


Figure 4.4. *Overall SEWB during adolescence (reflected in the number of connected SEWB domains) for children who had a connection to Country or place and children who did not have this connection during pre-school. The filled circles indicate where children who had a connection to Country or place were significantly more likely than children who did not have this connection to show stronger overall wellbeing than low overall wellbeing (i.e., relative to the reference condition of two or fewer domains connected, denoted by the unfilled circle).*

We further examined the **stability** of the overall SEWB profile over time, across the middle childhood and adolescent periods, among children who did, and did not, have a connection to Country or place during the pre-school period. These analyses were performed on data from 832 children who had overall SEWB information available during both of the middle childhood and adolescent periods as well as the information on connection to Country or place during the pre-school period. This analysis compared – for children who did and did not have a connection to Country or place during pre-school – the likelihood of children having strong stable overall SEWB across **both** middle childhood and adolescence, and the likelihood of children having stronger overall SEWB in **either** of these periods, each relative to having stable lower SEWB across both periods.

As illustrated in Figure 4.5 (and see Technical Appendix Table A4.3 for effect sizes), 39% of children with a connection to Country or place, prior to starting school, had the strongest SEWB profile across **both** middle childhood and adolescence (i.e., connections on all, or all but one, of the five SEWB domains), compared to 25% of children who did not have an early connection to Country or place in the pre-school period. As indicated by the filled circle, children with a connection to Country or place during the pre-school period were significantly more likely than their peers without this connection to Country or place to have stronger SEWB connections during **both** middle childhood and adolescence than they were to have a stable but lower SEWB profile (i.e., connections on three or fewer SEWB domains across both these periods, denoted by the unfilled circle).

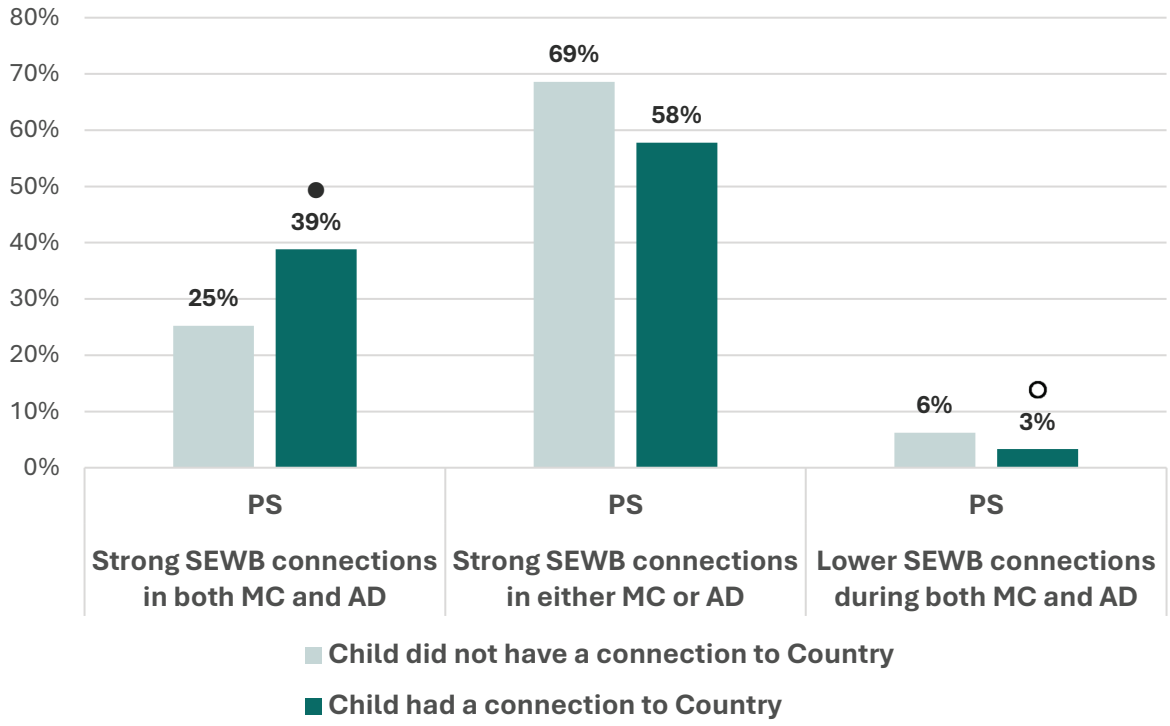


Figure 4.5. *Proportions of children who did and did not have a connection to Country or place during pre-school who later experienced strong SEWB connections in both, either, or neither of the middle childhood (MC) and adolescent (AD) periods. The filled circle indicates that children who had a connection to Country or place were significantly more likely than children who did not have this connection to show stable stronger SEWB connections across both developmental periods than stable lower SEWB connections during both periods (the reference condition, denoted by the unfilled circle).*

In a final set of analyses, we examined whether there were continuities for the Study Child on connection to Country or place, as reported by parents during the pre-school period, and in the middle childhood and adolescent periods. We did this by exploring the relationship between the parent's report of their child's connection to Country during pre-school, and the SEWB domain that reflected connection to culture, Country, Ancestors, and spirituality domain during middle childhood and during adolescence – this latter SEWB domain reflected a range of experiences assessed by 10 items, including the item that explicitly asked about connection to Country or place.

These analyses were conducted on data from 1,085 children with information available on the middle childhood connection to culture, Country, Ancestors, and spirituality domain, and data from the 943 children with information available on this domain during adolescence, along with information on connection to Country or place during the pre-school period. Logistic regression analyses (conducted separately for middle childhood and adolescence) were used to compare the likelihood of a connection to culture, Country, Ancestors, and spirituality, in middle childhood and in adolescence, among children who did and did not have a connection to Country or place prior to school.

Figure 4.6 illustrates the proportion of children with, and without, a connection to Country or place during the pre-school period, according to their connection to the SEWB domain of culture, Country, Ancestors, and spirituality, during middle childhood (blue bars) and adolescence (brown bars), respectively. There were 84% of children in middle childhood and 87% of children during adolescence who had connections to culture, Country, Ancestors, and spirituality. As denoted by the filled circles within the Figure, these connections were significantly more likely for children who had a connection to Country or place during the pre-school period than children who did not have this early connection to Country or place in the pre-school period (details on effect sizes are provided in Technical Appendix Table A4.4 for middle childhood and adolescence).

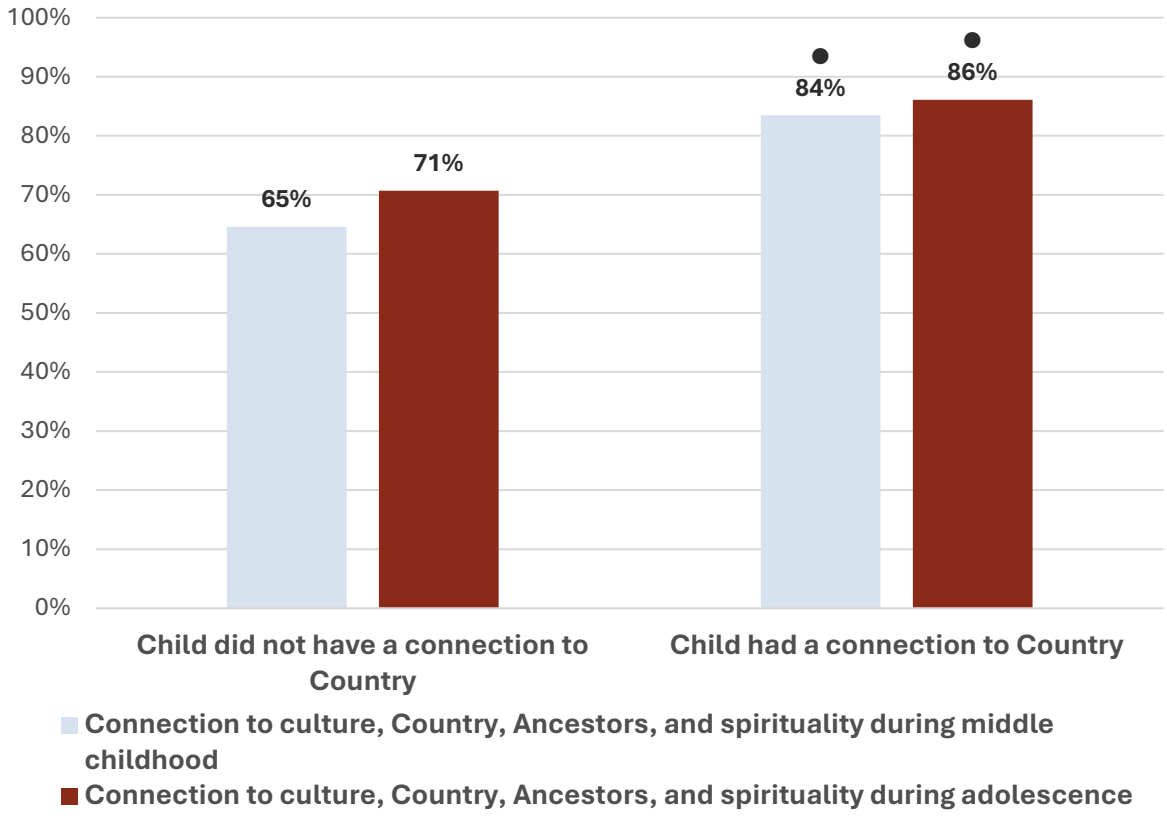


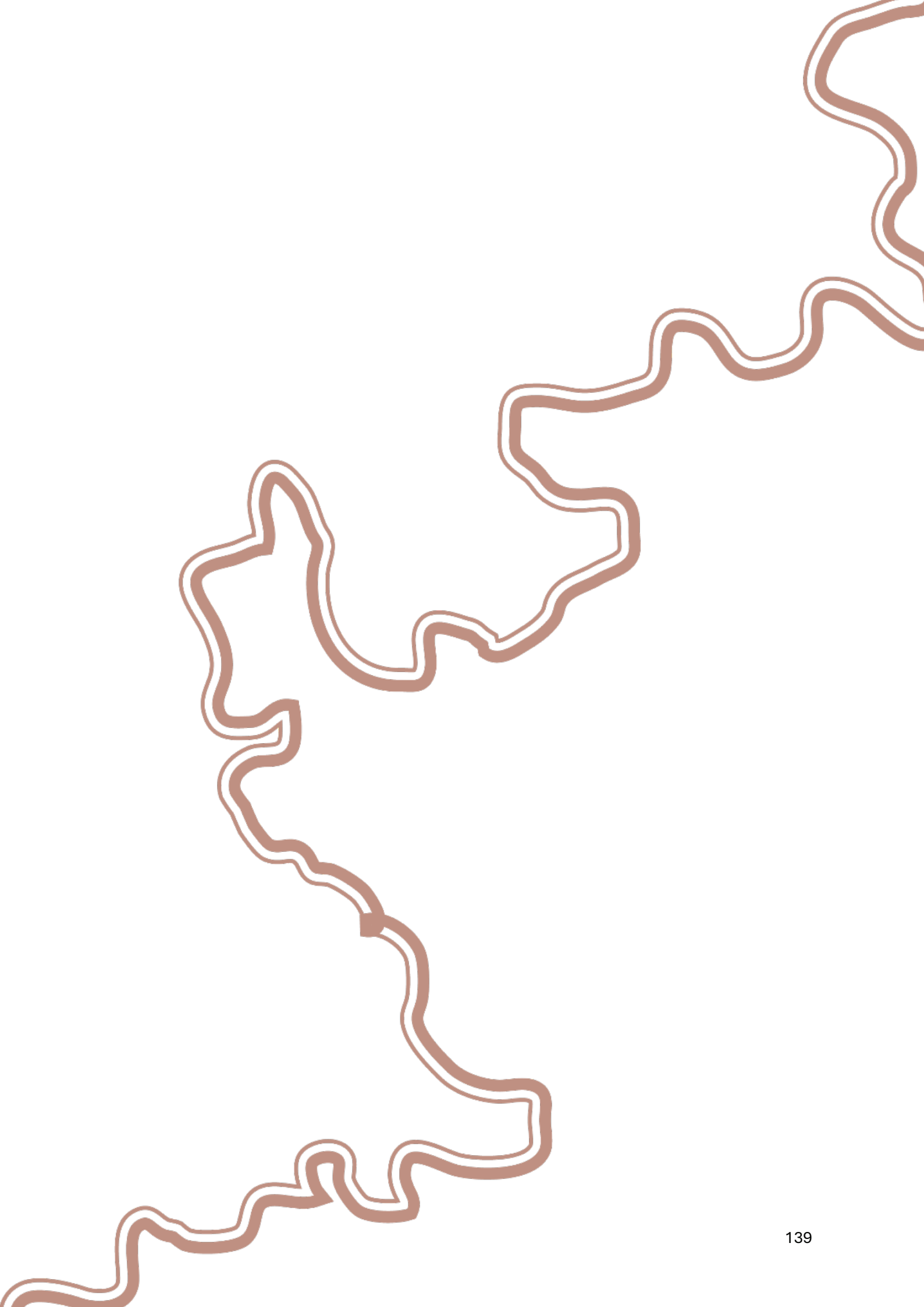
Figure 4.6. *Proportions of children who did and did not have a connection to Country or place during pre-school who later had a connection to culture, Country, Ancestors, and spirituality during middle childhood and adolescence, respectively. The filled circles indicate that children with a connection to Country or place prior to school were significantly more likely than children without this early connection to Country or place to have a connection to culture, Country, Ancestors, and spirituality during both middle childhood and adolescence.*

What are our key findings?

- Participants in LSIC identified children's opportunities to connect to Country or place in the pre-school period – for example by visiting or living on Country, or by hearing stories about Country – as an important means of supporting Aboriginal and Torres Strait Islander children to grow up strong.
- In all areas except major cities, parents reported that most children were connected to Country or place, with highest rates of connection reported for children in very remote areas (80%).
- While based on a limited subset of children who had data available (*n* = 150), findings show that most children (80%) among the two-thirds of children who had a connection to Country or place in early childhood consistently maintained this connection through middle childhood and adolescence. And, only a third (33%) of the third of children who did not have a connection to Country or place in early childhood consistently remained not connected through both middle childhood and adolescence.
- Children who had a connection to Country or place during the pre-school period were more likely to have stronger overall SEWB profile during middle childhood and during adolescence than lower overall SEWB, compared to children without this connection.
- Children with a connection to Country or place during the pre-school period were more likely than their peers without this connection to maintain a stable and strong overall SEWB profile across both middle childhood and adolescence.
- Children with a connection to Country or place prior to school were also more likely than children without this connection to be connected to the SEWB domain reflecting connection to culture, Country, Ancestors, and spirituality during middle childhood and adolescence.

What needs to be done?

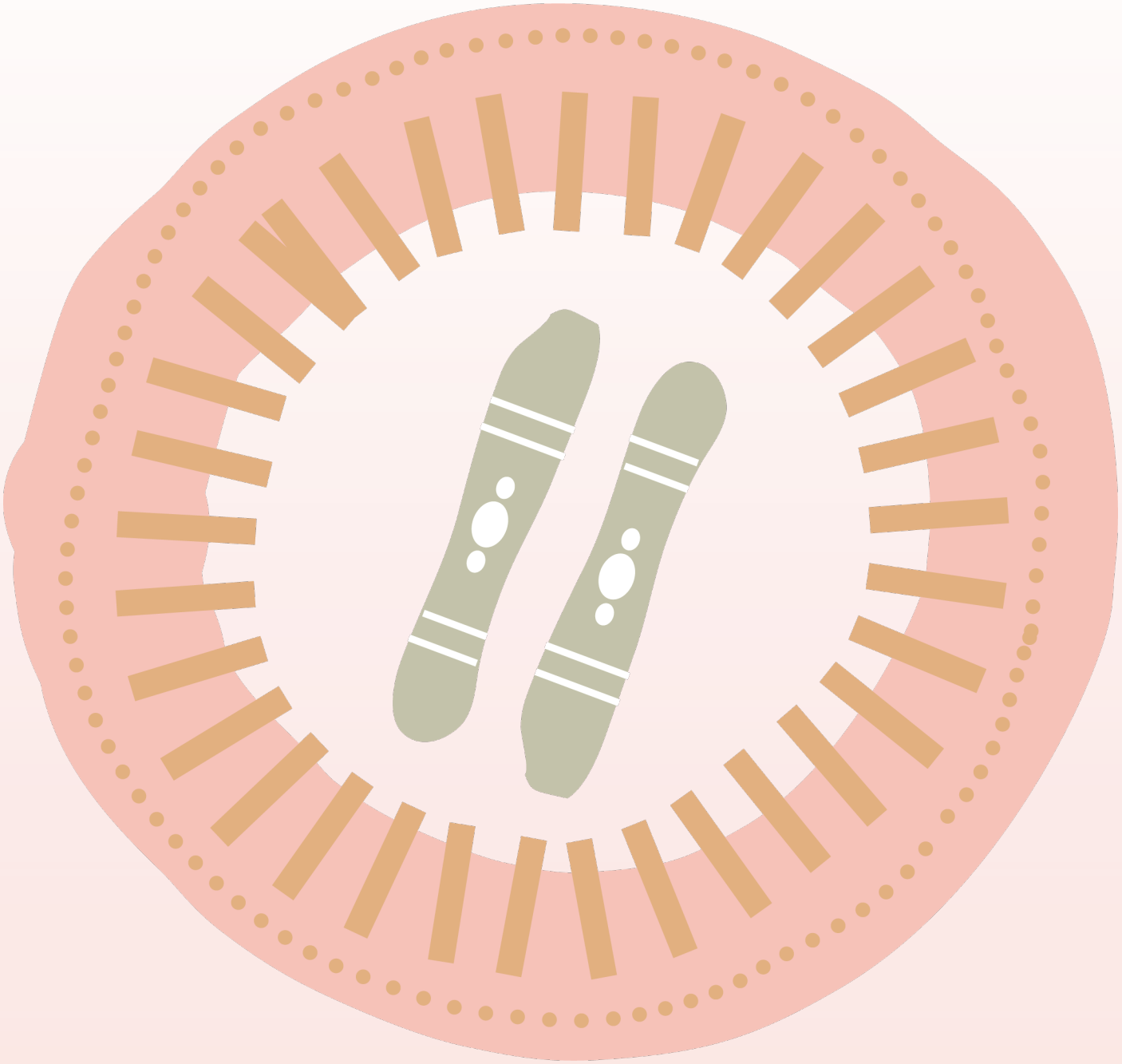
- Facilitate all children's connection to Country or place prior to their starting school by supporting Aboriginal and Torres Strait Islander parents' or caregivers' own connections to Country or the place where they are living.
- Conduct further research to identify factors that may contribute to fluctuations in children's connection to Country or place as they grow is required. Research could determine whether it is more common to maintain connections to Country or place developed early in life than to develop these connections later. This has important implications for supporting all Aboriginal and Torres Strait Islander children's early opportunity to establish these connections.
- Though a majority of children experience connection to Country or place from the early years, findings suggest that many children who do not have these connections during early childhood can establish them as they grow into middle childhood and/or adolescence. Thus, providing access to a variety of resources (e.g., books, videos, dramatic performances) that share stories of Country with children is important. These might be made available to families online, or in person via libraries, community centres, and early childhood care and education services.
- Acknowledge that different opportunities and supports may be required depending on the location of families. More innovative approaches, including Indigenous pedagogies, need consideration to support children who live in major cities to make connections to Country or place – and explore how Country or place is connected to them. This would be an important initiative, given less than half of children residing in these areas experience such connections.
- Particular efforts must be vested in providing new opportunities during middle childhood and adolescence for children who did not have early connection to Country or place, prior to school, to develop this connection.



Artist Interpretation: The visual meaning of the clapping sticks is one of celebration or ceremony and culture. Understanding, learning and speaking language offers us a deep connection to culture, our history and our ancestors. Like clap sticks, the audible cultural practice of language has proven positive benefits and is reason to celebrate many dialects across countries.

Chapter 5:

Growing up strong speaking an Indigenous language



Chapter 5: Growing up strong speaking an Indigenous language

LSIC participants describe speaking an Indigenous language as helping children to grow up strong

'Tegan' is born on Country, a place far away from any of the big cities. The daughter of an Aboriginal mother and father, Tegan has four older brothers and sisters. ***Before she starts school, Tegan's surrounded by her Mob's language. She uses it for yarning, singing, dancing, drawing, and playing. Tegan's mum knows that language and other aspects of their culture will help Tegan grow up strong. Over time, the family grows and moves, but their use of language continues. By the time she's sixteen years old, Tegan's still speaking her Mob's language.*** *She knows she's going to grow up strong and confident – independent and reliable – filled with respect. Tegan's mum can see this when Tegan helps the family – she knows Tegan is growing in confidence to help those around her.*

'Dannika' is a Torres Strait Islander girl living in a big city with her Torres Strait Islander mother and her four sisters and brothers. After Dannika's mum and dad separate while she's still young, Dannika continues to live in the city with her mum and siblings. They're a long way from the Torres Strait, but Dannika has visited from a young age. ***Her mum's fluent in both Torres Strait Creole and English and Dannika hears both from the moment she's born. Her mum believes learning culture won't be easy, but will give her kids confidence and strength. By the time she starts school, Dannika's connected to culture through speaking Creole, dancing, singing, and being part of cultural activities.*** *She and her family are proud when she fits into school and starts winning awards.* ***By the time she's fourteen years old, Dannika remains connected to language, speaking Creole a lot.*** *With all she's learnt, she is looking forward to a future where she is independent and can look after herself.*

Tegan's and Dannika's stories tell how their opportunity to speak an Indigenous language provides an important method of understanding and using culture for them and their families.

Relatively little is known about the extent to which languages are learned and maintained by Aboriginal and Torres Strait Islander children, despite 120 Indigenous languages currently being spoken in Australia (Verdon and McLeod, 2015). Data from 580 children from the B cohort of LSIC, who were followed longitudinally from Wave 1 (when aged 0–1 years) until Wave 4 (when aged 3–5 years), identified approximately one in five (19%) children speaking an Indigenous language, with children learning up to six languages (including English or Aboriginal English) (Verdon and McLeod, 2015). Among the children identified as learning to speak an Indigenous language at Wave 1, three quarters of these (76%) maintained this language use at Waves 3 and 4. Primary caregivers' use of an Indigenous language, and a higher level of relative isolation, were predictive of greater language maintenance during early childhood.

Similar findings, showing that parental use of language and remoteness are correlates of Indigenous language use, were identified in related research using data reported by parents for 692 children from the K cohort (aged 3-5 years at Wave 1, and 5-7 years at Wave 3) (McLeod et al., 2014). Up to eight languages were being spoken in this older cohort at Wave 1, and up to four spoken two years later at Wave 3. At Wave 3, a quarter of the children (27%) spoke at least one

Indigenous language. A third of families (31%) wanted to pass on their cultural language, and almost all (91%) indicated that they would like their child to learn an Indigenous language at school.

A further study, based on 86 children from the LSIC B cohort – who were reported by parents as speaking an Indigenous language at the Waves 1-3 assessments (mean age 37 months at Wave 3) – demonstrated that oral storytelling by family members in Indigenous language was a significant predictor of the size of children's Indigenous vocabulary (Farrant et al., 2014).

Together, these studies highlight the rich cultural and linguistic traditions of LSIC families, and the central role of parents and extended family in promoting children's language competence during the early childhood years.

This chapter extends this work by examining the relationship between early childhood experiences of speaking an Indigenous language and the children's overall SEWB during middle childhood and during adolescence and, specifically, their connection to culture, Country, Ancestors, and spirituality.

LSIC children's early childhood experiences of speaking an Indigenous language

Parent-reported information on whether children were speaking/learning an Indigenous language ("yes" or "no") was available in both of the early childhood periods examined in this Report (pre-school and early school). This information – which was collected between the calendar years 2008 and 2015 – was available for 1,577 children during pre-school, and for 1,041 children during early school.

There were 27% of children across the LSIC cohorts who spoke an Indigenous language, prior to starting school, and this proportion rose slightly in the first two years of school, to 30%, when children may have had access to Indigenous language programs at school in addition to their experiences in their home.

Children's opportunities to speak/learn an Indigenous language differed according to their location. Figure 5.1 illustrates the proportion of children who lived in each remoteness area whose parents reported that they spoke an Indigenous language during the pre-school (PS) and early school (ES) periods.

Parents reported that most children who lived in very remote areas of Australia spoke an Indigenous language in the early school years (76%). In remote areas, 34% of children spoke an Indigenous language in the early years of school; and 27% of children in outer

regional areas. However, only 6% in major cities spoke an Indigenous language during the early childhood period and the lowest rate for speaking an Indigenous language was for children living in inner regional areas (5%), during the early school period. In all areas, except major cities, there were small increases from pre-school period (PS) to early school (ES) periods, in the proportion of children who spoke an Indigenous language. Technical Appendix Tables A5.1 and A5.2 detail the statistically significant differences between remoteness areas in rates of children speaking an Indigenous language during the pre-school and early school periods, respectively.

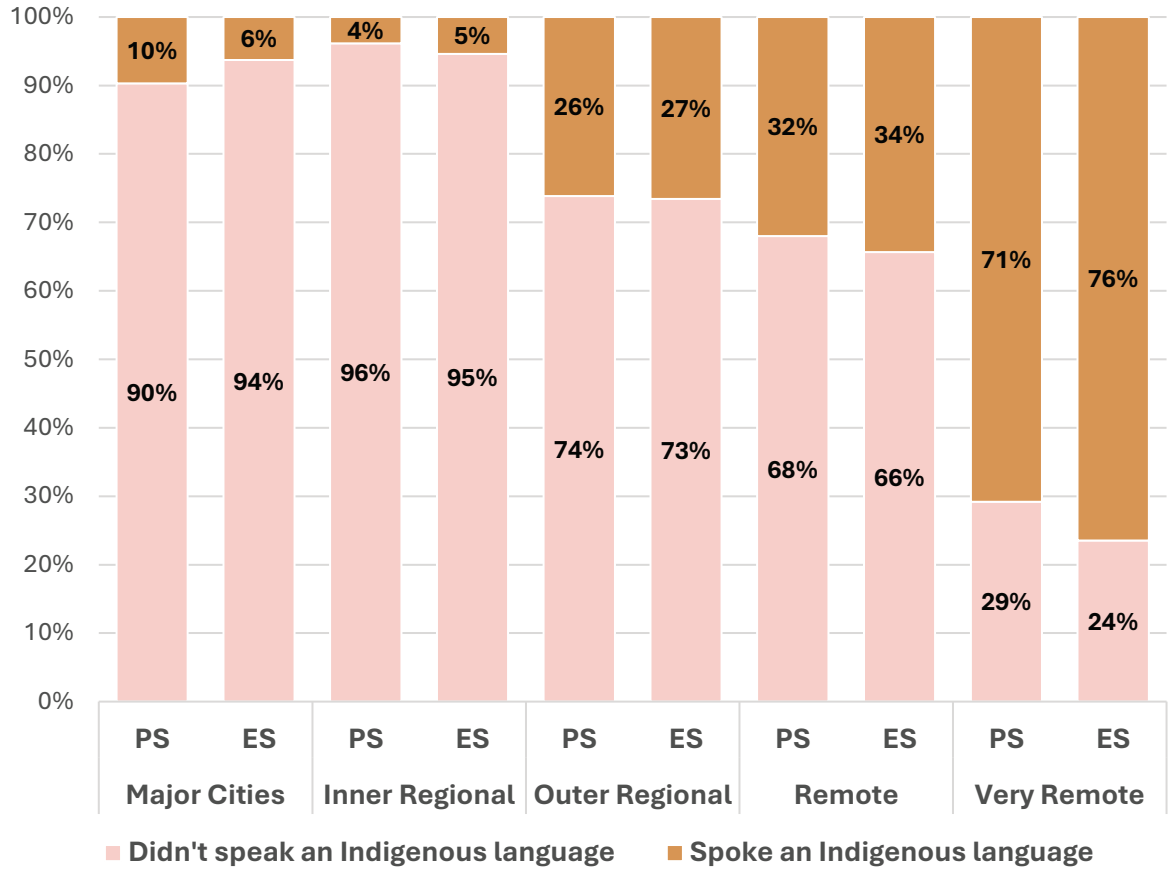


Figure 5.1. *Proportion of children in each remoteness area who spoke an Indigenous language (or not) during pre-school (PS) and early school (ES).*

Developmental patterns of Indigenous language learning among LSIC children

We examined the longitudinal patterns of children's Indigenous language use over development, by drawing on parental reports of children's language use during pre-school, and children's own reports of their language use during middle childhood and adolescence (with these child reports supplemented by parental reports if the former information was not available).

Among 750 children in LSIC who had data on Indigenous language use available in each of the pre-school, middle childhood, and adolescent periods, 18% were reported by parents to speak an Indigenous language prior to starting school.

Figure 5.2 illustrates the pathways of children's reported use of Indigenous language over these three developmental periods. While most children were stable speakers or non-speakers of Indigenous language over time, other children appeared to vary in their reported use of language. It is unclear whether this may reflect real changes in children's use of language with development, or whether it reflects changes related to the extent of use (e.g., parents and children may have different perceptions of children's use and or fluency with language that are reflected in these varying reports).

Two thirds (60%) of the 18% of children who spoke an Indigenous language during pre-school, continued to do so in middle childhood, and almost half (46%) continued to do so during adolescence; 40% of these children consistently spoke an Indigenous language across all three periods between pre-school and adolescence. This suggests that adolescence may be an important period in which to support opportunity for children to continue using their Indigenous language, and to identify factors that may be associated with discontinuation of use.

Among the majority (82%) of children who initially did not speak an Indigenous language, 12% reported speaking an Indigenous language during middle childhood, and 13% during adolescence; together, there were 14% of children who appeared to initiate use of Indigenous language subsequent to the pre-school period, for most of whom, their Indigenous language use was limited to middle childhood (11%).

These findings highlight the need for research into the factors that influence the maintenance and initiation of Indigenous language use over time among Aboriginal and Torres Strait Islander children, including the degree to which other sources of Indigenous language learning are afforded to children as they age or discourage Indigenous language use – for example, schools might either enable language initiation through formal teaching of Indigenous language, or they may be environments where children have less opportunity to use language or are discouraged from doing so through experiences of racism or cultural exclusion. We found 31.5% (376 of 1,193) of children in the middle childhood period indicated they were learning an Indigenous language at their school (Years 5 and 6 of primary school), whereas this reduced to 12.9% (135 of 1,050) in adolescence (Years 8-10 of secondary school). Thus, it appears that students received fewer opportunities for continued learning and use of Indigenous language into secondary school – something which could be encouraged to support the maintenance of these connections.

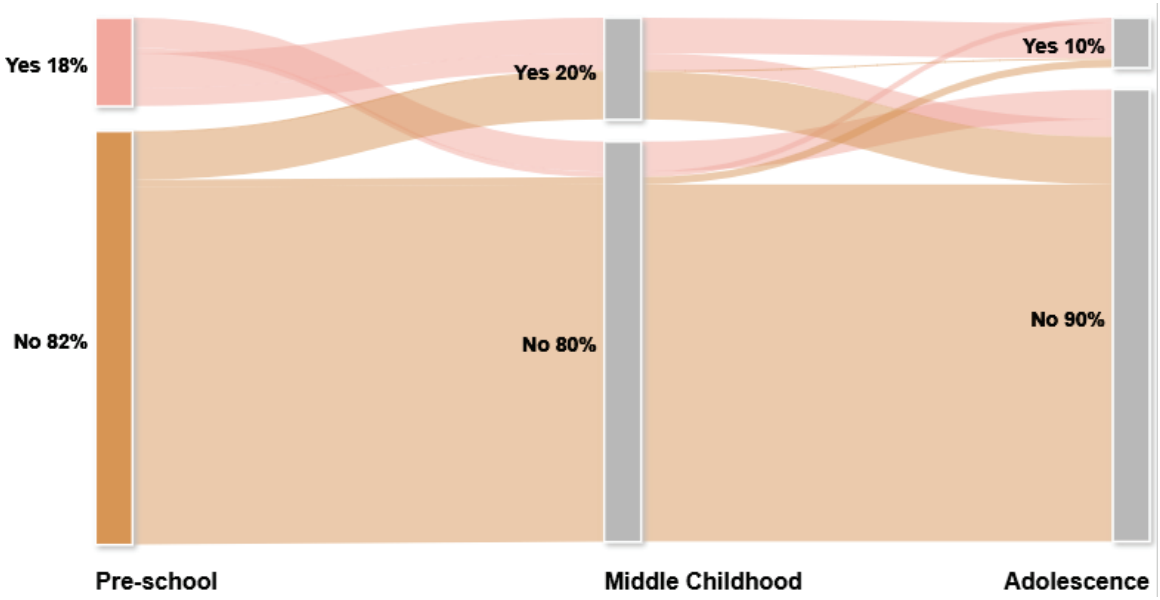


Figure 5.2. *The longitudinal pattern of children's use of an Indigenous language over the pre-school, middle childhood, and adolescent periods. The pink colour shows the pathways of children who spoke an Indigenous language during pre-school, and the tan shows pathways of children who did not speak an Indigenous language during pre-school.*

How does speaking an Indigenous language in early childhood relate to later SEWB?

The opportunity to speak an Indigenous language during early childhood may be an important way to support strong SEWB during middle childhood and adolescence.

We examined the relationship between speaking an Indigenous language in early childhood (during each of the pre-school and early school periods, separately) and children's overall SEWB profile, during middle childhood and during adolescence, as reflected in the number of connected SEWB domains. As in previous chapters (3 and 4), our analyses examined whether children who spoke an Indigenous language were more likely than children who did not speak an Indigenous language to be (i) connected on all SEWB domains, (ii) connected on all but one SEWB domain, or (iii) connected on three of five SEWB domains, than they were to be (iv) connected on two, or fewer, of the five SEWB domains.

The analyses of overall SEWB in middle childhood used information from 1,153 children whose parents had reported their child's speaking of an Indigenous language (or not) during the pre-school period, and 816 children whose parents had reported on speaking an Indigenous language (or not) during the early school period. Corresponding analyses of overall SEWB in adolescence were based on the 972 and 742 children, respectively, with information on speaking an Indigenous language (or not) during the pre-school and early school periods.

Figure 5.3 illustrates the proportion of children who spoke and did not speak an Indigenous language in the pre-school (PS) and early school (ES) periods in relation to the number of SEWB domains connected in middle childhood. Figure 5.4 similarly summarises these proportions for SEWB connections during adolescence.

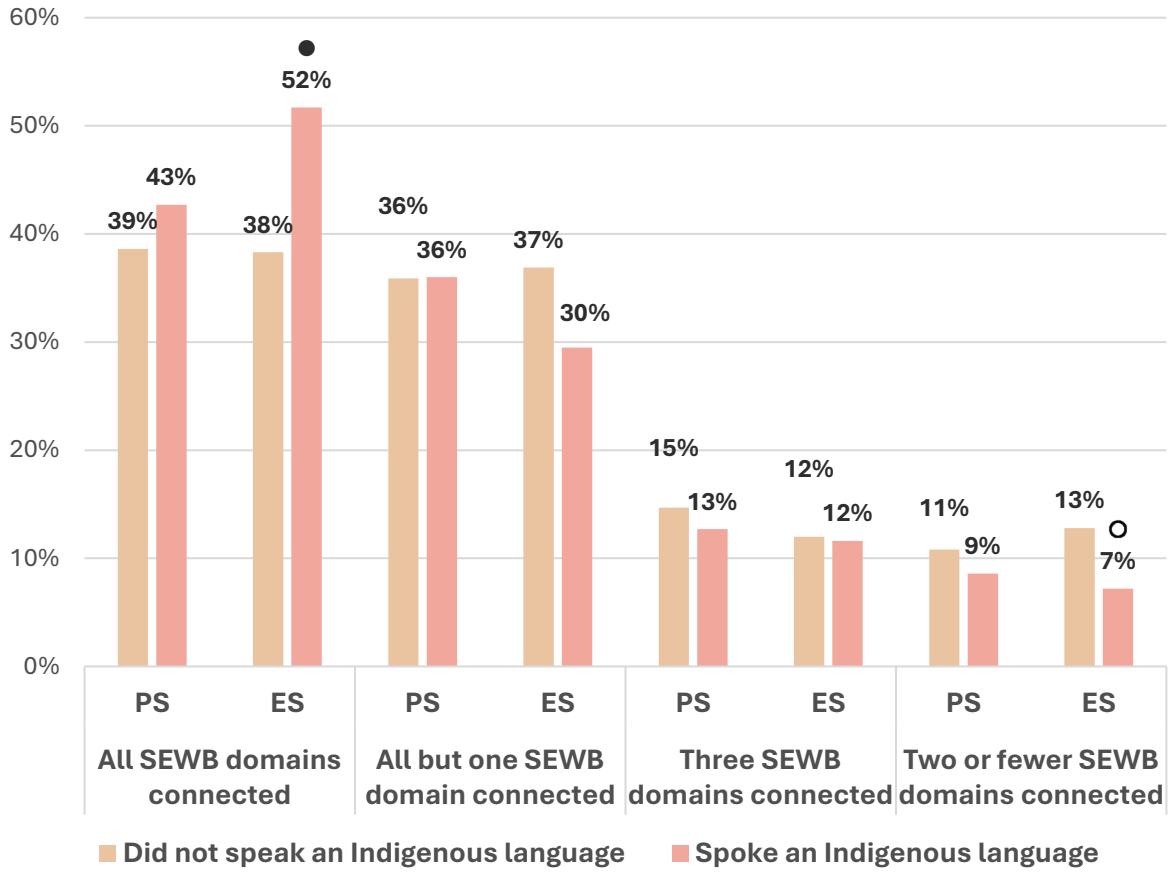


Figure 5.3. *Proportion of children who spoke an Indigenous language (and who did not) during pre-school (PS) and early school (ES), according to the number of SEWB domains connected during middle childhood. The filled circle indicates where children who spoke an Indigenous language (during the early school years) were significantly more likely than children who did not speak an Indigenous language to show stronger overall wellbeing during middle childhood than low overall wellbeing (i.e., relative to the reference condition of two or fewer domains connected, denoted by the unfilled circle).*

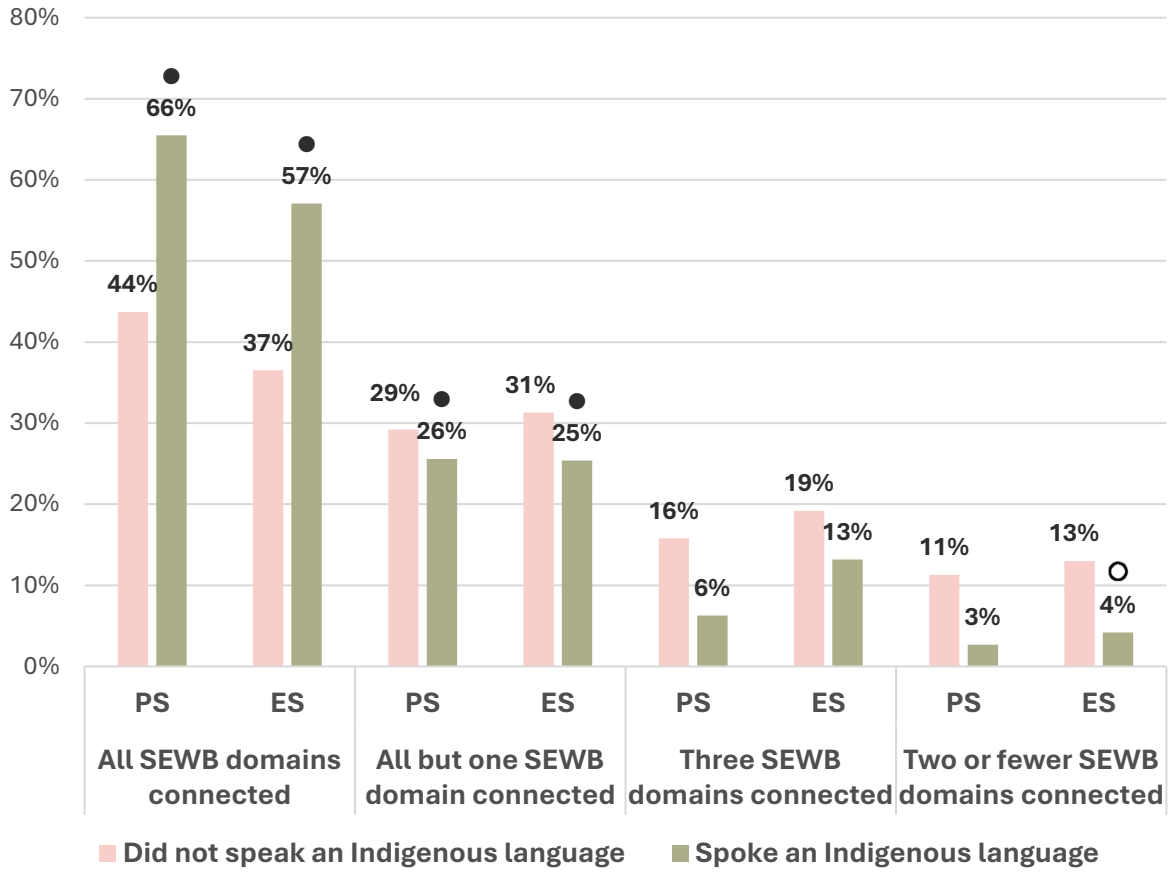
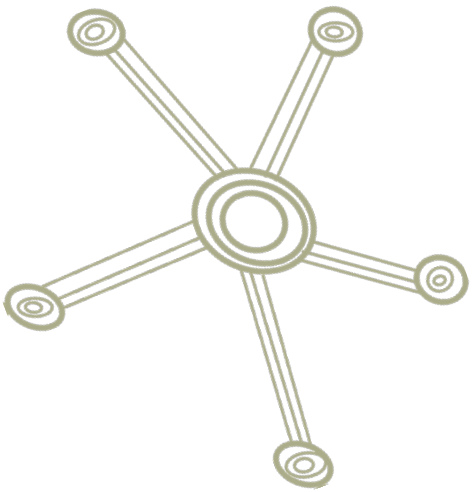
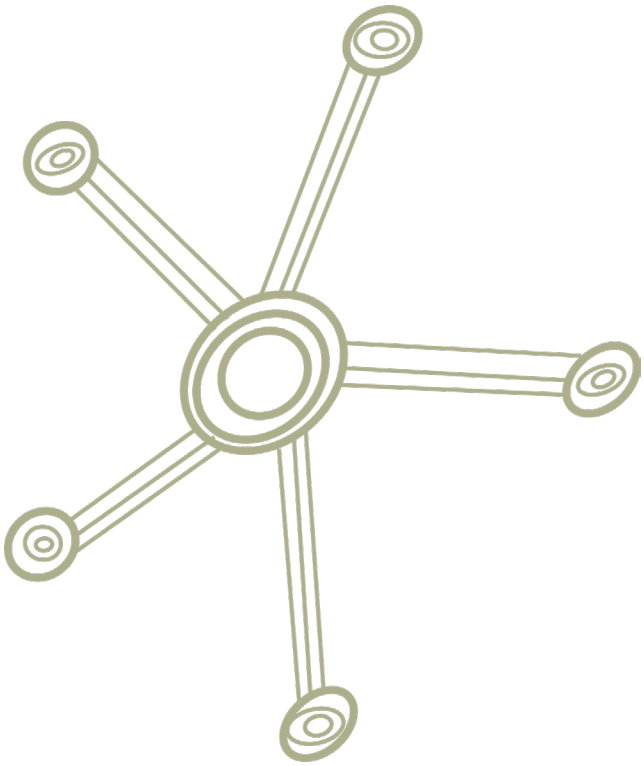


Figure 5.4. *Proportion of children who spoke an Indigenous language (and who did not) during pre-school (PS) and early school (ES), according to the number of SEWB domains connected during adolescence. The filled circles indicate where children who spoke an Indigenous language (during pre-school and early school) were significantly more likely than children who did not speak an Indigenous language to show stronger overall wellbeing during adolescence than low overall wellbeing (i.e., relative to the reference condition of two or fewer domains connected, denoted by the unfilled circle).*



The relationship between speaking an Indigenous language and later SEWB outcomes was most prominent for the early school period (see Technical Appendix Table A5.3 for effect sizes from the multinomial regression analyses). As indicated by the filled circles relative to the unfilled circles in Figures 5.3 and 5.4, children who spoke an Indigenous language in the first two years of school were significantly more likely to have connections on all of the five SEWB domains in

middle childhood, and on all, or on all but one, of the five SEWB domains in adolescence, than they were to have connections on two or fewer domains.



Speaking an Indigenous language during the pre-school period was associated significantly with strong overall SEWB in adolescence only (not in middle childhood). Relative to children who did not speak an Indigenous language, children who spoke an Indigenous language prior to starting school were significantly more likely to have connections on all, or on all but one, of the five SEWB domains in adolescence than they were to have connections on two or fewer of the five SEWB domains (see Technical Appendix Table A5.4 for effect sizes).

We also examined the **stability** of overall SEWB between the middle childhood and adolescent periods for children who spoke an Indigenous language in early childhood and children who did not speak an Indigenous language. These analyses used data on 854 children who had information available on speaking an Indigenous language (or not) during the pre-school period, and 651 children with this information available during the early school period. As in prior chapters (3 and 4), this analysis compared – for children who did and did not speak an Indigenous language during pre-school and during early school (separately for each period) – the likelihood of children having strong stable overall SEWB across **both** middle childhood and adolescence, and the likelihood of children having stronger overall SEWB in **either** of these periods, each relative to having stable lower SEWB across both periods.

As illustrated in Figure 5.5, approximately two in five children who spoke an Indigenous language during pre-school (43%) and during early school (39%) had strong overall SEWB in both middle childhood and adolescence, as did slightly fewer than a third of children who did not speak an Indigenous language during these early childhood periods (31% in each period). Very few children (≤2%) who spoke

an Indigenous language during these early childhood periods experienced stably poorer overall SEWB across middle childhood and adolescence, while slightly more children (≤6%) who did not speak an Indigenous language in these early periods experienced this stably poorer wellbeing across both these later periods.

As signified by the filled and unfilled circles in Figure 5.5, analyses indicated that children who spoke an Indigenous language in the years prior to school (pre-school), relative to children who did not speak an Indigenous language in this period, were significantly more likely to be strongly and consistently connected in **both** middle childhood and adolescence (i.e., connections on all, or all but one, of the five SEWB domains) than they were to have consistently lower levels of SEWB connections (i.e., connections on three or fewer SEWB domains) in both these later periods (see Technical Appendix Table A5.5 for effect sizes).

Similarly, children who spoke an Indigenous language in the first two years of school (early school) were more likely to be strongly and consistently connected in **both** middle childhood and adolescence than they were to have consistently lower levels of connections across these periods. In addition, strong SEWB connections in **either** middle childhood or adolescence were more likely than stable lower levels of SEWB connections among these children who spoke an Indigenous language during early school compared to children who did not (see Technical Appendix Table A5.6 for effect sizes).

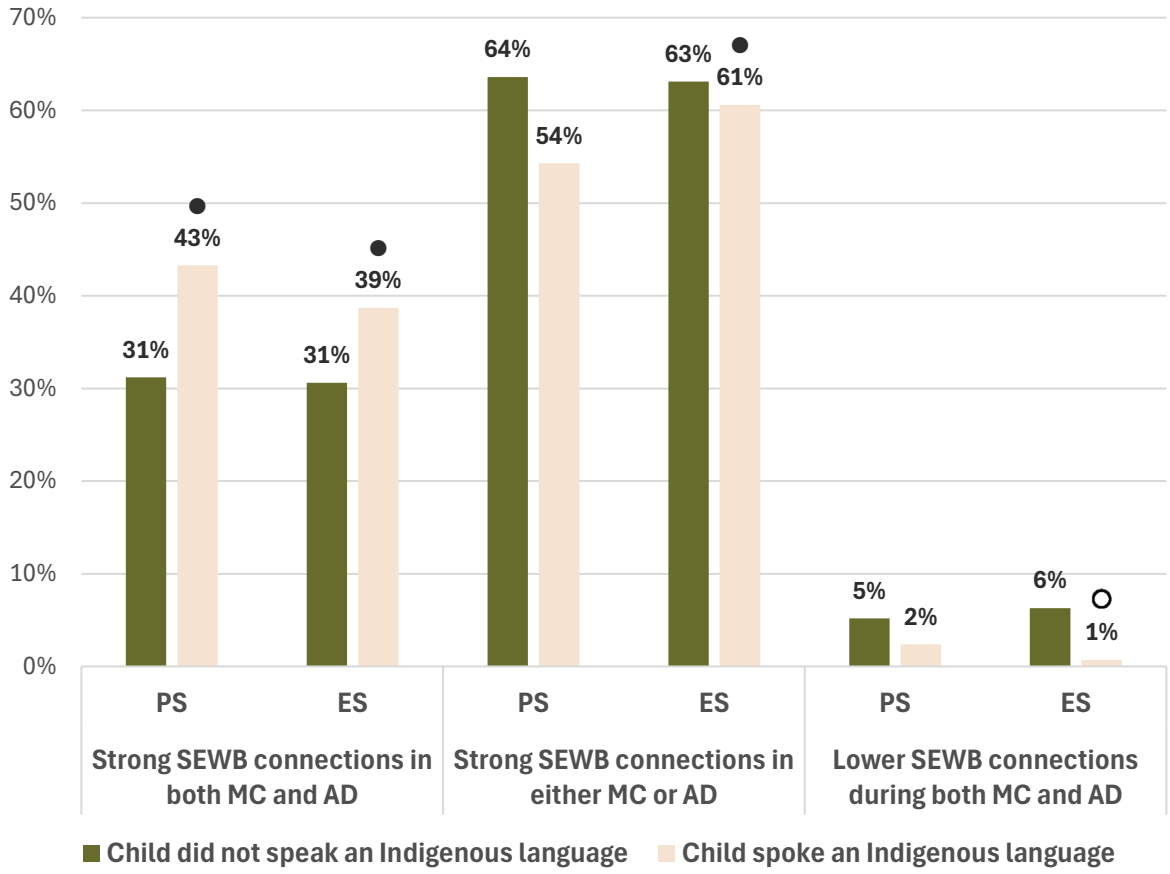


Figure 5.5. *Overall SEWB across development according to whether children spoke or did not speak an Indigenous language during pre-school (PS) and early school (ES). The filled circles indicate that children who spoke an Indigenous language (during pre-school and early school) were significantly more likely than children who did not speak an Indigenous language to show stable stronger SEWB connections across both developmental periods than stable lower SEWB connections during both periods (the reference condition, denoted by the unfilled circle). Children who spoke an Indigenous language in the early school period were also more likely than children who did not speak an Indigenous language to show strong SEWB connection in either middle childhood or adolescence than to show stable lower SEWB across both periods.*

Tegan's and Dannika's stories at the beginning of this chapter described how speaking an Indigenous language was part of a range of experiences, practiced within their families, that grounded them strongly in culture and were identified by their parents as important to helping them to grow up strong. In keeping with their experiences, our final set of analyses for this section examined whether children who spoke an Indigenous language during early childhood (pre-school and/or early school) were more likely to

report a later connection to culture, Country, Ancestors, and spirituality (noting that speaking an Indigenous language at home was one of the 10 items that measured this SEWB domain during middle childhood and adolescence).

We examined the connection to culture, Country, Ancestors, and spirituality in the middle childhood and adolescent periods separately, for children who spoke an Indigenous language in the pre-school and early school periods relative to children who did not. Analyses of middle childhood connection to culture, Country, Ancestors, and spirituality used data from 1,111 children who also had information on speaking an Indigenous language (or not) during the pre-school period, and for 772 children who had this information during the early school period. Analyses of adolescent connection to culture, Country, Ancestors, and spirituality used data from 971 and 739 children, respectively, who had information available on speaking an Indigenous language (or not) during the pre-school and the early school periods.

As illustrated in Figure 5.6, during both middle childhood and during adolescence, connection to culture, Country, Ancestors, and spirituality was present for most children – including around nine in ten children who spoke an Indigenous language, and more than seven in ten children who did not (see Technical Appendix Table A5.6 for effect sizes from the logistic regression analyses). As indicated by the filled circles, however, compared to children who did not speak an Indigenous language, children who spoke an Indigenous language during pre-school and children who spoke an Indigenous language during early school were significantly more likely to be connected to culture, Country, Ancestors, and spirituality).

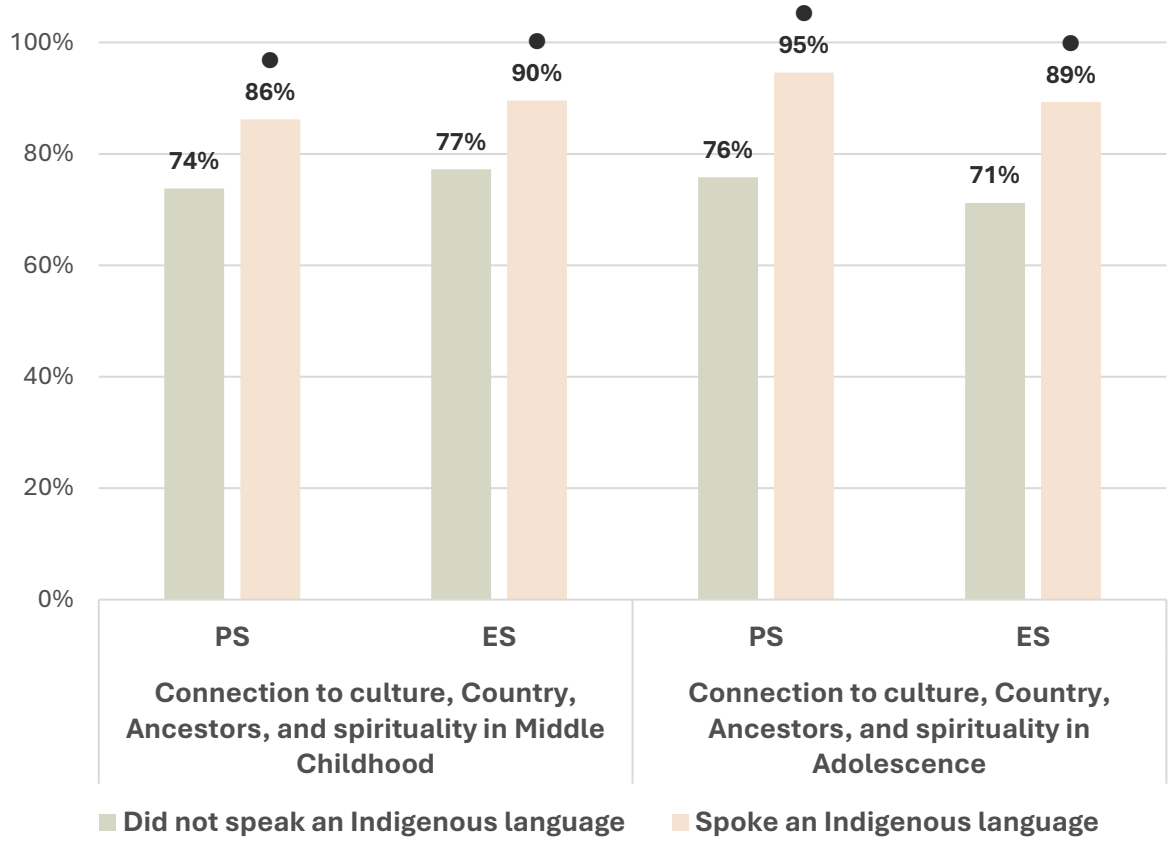


Figure 5.6. *Proportions of children who spoke and who did not speak an Indigenous language in the pre-school (PS) and early school (ES) periods according to their later connections during middle childhood and during adolescence to culture, Country, Ancestors, and Spirituality. The filled circles indicate that children who spoke an Indigenous language (during pre-school and early school) were significantly more likely than children who did not speak an Indigenous language to have a connection to culture, Country, Ancestors, and spirituality during both middle childhood and adolescence.*

What are our key findings?

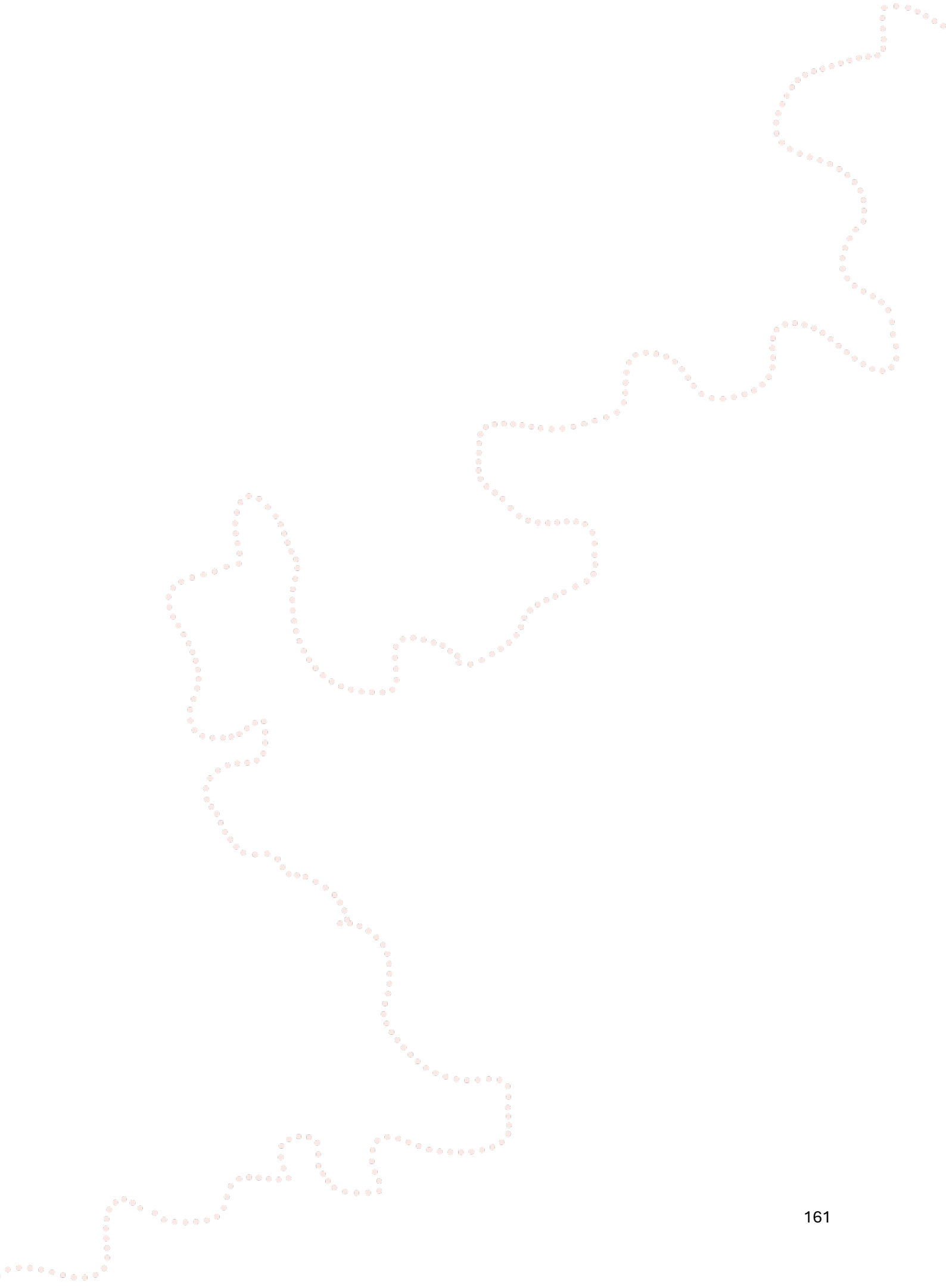
- Fewer LSIC parents reported that their children spoke an Indigenous language relative to the other cultural practices described by parents in Chapter 2, but speaking an Indigenous language was discussed by some participants as an important way to help Aboriginal and Torres Strait Islander children to grow up strong.
- By the first two years of school, almost a third of children in LSIC (30%) spoke an Indigenous language. However, opportunities to speak language varied by area. Three quarters of children in very remote areas spoke an Indigenous language, but few children (<6%) residing in inner regional areas had this opportunity during early childhood.
- A minority (40%) of children who spoke an Indigenous language prior to school continued to report doing so by adolescence. Conversely, around one in seven children (14%) who did not speak an Indigenous language prior to school later reported doing so either in middle childhood and/or adolescence (largely the former).
- Stronger overall SEWB during middle childhood and adolescence was more likely for children who spoke an Indigenous language, prior to school and/or during the early years of school, relative to children who did not speak an Indigenous language.
- Children who spoke an Indigenous language during pre-school or early school were more likely than their peers who did not speak an Indigenous language to maintain stable strong overall SEWB across both middle childhood and adolescence.
- Children who spoke an Indigenous language during early childhood (pre-school and/or early school) were more likely than children who did not speak an Indigenous language to later, during both middle childhood and during adolescence, be connected to the SEWB domain reflecting connection to culture, Country, Ancestors, and spirituality. Speaking an Indigenous language from early in life might facilitate unique opportunities for children to gain Indigenous knowledge and connect with their culture, Country, Ancestors, and spirituality.

What needs to be done?

- The positive relationship between speaking an Indigenous language in early childhood and later SEWB (overall; as well as specifically in a connection to culture, Country, Ancestors, and spirituality) during middle childhood and adolescence reinforces the value of language revival, revitalisation, and preservation programs. These programs are currently supported through the Indigenous Languages and Arts program (https://www.arts.gov.au/funding-and-support/indigenous-languages-and-arts-program), with an annual investment of around $30M. The present findings suggest there may be a need to expand these programs to create further opportunity for Aboriginal and Torres Strait Islander children across Australia. Such efforts would support the fulfillment of Closing the Gap Target 16, which commits the government to demonstrating a sustained increase by 2031 in the number and strength of Aboriginal and Torres Strait Islander languages being spoken.
- The analyses presented here relate to children who speak an Indigenous language at home – and most often this is likely to be the language of the child's Mob. Further research could establish whether learning any Indigenous language in other contexts (e.g., at early childhood education and care services, or school) facilitates similar outcomes in SEWB.
- Given language acquisition often occurs at home, a whole-of-family approach to language learning may be beneficial when languages are going through processes of revival, revitalisation, and preservation.
- Creating opportunities for access to Indigenous language learning for children who cannot access this through parents and family is important. Early childhood education and care services, and primary and secondary schools, may be feasible settings to facilitate this access, but this needs to be equitable. We previously identified, in the LSIC Primary School Report (Rogers et al., 2022), inequitable access to Indigenous language teachers in primary schools according to remoteness, with children residing in major cities having the least access to these teachers (fewer than 10% of children, compared to

greater than 20% of children in remote and very remote areas). The data presented in this chapter show that children residing in major cities were also the least likely to speak an Indigenous language from the early years. Thus, attention needs to be given to the tailoring of opportunities according to the facilities available in different areas.

- Variability in reports of Indigenous language use across developmental periods warrants further investigation as to the drivers of maintenance, initiation, and cessation of language use, particularly the contextual factors that influence language use and how these may vary during development.
- The findings reported here relate to dichotomous (yes/no) ratings of children's speaking an Indigenous language. Further research could investigate whether there are thresholds of language usage that are related to enhanced SEWB (i.e., does fluency and frequency make a difference?).
- Building on recent acknowledgement of language in relation to connection to culture (Dudgeon et al., 2025), future research could determine whether connection to language should be articulated as a standalone domain in a model of SEWB.



Artist Interpretation: Handprints are a symbol of belonging, identity and connection. It is used here in conjunction with growing and deepening footprints, to demonstrate a person's strength when they connect with their culture and heritage.

Chapter 6:

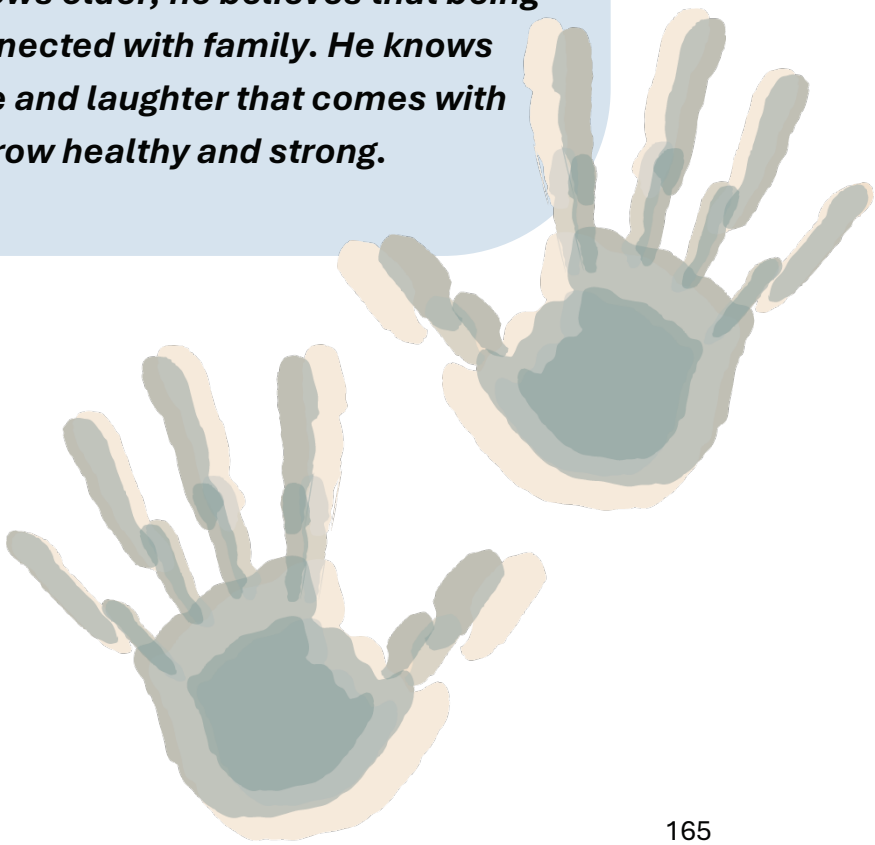
Growing up strong through identity and belonging

Chapter 6: Growing up strong through identity and belonging

LSIC participants describe identity and belonging as helping children to grow up strong

'Layla' is an Aboriginal girl born to an Aboriginal mother, a single parent of three children living in a remote part of Australia. From the time Layla's a baby, her mother knows that ***Aboriginal culture will help her grow up strong by knowing her identity****. Although their Country isn't near to where they live, Layla's visited by the time she's nine months old,* ***creating a link to her people and Country****. In the time before Layla starts school, she's learning about culture by yarning, learning stories, and speaking the language of her Mob. This learning's important for Layla's mum, who recognises the differences between people who live around Australia. She's* ***proud of the identity and culture that she and Layla share with their Mob****. By the time Layla's a teenager, her mum's greatest wish is for her to be happy and healthy. Layla looks forward to being strong, independent, knowing her Country, language, and culture.*

'Sam' is a Torres Strait Islander boy. His parents separated when he was five. ***He has strong connections with his extended family members, as his mum places a strong emphasis on keeping these ties strong.*** *He lives on his home Country and is connected to culture through food, eating sopsop (stew) and speaking his language, which his mother is proud that he gets to learn.* ***His family all contribute to growing his understanding of language and culture as he spends time learning songs and dances****. His mum believes his culture will be a strong support as he grows older, helping him to be a better and stronger person with self-respect.* ***Sam and his mum have moved around in his first few years but have always stayed connected to family and culture. As Sam grows older, he believes that being supported and connected with family. He knows that having the love and laughter that comes with this will help him grow healthy and strong.***



Though living in different contexts, Layla's and Sam's stories each highlight their parents' awareness that a strong sense of identity as Indigenous people and of belonging to Mob, community, and culture will help their children to grow up strong.

These stories align with previous research from LSIC using data from 424 children in the K cohort when they were aged between 10 and 12 years (Macedo, Santiago, et al., 2019). This study demonstrated that positive attitudes to one's identity as an Aboriginal or Torres Strait Islander person were associated with fewer social-emotional difficulties, as measured by the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997). In further work with this subsample, Macedo, Smithers, and colleagues (2019) demonstrated that these positive identity affirmations might mitigate the risk of social-emotional difficulties associated with experiences of racism. That is, fostering positive identity as an Aboriginal or Torres Strait Islander person during childhood may be an important way of promoting resilience to racism.

In further research, conducted with the K cohort at Wave 8 (n = 499 children aged10.5–12 years), Peacock and Guerzoni (2023) found that children who were comfortable in their identity as Indigenous people, particularly at school, were more likely to aspire to complete their secondary education.

This chapter builds on this prior work in LSIC to examine children's early childhood experiences of identity and belonging, and how these relate to their overall SEWB during middle childhood and adolescence, as well as

specifically their connection to culture, Country, Ancestors, and spirituality during these later developmental periods.

LSIC children's early childhood experiences of identity and belonging

Among the 1,532 LSIC children whose parents reported this information during the pre-school period, two-thirds (63%) of children were identified with a tribe, language group or clan. In this chapter, we refer to these children as identifying with Mob.

The stories at the beginning of this chapter highlighted the importance of identity and belonging for children living in diverse regions across Australia; nonetheless, the areas where children lived related significantly with their identification with Mob, prior to school. As illustrated in Figure 6.1, parents reported that approximately half of children living in major cities identified with Mob, and this rose with increasing remoteness, such that approximately three quarters of children residing in remote or in very remote areas identified with Mob. Technical Appendix Table A6.1 details the statistically significant differences between remoteness areas in rates of children's identification with Mob during the pre-school period.

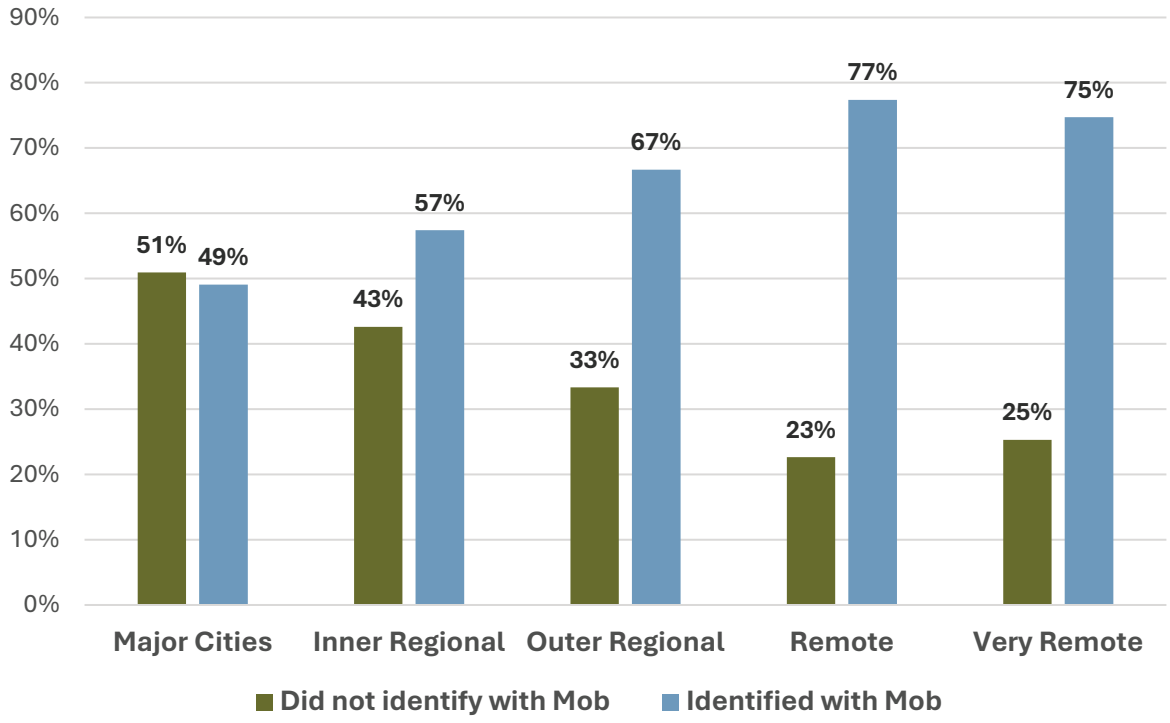


Figure 6.1. *Proportion of children in each remoteness area who identified with Mob during pre-school.*

How does early childhood identification with Mob relate to later SEWB?

We examined whether children who identified with Mob, prior to school, had significantly better overall SEWB during middle childhood and during adolescence than children who did not identify with Mob. Analyses for middle childhood SEWB were based on information available for 1,121 children who had parent-reported information prior to school, while analyses for adolescent SEWB were based on information available for 945 children with these pre-school reports.

As illustrated in Figure 6.2, during middle childhood, almost eight in ten children (80%) who identified with Mob prior to school had strong overall SEWB, as reflected in having connections on all, or all but one, of the SEWB domains. Around seven in ten children (69%) who did not identify, prior to school, had similarly strong overall SEWB in middle childhood.

As indicated by the filled circles relative to the unfilled circle in the Figure (and see Technical Appendix Table A6.2 for effect sizes from these multinomial regression analyses), relative to children who did not identify, children who identified with Mob, prior to school, were significantly more likely to have these stronger SEWB connections (i.e., connection on all, or all but one, of the SEWB domains) than to have poorer overall connection (i.e., connection on two or fewer SEWB domains).

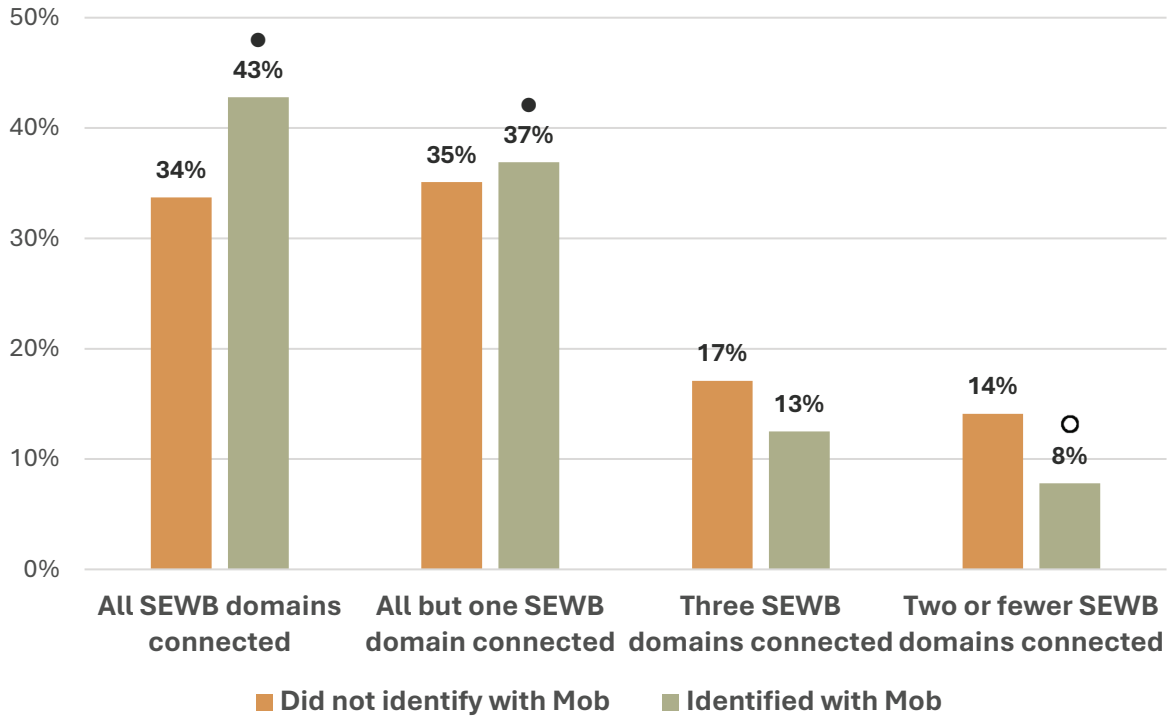


Figure 6.2. *Proportion of children during the pre-school period who did and did not identify with Mob, according to the number of SEWB domains connected* ***during middle childhood****. The filled circles indicate where children who identified with Mob during pre-school were significantly more likely than children who did not identify to show stronger overall wellbeing than low overall wellbeing (i.e., relative to the reference condition of two or fewer domains connected, denoted by the unfilled circle).*

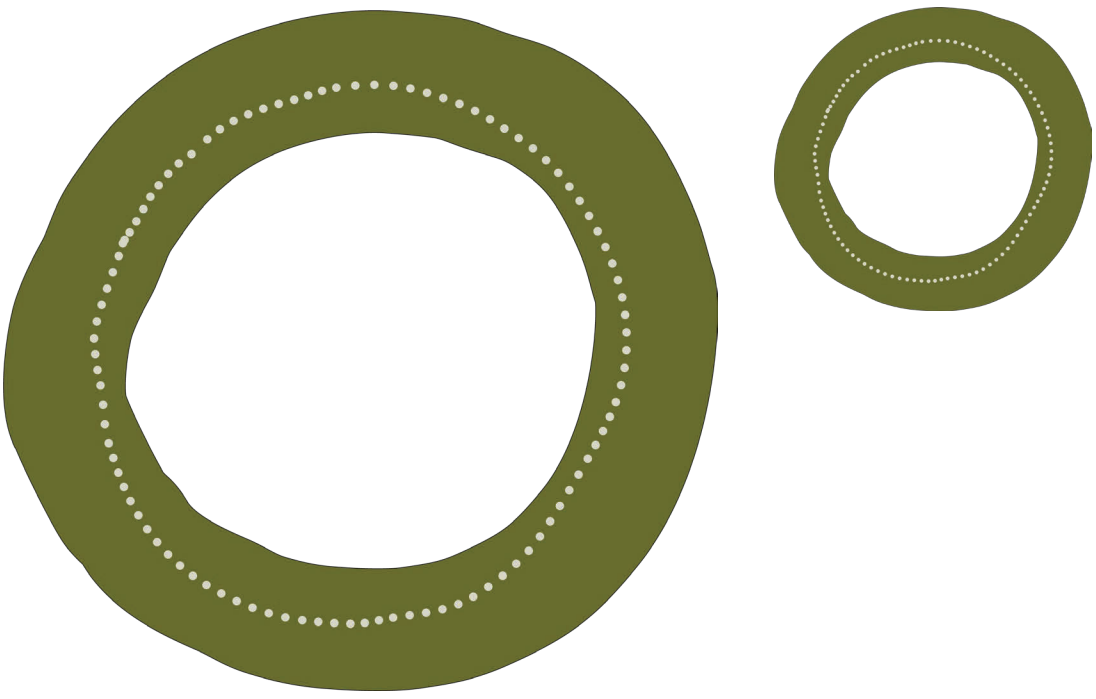


Figure 6.3 similarly illustrates the proportions of children who did and did not identify with Mob, prior to school, according to their overall SEWB during adolescence. Greater than half of children who identified experienced the strongest overall SEWB (i.e., all SEWB domains connected) during adolescence, as did 45% of children who did not identify. As indicated by the filled circle relative to the unfilled circle (see Technical Appendix Table A6.2 for effect sizes), compared to children who did not identify, prior to school, children who identified with Mob were significantly more likely to have this strongest overall SEWB (i.e., all domains connected) than to have poorer overall SEWB (i.e., two or fewer SEWB domains connected).

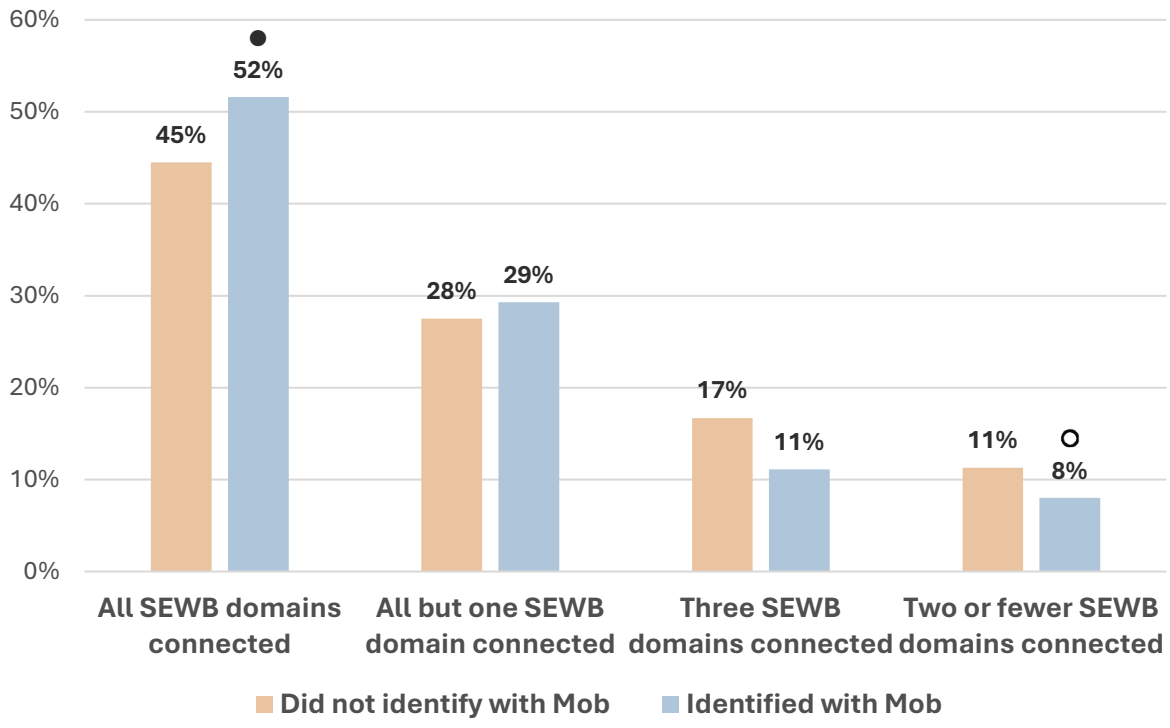


Figure 6.3. *Proportion of children during the pre-school period who did and did not identify with Mob, according to the number of SEWB domains connected* ***during adolescence****. The filled circle indicates where children who identified with Mob were significantly more likely than children who did not identify to show strong overall wellbeing than low overall wellbeing (i.e., relative to the reference condition of two or fewer domains connected, denoted by the unfilled circle).*

We additionally examined the **stability** of overall SEWB across middle childhood and adolescence among children who did and did not identify with Mob, prior to school. These analyses were based on 833 children who had overall SEWB information available in both the middle childhood and adolescent periods, along with the information regarding identification with Mob, prior to school.

Figure 6.4 demonstrates that 40% of children who identified with Mob prior to school had consistently strong SEWB across both middle childhood and adolescence (i.e., connections on all, or all but one, of the SEWB domains), as did a quarter of children (29%) who did not identify with Mob. As indicated by the filled circle relative to the unfilled circle (see Technical Appendix Table A6.3 for effect sizes), children who did identify with Mob, prior to school, were significantly more likely, relative to children who did not identify, to have stable strong SEWB connections across both middle childhood and adolescence than they were to have stable lower SEWB connections across these later periods.

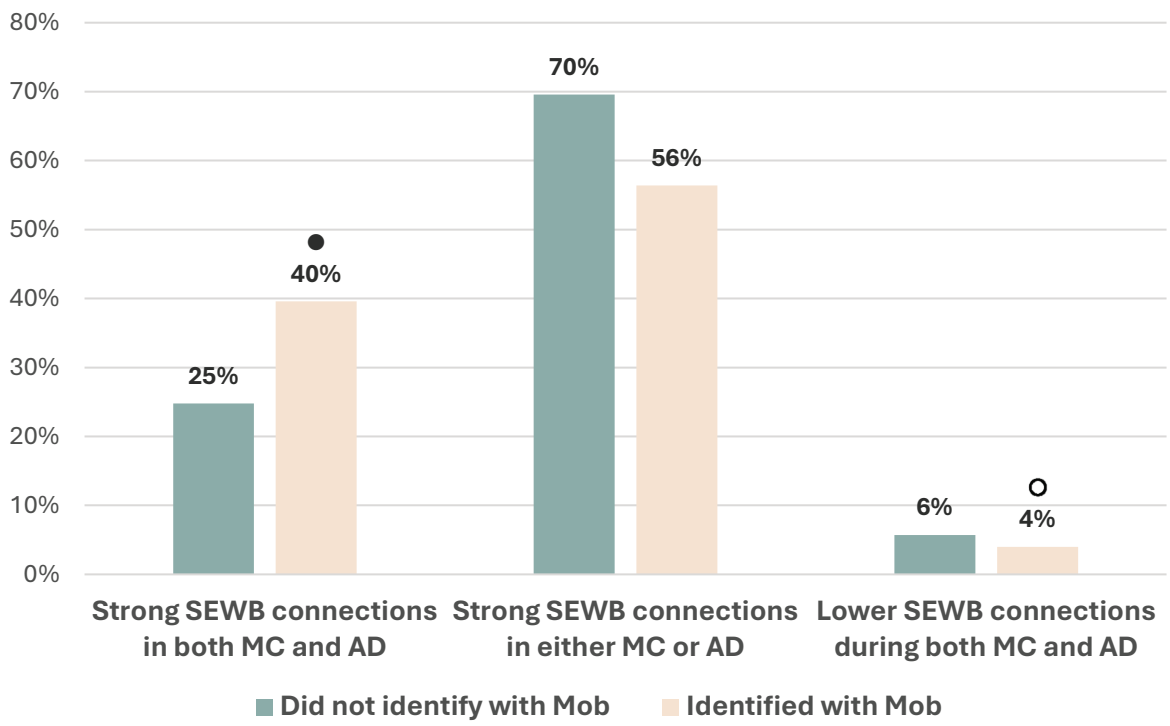
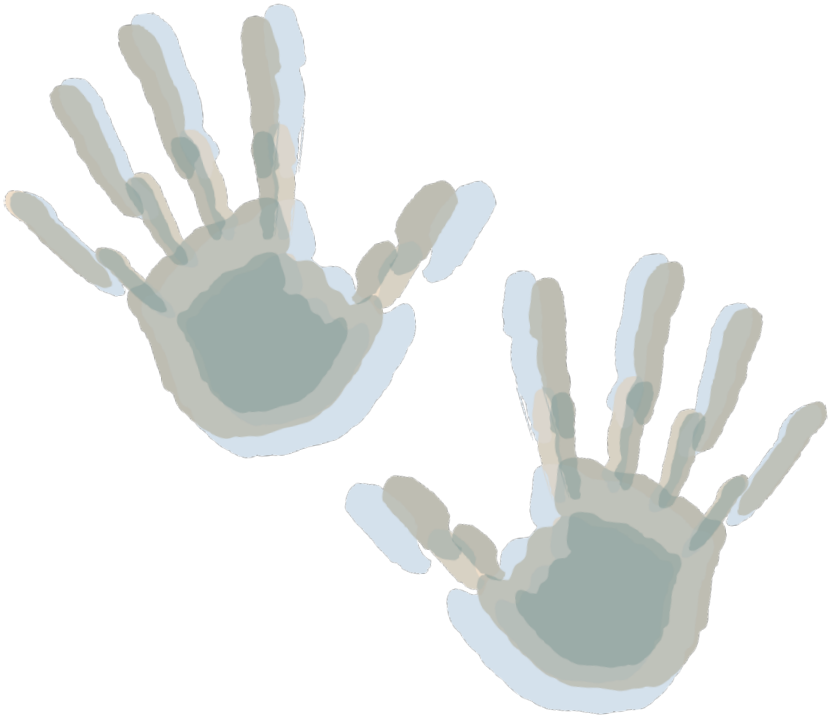


Figure 6.4. *Overall SEWB across development according to whether children identified or did not identify with Mob during pre-school. The filled circle indicates that children who identified were significantly more likely than children who did not identify to show stable strong SEWB connections across both developmental periods than stable lower SEWB connections during both periods (the reference condition, denoted by the unfilled circle).*



In our final set of analyses for this chapter, we examined whether children who did not identify with Mob prior to school differed significantly in their likelihood of being connected on the specific SEWB domain of connection to culture, Country, Ancestors, and spirituality, separately in the middle childhood and adolescent periods. These analyses used data from 1,079 children with information on this domain

available in middle childhood, and from 944 children with this information available in adolescence, alongside their information on identification with Mob, prior to school.

As illustrated in Figure 6.5, during both middle childhood and during adolescence, connection to culture, Country, Ancestors, and spirituality was present for most children – greater than eight in ten children who identified with Mob, and around seven in ten children who did not. As indicated by the filled circles, however, compared to children who did not identify, children who identified with Mob prior to school were significantly more likely to be connected to culture, Country, Ancestors, and spirituality (see Technical Appendix Table A6.4 for effect sizes from these logistic regression analyses).

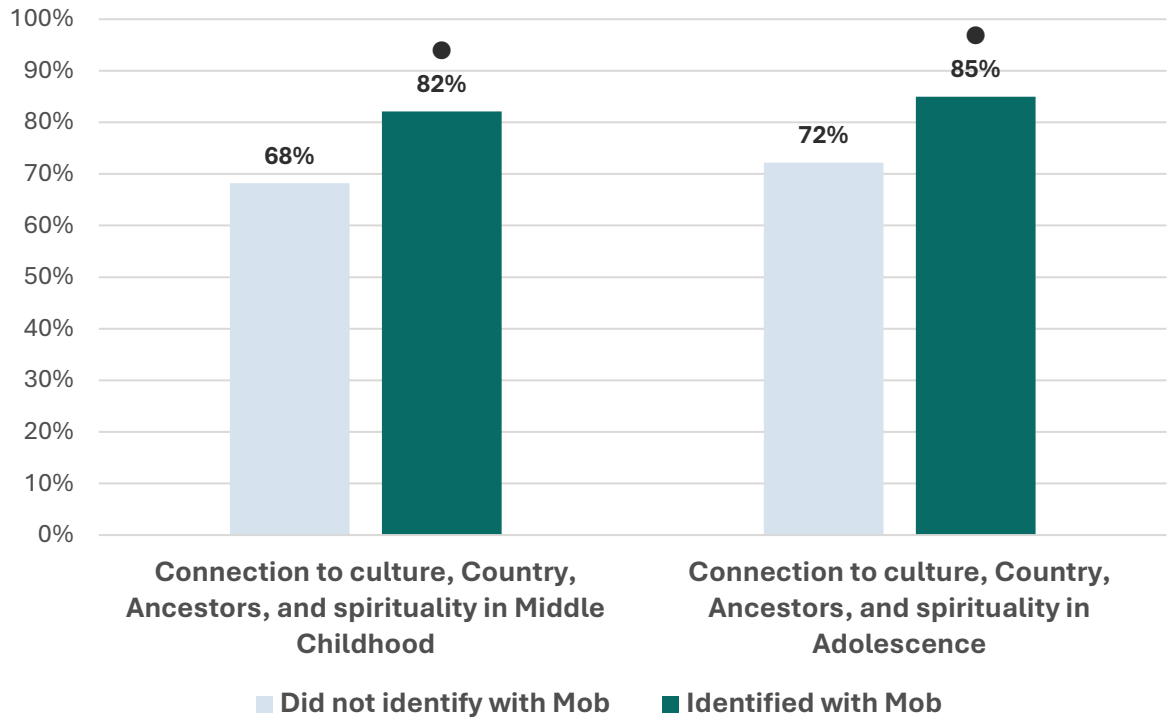


Figure 6.5. *Proportions of children who identified and did not identify with Mob prior to school, according to their later connection during middle childhood and during adolescence to culture, Country, Ancestors, and Spirituality. The filled circles indicate that children who identified with Mob during pre-school were significantly more likely than children who did not identify to have a connection to culture, Country, Ancestors, and spirituality during both middle childhood and adolescence.*

What are our key findings?

- Many LSIC participants described that children growing up strong by being grounded in knowing their identity as an Aboriginal and/or Torres Strait Islander person, and having a sense of belonging to Mob, Country, and culture. Almost two-thirds (63%) of parents in LSIC reported that their children, prior to starting school, identified with Mob (measured in LSIC as a connection to a tribe, language group, or clan).
- The percentage of children who identified with Mob prior to school varied by area. Whereas three-quarters of children in remote and very remote areas identified with such groups, only half of children in major cities did, while around two-thirds of children in inner and outer regional areas did so.
- Stronger overall SEWB during middle childhood and adolescence was more likely for children who identified with Mob before they started school, relative to children who did not identify.
- Children who identified with Mob prior to school were also more likely than their peers who did not identify to maintain stable strong overall SEWB across both middle childhood and adolescence.
- Identifying with Mob from early in life may also specifically facilitate children's ongoing connection to culture, Country, Ancestors, and spirituality. This is demonstrated in our finding that children who identified with Mob prior to school were more likely than children who did not identify to be connected to culture, Country, Ancestors, and spirituality, during both middle childhood and adolescence.

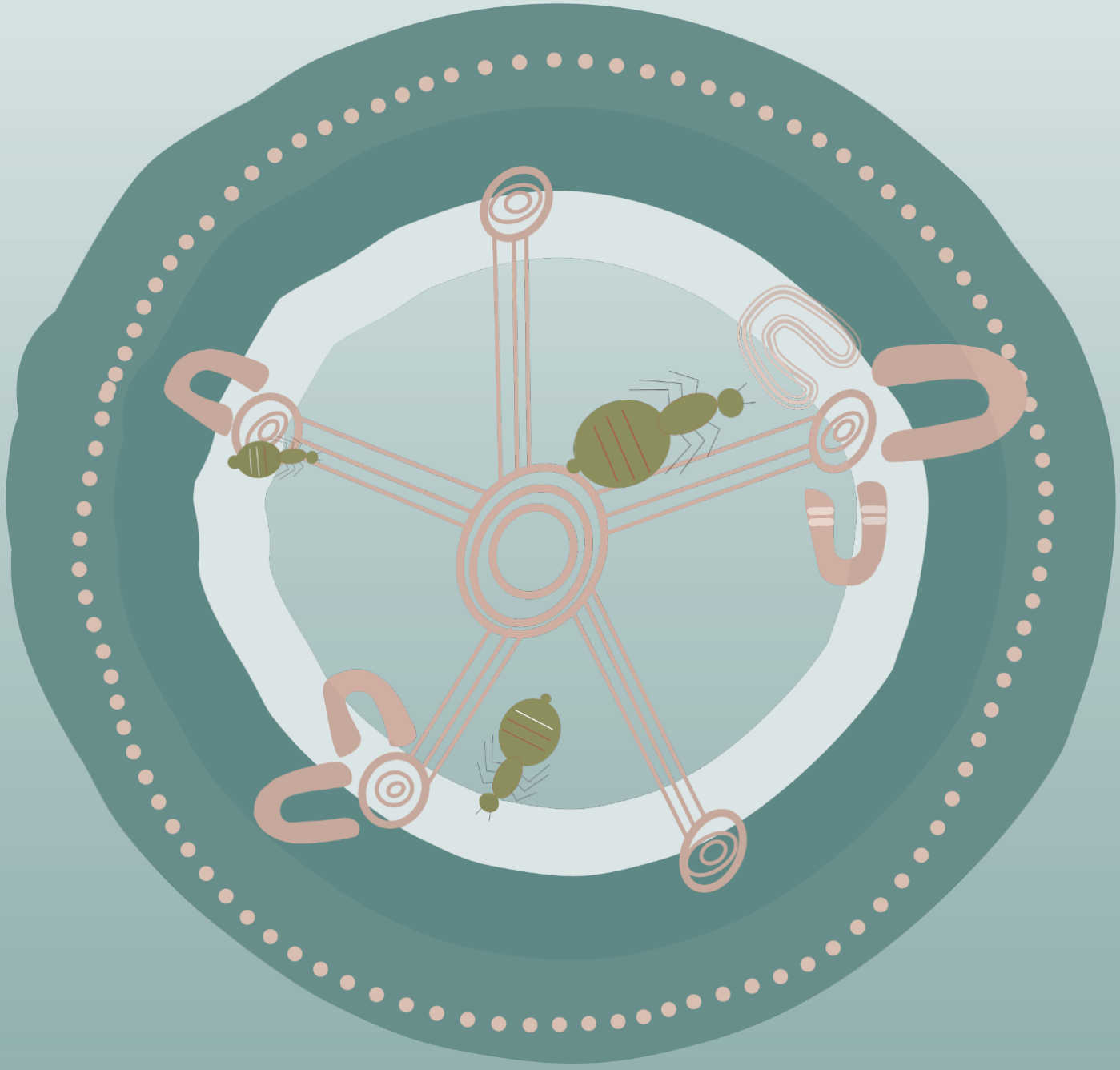
What needs to be done?

- Implement novel programs for promoting children's identification with Mob. This could include adapting existing models, such as international intercultural exchange programs, to facilitate children living off-Country to spend time with Mob.
- Where parents' or caregivers' own identification with Mob may have been impacted through intergenerational trauma, including the Stolen Generations, services such as Link-Up (https://aiatsis.gov.au/family-history/you-start/link) can promote connection with Mob. Promoting this connection will be an important precursor to their children's access to knowledge, identity, and sense of belonging.
- As has been the case in the prior chapters, policy makers need to give attention to how opportunities to connect with Mob may need to be tailored according to children's remoteness. Particular efforts to support these connections for children residing in major cities are required.
- Pre-schools and schools should be incentivised to foster connections with local Aboriginal and/or Torres Strait Islander communities to facilitate incursion and excursion experiences that promote the formation of children's identity and sense of belonging.
- The efficacy of school-based interventions designed to foster positive ethno-racial identity among other ethnic-minority youth (e.g., Latin, African, and Native-Americans) have been evidenced with respect to their effects on wellbeing and learning outcomes (Zamora et al., 2017; Umana-Taylor et al., 2018). This highlights the potential of schools as a key context for facilitating children's secure identity as an Aboriginal or Torres Strait Islander person. Further research to co-design with Aboriginal and Torres Strait Islander communities what school-based promotion of identity and belonging in Australian classrooms might entail is required.

Artist Interpretation: Honey ant nests are a system of underground tunnels that lead to where the honey ants live. They build nests in soil, many tunnels leading to one place. Parents are represented as the honey ants and the honey ant paths represent the social support opportunities they have available, which impact the developmental outcomes of their children. The more cultural resources they have available (people), the better the outcomes (larger honey ant).

Chapter 7:

Association between parent's levels of parenting social support and wellbeing over the early childhood period and children's developmental outcomes



Chapter 7: Association between parent's levels of parenting social support and wellbeing over the early childhood period and children's developmental outcomes

LSIC participants describe family and kin as helping children to grow up strong

'Logan' is an Aboriginal boy living with his Aboriginal father, non-Indigenous mother, and his siblings in a town not far from a big city. From the time he's young, Logan has close access to his Country and knows his Mob. Before he starts school, Logan's mum recognises ***the importance of a strong sense of family and community in Aboriginal culture, which means Logan's part of a large network that'll support him to grow up strong. As he grows, his family connects Logan to Aboriginal culture. He spends time with his Aunties, who tell him stories, and he learns through painting and attending cultural events.*** *Logan's confident in who he is, sharing with his school friends that he's Aboriginal. Things aren't always easy, and Logan's mum and dad eventually separate, but his mum continues to recognise that strong identity, knowing who you are, and having pride are essential for Logan to grow up strong. Logan agrees, understanding that he'll be strong if he knows what he stands for and how to be respectful.*

Logan's parents are committed to supporting their son to grow up strong and acknowledge the importance of a strong cultural identity from early in their son's development. These parents also value the role that family, kinship, and community play in their son's development, particularly his cultural connections. These networks are not only important for children's development but can also be a major support system for parents.

The first five years of a child's life can be a deeply rewarding but also challenging time for parents. To support children's healthy development, parents' wellbeing and social connections must be supported during this time. We acknowledge that Aboriginal and Torres Strait Islander people approach parenthood in the context of historical injustices and continued systemic barriers that challenge individual wellbeing and mental health. This chapter adopts a strengths-based approach, by focusing on the developmental outcomes of children with parents who have stronger parenting social support systems and greater wellbeing, with the purpose of informing policy and practice concerning resources and supports that should be accessible to all parents during the early childhood period.

Greater perceived parental social support is associated with higher parenting self-efficacy (confidence) and lower anxiety (Fierloos et al., 2023). Parents who know they have support networks that they can contact in stressful times experience less emotional arousal when faced with parenting challenges (Leahy-Warren, 2005). Ponnapali and colleagues (2023) interviewed 20 parents from an Indigenous community in South-East Queensland, exploring parents' and carers' conceptualisations of their wellbeing. Connections to family and kinship were the most frequently

reported aspect of Indigenous parent wellbeing. These parents said that support from kinship and family in their community can mitigate against parenting challenges. Family, including grandparents and older siblings of children, were identified as key support systems – they not only provided additional childcare to children, but also provided parents with advice and support. These connections boosted parents' wellbeing in times of parenting stress and fatigue. Many parents in this study also reflected on their community and cultural supports as important facilitators of wellbeing, describing a 'collective' approach to parenting in which family, kinship, and community, and cultural heritage play vital roles in child rearing.

In addition to social support, parents' mental health is a strong predictor of children's mental health and wellbeing. Notably, most of the research exploring the association between parental mental health and children's developmental outcomes assesses mental health as mental health disorders or psychological distress. The Study of Environment on Aboriginal Resilience and Child Health (SEARCH) found that caregiver psychological distress was predictive of children's developmental risk among children under 8 years of age (Chando et al., 2020). This developmental risk encompassed parent-reported concerns regarding cognition, language, motor skills,

behaviour, social-emotional wellbeing, and school success. Within the Longitudinal Study of Australian Children (LSAC), maternal psychological distress predicted children's internalising mental health symptoms (including emotional symptoms and peer relationship problems) (Bayer et al., 2011). Relatively limited research encompasses positive measures of mental health and wellbeing. Using early data from LSIC (Wave 5), Skelton (2014) found that higher parental resilience was associated with greater reading skills and fewer social-emotional difficulties among study children.

In this chapter, we sought to build on this work by further examining parents' levels of parenting social support and wellbeing during their child's early childhood. Analyses explored the association between parents' social support and wellbeing (resilience and distress) during early childhood and their child's developmental outcomes during middle childhood and adolescence.

LSIC parents' access to parenting support from family and friends during early childhood

Parents were asked to report on three different avenues they had used to seek advice about parenting, with options including family and friends (e.g., partner, family, friends, neighbours), professionals (e.g., teachers, doctors), and media (e.g., television, movies, the internet). Data were

combined from the waves of assessment completed during the child's pre-school period (i.e., 6 months through to 5 years of age, prior to starting school). Figure 7.1 illustrates the proportion of parents who, at some point during this period reported accessing that resource for parenting advice.

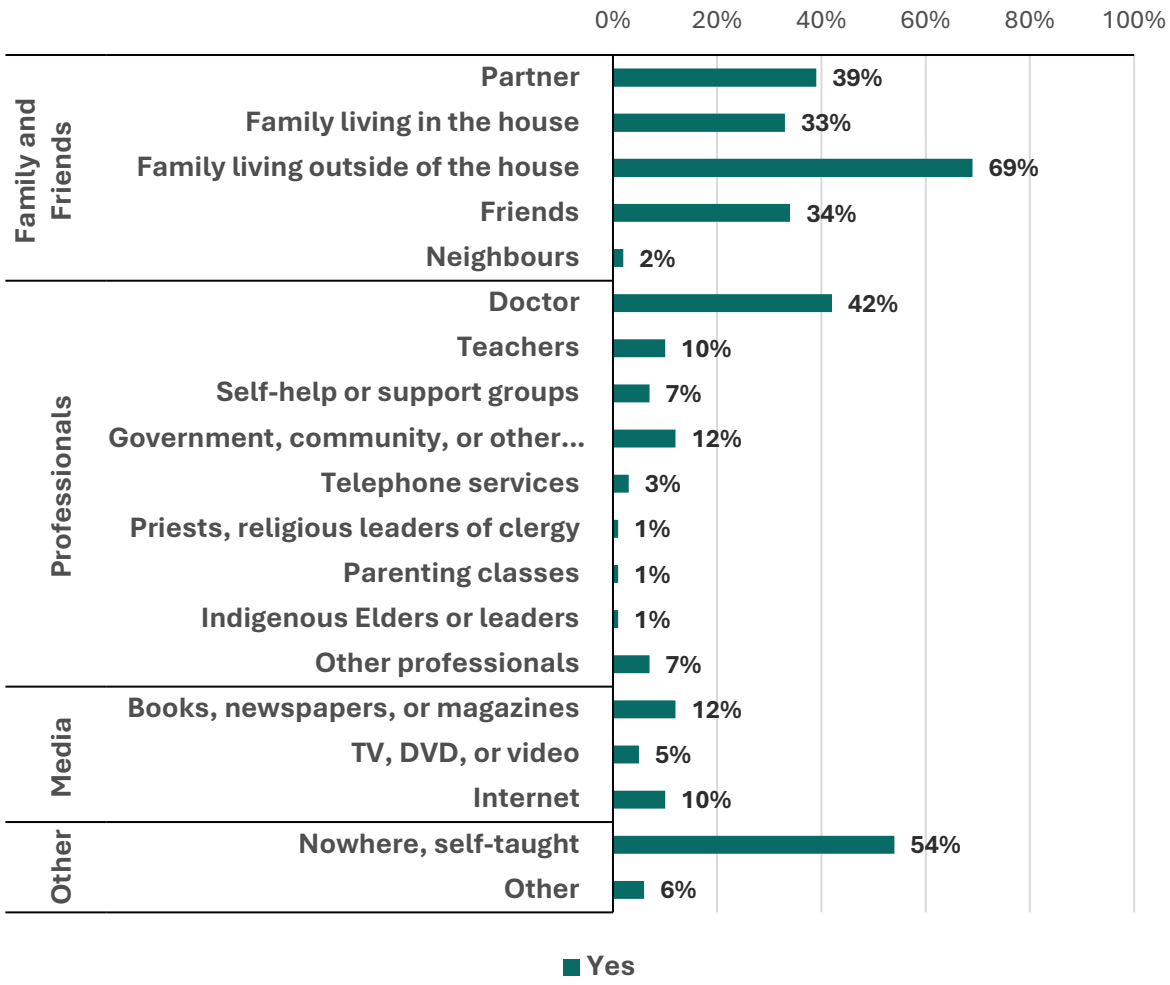


Figure 7.1. *Proportion of parents who reported seeking advice from these support systems in the early childhood period.*

We used data from parental responses on advice-seeking (from the annual assessment waves collected during the child's pre-school years [6 months to 5 years of age]) to sort children into two groups (see Figure 7.2):

- children whose parents did not report seeking support from family or friends in at least one wave of assessment during this pre-school period (*n* = 859; 53%), and
- children whose parents reported that support for parenting was available from family or friends in each wave of assessment during

the pre-school period (*n* = 749; 47%).

Thus, over half of the parents in the study received less consistent social support for parenting from family and friends.

We used these two groups to understand how access to regular social support from friends and family may make a difference for the parent and for their child's outcomes. We refer to these groups as 'unsupported' (at some point in early childhood parents did not seek parenting support from family or friends) and 'supported' parents (at all assessments completed in early childhood, parents reported seeking parenting advice from family or friends). We acknowledge that there may be a variety of reasons why parents did not report seeking parenting advice from family and friends. For instance, it may be that there are other sources of support that are more important to meet family's needs, including doctors, teachers, Elders, or other professionals. Some parents may also be confident in their own parenting abilities. We acknowledge the limitations to our approach of assigning parents into these two groups, when there are additional, important differences among parents that, unfortunately, we cannot capture.

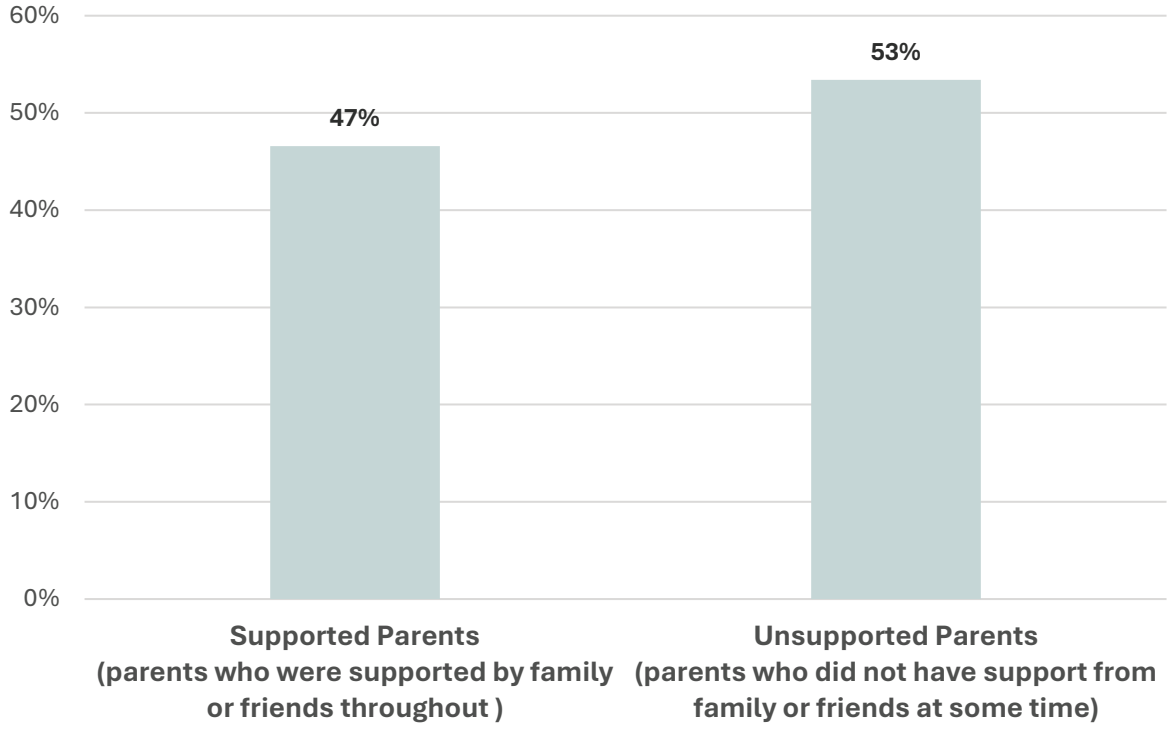


Figure 7.2. *Proportion (%) of children in groups differentiated according to*

parents' different levels of social support from family and friends during the pre-school period.

Factors associated with LSIC parents' social support from family and friends during early childhood

We first explored whether there were differences in sociodemographic factors for children with supported parents and children with unsupported parents.

Factors that differed between these groups included:

- **Parental education:** Parents who had been educated beyond Year 12 were more likely to report being supported by family and friends throughout their child's pre-school period (47%) than were parents who had been educated up to and including Year 12 (38%).
- **Total number of people in the household:** Children with unsupported parents lived with significantly more people in the household (Mean = 6.0) than parents who were supported throughout the pre-school period (Mean = 5.2). This difference might reflect that parents with more children were less likely to need to seek parenting advice from others, or perhaps parents with more adults in the household did not consider their everyday interactions as 'advice seeking'.
- **Attending playgroup:** Parents who reported they had attended a playgroup with their children in the years prior to school were slightly more likely to report being supported by family and friends (49%) than parents who had not attended a playgroup (44%).

Factors that did not differ between these groups included:

- **Remoteness area:** These two groups of children did not differ by remoteness area (i.e., they were similarly distributed across all regions of Australia).
- **Financial Stress:** There were no differences between children with supported and unsupported parents on financial stress scores.
- **IRISEO (Index of Relative Indigenous Socioeconomic Outcomes):** There were no differences in area-based socioeconomic advantage

scores between these groups of children.

To determine the outcomes associated with parents' being supported through the child's first 5 years, we explored later cognitive and academic outcomes during early school (first two years of school), middle childhood, and adolescence.

While some of the differences were small in size, relative to children of unsupported parents, children whose parents were supported by family and friends throughout the early childhood period demonstrated significantly higher outcomes for:

- Early school classroom self-regulation (Means = 3.0 and 2.9).
- Early school emotional self-regulation (Means = 3.8 and 3.7).
- Middle childhood school engagement (Means = 3.1 and 3.0).
- NAPLAN academic achievement on reading, writing, spelling, grammar and punctuation, and numeracy during middle childhood (Year 5) and during adolescence (Year 9) - see Table 7.1 for Means.
- Executive functioning during middle childhood/adolescence (Means = 101.2 and 99.2).

Parents' reports of parenting social support were significant predictors of all the above early school and middle childhood outcomes even when controlling for remoteness, gender, and parental education. That is, parent's support levels were associated with these outcomes (e.g., self-regulation, school engagement, and Year 5 NAPLAN) above and beyond the effects of sociodemographic factors.

Table 7.1. Differences in mean Year 5 and Year 9 NAPLAN scores according to parents' reported levels of social support from family and friends during the pre-school period.

	Parents Reported Supports throughout early childhood (Mean)	Parents Reported No Supports at some point in early childhood (Mean)
Year 5 Reading	296.0	189.4
Year 5 Writing	264.8	171.2
Year 5 Spelling	301.3	205.1
Year 5 Grammar and Punctuation	283.7	176.4
Year 5 Numeracy	253.3	158.4
Year 9 Reading	527.8	499.8
Year 9 Writing	483.6	460.8
Year 9 Spelling	539.3	524.2
Year 9 Grammar and Punctuation	513.6	488.7
Year 9 Numeracy	539.7	521.5

Support for parents during the pre-school period was also associated with children's later social-emotional wellbeing (SEWB) outcomes.

Children with supported and unsupported parents during the pre-school period differed in their later SEWB during middle childhood. Children of supported parents were significantly more likely than children of unsupported parents to:

- Have strong overall SEWB (as reflected in being connected on all SEWB domains: 44% of children with supported parents had strong overall SEWB versus 37% of children with unsupported parents: Figure 7.3).
- Be connected to mind and emotions (94% versus 88%: Figure 7.4).
- Be connected to community (87% versus 82%: Figure 7.4).
- Be connected to culture, Country, Ancestors, and spirituality (81% versus 74%: Figure 7.4).

The above associations remained significant even when accounting for sociodemographic factors, including gender, parental education, and remoteness, meaning parent's levels of parenting social support was related to these SEWB outcomes above and beyond sociodemographic factors.

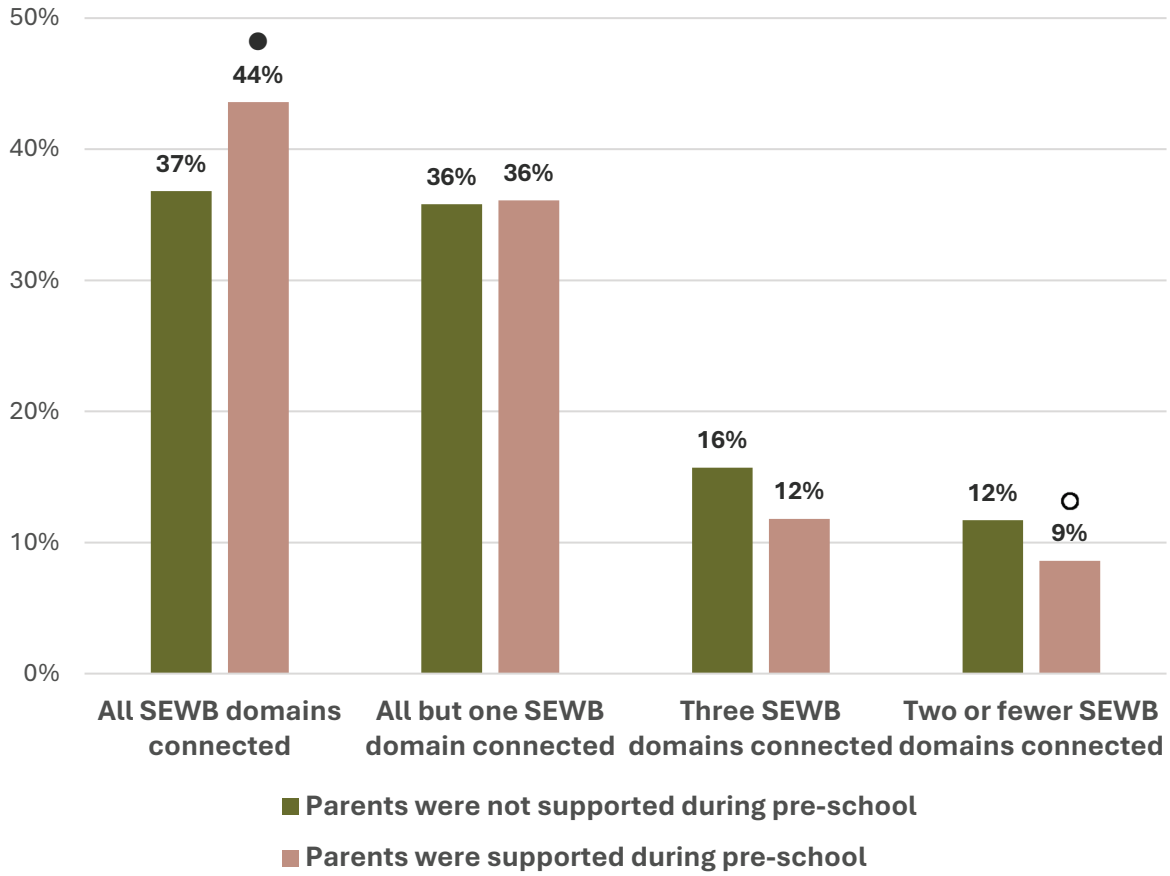


Figure 7.3. *Overall SEWB during middle childhood (reflected in the number of connected SEWB domains) among children with parents who reported being supported by family and friends during pre-school and among children with parents who were not supported. The filled circle indicates where children whose parents were supported during pre-school were significantly more likely than children whose parents were not supported to show strong overall wellbeing than low overall wellbeing (i.e., relative to the reference condition of two or fewer domains connected, denoted by the unfilled circle).*

Relative to children with unsupported parents, children with supported parents were 1.6 times more likely to be connected on all social-emotional wellbeing domains in middle childhood than to be connected on just two or fewer domains (see Technical Appendix Table A7.1).

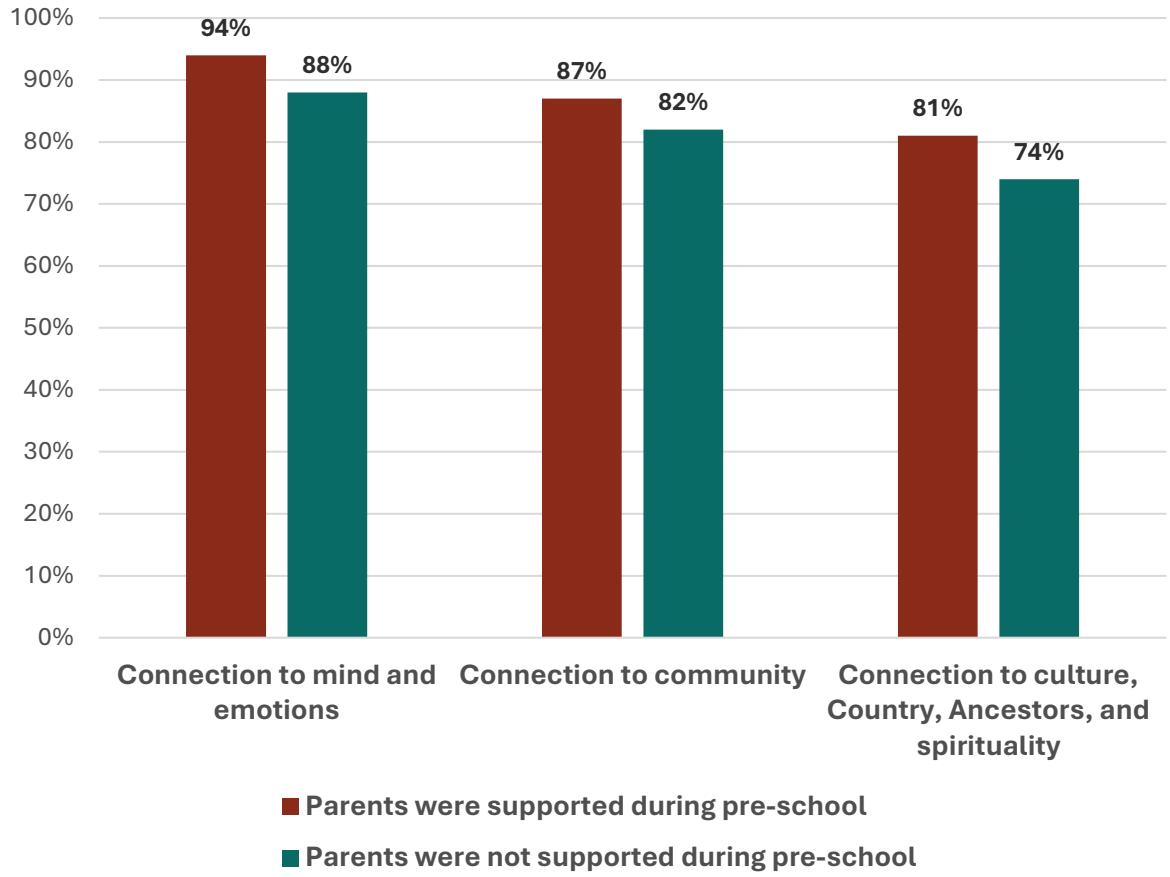


Figure 7.4 *Connections to specific SEWB domains during middle childhood, according to parental social support in the early childhood period.*

Analyses of these outcomes during middle childhood revealed that, relative to children with unsupported parents, children whose parents were supported during the pre-school period were twice as likely to be connected to mind and emotions, 1.4 times as likely to be connected to community, and 1.4 times as likely to be connected to culture, Country, Ancestors, and spirituality (see Technical Appendix Table A7.2).

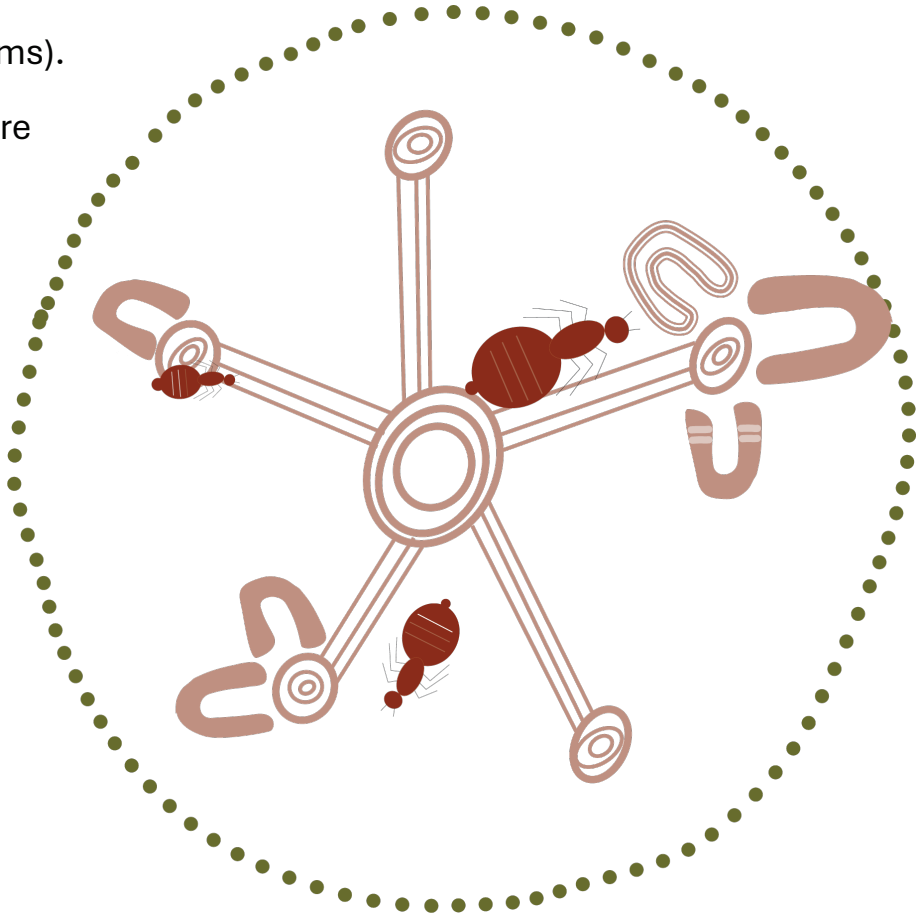
These findings suggest that having socially supported parents during pre-school years may provide children with strong support networks that foster their later connection to mind and emotions, community, and culture, Country, Ancestors, and spirituality during middle childhood. These findings align with Logan's story of growing up, in which he learnt about Indigenous ways of being and doing from large networks of family and community.

Parental resilience and distress during the pre-school period

LSIC parents were also asked to report on their wellbeing using the Strong Souls (Thomas et al., 2010) survey, with scores then computed to assess their 'resilience' and 'distress'. Example items for resilience were *"When you get sad or upset, you're able to find something that cheers you up"* and *"You have a strong family who help each other"*. Example items for distress were *"Have you stopped liking things that used to be fun?"* and *"Have you felt so worried your stomach (tummy) has got upset? Big worries make you sick"* (see Technical Appendix Sections 1.5.2 and 1.5.3 for the full list of resilience and distress items).

For each item, parents were asked to indicate how often they felt this way, with four options available (e.g., 0 = Never; 1 = Little bit; 2 = Fair bit; 3 = Lots). These responses were averaged within each wave (scores ranging from 0 to 3). To index the wellbeing of parents during the pre-school period (under 5 years of age), the minimum of these averaged scores was used for resilience and the maximum of the scores used for distress.

On average, most parents reported high resilience scores, with an average of 2.3 (standard deviation = 0.5) on the scale from 0 to 3. And, parents generally reported low distress scores, with an average of 0.8 (standard deviation = 0.6) on the scale from 0 to 3. These resilience and distress scores were significantly negatively correlated (r = -.3).



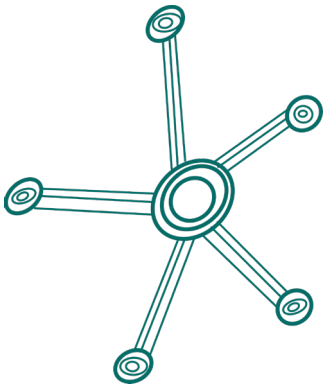
We explored whether there were differences in parental wellbeing (resilience and distress) according to sociodemographic factors. Significant relationships of parental resilience and/or distress (during the child's pre-school period) with the following factors were identified:

- **Remoteness area:** Parents residing in major cities had significantly lower resilience scores (Mean = 2.2) than parents in inner regional (Mean = 2.3) and very remote areas (Mean = 2.3). No differences were found in parents' distress scores between other regions.
- **Financial stress:** Higher financial stress scores were associated with higher distress scores, and lower resilience scores.
- **Number of major life events:** Higher number of major life events experienced was associated with higher distress scores and lower resilience scores.

Parental resilience and distress during pre-school were not associated with:

- **IRISEO (Index of Relative Indigenous Socioeconomic Outcomes):** Socioeconomic advantage was not associated with resilience or distress scores.
- **Number of people living in the household:** No association was observed between parental resilience and distress and the number of people living in the house.
- **Parental education:** No differences in parents' resilience or distress scores were observed according to parental education levels (beyond Year 12 vs. up to and including Year 12).

Parent factors associated with LSIC parents' wellbeing during early childhood

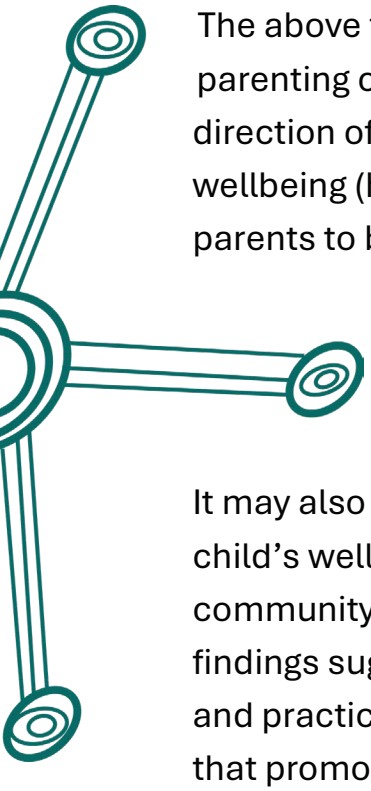


Parents who always reported seeking parenting support from family and friends during pre-school had higher resilience scores (2.3 for supported parents vs. 2.2 for unsupported parents) and lower distress scores (0.7 vs. 0.8) than parents who did not access family and friends for parenting support. Therefore, parent's level of support is associated with their wellbeing. It could be that parents with better wellbeing are more willing to build stronger connections with family, friends, and neighbours. However, it may also be that parents with stronger support networks and social connections have better wellbeing because of these social connections.

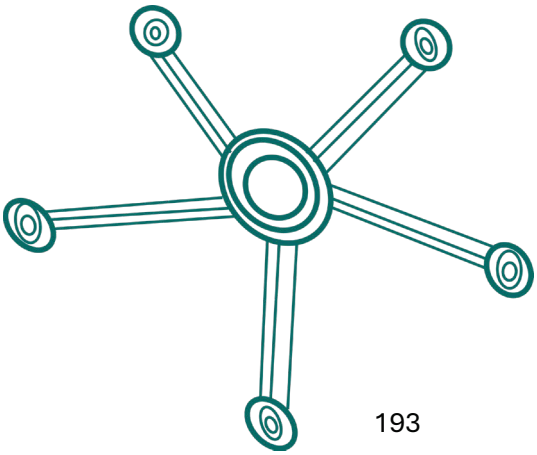
In further analyses, we determined that parental wellbeing (resilience and distress) during pre-school was also associated with measures of parents' confidence and practices (which were also measured during the pre-school period, or during the subsequent early school period). These relationships included the following:

- **Home learning:** Parents reported on the family activities they engaged in with their child within the last week, including playing, reading, and telling stories. Higher parental wellbeing was associated with higher home learning scores in early childhood (r = .11); however, no association was found between parental distress and home learning. Having attended a playgroup was also associated with higher home learning scores.
- **Parenting efficacy and empowerment:** Parents' reports (from Waves 5 and 7) of higher confidence with parenting (e.g., on items such as *"I feel I'm doing a good job as a parent"* and "*I feel good when I think about the future of my children"*) related positively with their self-reported resilience during the early school period (r = .20), but negatively with their distress (r = -.18). That is, parents who reported higher levels of distress also tended to report lower levels of parenting efficacy and empowerment.

- **Parental warmth:** Parents who reported higher parental warmth (e.g., on items such as "*How often do you hug or hold (Study Child) for no particular reason?*"; "*How often do you enjoy doing things with (Study Child)?*") were more likely to report higher parental resilience (r = .32) and lower parental distress (r = -.14).
- **Parental discipline:** Parents who reported lower levels of harsh discipline practices (e.g., on items such as *"If you tell (Study Child) they will get punished if they don't stop doing something, but they keep doing it, how often do you end up smacking them?"* and "*How often would you make (Study Child) stay in their bedroom is they misbehave?*") were more likely to report higher parental resilience (r = .09). Higher use of discipline was associated with higher parental distress (r = .13).



The above findings indicate that parental wellbeing is associated with parenting confidence and practices. We note that we cannot establish the direction of the association, meaning it could be that greater parental wellbeing (higher resilience and lower distress) provides the foundation for parents to be warmer, engage in lower use of discipline, engage in more home learning, and feel more confident in their parenting abilities. However, it could also be that parents with propensities for greater warmth and parents who engage in more home learning then have a stronger sense of wellbeing. It may also be that other factors underpin this association, such as child's wellbeing and temperament, parental support systems, community support, or parent's overall health. Nonetheless, our findings suggest that parental wellbeing and parenting confidence and practices are associated and, therefore, intervention and supports that promote stronger wellbeing could influence a range of parenting outcomes and, in turn, childhood development.



Child outcomes associated with LSIC parents' wellbeing during early childhood

Parent's resilience and distress scores during their child's pre-school period (first 5 years) were associated with a range of developmental outcomes for their child. Understandably, parents' wellbeing during pre-school was more strongly related to their child's concurrent developmental outcomes during pre-school and with the child's outcomes during their first few years of school, but there were also significant relationships between parents' wellbeing that extended to the child's outcomes during middle childhood and adolescence. These significant correlations between parental wellbeing and outcomes are summarised (using ticks) in Table 7.2 and described below.

Higher parent resilience and lower parent distress was associated with:

- Greater parent-reported overall health of their child during the pre-school period (and higher parent resilience [but not lower parent distress] continued to relate to greater overall health of the child during early school and middle childhood).
- Greater classroom, attentional, and emotional self-regulation skills during the early school period.
- Lower parent-reported social-emotional difficulties in middle childhood (and higher parent resilience [but not lower parent distress] continued to relate to lower social-emotional difficulties during adolescence).
- Greater parent-reported school engagement in middle childhood and adolescence.

Higher parent resilience only was additionally associated with:

- Greater child receptive language in the pre-school period.
- Greater child reading comprehension in the early school period.

Lower parent distress only was additionally associated with:

- Greater visual-motor and early literacy skills in the pre-school period.

Table 7.2. Summary of analyses exploring the association between parents' resilience and distress in early childhood and children's developmental outcomes.

	Parent Wellbeing: Pre-school Period	
Child outcomes	**Resilience**	**Distress**
Pre-school (Under 5 years of age)		
Overall health	✓	✓
Receptive Language (MacArthur-Bates)	✓	
Visual-Motor and Early Literacy Skills		✓
Early school (Foundation and Year 1)		
Overall health	✓	
Classroom self-regulation	✓	✓
Attentional self-regulation	✓	✓
Emotional self-regulation	✓	✓
PAT Reading comprehension	✓	
Middle childhood (Years 5 and 6)		
Overall health	✓	
Social-emotional difficulties	✓	✓
School engagement	✓	✓
Adolescence (Years 8 to 10)		
Social-emotional difficulties	✓	
Kessler's psychological distress	✓	✓
School engagement	✓	✓

These results illustrate the importance of parents' wellbeing, both in terms of resilience and levels of distress, for their child's cognitive, academic, and social-emotional development (see Technical Appendix Table A7.3 for effect sizes).

As a supplementary analysis, we conducted multivariate analyses to see whether the association between parental wellbeing during the pre-school years, and middle childhood social-emotional difficulties and adolescent psychological distress remained significant even when accounting for sociodemographic factors (including child gender, family socioeconomic status, and remoteness). These results are presented in the Technical Appendix (see Tables A7.4 and A7.5). In summary, the effects of parental resilience and distress held even when accounting for these sociodemographic factors. That is, parent wellbeing during the pre-school years is an important factor for children's ongoing mental health and wellbeing, over and above the impact of family resources and location.

What are our key findings?

- Children of parents who were more supported by family and friends throughout their child's first 5 years of life had greater learning and academic achievement outcomes, including stronger self-regulation skills, higher NAPLAN scores, and greater school engagement, than children whose parents did not report having these same parenting social support networks.
- Children of more supported parents were more likely to be connected on three SEWB domains in middle childhood: mind and emotions, community, and culture, Country, Ancestors, and spirituality.
- We observed high levels of parental resilience and low levels of distress among parents of LSIC children during pre-school. However, some parents may require additional supports during this period to boost their wellbeing.
- Parents with greater wellbeing (higher resilience and lower distress) reported higher parenting efficacy and empowerment, greater parental warmth, and lower use of harsh discipline.
- Higher parental resilience and lower distress during the pre-school period was associated with better developmental outcomes for children, including early school self-regulation, and middle childhood and adolescent social-emotional wellbeing and school engagement.
- Resilience and distress, while related to each other, were associated with unique outcomes and explained unique variance in students' later social-emotional wellbeing and psychological distress.

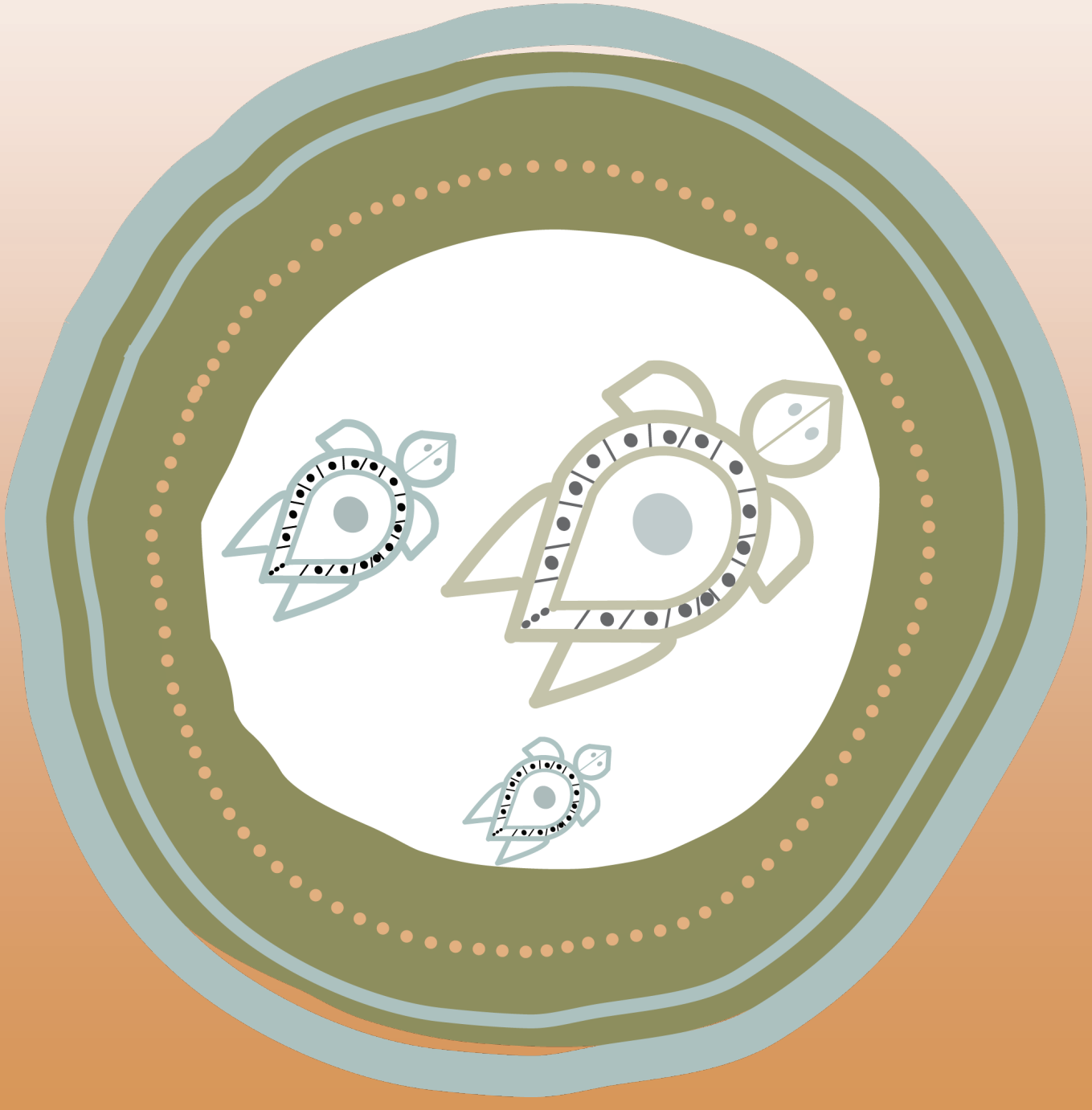
What needs to be done?

- Parenting programs or playgroups have been found to build parents' self-efficacy and support networks (Strange et al., 2015; Williams et al., 2016). Increased access to culturally responsive parent playgroups and support programs could improve parents' wellbeing and social support during early childhood and subsequently improve children's developmental outcomes.
- As parental resilience was lower among parents from urban areas, relative to parents from remote areas, specific supports may be required in major cities of Australia to connect parents with culturally responsive parenting supports and community services.
- As parents' resilience and distress each predicted some unique developmental outcomes for children, both are important dimensions that should be addressed and supported among Indigenous parents. Ensuring families are linked to culturally responsive community services will promote environments that optimise children's developmental outcomes.
- Future research within LSIC should seek to explore parents' SEWB across other domains (including those aligned with the SEWB model) and the associations between these parent SEWB connections and their children's developmental outcomes.
- Further research is also needed that can capture and explore the important role of community and extended family and kin in Aboriginal and Torres Strait Islander child-rearing. Mapping these networks and evidencing their importance for the wellbeing and development of Indigenous children is an essential step towards establishing culturally appropriate recommendations for policy, practice, and resourcing to support all Indigenous children to grow up strong.

Artist Interpretation: The turtle is known in culture for its wisdom and patience. Because of its hard shell, it is said that it can carry the world on its back. Here, it is used to represent the relationship, resources and strength that the right teachers can provide to students from early school through to middle school, right the way through to adolescent education.

Chapter 8:

The impact of early learning experiences on students' middle childhood and adolescent school engagement



Chapter 8: The impact of early learning experiences on students' middle childhood and adolescent school engagement

This chapter investigates the longitudinal association between children's early learning experiences, both prior to school and in the first two years of school, and school engagement in middle childhood and adolescence.

Children's engagement with school is a recognised precursor of academic achievement and is strongly associated with disengagement from school and school leaving (Guthrie & Wigfield, 2000; Rumberger & Rotermund, 2012). School engagement will be a key determinant of the success of Target 5 of the Closing the Gap Agreement, which aims to have increased the proportion of Aboriginal and Torres Strait Islander people attaining a Year 12 or equivalent qualification to 96% by 2031.

Moderate stability has been found between children's early school engagement levels and their engagement in early adolescence, suggesting that, for many children, their early school years are the beginning of enduring engagement patterns that persist across development (Ladd & Dinella, 2009). Children's engagement with school is commonly defined as encompassing three different components (Fredricks et al., 2004; Jimerson et al., 2003):

- **Behavioural engagement** – defined as participation and involvement in school activities.
- **Emotional engagement** – positive and negative interactions with teachers and classmates.
- **Cognitive engagement** – the effort and motivation to engage in the academic demands of school.

Early learning experiences, both formal and informal, help prepare children for their entry to school and can lay the foundation for school success. Using LSIC data, Williams and colleagues (2017) found that attending a playgroup (informal gatherings of young children and their families) when children were 2-3 years old was associated with more home learning experiences, and in turn, higher vocabulary scores. Playgroups are an ideal setting for promoting parents' social capital (that is, their relationship networks) and strengthening children's early learning skills. Similarly, engagement in early learning activities at home, such as reading, drawing, playing, and telling stories, are an important way of supporting children's transition to formal schooling and promoting their academic and social success (Anders et al., 2012). As a more formal setting for early learning, pre-school programs provided in the Year Before Formal Schooling commences are associated with stronger cognitive and developmental outcomes, both in the short term and long term for Aboriginal and Torres Strait islander children (Holzinger & Biddle, 2015). In this Report, we investigate the association between engagement in formal (pre-school) and informal (playgroup and home learning) learning in the early childhood period and students' later school engagement.

Interactions and relationships with teachers have the potential to either reinforce strong emotional engagement and positive connections to school or dissuade students from attending or participating in school activities (Pianta et al., 2012). Student-teacher relationships at the beginning of school are particularly important as they can influence school-entry adjustment and success. Consistently nurturing and sensitive student-teacher interactions in the first year of school predict stronger language, pre-academic, and social skills (Burchinal et al., 2008). Conversely, student-teacher relational negativity in the first year of school predicts academic under-achievement and poor behavioural outcomes, even into early adolescence (Hamre & Pianta, 2001).

Children's capacity for self-regulated learning overlaps closely with the definition of cognitive engagement (Wolters & Taylor, 2012). Self-regulated learning refers to students' ability to set goals and regulate their cognition, behaviours, and emotions in order to meet these goals. Stronger self-regulation skills in early schooling are associated with greater achievement, interpersonal, and wellbeing outcomes in adolescence (Robson et al., 2020) and with school engagement, participation, and liking (Brock et al., 2009; Denham et al., 2012).

In the LSIC Primary School Report, Rogers and colleagues (2022) identified three groups of children differentiated based on their patterns of behavioural, emotional, and cognitive engagement across the primary school years

(Foundation to Year 6). These three groups included children who were:

- Strongly engaged (50%) – high and stable behavioural, cognitive, and emotional engagement throughout primary school.
- High self-concept/weakly engaged (35%) – high but decreasing cognitive engagement, low emotional engagement with teacher, and low behavioural engagement.
- Low self-concept/weakly engaged (15%) – low levels of cognitive and behavioural engagement, and low but increasing emotional engagement with teachers.

Using these engagement profiles, Rogers and colleagues (2022) identified student-teacher conflict as an important predictor of children's primary school engagement patterns. In fact, student-teacher conflict in the middle primary years (Years 3 and 4) was the strongest predictor of children's behavioural and cognitive engagement in senior primary (Years 5 and 6). Early childhood attentional and emotional self-regulation skills were also associated with membership in strongly engaged profiles, relative to membership in weaker engagement profiles.

This chapter builds on this previous work by exploring the longitudinal associations of early learning experiences and early school cognitive engagement (self-regulation) and emotional engagement (closeness and conflict with teachers) with later school engagement during the middle childhood (Year 5 and 6) and adolescent (Years 8 to 10) periods. Exploring these longitudinal associations from early childhood through adolescence could provide insights into the importance of children's early learning experiences in setting the foundation for enduring engagement patterns.

Measuring LSIC children's school engagement during middle childhood and adolescence

School engagement was measured in LSIC using a five-item scale, asking parents to report on how well their child was managing in school. The following five items were included:

- *"How well do you think (Study Child) is managing in school with schoolwork?"*
- *"How well do you think (Study Child) is managing in school with making friends?"*
- *"How well do you think (Study Child) is managing in school with being good?"*
- *"How well do you think (Study Child) is managing in school with feeling strong?"*
- *"How well do you think (Study Child) is managing in school with knowing where to be and when?"*

Responses options were recoded to 0 = Not very well at all, 1 = Not very well, 2 = Reasonably well, 3 = Well, and 4 = Extremely well. Scores on these five items were averaged for each wave of available data during the middle childhood and adolescent periods (scores ranging from 0 to 4), and a mean of scores across all available waves calculated for each period.

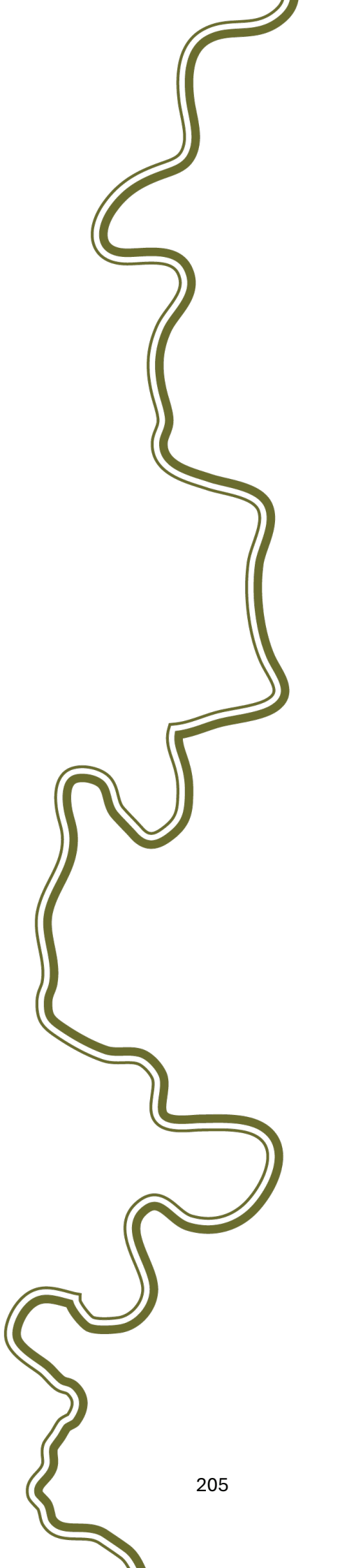
School engagement scores were higher during middle childhood (*n* = 1,040; Mean = 3.1, standard deviation = 0.7) and lower in adolescence (*n* = 1,034; Mean = 2.9, standard deviation = 0.7).

Initial analyses examined the association of school engagement with sociodemographic factors. During middle childhood, higher school engagement was associated with:

- Being a girl.
- Experiencing lower family financial stress.
- Experiencing a lower number of major life events.
- Living in major cities and inner regional areas relative to outer regional and very remote areas of Australia.

During adolescence, higher school engagement was associated with:

- Experiencing lower family financial stress.
- Experiencing a lower number of major life events.
- Living in major cities relative to inner regional, outer regional, or very remote areas of Australia.



LSIC children's early learning experiences

Playgroup attendance

In Wave 1 for the Kindergarten cohort, and Waves 1 to 4 for the Birth cohort, parents were asked "*In the past month, has (Study Child) gone to playgroup, mother's group, father's group, early learning circles or any other baby group/class?"*. Of 1,576 children with available data in the pre-school (under 5 years) period, 626 (39.7%) had attended a playgroup at some point, whereas 950 (60.3%) had not.

Children were more likely to have attended a playgroup if they:

- Lived in major cities, inner regional, or outer regional areas, relative to very remote regions.
- Had experienced a higher number of major life events.
- Had a lower number of people living in the household.
- Had parents with education beyond Year 12 standard.

Pre-school attendance

More than half of LSIC children (55%; *n* = 878) had attended a formal pre-school program in the year before fulltime schooling.

Children were more likely to have attended a formal pre-school program in the year before formal school if:

- They lived in urban regions, relative to remote regions.
- Their parents were educated beyond a Year 12 standard.
- They experienced higher socioeconomic advantage.
- They had a lower number of people in their household.

Home learning

For this Report, we created a variable to quantify the informal learning experiences that children engaged in with their families during the pre-school period. LSIC parents were asked to report on whether they or another member of their family engaged in home learning activities with Study Child within the last week. Responses to these questions were then summed, to create a variable demonstrating the range of home learning experiences LSIC

children engaged in with their family (see Technical Appendix Section 1.5.7 for more information). Activities included in this home learning score include:

- Telling an oral story.
- Engaging in drawing, arts, or crafts.
- Engaging in music and dance activities.
- Engaging in housework or cooking.
- Playing indoors.
- Playing outdoors.
- Going shopping.
- Listening to Study Child read.

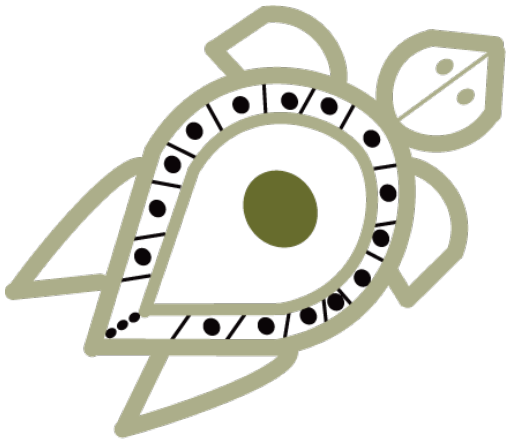
Of these eight activities, 68% of LSIC children consistently engaged in all of these activities with their family in their early childhood period. Only 2% of children consistently engaged in five or fewer of these activities over this pre-school period. Thus, many LSIC children have very high exposure to home learning activities in the years leading up to formal schooling. As there was limited variation in these scores, we did not explore home learning according to sociodemographic factors.

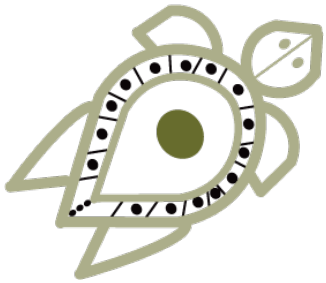
Are LSIC children's pre-school learning experiences related to their school engagement in middle childhood and adolescence?

We investigated the association between the three early learning experiences described above (playgroup attendance, pre-school program attendance, and home learning activities) and students' school engagement in middle childhood and adolescence.

Children who attended a playgroup in the pre-school period demonstrated significantly higher parent-reported school engagement in middle childhood (Mean = 3.11 out of 4.00), compared to their peers who did not attend playgroups (Mean = 3.01). However, this difference was not significant in the adolescent period, when school engagement scores were generally lower (attended = 2.90; did not attend = 2.86).

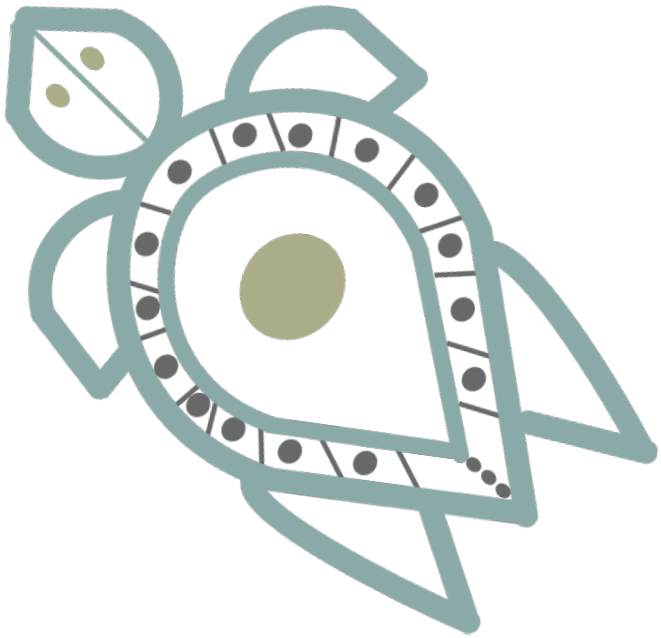
Children who attended a formal pre-school program in the year before formal schooling had higher middle childhood (Mean = 3.08) and adolescent (Mean = 2.90) school engagement scores than children who did not (Mean = 3.01 [middle childhood] and 2.83 [adolescence]); however, these differences were not significant.





There was no significant association between engagement in home learning activities in the pre-school period and middle childhood or adolescent school engagement. However, this association approached significance in middle childhood (r = .06, p = .074), but not in adolescence (r = .02, p = .649). We suspect these non-significant findings are the result of the limited variation in home learning engagement among LSIC children, with a large majority of children consistently engaging in almost all of the home learning activities investigated throughout their early childhood years.

To see whether playgroup attendance prior to starting school was associated with middle childhood school engagement above and beyond sociodemographic factors, we ran a complex statistical model combining multiple predictors. We found that playgroup attendance was still a significant predictor of later school engagement even when accounting for the effect of gender, family socio-economic status, and remoteness (see Technical Appendix Table A8.1).



Measuring LSIC children's early school student-teacher relationships

Students' relationships with teachers in the early school period (Foundation and Year 1) was assessed using teacher-reports on the Pianta Student Teacher Relationship Scale on two indices: **closeness** and **conflict**. Each of these scales was measured using seven items detailed in the Technical Appendix (Section 7.1); examples of items for closeness included *"I share an affectionate, warm relationship with this child"* and "*If upset, this child will seek comfort from me"*; and for conflict included *"This child and I always seem to be struggling with each other (i.e. having a hard time getting along"* and *"When this child is in a bad mood, I know we're in for a long and difficult day"*. Responses to the seven items on each scale were recoded to 1 = Definitely does not apply, 2 = Not really, 3 = Neutral/Not sure, 4 = Applies somewhat, 5 = Definitely applies. These items were averaged (provided there was data on at least three items) within each wave of available data within the early school years (Foundation and Year 1) and then an overall mean was computed.

Teachers reported high levels of closeness with children (*n* = 770; Mean = 4.3, standard deviation = 0.6, range = 2 to 5) and low levels of conflict (*n* = 773; Mean = 1.5, standard deviation = 0.8, range = 1 to 4.7).

Analyses determining the association of student-teacher relationships of closeness and conflict with sociodemographic factors indicated that higher teacher closeness in the early school years was associated with:

- Being a girl.
- Experiencing lower financial stress.
- Experiencing a lower number of major live events.

Higher teacher conflict in the early school years was associated with:

- Being a boy.

Higher closeness between child and teacher was associated with lower teacher conflict levels (*r* = -.32).

Do LSIC children's early school student-teacher relationships relate with their school engagement during middle childhood and adolescence?

Closeness with teachers during early school was a significant, positive predictor of school engagement during middle childhood, explaining 2.3% of the variation in children's school engagement scores (*n* = 580, *p* <.001). Teacher closeness was also a significant, positive predictor of school engagement during adolescence, though to a lesser extent, explaining 1.8% of the variance in children's scores (*n* = 511, *p* =.002).

Conflict with teachers during early school was a significant, negative predictor of school engagement during middle childhood, explaining 7.6% of the variation in children's engagement scores (*n* = 581, *p* <.001). Teacher conflict was also a significant, negative predictor of school engagement during adolescence, though to a lesser extent, explaining 1.9% of the variance in children's scores (*n* = 513, *p* =.002). That is where higher levels of conflict with teachers were reported in the early school years, children were slightly less likely to be strongly engaged with school in middle childhood and adolescence.

As a supplementary analysis, we ran a more complex model with multiple variables, including both closeness and conflict as predictors, as well as sociodemographic factors (gender, socioeconomic status, and regionality) (see Technical Appendix Tables A8.2 and A8.3). The association between student-teacher closeness and middle childhood school engagement was no longer significant when simultaneously accounting for student-teacher conflict and sociodemographic factors. Interestingly, this was not the case for adolescent school engagement, with both student-teacher closeness and conflict remaining significant independent predictors in the multivariable model. That is, higher closeness with teachers, and lower levels of conflict in the early school years, were associated with higher levels of adolescent school engagement, over and above the influence of family resources and where children lived.

Measurement of LSIC children's self-regulation skills in the early school period

Classroom self-regulation comprised six teacher-reported items asking teachers to report how often study children demonstrated behaviours in the past month or two (see full details in Technical Appendix Section 1.7.4). Example items include "*works independently*", "*persists in completing tasks*" and "*show eagerness to learn new things"*. Response options ranging from Never (1), Sometimes (2), Often (3), Very often (4). A mean of the available data for each of the six items was computed in the early school period, and then the mean of these averaged items was then computed, with the final score ranging from 1 to 4.

Children's **attentional self-regulation** and **emotional self-regulation** was assessed using parental report on the Short Temperament Scale for Children (Prior et al., 2000). Each scale comprises four parent-reported items (see Technical Appendix Sections 1.7.5 and 1.7.6 for full detail). Example items for attentional self-regulation include "(*Study Child) likes to complete one task or activity before going onto the next"* and "*they stay with an activity (e.g., puzzle, construction kit, or reading) for a long time",* and for emotional self-regulation items included "*If they are upset, it is hard to comfort them (reverse scored)"* and *" When they are angry about something, it is difficult to sidetrack them (reverse scored)"*. Response options ranged from Almost never (1), Not often (2), Usually does not (3), Usually does (4), Frequently (5), Almost always (6). Items were averaged across the early school period, with final scores ranging from 1 to 6.

Children had relatively high levels of classroom (*n* = 771; Mean = 2.9, standard deviation = 0.8, range = 1 to 4), attentional (*n* = 724; Mean = 4.0, standard deviation = 1.1, range = 1 to 6), and emotional (*n* = 726; Mean = 3.7, standard deviation = 1.2, range = 1 to 6) self-regulation skills during the early school period.

Which factors are associated with LSIC children's early school self-regulation?

Children's self-regulation (classroom, attentional, and emotional) during the early school period related with sociodemographic factors, as follows.

Higher classroom self-regulation was associated with:

- Being a girl.
- Experiencing lower financial stress in early school.
- Experiencing a lower number of major life events in early school.
- Living in major cities relative to remote and very remote regions.

Higher attentional self-regulation was associated with:

- Being a girl.

Higher emotional self-regulation was associated with:

- Higher socioeconomic advantage in early school.
- Experiencing lower financial stress in early school.
- Having a lower number of people living in the household.
- Having parents who were educated beyond Year 12.

Classroom, attentional, and emotional self-regulation were also significantly and positively associated with each other:

- Classroom and attentional self-regulation (r = .12).
- Classroom and emotional self-regulation (r = .13).
- Attentional and emotional self-regulation (r = .16).

Do LSIC children's early school self-regulation skills relate with their school engagement during middle childhood and adolescence?

Classroom self-regulation during the early school years was a significant positive predictor of school engagement during middle childhood, explaining 12.3% of the variation in children's school engagement scores (n = 581, p <.001). Classroom self-regulation was also a significant predictor of school engagement during adolescence, though to a lesser extent, explaining 3.3% of the variance in adolescent scores (n = 516, p <.001).

Attentional self-regulation during early school was similarly a significant predictor of school engagement during middle childhood (explaining 16% of variation; n =393; p = .003) and during adolescence (explaining 17%; n = 496, p = .013).

Emotional self-regulation during early school was, however, not a significant predictor of school engagement during either middle childhood (explaining less than 0.3%; n = 395, p = .251) or adolescence (explaining 0.1%; n = 497, p = .574).

We then ran regression analysis with multiple variables to determine whether the predictive capacity of self-regulation was still significant even when accounting for sociodemographic factors (gender, socioeconomic status, and regionality). We conducted separate multivariable analyses for classroom and attentional self-regulation, as a limited number of children had data available on classroom self-regulation, attentional self-regulation, and school engagement measures (see Technical Appendix Tables A8.4 and A8.5). These analyses demonstrated that classroom and attentional self-regulation during early school each independently predicted school engagement during both middle childhood and adolescence, when accounting for sociodemographic covariates.

Pathway from pre-school playgroup attendance to middle childhood school engagement

We next investigated the extent to which playgroup attendance was associated with middle childhood school engagement because they provide a setting for children to strengthen their self-regulation skills.

First, we found that children who attended a playgroup in the pre-school period demonstrated significantly higher teacher-reported classroom self-regulation skills in their first two years of formal schooling (Mean = 2.99 out of 4.00), compared to their peers who did not attend playgroups (Mean = 2.87). No significant differences in attentional self-regulation were found according to pre-school playgroup attendance.

Second, when we tested the pathway illustrated below, results suggested that the association between playgroup attendance and later school engagement was explained by early school classroom self-regulation. This means that children who participated in playgroups prior to starting school, entered school with higher self-regulation skills, which then provided the foundation for positive early school experiences that supported their school engagement even into the middle childhood period. See Technical Appendix Supplementary Results A8.1 for more detail.

These findings demonstrate the importance of providing families with access to playgroup services in the early childhood period.

What are our key findings?

- Children's early school experiences and skills predict their later school engagement during middle childhood and adolescence.
- Children's closeness with their teacher in the early school years positively predicted school engagement during middle childhood and adolescence.
- Children's conflict with their teacher was a stronger predictor of these outcomes, with lower levels of conflict in early school associated with higher levels of school engagement during middle childhood and adolescence.
- Children's classroom self-regulation skills and their attentional self-regulation during the early school period predicted school engagement during middle childhood and adolescence, over and above the influence of students' gender, socioeconomic status, and regionality.
- Attendance at a playgroup prior to starting formal schooling, strengthened children's self-regulation skills upon their school entry. These skills then provided the foundation for strong school engagement into middle childhood.

What needs to be done?

- Schools and educators need to prioritise building positive relationships between students and teachers, particularly in the early school years, and reducing student-teacher conflict. These relationships inform children's engagement with and enjoyment of school, with implications for school success beyond these initial years.
- Early learning programs and playgroups can enhance children's self-regulation and preparation for early schooling. Successful cognitive engagement and learning in these early years sets the foundation for later school engagement and success.
- Stronger policies and resources are needed to guide the delivery of high quality, evidence-based approaches to supporting early development. A range of evidence-based approaches that support early self-regulation development for all children as part of inclusive early years settings are available and should be supported.
- Teacher performance should be judged based on teachers' capacity to form strong and positive relationships with students and their families. Teacher's capacity for building these positive connections may be related to their wellbeing, stress, and levels of experience. Therefore, addressing staff turnover and burnout may be an important step to promoting positive student-teacher interactions.
- Further research is needed to explore the pathways from early childhood learning experiences and later engagement to determine other important factors implicated in school engagement over time. Such work might also identify additional avenues and opportunities for further promoting school engagement, particularly in the adolescent years.
- We recognise the limitations of relying on parents' reports of students' school engagement, especially in the middle childhood and adolescent years, and recommend that future research with LSIC utilise children's perspectives on their engagement with and enjoyment of school.

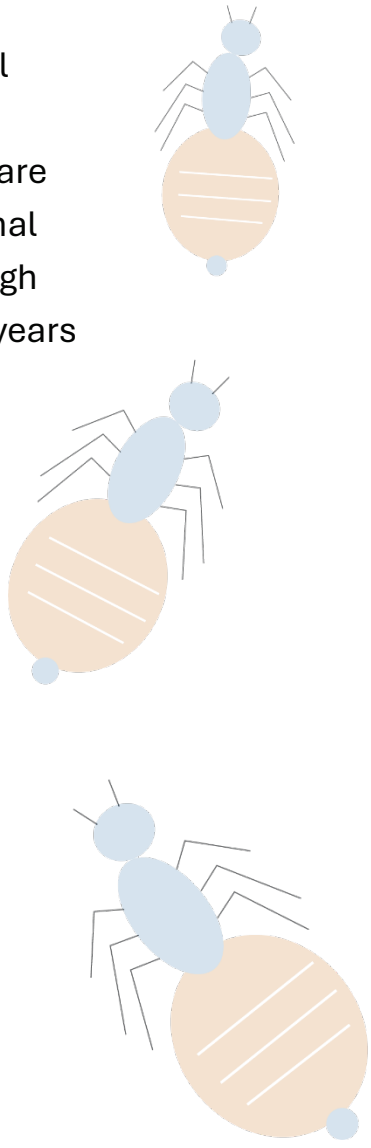
Artist Interpretation: The honey ant symbolises the sweet things that life has to offer, and the hard work and achievements that can be made with the right pathways. Honey ants intelligently navigate their way through the dirt, just as children and adolescents learn to think critically and reflectively about their steps towards an independent life.

Chapter 9:

Pathways from early childhood to middle childhood academic achievement and adolescent thinking skills (executive function)

Chapter 9: Pathways from early childhood to middle childhood academic achievement and adolescent thinking skills (executive function)

This chapter explores how children's early developmental skills, their experiences in families and communities, as well as in early education, contribute to academic achievement in middle childhood and to executive function in adolescence.



In early childhood, young children's emerging neurological capabilities enable them to begin to regulate their own thinking, behaviour, and emotional states. These abilities are shaped over time by contextual influences and maturational processes in brain development and reach moderate to high stability for individual children during the early childhood years (Bridgett et al., 2015). Over time, these thinking processes become more effective and efficient. Through childhood and adolescence, the prefrontal cortex of the brain continues to develop, while at the same time, connections are built across brain networks. In adolescence, there is also refinement of neural networks, which support complex aspects of cognition that will be important for effective decision-making, across the life course, to achieve personal goals (Cromer et al., 2015).

These range of neurological processes, mature through childhood and adolescence, and are commonly described as **self-regulation** and **executive function**. Self-regulation and executive function are also important to social development, to enable individuals to build and maintain relationships. Behaviours reflecting executive function are evident from infancy and reflect young children's learning at home and in the communities in which they live. In daily life, behaviours illustrative of self-regulation of behaviour and executive function include:

- Attention – capabilities to maintain focused attention to complete a specific task.
- Working memory – ability to hold immediate information in mind and use that information to inform completion of a simple task.
- Inhibition – self-control which is exercised to stop impulsive and reactive behaviours and responses.
- Flexibility – ability to make a shift in perspective to solve a 'problem' when a current strategy is not working.
- Planning / prioritising – thoughtful and prior planning to identify the steps required to complete a task.

Environmental and cultural influences on the development of self-regulation and executive function are also important. Children's thinking and behaviours are shaped by their experiences with others in their immediate environments (Bronfenbrenner & Morris, 2007; Munakata & Michaelson, 2021; Phillips & Shonkoff, 2000). From an early age, caregivers of infants and young children can help them to manage their levels of arousal and distress through responsive interactions and sensitivity. This helps children to build resilience, which is evident in age-appropriate control of emotions and behaviours. However, stressful circumstances at home, particularly, and other environments, such as schools, can elevate children's physiological and psychological stress. 'Toxic' stress negatively impacts children's learning and development (McEwen & McEwen, 2017).

Family socio-economic circumstances have strong and consistent associations with children's academic achievement and the development of executive function (Ku & Blair, 2023). These associations are mediated by the quality and support for children at home and in educational settings. In early childhood programs and through the school years, children have important opportunities to develop self-regulation and executive function skills that will impact ongoing learning and wellbeing into adulthood.

The demands of the school curriculum implemented in secondary schools require high levels of commitment to learning by adolescents, as well as demands on their self-regulation skills. For example, many current complexities in the digital world impact adolescents, which require competent decision-making skills, as well as self-control, to manage impulsive actions and responses (Steinbeis & Crone, 2016). Cognitive control in thinking and behaviour becomes especially important in adolescence because of increasing opportunities for independence, and many pressures, especially by peers who may encourage risk-taking behaviours.

The longitudinal statistical analyses presented in this chapter focus on learning outcomes in reading and numeracy during middle childhood and on executive function during adolescence. Predictive measures included from LSIC data were drawn from the pre-school years (under 5 years of age) and the early school years (Foundation and Year 1).

The measures used in these analyses included the following:

Pre-school period measures of development

- **Visual-motor and early literacy skills:** The Who am I? is a developmental assessment that requires children to print their name, copy shapes, write letters, numbers, and words. Simple instructions are given to the child, and encouragement is provided by the LSIC interviewer. Higher scores indicated stronger visual-motor and emergent literacy skills.
- **Expressive vocabulary:** The Renfrew Word Finding Vocabulary Test assesses children's expressive vocabulary (i.e., how many words they know). It assesses the extent to which pictures of objects, arranged in order of difficulty, can be named correctly. Higher scores indicated larger vocabulary.
- **Attentional regulation:** Parents rated four items on their child's abilities to focus attention during everyday activities, as observed by the parents. Higher scores indicated stronger attentional regulation.

Early school period measures of development

- **Classroom self-regulation:** Teachers rated six items focused on: child's attentiveness. task persistence, eagerness to learn, ability to work independently, flexibility when changes in classroom routines occur, and abilities to organise their own learning materials in the classroom. Higher scores indicated stronger behavioural self-regulation.

Middle childhood period academic achievement

- **Year 5 NAPLAN scores** measured outcomes in middle childhood for academic achievement. Results for **reading** (reading comprehension) and **numeracy** were included in the analyses.

Adolescent period executive function

- **CogState measures** of executive function were used. Data were available for 473 participants, ranging in age between 12 and 18 years, who completed three screen-based tasks on a notebook computer. The tasks completed measured: (i) information processing and visual attention; (ii) working memory; (iii) problem-

solving, requiring visual-spatial skills. An overall measure of executive attention was derived from the standardised performance score on each task, which were then combined into a single composite score of executive function.

Other important contextual and environmental factors included in the analyses were:

Early childhood sociodemographic factors

- Child gender.
- Family socioeconomic status in pre-school period.
- Residential remoteness in pre-school period.
- Number of people living in the household in pre-school period.

Early learning settings

- **Playgroup attendance** in the first five years. Playgroups are regular meetings of groups of parents and children together in community settings. Playgroups support social connections and wellbeing of parents, as well as play-based learning and development for children. LSIC parents reported at each of the early waves of LSIC on whether (or not) their child had attended a playgroup.
- **Pre-school attendance** in the year before fulltime schooling was also reported by parents.

Early parenting

- **Parent social support** was an indicator that reflected the extent to which parents reported that they had family, friends, professional, and community resources to turn to for parenting support.
- **Parent resilience** is a summary score of eight items from the resilience subscale of the Strong Souls questionnaire. Parents indicated the extent to which they knew good people, had older people looking out for them, had hobbies, friends, made jokes, and had people to talk to. Higher scores (which were averaged across the early years) indicated a higher level of resilience in parents.
- **Home learning in the pre-school period.** Parents reported family activities in which they had engaged with their children in the previous week (e.g., playing, reading, and telling stories).

The next sections summarise the results of a series of simple analyses that examined relationships between pairs of measures. A diagrammatic summary of these relationships is provided following the text description in Table 9.1.

Factors associated with stronger early visual-motor and early literacy skills

A potentially important factor associated with later academic achievement and executive function was **visual-motor and early literacy skills,** as measured by the Who am I? during the pre-school period. Simple analysis that examined pairs of measures for their associations (correlations) for all children with data on these pairs of variables were conducted.

Higher visual-motor and emergent literacy skills were associated with:

- Higher levels of adult-child home learning activities, prior to school.
- Attendance at pre-school, in the year before fulltime schooling.
- Higher expressive vocabulary scores.
- Higher skills for attention regulation, as reported by parents.
- Being a girl.
- Fewer people living in the household in the pre-school period.
- Higher family socioeconomic position in the pre-school period.
- Living in a less remote area in the pre-school period.
- Higher levels of parenting social support in the pre-school period.

Factors associated with stronger classroom self-regulation during the early school years

A potentially critical factor in terms of later academic and executive functions is classroom self-regulation skills. Simple analysis that examined pairs of measures for their associations (correlations) for all children with data on these pairs of variables were conducted.

Factors in the pre-school period associated with children having **stronger classroom self-regulation skills** in the early years of school were:

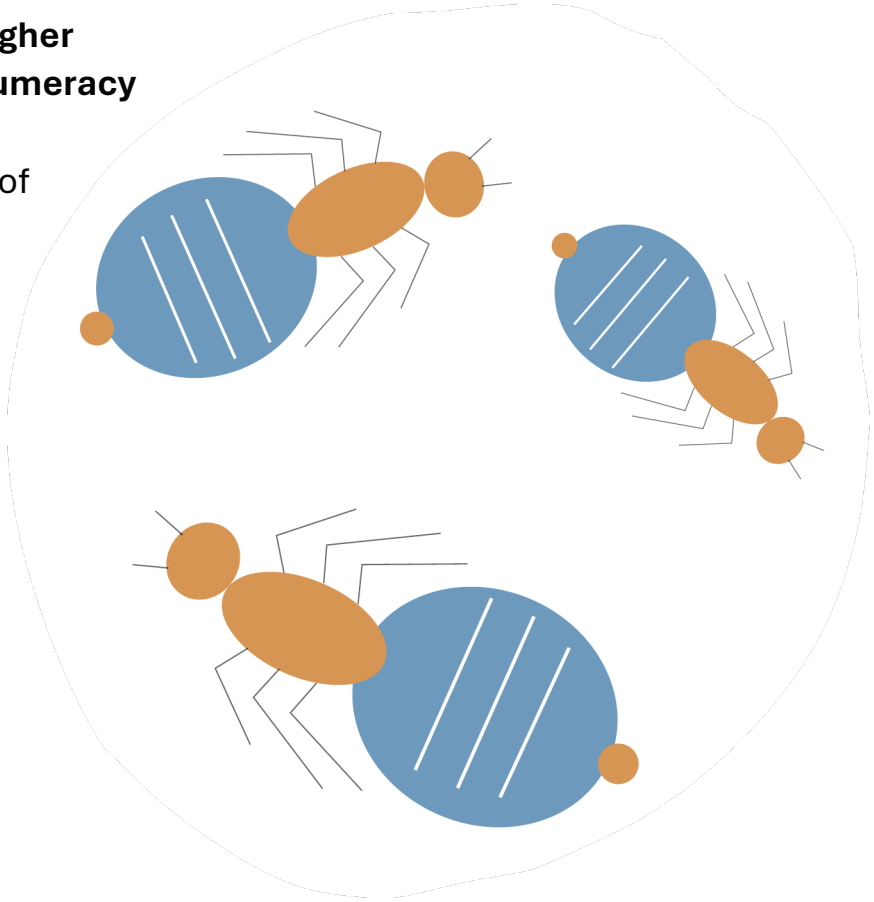
- Higher levels of adult-child home learning activities.
- Attending pre-school in the year before fulltime schooling.
- Attending playgroup.
- Having higher expressive vocabulary.
- Having higher visual-motor and early literacy skills (measured using Who Am I?).
- Having higher attention regulation skills, as reported by parents.
- Being a girl.
- Higher family socioeconomic position.
- Living in a less remote area.
- Higher levels of parenting social support.
- Higher parent resilience.

Factors associated with stronger academic achievement during middle childhood

Simple analysis that examined pairs of measures for their associations (i.e., correlations) for all children with data on these pairs of variables identified that **higher academic achievement in reading** during middle childhood was associated with the following factors from the pre-school period (or early school period where indicated):

- Stronger home learning environment.
- Attending a playgroup.
- Attending pre-school, in the year before fulltime schooling.
- Stronger classroom self-regulation, during the early school years.
- Fewer people living in the house.
- Stronger expressive vocabulary.
- Stronger visual motor and literacy skills.
- Stronger attentional regulation.
- Being a girl.
- Higher family socioeconomic position.
- Living in a less remote area.
- Higher parenting social support.

Similar analyses found that **higher academic achievement in numeracy** during middle childhood was associated with the same set of constructs described above, except that there were no differences between boys and girls for numeracy during middle childhood.



Factors associated with better executive function during adolescence

Simple analysis examined pairs of measures for their associations (i.e., correlations) for all children with data available on those variables. These analyses found that **higher levels of executive function skills in adolescence** were associated with each of the following factors, which were measured during the pre-school period (or early school period where noted) 7 to 13 years earlier than when executive function was assessed:

- Having higher visual motor and early literacy skills.
- Having higher classroom self-regulation as reported by teachers, during the early years of school.
- Fewer people living in the household.
- Having higher expressive vocabulary.
- Having higher attention regulation skills as reported by parents.
- Higher socioeconomic position.
- Living in a less remote area.

A summary of all significant bivariate associations between pairs of variables is provided in Table 9.1, with the table formatted according to developmental period.

Table 9.1. *Early childhood factors that supported children's learning outcomes over time.*

Developmental Period	**Pre-school**	**Early school**	**Middle childhood**		**Adolescence**
Child outcomes	**Visual-motor and early literacy skills**	**Classroom self-regulation**	**Reading**	**Numeracy**	**Executive function**
Early childhood environment predictors					
Female	✓	✓	✓		
Higher socio-economic status	✓	✓	✓	✓	✓
Living in a less remote area	✓	✓	✓	✓	✓
Fewer people living in household	✓		✓	✓	✓
Early childhood development predictors					
Expressive vocabulary	✓	✓	✓	✓	✓
Visual-motor and early literacy skills		✓	✓	✓	✓
Attentional regulation	✓	✓	✓	✓	✓
Classroom self-regulation			✓	✓	✓
Early learning setting predictors					
Playgroup attendance in first five years		✓	✓	✓	
Attended a pre-school in the year before fulltime schooling	✓	✓	✓	✓	
Early parenting predictors					
Parental social support	✓	✓	✓	✓	
Parent resilience		✓			
Early home learning activities	✓	✓	✓	✓	

A longitudinal model predicting NAPLAN reading and numeracy in middle childhood

The findings obtained from the correlational analyses described above were used to inform and fit a longitudinal model to the LSIC data. This analysis simultaneously explored multiple factors involved in developmental pathways that contribute to reading and numeracy outcomes during middle childhood (measured using Year 5 NAPLAN results). Covariance coverage across pairs of variables in forming our longitudinal model meant that we could not include pre-school attentional regulation in our model, as data were not sufficiently available. We also trimmed non-significant pathways and variables, to develop the best fitting model.

We modelled reading and numeracy outcomes simultaneously in this model, but for simplicity in Figure 9.1, we show the outcome as overall academic achievement. Pathways to both reading and numeracy were similar, with the only differences being there were no associations between number of people living in the household and numeracy outcomes.

- **Blue arrows** in the figure show positive relationships between constructs (i.e., as levels in the construct increases, so do the levels in the related construct).
- **Tan arrows** in the figure indicate negative relationships (i.e., as one construct increases, the related variable decreases and vice versa).

This model shows that attending pre-school in the year before fulltime schooling and attending playgroup at some point in the pre-school period both supported children's expressive vocabulary development. This was, in turn, associated with visual-motor and early literacy skills in the pre-school period. Stronger expressive vocabulary and stronger visual-motor and early literacy skills during the pre-school period were each directly associated with reading and numeracy assessed in middle childhood, and these two variables also contributed to classroom self-regulation during the early years of school (which also, in turn, supported academic achievement). Where parents reported engaging in higher levels of home learning

activities with their children, and higher levels of parenting social support, these also supported children's positive learning skills prior to school.

A higher family socioeconomic position in early childhood was associated with stronger pre-school skills and later academic achievement. Living in a house with more people was associated with lower reading skills but was not associated with numeracy skills in middle childhood. Living in a more remote area was associated with lower expressive vocabulary skills and academic achievement. See Technical Appendix Table A9.1.

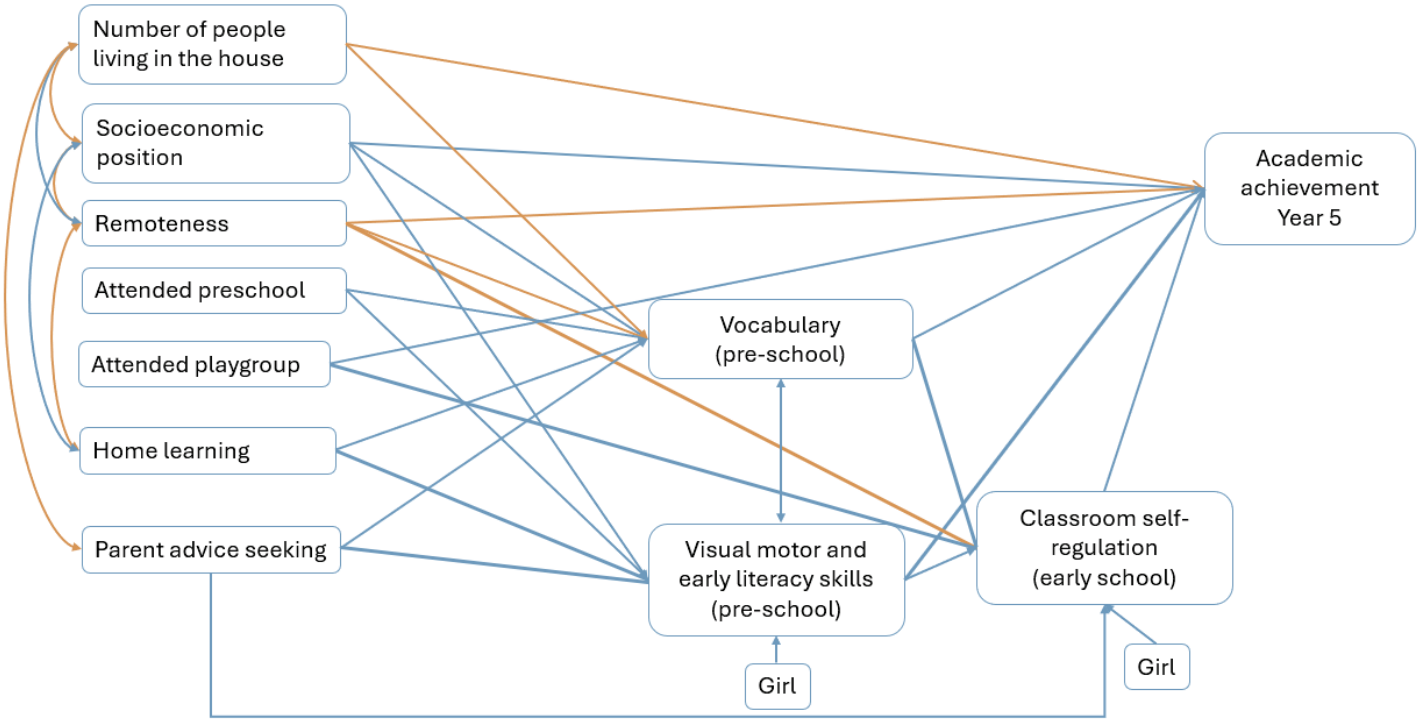


Figure 9.1. *Longitudinal model showing significant pathways from early childhood factors to Year 5 academic achievement as measured by NAPLAN reading and writing.*

A similar model to the above was also fit to the LSIC data, this time exploring longitudinal developmental pathways to adolescent executive function, as an important skill for lifetime learning and wellbeing. This model, illustrated in Figure 9.2, indicated a similar pathway, with attendance at pre-school, a strong home learning environment, and stronger parenting social support in the early years, associated with stronger vocabulary skills and stronger visual-motor and early literacy skills. Early expressive vocabulary supported development of visual-motor and early literacy skills which, in turn, were directly associated with enhanced classroom self-regulation in the early years of school and executive function skills in adolescence.

- **Blue arrows** in the figure show positive relationships between constructs (i.e., as levels in the construct increases, so do the levels in the related construct).
- **Tan arrows** in the figure indicate negative relationships (i.e., as one construct increases, the related variable decreases and vice versa).

A higher family socioeconomic position in the pre-school period was also associated with stronger visual-motor and early literacy skills in early childhood. Living in a household with more people, also meant that children were more likely to have lower levels of expressive vocabulary and visual-motor and early literacy skills, and lower executive function scores in adolescence. Living in a more remote area was also associated with lower vocabulary skills. See Technical Appendix Table A9.2.

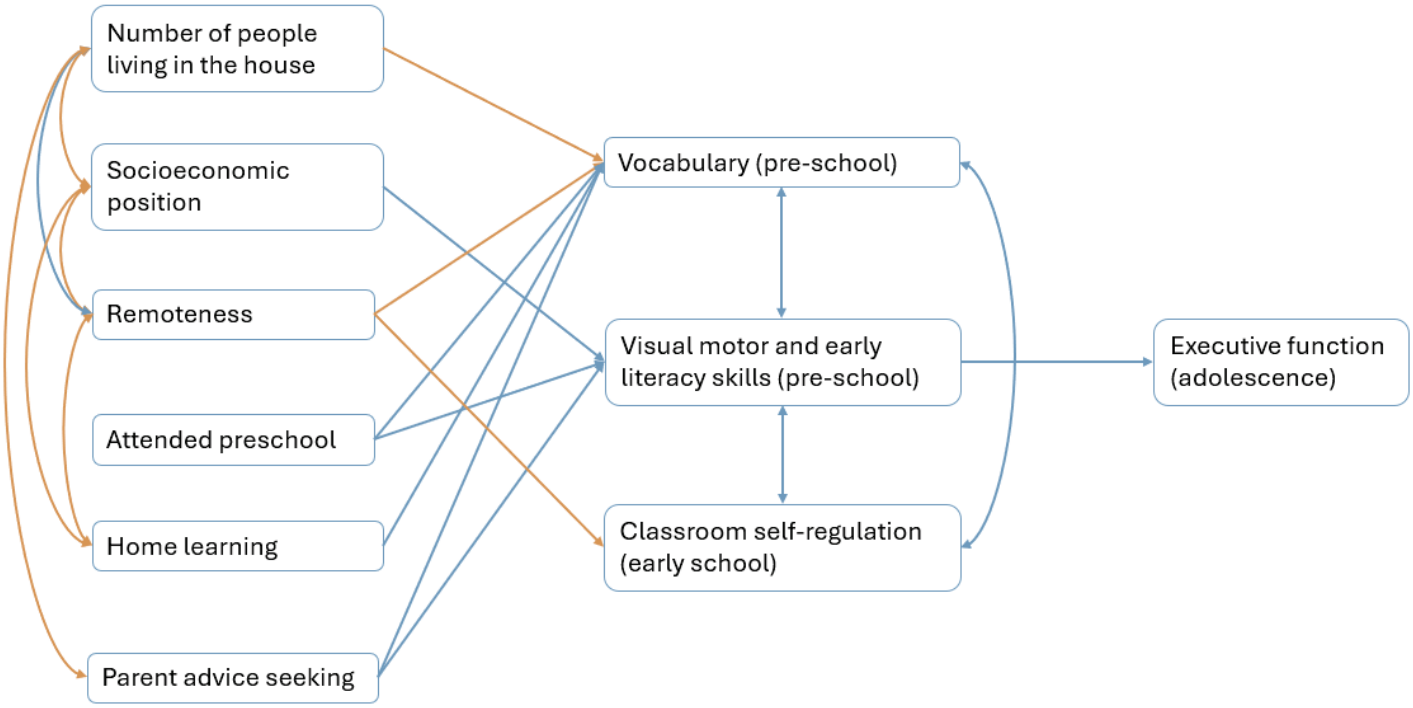


Figure 9.2. *Longitudinal model showing significant relationships between predictors of executive functioning during adolescence.*

Teacher's reports of the strengths and skills of LSIC students in adolescence which reflect executive functioning

Executive functions and self-regulation of behaviour are observable in the everyday skills that children develop across childhood. Such skill development is facilitated by how adults engage with children at home and school, when parents and teachers guide and support children to manage their emotions and approaches to learning (Fay-Stammbach, et al., 2014; Vandenbroucke et al., 2018). A key behavioural transition in early adolescence is the shift from reliance on adult guidance to more self-directed control, as adolescents seek greater independence and opportunities to make choices and pursue their own interests (Steinbeis & Crone, 2016). There is also greater developmental vulnerability evident through adolescence, as demonstrated by increased risk-taking behaviours to achieve immediate rewards, as well as greater sensitivity to social evaluations, especially from peers (Choudhury et al., 2023).

However, when adolescents have meaningful connections with the school which they attend – reflected in the extent to which they feel accepted and supported by their peers and teachers in the school social environment – a meaningful sense of belonging can develop. When there are positive and supportive social environments, teachers also can have an important impact on the life course pathways of adolescents.

Across the LSIC study, children's teachers completed questionnaires about LSIC participants' learning in classrooms. Teachers' qualitative responses, across LSIC data collection waves, are rich in detail and have very high levels of positivity about the talents of their students. For the purposes of this chapter on development of executive functions skills, examples of teacher responses about their students' capabilities (which reflect executive functioning skills and were reported about children who scored above the mean score for executive function skills), are reported on the next page.

“What do you think (Study Child) is good at? What are his/her skills and strengths?”

... Is dedicated and persists with tasks. He is eager to learn and is excited about learning new concepts and making connections. He is positive and happy with a fantastic demeanour. He gets along with everyone and does his best at all times.

... Artistic; athletic; good cultural knowledge and pride; willing to learn and take 'risks' in his learning.

... Classroom discussion; trying his best; proving he understands; helping others to learn; mathematical skills.

... Sport especially netball and running; is part of a lot of sporting events. Art, able to use numerous mediums and create different forms; dancing, cooking, writing, working with younger students, STEM activities, able to think in innovative ways.

... Has a fantastic sense of humour and is always looking to make others laugh. She is brutally honest which can sometimes come off as rude if you don't get to know her. She has a charismatic personality and is a natural leader.

What are our key findings?

- Children with stronger expressive vocabulary, and visual-motor and early literacy skills, prior to school, had stronger self-regulation in the early years of school.
- This skill set is important in laying strong foundations for positive trajectories in relation to academic achievement in middle childhood, and stronger executive function in adolescence.
- After taking account of where children lived (residential remoteness and family socioeconomic status), attendance at playgroup and pre-school, and children's higher engagement in home learning activities with parents in the years prior to school, ensured stronger child competence for later learning outcomes.
- Parents' level of social connections with family and friends in terms of seeking advice about parenting also supported children's positive developmental trajectories.

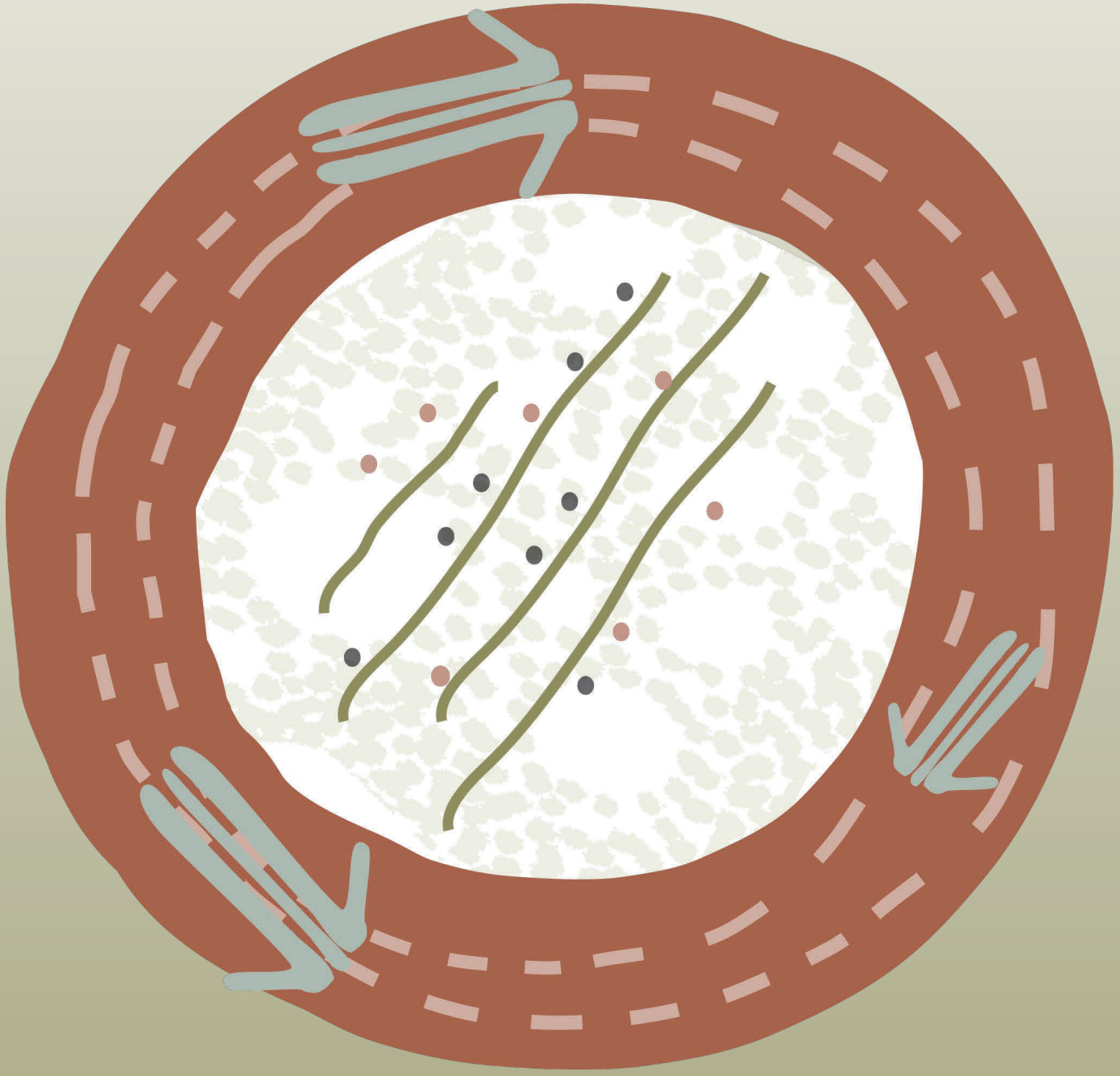
What needs to be done?

- Ensure families have access to local, culturally responsive playgroups all through the early years, to support parents' wellbeing and social support as well as children's developmental outcomes.
- Embed playgroups in all schools as essential hubs in the community, supporting transition to school for families.
- Resource supported playgroups as much as possible. Supported playgroups are led by a trained facilitator who has skills in cultural safety in early childhood learning and parent engagement, as opposed to being volunteer led. Prior evidence from LSIC suggests that most playgroups that LSIC families attended in the early years were indeed supported playgroups (with a paid facilitator; Williams et al., 2017). Evidence for the effectiveness of supported playgroups in fostering positive family and child outcomes is strong (Borinski & Robertson, 2024; Williams et al., 2018) and so these represent a high value family support platform that should be widely available.
- Ensure all children have access to high quality pre-school in the year before fulltime schooling.
- Support parent social connections with family and friends. Playgroups represent one way to do this, as a key two-generational strategy (involving children and their parents) and are known to boost social capital for parents, while also supporting positive development for children.
- Playgroups and pre-school should focus on enriching oral language environments to develop vocabulary, and emergent literacy skills (e.g., shared book-reading with family, and drawing and writing play activities, which involve fine and visual motor skills). Engaging in playful activities with young children sets a solid foundation for future learning through the school years.
- Recognise and celebrate the playgroup and pre-school workforce who provide important family support and early learning experiences for young children, which our research shows makes a difference, even years later as children enter middle childhood.

Artist Interpretation: The symbol of rain has been used to represent the impact that digital access and technology has on our environment when it comes to education and early childhood outcomes. The travelling kangaroo tracks represents the movement towards positive outcomes, in a forward direction with strength.

Chapter 10:

Outcomes associated with early childhood digital access



Chapter 10: Outcomes associated with early childhood digital access

Digital inclusion refers to equitable access to digital technologies and the skills necessary to fully participate in a modern, connected society. Digital inclusion has three recognised pillars in international literature: access, affordability, and ability. Globally, digital inequalities exist between Indigenous and non-Indigenous people (Marshall et al., 2023). The concept of "Indigenous digital inclusion" has emerged in recent years and specifically refers to the equitable access to digital technologies, internet services, and digital literacy for Indigenous communities, enabling them to fully participate in the social, educational, and economic opportunities provided by a connected world. It recognises the unique challenges faced by Indigenous peoples and their communities, including affordability, infrastructure limitations, cultural relevance, and digital literacy barriers, which often (although not always) vary between Indigenous peoples living in remote as compared to urban communities. True digital inclusion for Indigenous peoples goes beyond access, incorporating culturally appropriate solutions, respect for Indigenous knowledge systems, and the empowerment of communities to use digital tools in ways that align with their values, aspirations, and needs (Rogers et al., 2023).

The Australian Government has taken several steps in recent years to address Indigenous digital inclusion. Target 17 of the National Agreement on Closing the Gap commits the government to ensuring that Aboriginal and Torres Strait Islander people have equal levels of digital inclusion by 2026. This sits within the broader Outcome 17, which is that Aboriginal and Torres Strait Islander people have access to information and services enabling participation in informed decision-making regarding their own lives. The Government has formed the First Nations Digital Inclusion Advisory Group (FNDIAG), and their Initial Report notes that the latest Australian Digital Inclusion Index 2022 (ranging for 0 [highly excluded] to 100 [highly included]) shows a national gap of 7.5 points across access, affordability, and digital

ability for First Nations Australians. Currently, there are a small handful of Australian researchers and universities conducting research on Indigenous digital inclusion, and the Australian Digital Inclusion Index, which draws on a small data set, remains the only Index available to researchers. The paucity of data is just one issue that is slowing down progress in Indigenous digital inclusion, toward meeting Target 17.

A recent report by the Bureau of Communications, Arts and Regional Research (BCARR) report, "Use of digital technologies among First Nations children – Findings from the Longitudinal Study of Indigenous Children" (2024) analysed LSIC survey data to understand how their Indigenous young people's use of telecommunications has changed over time. Their research identified socioeconomic characteristics that impact digital technology use and ownership for Indigenous young people. They found that almost all LSIC surveyed children used the internet by 2019 (when the B cohort was aged 11.5-13 years, and the K cohort 14.5-16 years). The share of children using the internet increased from 39% in 2011 to 92% in 2019 (when the children sampled were older). Children mostly accessed the internet at home (79% in 2019) or at school (74% in 2019). Children's location was a strong factor for their computer and internet use at home, as well as their mobile phone ownership. A child in a very remote area was 56% less likely to own their own phone, 45% less likely to use internet at home, and 44% less likely to use computer at home compared to a child in a metropolitan area.

LSIC data provides excellent insights into the impact of early childhood access to digital learning, and we have drawn on the data to understand the impact of early childhood digital inclusion on later outcomes for Indigenous young people.

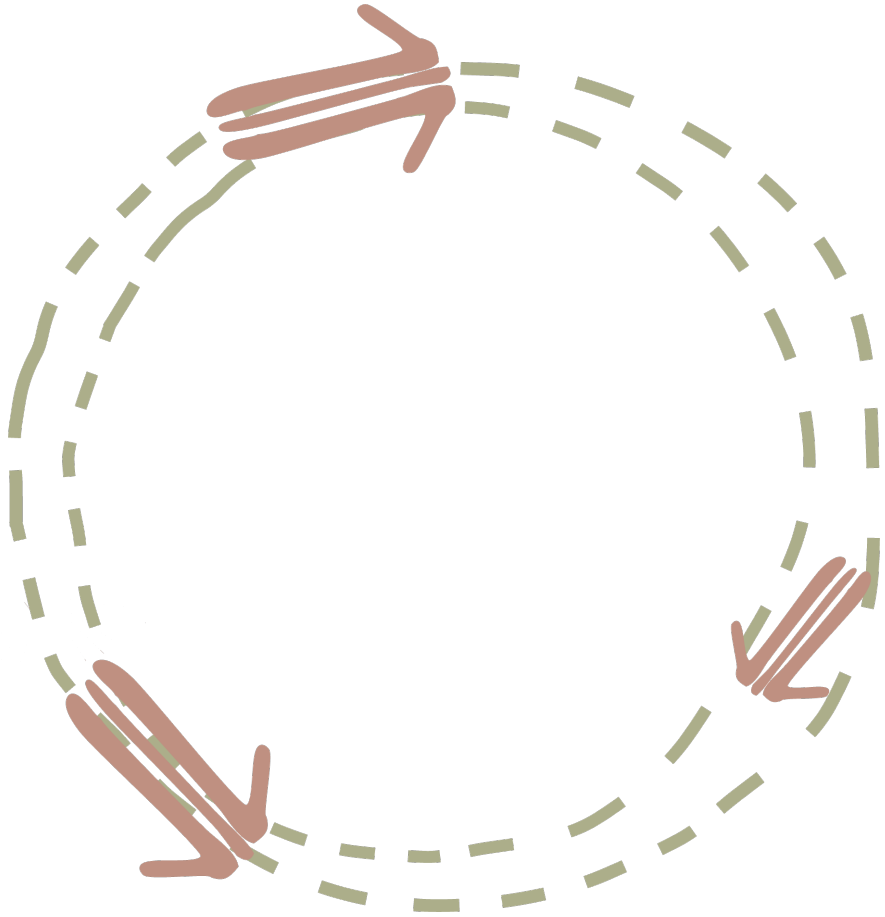
Digital access

During the early school period (i.e., during the first two years of formal schooling: Foundation and Year 1), parents were asked to report whether study children used the internet at home, at school, elsewhere, or at all. Importantly, we used data from Wave 4 (2011) and 6 (2013), to align with the early childhood period, and acknowledge that patterns of technology use are likely to have changed in the decade since these data were collected.

We categorised children into those whose parents reported they had access to the internet at some point in early school period and those who never had access to the internet in this period.

Data was available for 976 students (55%), with 362 children (37% of 976) using the internet at home, and 614 children (63%) not using the internet at home across this developmental period. In terms of other sources of access to the internet during this time, almost two-thirds of children (61%) were using the internet at school, less than 1% used the internet "elsewhere", and 31% of children did not use the internet at all.

Given digital ability will be strongest among children with increased exposure to and practice with technology, we sought to further explore factors associated with access to the internet at home.



Digital affordability

The association between sociodemographic factors and access to internet in the home was investigated for remoteness of family residence, parental education, family's financial stress, and area-based socioeconomic disadvantage.

- **Remoteness area:** As illustrated in Figure 10.1, access to the internet at home was highest within major cities, where over half of children used the internet at home during the early school years (56%). Internet access at home was similarly distributed in inner regional (41%) and outer regional (38%) areas, but less frequent in remote areas of Australia. A quarter (27%) of children in remote areas, and fewer than one in ten (9%) in very remote areas of Australia had access.
- **Parental education:** Children whose parents had education qualifications beyond Year 12 were significantly more likely to have used the internet at home during early schooling (50%) compared to children whose parents had education up to and including Year 12 standard (31%).
- **Financial stress:** Parents were asked to indicate experiences of financial stress in the last 12 months (in each year of the early school period), such as being unable to pay bills on time, going without meals, or being unable to cool or heat the home. Children who accessed the internet at home had significantly lower financial stress scores (Mean = 1.05) than children who did not have access to the internet at home (Mean = 1.26).
- **Index of Relative Indigenous Socioeconomic Outcomes (IRISEO):** During the early school period, children with technology access were residing in areas with significantly higher socioeconomic levels (Mean = 6.48) than children who did not have access to the internet at home during this period (Mean = 4.98).

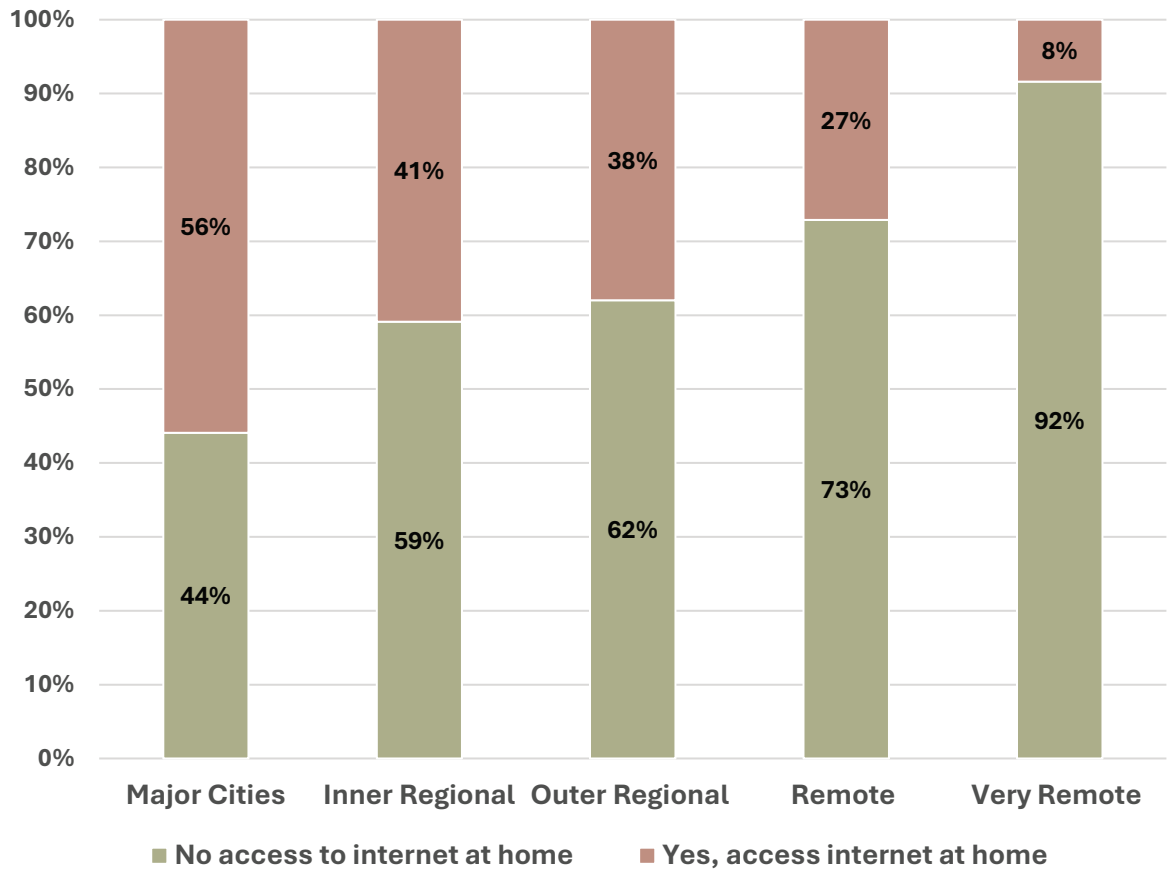


Figure 10.1. *LSIC children's use of internet at home during the early school period, according to remoteness area.*

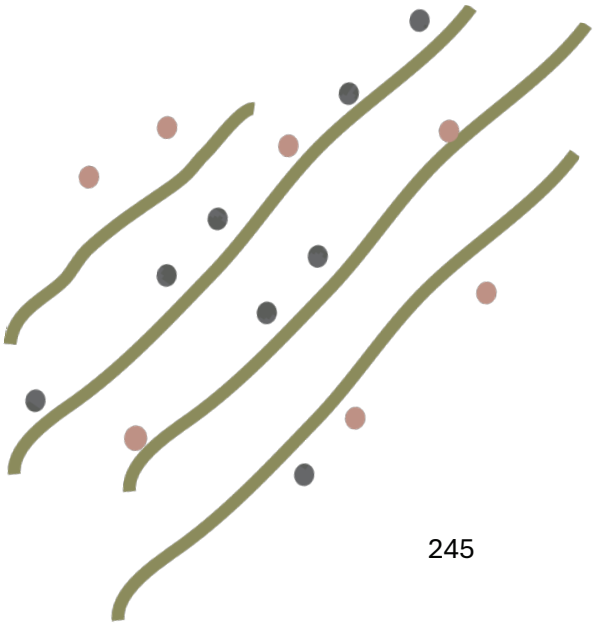
Note. See Technical Appendix Table A10.1 for details regarding statistically significant differences between remoteness areas.

Digital ability

To identify developmental factors that related to children's digital ability, we compared early school (cross-sectional) and later middle childhood and adolescent (longitudinal) outcomes between children whose parents reported that they used the internet in the home at some point during the early school period (*n* = 362) and children whose parents indicated they did not use the internet at home during this period (*n* = 614).

First, we examined differences between these groups on developmental functioning during the early school period (Foundation and Year 1) – that is, measures taken concurrently with the measure of digital access. We examined the following outcomes:

- **Visual-motor and early literacy skills:** On the Who am I? developmental assessment of children's cognitive skills – including skills such as letter, number, and word writing - children with early internet access had significantly higher school readiness scores (Mean = 31.3) than children without access (Mean = 29.4).
- **Higher classroom self-regulation:** On teacher reports of children's self-regulation – reflecting children's organisation and persistence in the classroom – children who used the internet at home during the early school period had significantly higher self-regulation scores (Mean = 3.1) than children who did not access the internet at home (Mean = 2.8).
- **Reading comprehension:** On measures of reading comprehension from the Progressive Achievement Test (PAT), children who used the internet at home had significantly higher reading comprehension scores (Mean = 78.7) than children who did not (Mean = 71.1).



We also explored longitudinal outcomes (during middle childhood and adolescence) of exposure to the internet at home during the early school period, as follows:

- **Technology self-concept:** Based on children's reports of their perceived ability to use technology and computers (i.e., items indicating the child likes technology, learns things fast in technology, is good at technology; with scores ranging from 0 to 15), children with early internet use at home had significantly higher technology self-concept in middle childhood (Years 5 and 6: Mean = 12.7) and adolescence (Years 8-10: Mean = 10.5) than children who did not use the internet at home during their early school years (middle childhood Mean = 11.9 and adolescent Mean = 9.5).
- **Perceived safety on the internet:** From children's reports of whether they felt safe on the internet during adolescence, children with internet use at home during the early school period were significantly more likely to report feeling safe on the internet (95%), than children who did not have early internet access (91%).
- **Range of mobile phone activities:** During middle childhood and adolescence, children were asked to indicate the activities for which they used a mobile phone, including emails, banking, schoolwork, and staying connected with family and friends. Responses of "yes" to these items were summed in each wave, and then these summed scores in each wave of available data were then averaged to account for differences in the number of items asked in each wave. Scores were then a proportion of the number of activities listed, in which children engaged. Early technology use was associated with significantly more activities on the mobile phone in middle childhood (Mean = 0.25) than children without this early use (Mean = 0.20). Sufficient sample numbers were not available in adolescence so this outcome could not be explored during this period.
- **Adolescent executive functioning:** Executive functioning skills were assessed using the CogState tasks during adolescence. These were significantly higher among children who had early internet exposure (Mean = 103.2) relative to children who did not (Mean = 98.7).

In addition to the bivariate relationships already described, separate multivariable models were run to determine whether technology exposure during the early school period predicted concurrent reading comprehension (from the PAT assessment completed during the early school period; see Technical Appendix Table A10.2) and later executive functioning skills during adolescence (see Technical Appendix A10.3), after accounting for the effects of other school-based factors on these outcomes. These analyses controlled for the effects of early childhood expressive language (measured using the Renfrew Word Finding Vocabulary Test), range of home learning activities (family activities such as reading, playing etc.), cognitive school readiness (measured using Who am I?), and area-based socioeconomic advantage on these middle childhood and adolescent outcomes.

The effect of internet use at home on early school reading comprehension and adolescent executive functioning remained significant even when accounting for these sociodemographic, home learning, and language and cognitive factors.

What are our key findings?

- One third of LSIC children (37%) accessed the internet at home during their first two years of formal schooling (from data collected during 2011 and 2013).
- When compared by region, over half of children living in major cities had access, whereas one quarter of children in remote areas, and one tenth of children in very remote areas, had access.
- Access to the internet during the early school period was associated with higher parental education and socioeconomic advantage and lower financial stress.
- Children with early school internet exposure at home had greater cognitive skills, self-regulation, reading comprehension, and mathematics performance than children without access at home.
- Multivariable analyses found that the effect of technology exposure on reading comprehension and executive functioning remained significant even when accounting for the effect of sociodemographic factors and early learning skills.
- Early school internet exposure was also associated with higher technology self-concept in middle childhood, greater perceived safety on the internet during adolescence, and use of a mobile phone for a greater range of activities during middle childhood and during adolescence.

What needs to be done?

- These findings reflect early childhood digital access patterns from 2011 and 2013, so new research is needed to determine current trends in early childhood digital access, affordability, and abilities.
- It is important that Indigenous digital inclusion continues to be considered as a key area of research when any outcomes related to Indigenous people are concerned.
- Digital inclusion affects every aspect of life for Indigenous people and communities, no matter where they are based in Australia, whether it be applying for employment opportunities online, managing Centrelink or Medicare services, booking travel, medical and health appointments, or finding information online. Education relies on digital inclusion at early childhood, primary, secondary, and tertiary levels.
- Digital inclusion data needs to be gathered from several surveys, sources, and research projects. All research related to Indigenous peoples provides opportunities to include the impact of digital inclusion.
- Our findings show that early access to digital learning for Indigenous young people has positive outcomes across a number of domains.

Artist Interpretation: The meeting place within a meeting place represents a safe space. The people around the meeting place share stories, learnings and celebrate their stories, experiences and diversity. The flower in the middle represents the words from a poem, talking of the gum tree that scatters its seeds with the wind. With the words shared from participants, we can all benefit from learnings, perspectives and shared experience.

Chapter 11:

LSIC participants teach us how to grow up strong – hearing participant's voices through poetic inquiry

Chapter 11: LSIC participants teach us how to grow up strong – hearing participant's voices through poetic inquiry

We end this LSIC Early Childhood Report with the voices of the LSIC participants made prominent. Led by Indigenous scholar Jessa Rogers, we used our 'poetic lines' methodology – as described in Chapter 1 – to create "poems" using the verbatim responses provided by parents and children to two questions that have centred our work in this Report:

- ***"What is it about Aboriginal and/or Torres Strait Islander culture that will help*** *(Study Child)* ***grow up strong?"*** *(asked of parents 1 and 2 during early childhood, Waves 1 and 2).*
- ***"What does 'grow up strong' mean to you?"*** *(asked of children at Wave 13, when the B cohort were in middle childhood, and the K cohort in adolescence).*

This was supplemented by our reflections on LSIC children's drawings, created in response to the prompt:

- ***"Draw a picture of you and your family"*** *(asked of children from the B cohort during early childhood, Wave 6).*

In this way we hear, in participants' own voices, how Aboriginal and Torres Strait Islander children grow up strong.

Parent poem 1

Knowing her culture. Her language.
He will learn so much. Knowing where he came from. A sense of pride, of who he is.

Where he came from.

It will be good that she knows

Where she comes from.

To know who she is
Proud of who she is
a sense of belonging

Where he comes from.

Knowledge of her background, it will make her stronger inside to survive.
If he comes into trouble, he knows his family.

He will speak clearly and strong up front.
We are strong people
We are survivors
in every way possible.

This will help her grow up strong:

Aboriginal ways. Looking after each other
Culture. Stories. Art. Kinship. Bonding. Singing. Dancing. Traditions. Food.
Initiations.
Ceremonies. Pride. Connection to a place. Respect for Elders.

Having a sense of knowing who he is,
To know her identity
Stand up and be strong.

Closeness
Respect
History
Survival.

Parent poem 2

I take the children out bush
hunting, fishing.
Speaking language, learning history of past elders, dancing. Dot painting, ceremony.
Singing and island dance. Go out bush with family.

He paint and Mum put on the computer,
Language and internet site, books and tell her stories.
I read to her, and she's learning more every day.

Yarning with his Dad and his Pop.
Grandmother tells stories.
Speaking language,
Dancing with Uncles.

Teach them cooking, show them bush foods. Go out bush with her Mothers and Aunties. Speak
to Elders. Tell stories from the old days.

Go back to our Country,
Living the culture.

Parent poem 3

What I want other people to know about being Aboriginal
We have no need to be shame.

This Land is our Inheritance!

It is important to understand about identity and connection,
To understand that Australia belongs to Aboriginal People.

This Land is our Inheritance!

Be proud that our ancestors walked on this land 60,000 years
To know we are still here and we survived

This Land is our Inheritance!

We are the traditional owners of this country
For us, we have a responsibility to land, culture and our community.

We are
and always will be.

This Land is our Inheritance!

Child poem 1

What does “growing up strong” mean to you? (Part 1)

Knowing who you are and where you come from.

Making the right decisions and being proud of who I am.
Not being stupid going to jail all the time
Or getting in trouble with police
Having a good job and a nice house.

Able to deal with tough situations. Keep pushing when things get tough!

To live a good life. Eat healthy and don't drink and smoke.

Keep my culture strong.
Responsible for my actions.
Reliable. Respectful.

Proud of my identity. Love and support from my family
Caring for one another.

Good education for good job. Finish school.
Getting my life on track. A plan for the future.

Being able to look after myself.
Grown up doing the right things.

Child poem 2

What does “growing up strong” mean to you? (Part 2)

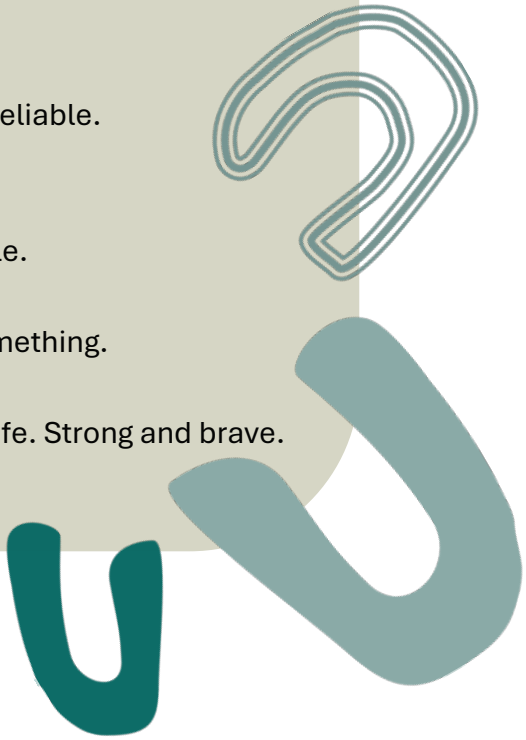
When you are older you are brave and smart.
Growing up mentally strong and get through any problem in life.
Having a well supported family, having good mates,
Being confident, knowing what to do and help people,

I think it means to be strong in life.

Being healthy and making good decisions,
Growing up healthy with a strong mind.
Good relationships. Confident, independent, and reliable.

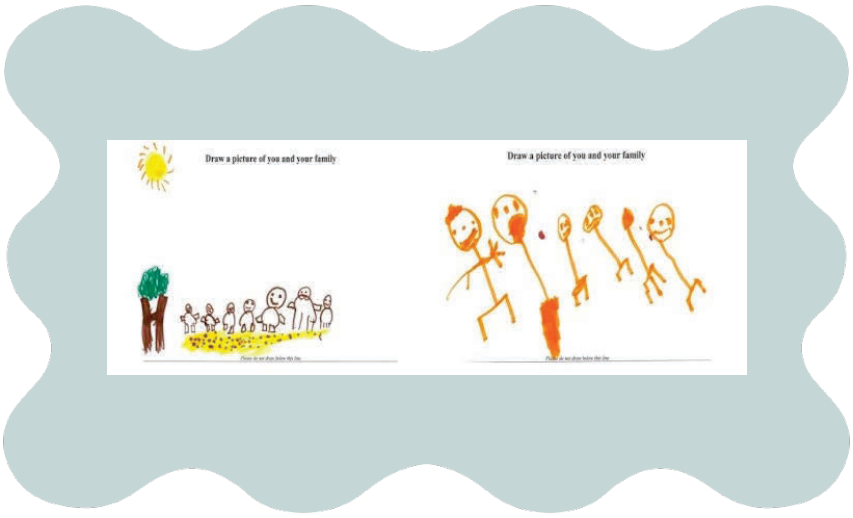
Respect my Elders and culture,
Being kind hearted, helping and looking after people.
Getting a good education, keep growing strong.
Being resilient and persistent. Getting better at something.

You have learnt how to be a good person and be safe. Strong and brave.



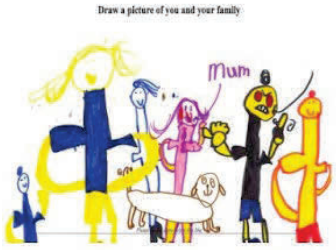
Extending these **Poetic Lines** to include visual data, we recognise the power of children's artistic expression as a form of knowledge production, ensuring that their voices remain central to our research. Across the images, examples of which are provided following, a strong theme of extended kinship networks emerged. The images reflected Indigenous cultural identity, depicting relationships beyond the immediate family unit. The majority of drawings featured multiple figures (more than four), aligning with Indigenous kinship structures where family encompasses not only parents and siblings but also Elders, aunts, uncles, and other community members. Many images also included dogs, which may represent family pets or town dogs – a common presence in remote communities.

The LSIC visual data sets conveyed deep connections between family members, underscoring themes of care, respect, and belonging. When faces were depicted, they almost always featured smiles. Many images portrayed families outdoors, incorporating elements such as the sun, blue skies, and Country/ground. Children predominantly selected bright colours, though some opted for darker shades (brown, black) to depict their family members. Spatial arrangement was another notable feature, with figures often holding hands or positioned in close proximity, reinforcing collective identity and relational ties.

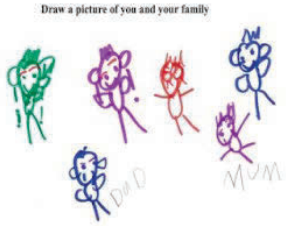


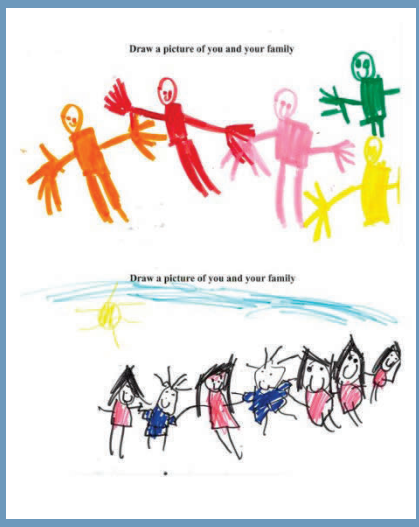

Draw a picture of you and your family
Draw a picture of you and your family
Draw a picture of you and your family
Draw a picture of you and your family
Draw a picture of you and your family
Draw a picture of you and your family


Draw a picture of you and your family


Draw a picture of you and your family
Mum


Draw a picture of you and your family


Draw a picture of you and your family
DAD
MUM


Draw a picture of you and your family
Draw a picture of you and your family


Draw a picture of you and your family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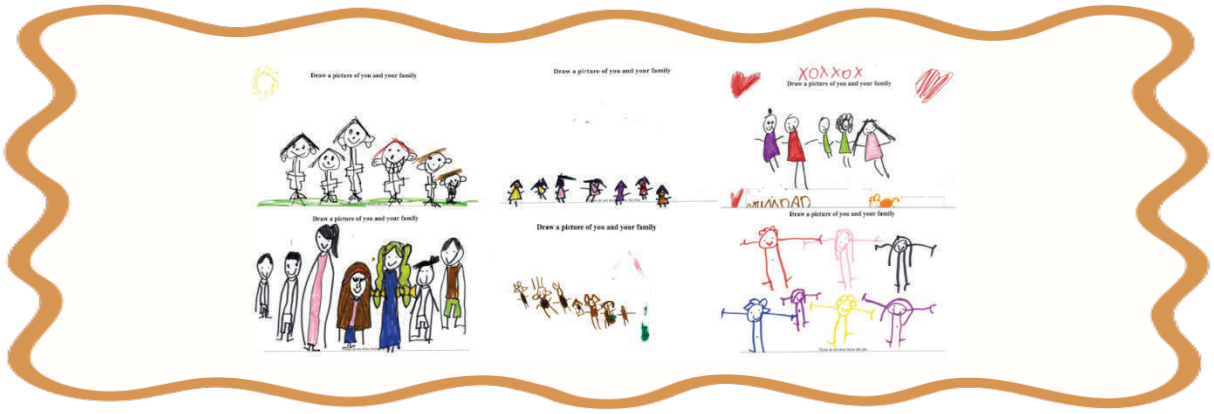
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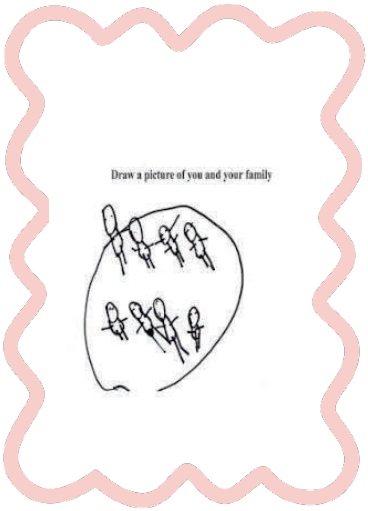
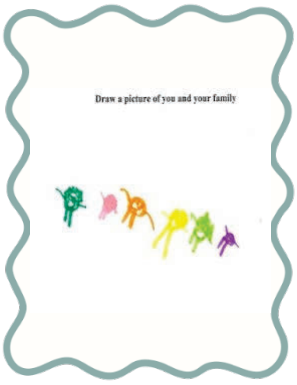

Draw a picture of you and your family


Draw a picture of you and your family


Draw a picture of you and your family
Draw a picture of you and your family


Draw a picture of you and your family
Draw a picture of you and your family
Draw a picture of you and your family
Draw a picture of you and your family
Draw a picture of you and your family
Draw a picture of you and your family


Draw a picture of you and your family
Dad


Draw a picture of you and your family

We present these images created by children alongside a poem drawn from Rogers' reflections on the images within the visual LSIC data set. Rather than conducting an in-depth analysis shaped by our own interpretations, we believe the artefacts speak for themselves, using poetry to complement rather than decode their meanings. The poem highlights the recurring themes that emerge when viewed in the context of both Indigenous families and the LSIC study. Through this poem we seek to honour the LSIC children who shared with us, through their images, their knowledge that "family grows us strong".

Researcher poem: Always was, Always will be

Our mob is here all of us together

red dirt soft beneath our feet the same dirt we have walked for generations and will walk to come

Small and big feet walking together on this Country that knows us/that we know.

Family stretches out in every direction –

Mum, Dad, Nan, Pop, Aunties, Uncles and the biggest mob of cousins

laughing

running

playing

learning

small hands held in bigger ones shoulders to lean on lean in when hard times come

family is many hands to wipe the tears when times get tough to squeeze and say

"love you"

family is many mouths to share yarns and stories for big feeds and big belly laughs

playful dogs follow weaving between legs resting, watchful
part of the story young ones growing up beside our own

just like the gum trees standing tall seeds scattering with the wind

new life new generations same family lines faces that remind us of relations

just like the river carving its path always changing, yet always the same

family is more than what is seen it is a *feeling* family is memories made and shared

it's Pop's laughter rolling like thunder during summer storms

it's Mum's arms warm like a cuppa made for Nan

family is being together knowing where we belong

Mob is our differences aside for the collective

connected related

you can see it in the hundreds of ochre handprints

thousands of generations of family kept alive on ancient rock walls

or in the simple, bright lines drawn by little hands in oversized school uniforms

family is a beautiful rainbow vibrant colours of strength, diversity

our hope for the future

we are small learning growing

standing strong in the stories that shape us the same ones that shape our families

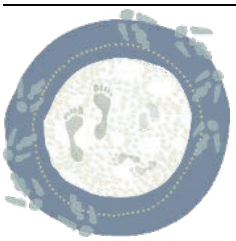
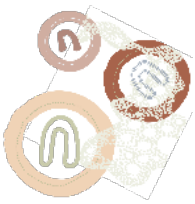
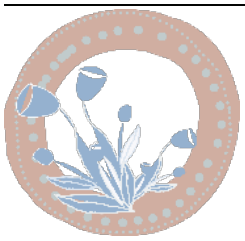
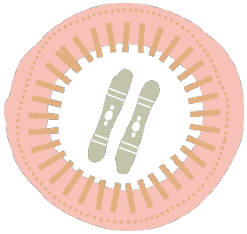
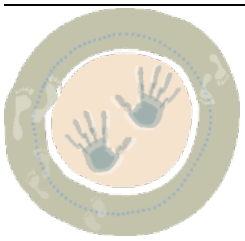
walking forward our old ones beside us to guide the way

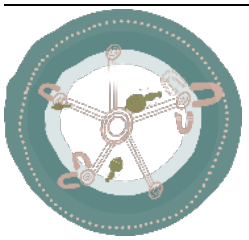
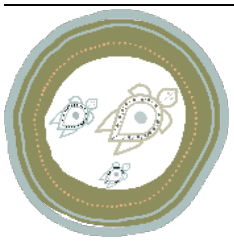
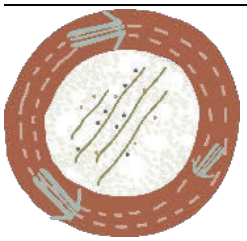
proud heads high hearts full

our bloodlines strong as songlines

family grows us up strong and reminds us who we are

Glossary of Artist Interpretations

Symbol	Research Chapter	Interpretation
	**Chapter 1:** Growing up strong	Eagle's tracks show a strong and tenacious spirit, representing the strength in the data and the recommendations offered in these findings for the participants and beyond. Footprints get bigger and darker, representing strength in the imprint they leave behind as people during their development.
	**Chapter 2:** Mapping LSIC children's experiences by developmental stage	Three meeting places represent the developmental stages that children grow through. Each person within the meeting place starts small and gets bigger, representing growth and development. The dotted path represents the journey and the capture of information through this progression for the participants, through a cultural lens.
	**Chapter 3:** Growing up strong knowing one's culture	The spiral represents self-awareness and the expansion of one's spiritual and cultural journey. It is often used to portray healing, and in this story represents the awareness, exposure and participation in culture for the participants. The human footprints represent their growth and development when they walk with culture as part of their lives.
	**Chapter 4:** Growing up strong through connection to Country	Bush medicine and bush tucker is a way of connecting to the physical land we call Country. Understanding its healing properties brings us wellbeing and connection to community and our ancestors.
	**Chapter 5:** Growing up strong speaking an Indigenous language	The visual meaning of the clapping sticks is one of celebration or ceremony and culture. Understanding, learning and speaking language offers us a deep connection to culture, our history and our ancestors. Like clap sticks, the audible cultural practice of language has proven positive benefits and is reason to celebrate many dialects across countries.
	**Chapter 6:** Growing up strong through identity and belonging	Handprints are a symbol of belonging, identity and connection. It is used here in conjunction with growing and deepening footprints, to demonstrate a person's strength when they connect with their culture and heritage.

	**Chapter 7:** Association between parent's levels of parenting social support and wellbeing over the early childhood period and children's developmental outcomes	Honey ant nests are a system of underground tunnels that lead to where the honey ants live. They build nests in soil, many tunnels leading to one place. Parents are represented as the honey ants and the honey ant paths represent the social support opportunities they have available, which impact the developmental outcomes of their children. The more cultural resources they have available (people), the better the outcomes (larger honey ant).
	**Chapter 8:** The impact of early learning experiences on students' middle childhood and adolescence school engagement	The turtle is known in culture for its wisdom and patience. Because of its hard shell, it is said that it can carry the world on its back. Here, it is used to represent the relationship, resources and strength that the right teachers can provide to students from early school through to middle school, right the way through to adolescent education.
	**Chapter 9:** Pathways from early childhood to middle childhood academic achievement and adolescent thinking skills (executive function)	The honey ant symbolises the sweet things that life has to offer, and the hard work and achievements that can be made with the right pathways. Honey ants intelligently navigate their way through the dirt, just as children and adolescents learn to think critically and reflectively about their steps towards an independent life.
	**Chapter 10:** Outcomes associated with early childhood digital access	The symbol of rain has been used to represent the impact that digital access and technology has on our environment when it comes to education and early childhood outcomes. The travelling kangaroo tracks represents the movement towards positive outcomes, in a forward direction with strength.
	**Chapter 11:** LSIC participants teach us how to grow up strong – hearing participant' voices through poetic inquiry	The meeting place within a meeting place represents a safe space. The people around the meeting place share stories, learnings and celebrate their stories, experiences and diversity. The flower in the middle represents the words from a poem, talking of the gum tree that scatters its seeds with the wind. With the words shared from participants, we can all benefit from learnings, perspectives and shared experience.

Glossary

Term	Definition
Attentional Regulation	**Attentional regulation** describes children's ability to self-monitor their attention, including maintaining attention, ignoring distractions, and staying alert to task goals (Howard & Williams, 2018). Attentional regulation was measured using parent report on temperament items, related to task persistence and emotional reactivity which have been used extensively in prior Longitudinal Study of Australian Children and LSIC studies (Williams et al. 2017). See Technical Appendix Section 1.7.5 for further details.
Classroom Regulation	**Classroom self-regulation** reflects abilities to understand and manage personal behaviours, including emotions, and behavioural reactions in school contexts. Self-regulation helps children's learning and social relationships, with teachers and peers. Self-regulation develops rapidly across early childhood and early school years, with support from responsive adults.
Connection to Ancestors and Spirituality	**Connection to Ancestors and Spirituality** includes the knowledge and belief systems left by ancestors. These systems include the Dreaming, stories, rituals, ceremonies, cultural healing practices, and encompass values of wisdom and hope. Missions and assimilation caused disruption; however, expressions of spirituality and acceptance of Indigeneity can be paths to restoration.
Connection to Body and Behaviour	**Connection to body and behaviour** encompasses typical biological markers of physical health and wellbeing (e.g., exercise, weight, nutrition, illness). Disruptions include smoking and substance use, chronic diseases, and exclusion from health services. Whereas, restorations include sport, cultural practices such as hunting and gathering, and access to health services.
Connection to Community	**Connection to community** includes the personal connections and sociocultural norms fundamental to identify and concept within Aboriginal cultures and communities. Strong inclusion and cohesion with the community supports strong cultural identities. Disruptions can include isolation and feuds, whereas restoration includes accessing community settings to learn, seek support, and engage with others.
Connection to Country	**Country** is used to refer to an area of land associated with a cultural group of Aboriginal or Torres Strait Islander people. **Connection to Country** and land refers to the strong connection Aboriginal and Torres Strait Islander people have with the land and encompasses traditions, spiritual associations, meaningful experiences, and belonging to

	Country. Disruptions are caused by dispossession of land, whereas restoration can occur through healing of the land and reconnecting with Country.
Connection to Culture	**Connection to culture** refers to Aboriginal and Torres Strait Islander peoples' capacity and opportunity to establish health and strong connections to their heritage. Such expressions include knowledge, law and practices, protocols, norms, lores moral and ethical values, yarning, ceremony, fire, art, dance, song, storytelling, and language. Disruptions include cultural loss, genocide, and clash, whereas restoration can occurs through cultural learning, involvement, and participation.
Connection to Family and Kinship	**Connection to family and kinship** recognises the importance of interpersonal connections, including family and kinship attachments, particularly for supporting cultural ties and reciprocal relationships. Connection on this domain can be disrupted by removal of children from their families. Restorative practices include learning family history, parenting and family programs, and relationships with Elders.
Connection to Mind and Emotions	**Connection to mind and emotions** encompasses both mental wellbeing and the absence of mental ill health, and a broad spectrum of cognitive, emotional, and psychological human needs, such as sense of safety, experience of joy, self-confidence, and sense of belonging. This domain is more than just the absence of ill health, but is the presence of positive emotions and mental wellbeing. Disruptions include trauma and threat to safety, whereas restoration can occur through supports and truth-telling.
Digital Ability	**Digital ability** is capacity to engage effectively and safely with digital technologies so as to support daily living.
Digital Access	**Digital access** refers to how and where internet and telecommunication services can be accessed, and refers to the reliability of these services.
Digital Affordability	**Digital affordability** is the financial barriers to accessing digital technology and services.
Emotional Regulation	**Emotional regulation** refers to children's ability to successfully self-monitor their own emotions and express them appropriately (Raver et al., 2017). Emotional regulation was measured using parental report on temperament items related to task persistence and emotional reactivity which have been used extensively in prior Longitudinal Study of Australian Children and LSIC studies (Little et al., 2012; Williams et al. 2017). See the Technical Appendix Section 1.7.6 for further details.
Executive Functioning	**Executive functions** are a set of cognitive processes that support goal-directed behaviours, by regulating attention, thinking and behaviour. Executive functions include basic

	cognitive processes including attentional control, cognitive inhibition, working memory, and cognitive flexibility. Higher-order executive functions include planning, reasoning and problem-solving.
Expressive Language	**Expressive language** is the "output" of language, the ability to express our wants and needs through verbal or nonverbal communication, including using speech, gestures, signs, and/or other symbol systems.
Indigenous Language	**Indigenous language** refers to the unique set of languages and dialects, spoken by Australian Indigenous communities, which have been described as "storehouses of cultural knowledge and tradition" (AIATSIS, 2005, p. 21), where they are key to maintaining connection with ancestors, land and law (McLeod et al., 2014). It has been reported that an estimated 145 Indigenous Australian languages are spoken, 110 are critically endangered, and less than 20 Indigenous languages are spoken across all generations (AIATSIS, 2005; McConvell, 2008; Obata & Lee, 2010). Indigenous languages also include Creole and Kriol, which began by merging Indigenous and English languages to facilitate communication on missions and outstations. Over time, Creoles and Kriols developed in complexity and are languages into their own right (McLeod et al., 2014). Each Indigenous language is intimately connected to Country and has deep spiritual significance for its Aboriginal and Torres Strait Islander community.
IRISEO (Index of Relative Indigenous Socio-Economic Outcomes)	**IRISEO** is a composite, rank order variable derived from information on the employment, education, income, and housing characteristics of Aboriginal and Torres Strait Islander communities from Indigenous Regions across Australia (Biddle, 2009). This variable ranges from 1 to 10 (deciles) where higher numbers reflect higher socioeconomic outcomes.
LSIC Steering Committee	LSIC is guided by a Steering Committee of Indigenous and non-Indigenous academic experts, with a majority Aboriginal and Torres Strait Islander membership. The **LSIC Steering Committee** provide advice on survey design, implementation, community engagement, ethical and cultural protocols, data analysis, interpretation, and reporting.
Longitudinal	The LSIC study is classified as **longitudinal** as the study tracks the development of Australian Aboriginal and Torres Strait Islander children over time, revisiting the same participants at different points.
Main Carer	**Main Carers** were those that identified themselves as knowing the LSIC Study Child the best.

Mob	The term **Mob** is used to refer to a group of Aboriginal or Torres Strait Islander people who are from a particular place or Country.
Multivariable Regression	**Multivariable regression** explores relationships between multiple independent variables (predictors) and a dependent variable (outcome variable). This method allows researchers to explore the overlap in the associations between these variables and the significance of associations of specific predictors when accounting for others.
NAPLAN	**NAPLAN** refers to the standardised school-based National Assessment Program - Literacy and Numeracy (NAPLAN). It is a series of tests focused on basic skills which are administered to students in year levels three, five, seven and nine. Tests are supplied by state/territory governments where parent or guardian permission was granted.
Parent	While recognising the diversity of families and range of care arrangements that may exist for children, we use '**parents**' to refer to biological parents, legal guardians, or others who are primary caregivers for children, who may include relative carers, kinship carers, foster carers (South Australian Department of Education, 2022). In the context of LSIC, these were termed 'main carers' and self-identified as the person who knew the Study Child the best.
Parent Distress	The psychological distress scale of the Strong Souls (Thomas et al., 2010) questionnaire assessed **parents' distress,** including experiences of worry, anger, and shame**.** This scale comprised seven items, with example items including "*Have you stopped liking things that used to be fun?*" and "*Have you felt so worried that you had trouble breathing?*".
Parent Resilience	The resilience scale of the Strong Souls (Thomas et al., 2010) questionnaire assessed **parents' resilience** and mental wellbeing, including interpersonal connections, knowledge of family history, and passions. This scale comprised twelve items, with example items including "*You have a strong family who help each other"* and "*When you're sad or upset you have a person that you can talk to*."
Parent Social Support	**Parent social support** refers to the social capital and social resources accessible to parents, such as partners, family, friends, neighbours, and community. It is not just the availability of these social resources, but also the quality of these resources. In this Report, this is assessed via parental report of who they seek parenting advice from.
RAOs	**RAOs** are a team of locally employed Aboriginal and/or Torres Strait Islander Research Administration Officers (RAOs) who conduct face-to-face data collection with children and their families in the LSIC study.

Receptive Language	**Receptive language** is the "input" of language, the ability to understand and comprehend information from spoken or written language, sounds, gestures, movements, or signs.
Remoteness	**Remoteness** refers to the Study Child's geographical remoteness, which has been classified into five categories (areas): Major City, Inner Regional, Outer Regional, Remote, and Very Remote. These are classified by the Australian Bureau of Statistics based on a measure of relative access to services, measured by the Accessibility and Remoteness Index of Australia (ARIA+). Further information can be found by searching 'remoteness' on the Australian Bureau of Statistics website.
School Engagement	**School engagement** refers to students' participation in academic and school-related activities (Christensen et al., 2012) and has important implications for students' wellbeing and academic achievement. This multidimensional construct comprises three domains: emotional engagement, behavioural engagement, and cognitive engagement. In brief, emotional engagement relates to a child's emotional and affective attachment to school. Behavioural engagement reflects students' conduct in school and with related activities (e.g., homework). Finally, cognitive engagement refers to students' investment in academic tasks.
Student-Teacher Closeness	The **student-teacher closeness** subscale of the Pianta Student-Teacher Relationship Scale (Pianta, 1992) assesses the degree to which a teacher experiences affection, warmth and open communication with a particular student. The factor structure, validity, and reliability of this scale in the LSIC sample has been previously explored (Biddle et al., 2019). Seven items are used for this scale, with example items including "*I share an affectionate, warm relationship with this child"* and "*if upset, this child will seek comfort from me"*. See the Technical Appendix Section 1.6.1 for further details.
Student-Teacher Conflict	The **student-teacher conflict** subscale of the Pianta Student-Teacher Relationship Scale (Pianta, 1992) seeks to assess the degree of conflict and negativity that the teacher perceives in their relationship with the student. The factor structure, validity, and reliability of this scale in the LSIC sample has been previously explored (Biddle et al., 2019). Seven items are used for this scale, with example items including "*this child and I always seem to be struggling with each other*" and "*this child easily becomes angry with me*". See the Technical Appendix Section 1.6.2 for further details.
Study Child	The term **Study Child** refers to the child participating in the LSIC study. For readability purposes the word 'children' is used throughout the Report when discussing study participants.

Visual-Motor and Early Literacy Skills	**Visual-motor and early literacy skills** are assessed in this report using the Who am I?, assessment, which requires children to write their name, copy shapes, write letters, numbers and words in a small booklet. These skills include coordination between eyes and hands to permit writing and drawing, and involves fundamental skills of writing and spelling letters and numbers.
Wave	Data is collected annually in LSIC, with each annual collection being referred to as a **wave.**

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