Australian National University

Wave 13 (2020) Summary Report for *Footprints in Time*: The Longitudinal Study for Indigenous Children (LSIC)

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Wave 13 (2020) Summary Report

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Abstract

Footprints in Time: The Longitudinal Study of Indigenous Children (LSIC) is the only Australian longitudinal child cohort study on the developmental outcomes of Indigenous children. The study follows two cohorts of Aboriginal and Torres Strait Islander Australian children who were 6 months–2 years old (younger cohort) and 3.5–5 years old (older cohort) when the study began in 2008. *Footprints in Time* collects data annually on a wide range of topics to build a comprehensive data resource that helps answer such questions and provides an evidence base for developing policies and programs that improve life outcomes for Aboriginal and Torres Strait Islander peoples. This report unveils the key findings from Wave 13 (2020). The report delves into the perspectives of the Study Youth regarding the attributes necessary to 'grow up strong' and their awareness and comprehension of key Aboriginal and Torres Strait Islander issues, such as Reconciliation, Constitutional Recognition and Native Title. Moreover, it offers comprehensive cross-sectional and longitudinal analyses of the factors influencing the wellbeing, educational participation, and work aspirations of the Study Youth. Additionally, the report sheds light on the consequences of the COVID-19 lockdowns and restrictions on the Study Youth, their families, and communities.

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Ethical approval for the collection of Wave 13 was granted by the Research Ethics Committee of the Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS) and Aboriginal and Torres Strait Islander jurisdictional ethics committees.

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Professor Nicholas Biddle (Director, Evaluation and Analysis)

Acronyms

ABS	Australian Bureau of Statistics
AIATSIS	Australian Institute of Aboriginal and Torres Strait Islander Studies
AIHW	Australian Institute of Health and Welfare
ANU	Australian National University
CAEPR	Centre for Aboriginal Economic Policy Research
CI	chief investigator
DSS	Department of Social Services (Australian Government)
NDIS	National Disability Insurance Scheme
IRSAD	index of relative socioeconomic advantage and disadvantage (SEIFA)
LSIC	The Longitudinal Study of Indigenous Children
SEIFA	Socio-Economic Index for Areas (ABS)

Disclaimer

This summary report is prepared by researchers at the Australian National University (ANU) using data from *Footprints in Time*: The Longitudinal Study of Indigenous Children (LSIC). LSIC is conducted by the Australian Government Department of Social Services (DSS), which also commissioned this report. The findings and views included in this report are those of the authors and do not necessarily reflect any official ANU position, nor do they reflect the views of DSS or the Aboriginal and Torres Strait Islander peoples and their communities involved in the study.

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Introduction

Australia's *Footprints in Time*: The Longitudinal Study of Indigenous Children (LSIC) is the only Australian longitudinal child cohort study on the developmental outcomes of Indigenous children. The study follows two cohorts of Aboriginal and Torres Strait Islander Australian children who were 6 months–2 years old (younger cohort) and 3.5–5 years old (older cohort) when the study began in 2008. When the study commenced in 2008, the geographic distribution of *Footprints in Time* families was similar to that of the general Aboriginal and Torres Strait Islander population (Department of Social Services [DSS], 2020; Dodson et al., 2012). Though *Footprints in Time* does not provide a nationally representative sample, it generates a large enough sample for general statistical analysis and an in-depth analysis of relationships between child development outcomes and social, cultural and economic contexts. The range of topics covered in this report also showcases both the richness of the data and the potential for further research.

This Wave 13 Summary Report provides a selection of research findings from data collected in 2020, the 13th annual wave, or collection year, of the study. The writing of the report is a collaboration between staff within POLIS: the Centre for Social Policy Research, including the Centre for Indigenous Policy Research and the Centre for Social Research Methods within the Australian National University (ANU). The ANU research team was led by Professor Valerie Cooms, who is a Quandamooka woman with decades of experience in working in Indigenous affairs, leading large and complex projects, and conducting cutting-edge research. The ANU research team included non-Indigenous researchers, Associate Professor Deirdre Howard-Wagner, Dr Yonatan Dinku, and Professors Ben Edwards and Nicholas Biddle, who have expertise in qualitative and quantitative data analysis and modelling, including extensive experience in analysing Indigenous data, including data from *Footprints in Time*, using ethical and culturally safe approaches. Collectively, the team brings lived experiences and a range of theoretical and empirical approaches to Indigenous data analysis and interpretation. The team are highly experienced in designing and implementing research methodologies that weave First Nations ways of knowing, being and doing with Western research methodologies, including both qualitative and quantitative methods.

The report is organised in two sections. Section A summarises data collected in Wave 13 for the first time. Section B consists of five feature articles that provide an in-depth analysis of selected topics drawing upon a wealth of data, including collections from previous waves.

The key findings are as follows.

- For many participants the positive effects of COVID-19 lockdowns and restrictions in 2020 far outweighed the negative effects. The COVID-19 pandemic crisis did create uncertainty about daily living and hindered social and cultural interactions and access to community services for a small number of study parents and carers who participated in Wave 13. However, most LSIC Wave 13 parents and carers report positive outcomes such as flexible working arrangements, increased family time and more earning opportunities, mainly through the Commonwealth coronavirus stimulus packages, such as JobSeeker, JobKeeper, and the early release of superannuation. Findings also show significant overall improvements in employment

and psychological health among parents and carers who participated in Wave 13 compared with pre-pandemic levels.

- Study Youth responses to a new question on what it means to grow up strong shows that both the younger and older cohort are at a stage in their life where they are navigating their world and thinking about and have clear ideas about what characteristics and/or attributes are needed to grow up strong. Nearly all Study Youth responses to this question express an awareness and a valuing of positive outcomes in their future.

- For the first time, the LSIC Wave 13 study included two questions asking all Study Youth how they see themselves and their friends with respect to a set of personal qualities. Their responses show that a very high proportion of Study Youth who participated in LSIC Wave 13 have a positive sense of self and their peers.

- The overwhelming majority of older Study Youth who participated in Wave 13 consider topics such as reconciliation, constitutional recognition, native title, and land and water rights, to be very important. While less than half had heard 'some' or 'a lot' about these topics, their responses suggest that what they had heard had given them a strong understanding.

- One-quarter of LSIC families who participated in Wave 13 (2020) experienced serious worries about money and difficulties in meeting basic financial commitments in the previous 12 months. However, the prevalence is lower than pre-pandemic levels. Financial hardship was associated with reduced wellbeing, more strongly for parents and carers than Study Youth. Financial hardship tends to be more detrimental to wellbeing when it occurs more persistently.

- LSIC families who participated in Wave 13 experienced a wide range of major life events, with over 80% experiencing more than one major life event. For Study Youth, exposure to events, such as serious money worries, being humbugged[1] or robbed and being scared by another person's behaviour, was significantly associated with difficulty sleeping. The likelihood of having trouble initiating or maintaining sleep increases with the number of major life events a family experience.

- While most Study Youth who participated in Wave 13 hold strong educational and work aspirations, the educational qualifications and occupations they aspire to differ across demographic, socioeconomic and geographical groups.

- The Study Youth who participated in Wave 13 reported several motivational factors for continuing their education, with friends and families being the most important influence.

[1] Humbugging refers to being harassed for money by family, friends or debt collectors.

Background

This report summarises new data and survey findings from Wave 13 (2020) of the Longitudinal Study of Indigenous Children (LSIC), also known as *Footprints in Time*. *Footprints in Time* is a study that follows the lives of two age cohorts of Aboriginal and Torres Strait Islander children and their families. The younger cohort consists of Study Youth born between 2006 and 2008, whereas the older cohort consists of Study Youth born between 2003 and 2005. The study began in 2008 with a sample of nearly 1,700 Aboriginal and Torres Strait Islander children and their families from 11 sites, including major cities and very remote areas across Australia (DSS, 2020).

Participating children and families were recruited through convenient/purposive sampling designs.

Footprints in Time was developed within the context of supporting the following four overarching research questions (DSS, 2020).

- What do Aboriginal and Torres Strait Islander children need to have the best start in life to grow up strong?
- What helps Aboriginal and Torres Strait Islander children to stay on track or to get them to become healthier, more positive and stronger?
- How are Aboriginal and Torres Strait Islander children raised?
- What is the importance of family, extended family and community in the early years of life and when growing up?

The LSIC Steering Committee[2] updated the Key Research Questions for LSIC for 2020–2025 as follows:

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 stronger?
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?

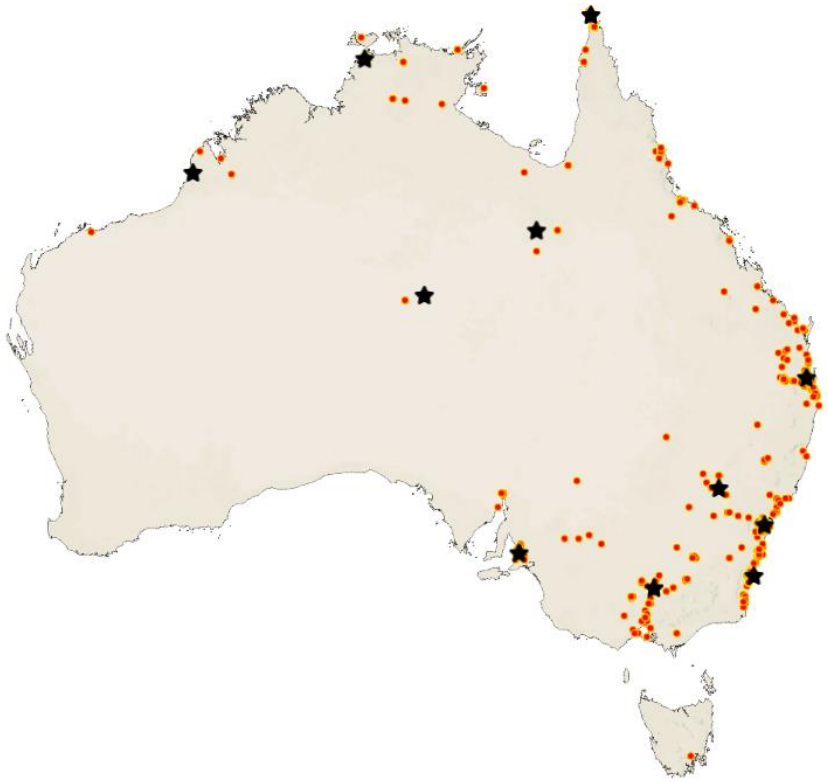
Footprints in Time collects data annually on a wide range of topics to build a comprehensive data resource that helps answer such questions and provides an evidence base for

[2] This is an Indigenous-led Steering Committee and has major Aboriginal or Torres Strait Islander representations. For more information, see: https://www.dss.gov.au/about-the-department/longitudinal-studies/footprints-in-time-lsic-longitudinal-study-of-indigenous-children-overview.

developing policies and programs that improve life outcomes for Aboriginal and Torres Strait Islander peoples. The topics include education, health and wellbeing, aspirations and values, language and culture, income and employment, housing, family relationships, community safety and school resources. In every wave of data collection, information on topics of interest is collected by Aboriginal and Torres Strait Islander interviewers. Up to Wave 12, information was collected through face-to-face interviews with up to three participants: the Study Youth, a parent or primary carer of the study child (P1), and another adult with caring responsibility for the Study Youth (P2) (designed from Wave 4 specifically as a father's interview). A fourth informant, the Study Youth's teacher, was sent a questionnaire with the consent of the P1.

Fieldwork for Wave 13 was scheduled to start as usual in late February–early March 2020. However, the COVID-19 pandemic arrived and face-to-face interviews could not be conducted. All interview instruments were revised for telephone and resubmitted to the Australian Institute for Aboriginal and Torres Strait Islander Studies (AIATSIS) Human Research Ethics Committee for ethical clearance. Wave 13 interviews were conducted entirely by telephone during the pandemic crisis (June to December 2020). More sensitive topics and self-complete sections covered in previous waves were also removed to suit the changing circumstances of the study participants and encourage participation. On the other hand, new questions were added to the survey, mainly about the impacts of COVID-19. Teacher questionnaires were not sent out for Wave 13 as Departments of Education around Australia halted research to focus on delivering education online.

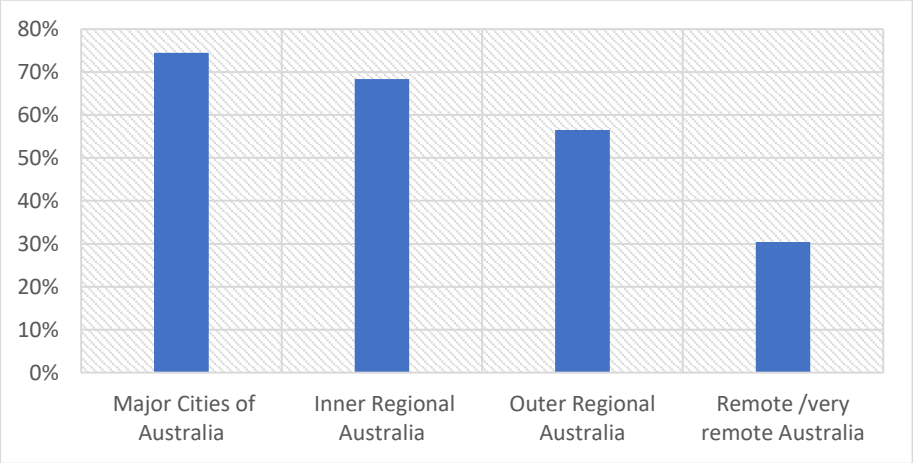
Figure 1 Geographic distribution of families interviewed in Wave 13



Source: DSS.

A total of 755 families (represented by P1s) were surveyed in Wave 13, only accounting for 49% of the in-scope population for the wave and 43% of Wave 1 participants (DSS, 2022). The Wave 13 sample was highly clustered around non-remote areas, see Figure 1. For example, 40% of families were from major cities, 44% from regional areas and 16% from remote and very remote areas, compared with 30%, 41% and 29%, respectively, in Wave 12. Of the 755 families interviewed in Wave 13, 93% were interviewed in Wave 12, 91% were interviewed in Wave 11, and 53% were interviewed in all the previous 12 waves. Participant retention between Waves 12 and 13 was highest in major cities (more than double the rate in remote/very remote areas), followed by inner regional areas, see Figure 2.

Figure 2 Sample retention, Waves 12–13



While 755 families were surveyed, the findings in this report were only obtained from those who had a non-missing value of the data of interest. It is also worth noting that our analyses were not weighted for sample representativeness, mainly because the *Footprints in Time* data do not have published survey weights. Therefore, we caution against generalising the findings of this report to all LSIC participants and the wider Aboriginal and Torres Strait Islander youth population.

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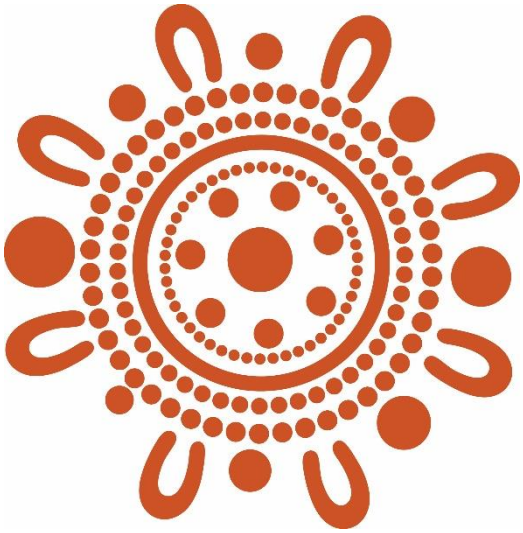


Section A: Wave 13 (2020) – New questions

In *Footprints in Time*, there are many sets of questions (or modules) that repeat annually or every few years. In addition, new questions are introduced as they become age appropriate. Some items are introduced for a single wave – these are usually factors that are not expected to change frequently over time. The new topics included in Section A centre the voices of Wave 13 Study Youth in the knowledge production about them in relation to their identities (Shay & Sarra, 2021). As Shay and Sarra point out, a deeper understanding of identity through the lens of Study Youth is critical for improving policy and program development as well as future research (2021: p. 166).

New topics and questions in Wave 13 included in Section A:

- Growing up Strong (younger and older Study Youth)
- About Oneself and One's Peers (younger and older Study Youth)
- Indigenous Rights and Recognition (older Study Youth)
- Thinking about the World (younger and older Study Youth and primary parent and carer)

Given that Wave 13 was conducted during the peak of the COVID-19 crisis, a series of relevant question relating to the COVID-19 pandemic were added to the study. In section B, the first of the five articles are dedicated to examining the social and economic consequences for Study Youth, families and communities of the COVID-19 pandemic.

Growing Up Strong

Main findings

Collecting qualitative short text responses to a new question on what it means to Study Youth to 'grow up strong' allowed this report to integrate and privilege the voices of LSIC Study Youth. Study Youth responses show that both the younger and older Study Youth are at a stage in their life where they are navigating their world, thinking about and have clear ideas about the characteristics and/or attributes they need to grow up strong. Nearly all Study Youth responses to this question express an awareness and a valuing of positive outcomes in their future.

In an effort to better understand what 'growing up strong' means to LSIC Wave 13 Study Youth, the study included an open-text question asking them, 'What does 'grow up strong' mean for you? Not just physically.' A total of 553 Study Youth, aged between 12 and 17 at the time, responded to this question.

A summative qualitative coding of the short open-text responses resulted in the identification of 25 recurring 'growing up strong' characteristics and/or attributes (see Table 1). Frequently, between two and four of the recurring 'growing up strong' characteristics and/or attributes were identified by an individual Study Youth response (see Box 1).

Table 1 What 'grow up strong' means for LSIC Study Youth

Resilience	Strong person	Being independent	Strong character (role model)	Being proud
Confidence	Being brave	Being smart	Doing best	Being respectful
Emotionally strong	Being positive	Being focused	Achieving goals	Culture strong
Strong physically & mentally	Enjoying life	Good education	Doing the right thing	Family
Healthy	Happy and safe	Good job	Perseverance	Community

Box 1 gives voice to LSIC Wave 13 Study Youth on what it means to 'grow up strong'. The quotes illustrate how multiple 'growing up strong' characteristics and/or attributes identified in Table 1 can appear in a single Study Youth response.

Box 1. What Study Youth say it means to 'grow up strong'

'Being independent, having a good job to provide for yourself.'

'Being mentally strong and healthy. Everything I think.'

'Being healthy and getting a good job.'

'Persistent, having a good education for a good outcome in life.'

'Looking after and able to provide for myself and my family. Good education so I can get a good job. Be healthy, respect and confident.'

'Be healthy, get a good education, keep my culture strong, respect and support.'

'Listen to my old people and learn, knowing my country.'

'Proud of your culture, believing in yourself.'

'Learning culture and language, getting a good job.'

'My Culture identity and knowing my connection.'

'Proud of my identity.'

'Have a good sense of knowledge and be proud of what you do.'

'To be strong, independent and know my country, language and my culture.'

'Don't listen to people when they tell you that you are not good enough, prove them wrong.'

'Finish school, be responsible for my actions, learn to respect, proud of my identity.'

'Good family and good support. Everyone being there to help each other.'

'Grow up with a good education. Stay on the right path.'

'Growing up confident in yourself and not letting anyone pushing you down and following your dreams and being happy in yourself.'

About Oneself and Peers: Social and Cultural Attributes

Main findings

For the first time, the LSIC Wave 13 study included two questions asking the Study Youth how they see themselves and their friends with respect to a pre-identified set of personal qualities. Study Youth responses show that a very high rate of Study Youth who participated in LSIC Wave 13 have a positive sense of self and their peers.

In the 2020 LSIC Study Youth were asked how they see themselves and their friends. First, Study Youth were asked: 'Here's some of the different qualities people may have. How much is each word or phrase like you?' Study Youth were able to express the degree to which each quality was either a lot like them or not like them.

Secondly, Study Youth were asked: 'Thinking about your friends and other kids you spend time with – from school, your community or online. How many of the kids you spend time with…'. Study Youth were then presented with a pre-defined list of qualities. Study Youth were able to express the degree to which each quality was like most of their friends and other kids they spend time with or not.

The results presented in Tables 2 and 3 show that a very high rate of LSIC Wave 13 study had a very positive sense of self qualities and those of their peers.

About oneself

Table 2 ranks the qualities Study Youth identified as indicative of 'a lot like me'.

Table 2 Percentage ranking of qualities Study Youth identified as indicative of 'a lot like me', by remoteness

Percentage of Study Youth who responded 'a lot like me'					
Self quality	**Total (All respondents)**	**Major cities**	**Inner regional areas**	**Outer regional areas**	**Remote/very remote areas**
Respectful	90%	89%	90%	93%	91%
Friendly	90%	91%	87%	93%	92%
Kind	86%	88%	82%	89%	90%
Helpful	83%	81%	79%	90%	86%
Reliable	79%	78%	78%	82%	82%
Good with pets, animals	79%	85%	79%	78%	64%
Good at caring for Country	79%	80%	81%	76%	72%
Easy going	76%	74%	73%	80%	85%

Percentage of Study Youth who responded 'a lot like me'					
Has lots of common sense	76%	75%	80%	74%	76%
Good listener	74%	74%	70%	84%	75%
Has a good sense of humour	74%	76%	75%	76%	60%
Persistent	72%	69%	71%	74%	81%
Independent	65%	64%	71%	61%	63%
Good at cultural activities	64%	61%	65%	64%	68%
Outgoing	63%	61%	63%	67%	64%
Good at sport	61%	58%	55%	70%	70%
Creative	60%	63%	53%	63%	65%
Confident	56%	55%	53%	63%	59%
Good at solving problems	54%	56%	54%	58%	46%
Good at music	49%	48%	48%	52%	47%
Good storyteller	40%	40%	36%	35%	54%

Almost all Study Youth identified 'respectful' and 'friendly' as self-qualities. Table 2 shows that geographical locality had some bearing on the self-qualities Study Youth chose as indicative of a lot like them. For example, over half of Study Youth in remote/very remote areas indicated that the quality 'good storyteller' was more like them (54%) compared with nearly 40% of Study Youth in inner regional areas (36%). Nearly three-quarters of Study Youth in remote/very remote areas indicated that the quality 'good at sport' was more like them compared with over half of Study Youth in inner regional areas.

About one's peers

Table 3 ranks by percentage the qualities Study Youth identify as indicative of 'most or all' of their friends and the kids that they spend time with.

Table 3 Ranking of qualities Study Youth identify among their friends and other kids they spend time with, by remoteness

Qualities of friends and other kids					
Quality	**Total (All respondents)**	**Major cities**	**Inner regional areas**	**Outer regional areas**	**Remote/very remote areas**
Look after you	87%	92%	86%	85%	77%
Helpful and kind	86%	89%	87%	82%	78%
Respectful	86%	87%	89%	81%	79%
Do well in school	68%	74%	66%	66%	57%
Think getting good grades is important	67%	73%	62%	65%	64%
Work hard	64%	72%	62%	64%	49%
Have goals for the future	63%	66%	64%	62%	54%
Like school	53%	48%	50%	61%	65%
Do activities outside of school	43%	44%	44%	44%	39%
Like to read books	19%	20%	15%	18%	26%
Try to get away with things	9%	8%	11%	7%	8%
Get into a lot of trouble	5%	5%	4%	6%	6%
Mean to other kids	2%	1%	2%	2%	2%
Have broken the law	1%	1%	2%	0%	2%

As Table 3 shows, Study Youth strongly identify their friends and those they spend time with as having the following qualities: 'looking after you', 'helpful', 'kind', and 'respectful'.

Geographical locality does have some bearing on which qualities Study Youth attributed to their friends and those they spend time with. For example, Table 3 indicates that 74% of Study Youth in major cities identified their friends and those that they spend time with as 'doing well in school' compared with 57% in remote/very remote areas. Table 3 indicates

that about one-quarter of Study Youth in remote/very remote areas indicated that their friends and those they spend time with 'like to read books' (26%) compared with less than one-sixth in inner regional areas (15%).

A very low percentage of Wave 13 Study Youth identify their friends and the kids they spend time with as engaging in negative peer behaviour, such as 'getting into a lot of trouble' (5%). Only 10% of Study Youth identify that their friends and those they spend time with are more likely to 'try to get away with things'. Only around 2% indicated that 'most of' or 'all of' their peers 'are mean to other kids' or 'have broken the law'. Geographical locality had no notable bearing on the ranking of negative peer behaviour.

Hearing about, understanding, and importance of key topics for Aboriginal and Torres Strait Islander peoples

With the Wave 13 interviews, older LSIC Study Youth were asked a series of three new questions designed to identify:

(1) how much they had heard about key topics for Aboriginal and Torres Strait Islander peoples

(2) how much they understood about those topics, and

(3) how important they considered those topics to be.

The key topics were Land rights; Water rights; Sea rights; Native titles; Treaty; Constitutional recognition and Reconciliation. Study Youth could express importance, understanding and how much they had heard as either 'a lot', 'some', 'a little', or 'none'.

The results for each question are presented in Tables 4, 5 and 6 for the combined rating of 'somewhat' or 'very important'.

Table 4 How much have you heard about…? , by remoteness

Percentage of Study Youths who responded 'some' or 'a lot'					
Key topic	**Total (All respondents)**	**Major cities**	**Inner regional areas**	**Outer regional areas**	**Remote/very remote areas**
Reconciliation	33%	34%	31%	31%	34%
Land rights	28%	25%	29%	39%	25%
Native title	23%	14%	23%	35%	34%
Treaty	15%	11%	20%	16%	11%
Constitutional recognition	14%	12%	22%	3%	11%

Water rights	11%	8%	14%	13%	7%
Sea rights	8%	3%	10%	16%	10%

Only those who had heard about these topics were asked about their level of understanding of the issues and how important they considered those issues.

Table 5 How much do you understand about…?, by remoteness

Percentage of Study Youths who responded 'some' or 'a lot'					
Key topic	**Total (All respondents)**	**Major cities**	**Inner regional areas**	**Outer regional areas**	**Remote/very remote areas**
Reconciliation	48%	47%	52%	53%	42%
Native title	42%	33%	43%	50%	50%
Land rights	42%	40%	42%	59%	30%
Sea rights	37%	36%	42%	44%	26%
Water rights	36%	36%	44%	31%	18%
Constitutional recognition	35%	38%	43%	22%	15%
Treaty	34%	32%	43%	23%	21%

Table 6 How important is/are….?, by remoteness

Percentage of Study Youths who responded 'somewhat'or 'very important'					
Key topic	**Total (All Respondents)**	**Major cities**	**Inner regional areas**	**Outer regional areas**	**Remote/very remote areas**
Land rights	93%	92%	88%	100%	100%
Water rights	91%	93%	88%	87%	100%
Sea rights	94%	95%	85%	100%	100%
Native title	93%	93%	85%	100%	100%
Treaty	95%	97%	89%	100%	100%

Constitutional recognition	94%	95%	89%	100%	100%
Reconciliation	94%	95%	89%	100%	100%

Of those who had heard about these topics, their understanding of the key identified issues was notably higher compared with what they had heard (see Tables 4 and 5). For example, while only one-third of the older Study Youth cohort indicated that they had heard some or a lot about reconciliation, nearly 50% of those who had heard about reconciliation indicated that that they had some or a lot of understanding of reconciliation (see Table 5).

There are notable regional variations around their reported level of understanding of the key identified issues. The greatest difference is around constitutional recognition. Only 15% of older Study Youth in remote/very remote areas reported some or a lot of understanding of constitutional recognition compared with 38% in major cities. Inversely, 50% of older Study Youth in remote/very remote areas reported having some or a lot of understanding about native title compared with 33% in major cities.

All older Study Youth in very remote/remote areas and around 90% of older Study Youth living in the other three areas deemed the key issues for Aboriginal and Torres Islander peoples as very important (see Table 6).

Thinking About the World

Main findings

While concerned, most Study Youth expressed low levels of worry about big issues like 'climate change', 'drought and running out of water', 'environmental issues (like extinction, pollution, air quality)' and 'housing issues'.

In Wave 13, for the first time Study Youth, parents and carers were asked separate questions about whether there were any big issues worrying them. Study Youth were presented with a list of the following big issues: 'climate change', 'drought and running out of water', 'environmental issues (like extinction, pollution, air quality)', 'housing issue', and 'other big issues'. Study Youth could express the degree to which those big issues were worrying them as either: 'very much', 'quite a bit', 'somewhat', 'a little bit', and 'not at all'.

Table 7 presents the Study Youth response rate to this question, showing the variation in the number of younger and older cohort Study Youth who responded to it. Figures 3 and 4 present the results.

Table 7 Response rate for each big issue and each measure

Issue	Younger cohort (total n=464)		Older cohort (total n=247)	
	Answered	Didn't know/Refused	Answered	Didn't know/Refused
Climate change	88%	12%	94%	6%
Drought and running out of water	91%	9%	96%	4%
Environmental issues (like extinction, population, air quality)	91%	9%	93%	7%
Housing issues	89%	11%	91%	9%
Other big issues	78%	22%	82%	18%

Figure 3 How worried are you about…?

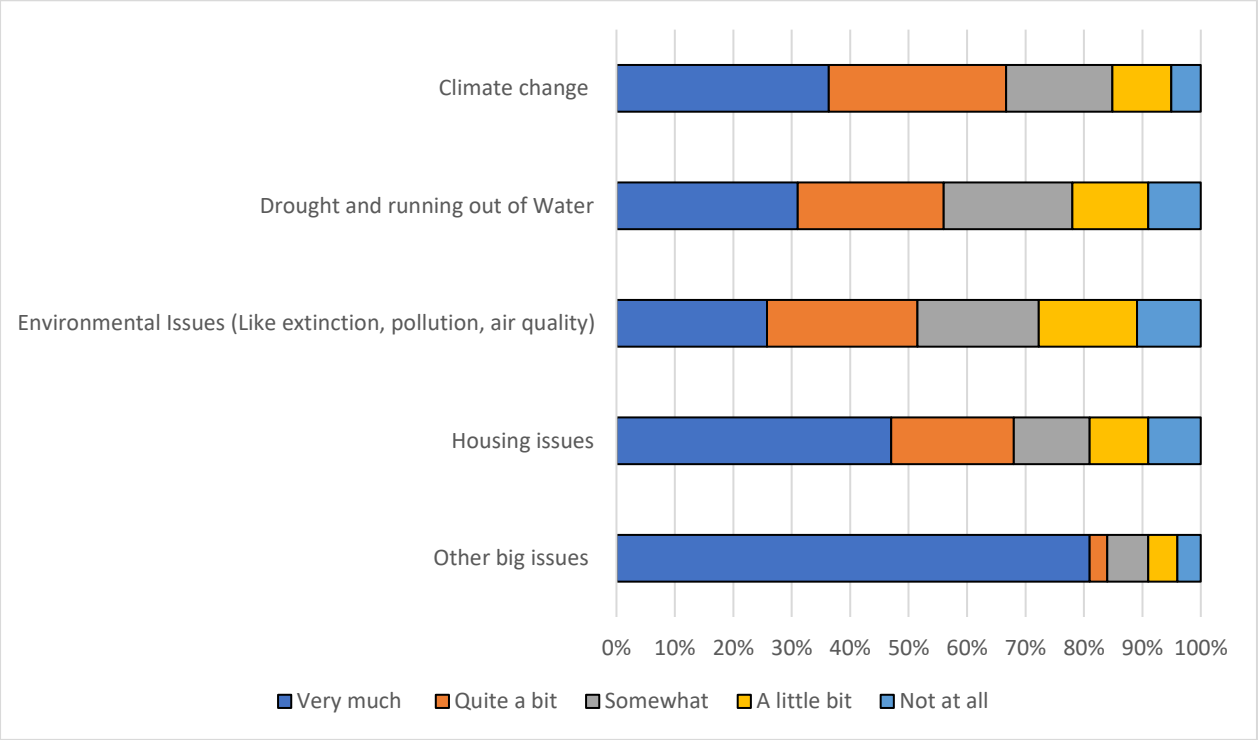
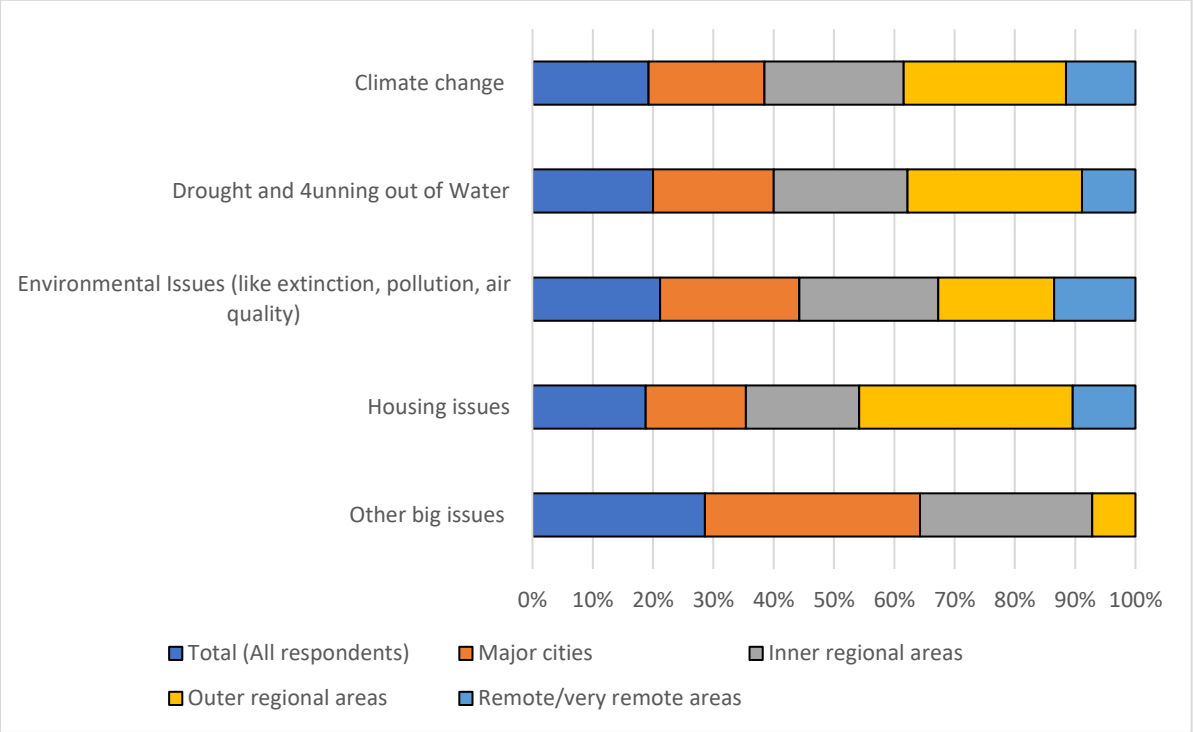
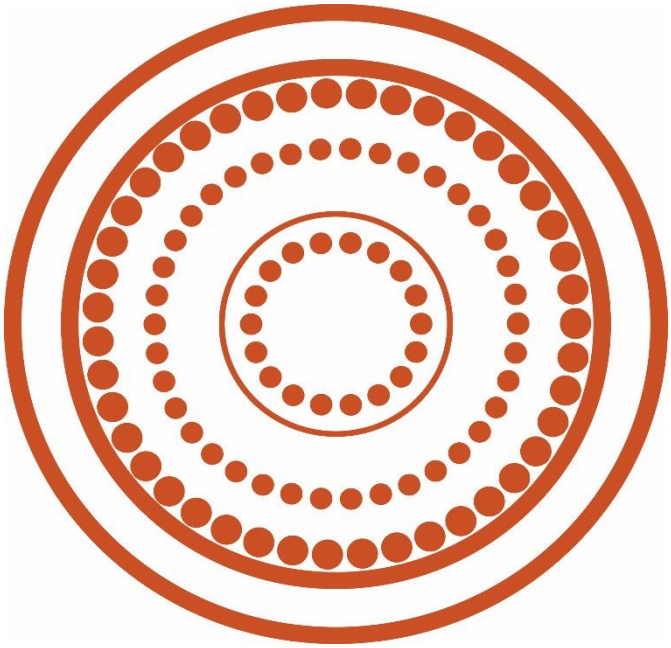


Figure 4 Regional breakdown of Study Youth who were worried 'quite a bit' or 'very much'

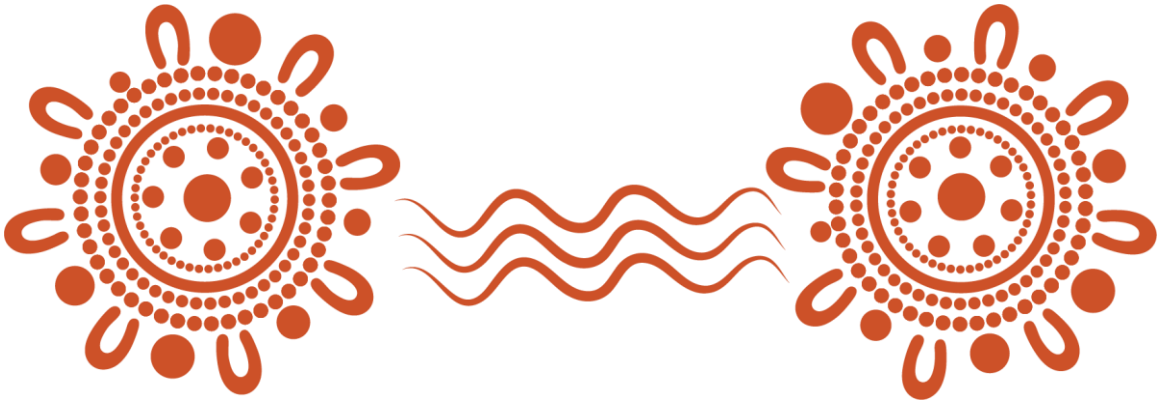


The percentage of Study Youth who worried 'quite a bit' or 'very much' about housing issues was more than the percentage worried 'quite a bit' or 'very much; about issues like drought and water scarcity, climate change, and other environmental issues. While around two-thirds of Study Youth were worried 'quite a bit' or 'a lot' about drought and water scarcity, climate change, and other environmental issues, only around 10% or less of Study Youth expressed high levels of worry (see Figure 3). Figure 4 shows that regional variation did not factor notably in determining whether Study Youth expressed high rates of concern for the key identified issues.

Study Youth were also asked 'Any other big issues worrying you?'. Their qualitative responses were short and to the point. COVID-19 was the major concern with over half (n=60) of 112 Study Youth who answered this question Worry about COVID-19 was followed by worry about racism (n= 18), bushfires (n=10). All other responses were individual specific.



Section B: Feature Articles



COVID-19 and Consequences for Study Youth, Families and Communities in 2020

Main findings

- COVID-19 had minimal direct health effects (in terms of infection and death) on Footprints in Time families.
- For many parents and carers of Footprints in Time Study Youth, there was increased family time and more earning opportunities and overall improvements in psychological health, employment, income and finances compared with pre-pandemic levels.
- In terms of COVID-19-induced remote learning, some Study Youth had positive experiences, such as less distraction from peers and increased focus on learning activities and less exposure to bullying behaviours while others had negative experiences, such as disconnection from peers and social network and lack of sufficient learning resources and support in the home.
- COVID-19 did disrupt access to food and other essential items, especially in regional and remote communities.

Introduction

Since Wave 13 was conducted during the COVID-19 pandemic crisis, several questions were included to obtain information about the social and economic impacts of the COVID-19 pandemic on Study Youth and their families. At the time of the interviews, COVID-19 lockdowns, restrictions, temporary school closures and remote learning, and economic packages had recently been and/or were in place across many parts of Australia. This article provides insights relating to the socioeconomic and other impacts of the COVID-19 pandemic on Study Youth and their families across a range of outcomes, including family life, community, health, education, employment, income and finance and access to essential supplies.

LSIC Wave 13 data provides a unique policy opportunity to understand how the COVID-19 pandemic affected Aboriginal and Torres Strait Islanders children and families because little is known about their key social and economic outcomes during the crisis. Most studies

conducted over the past three years to measure the impact of the pandemic have focused on the general Australian population (Borland & Charlton, 2020; Birch & Preston, 2021; Tomaszewski et al., 2023; Westrupp et al., 2023). The handful of studies that have examined COVID-19 impacts on Aboriginal and Torres Strait Islander people draw their analysis on pre-pandemic data (Dinku et al., 2020; Markham et al., 2020) or are very limited in scope (Fredericks & Bradfield, 2021; Gall et al., 2021; Dinku & Yap, 2023).

Data and methods

The article draws on data from responses to the following study questions.

Positive and community impacts

- 'Have any good things happened because of the Coronavirus pandemic (n=461)?'
- 'How have the Coronavirus and restrictions affected community (n=128)?'

Health

- Whether someone in the family was infected with the coronavirus.
- Whether someone in the family died because of coronavirus infection.
- Whether someone in the family was quarantined for contracting the coronavirus.
- Whether the Study Youth needed a dentist but did not see one because of the coronavirus.
- Kessler Psychological Distress Scale (K-5): The distress scores were computed from survey responses to a subset of five items in the Kessler Psychological Distress Scale-10 (K10), which is designed to assess levels of negative emotional states experienced by people in the four weeks prior to interview (Bougie et al., 2016). In Waves 12 and 13, parents and carers (P1s) were asked about how often in the last four weeks they felt: Nervous; Without hope; Restless or jumpy; That everything was an effort; So sad that nothing could cheer them up.[3] For each question, the response scale was provided as, None of the time; A little of the time; Some of the time; Most of the time; All of the time. 'Don't know' and 'Refused' were included as response options. A single measure was created by adding the value of selected options in the five items. The scores ranged from 5 to 25, where higher values indicate higher levels of distress, and lower values indicate lower levels of distress.

Education

- Whether the Study Youths' education changed after COVID-19 broke out.
- Qualitative responses to the question, 'How has your education been since the coronavirus? Good and bad.'
- Whether there are any subjects that the Study Youth had not been able to do that year because of the coronavirus.

[3] Information was collected on all the 10 Kessler items in Wave 12, but was reduced to the K5 from Wave 13 (see the rationale in Thurber et al., 2019).

Employment

Employment status of P1

Whether P1 or another carer of the Study Youth lost a job because of COVID-19.

Whether P1 or their partner (if any) were not in a paid work because of the coronavirus.

Whether P1's work changed due to the coronavirus.

Income and Finance

- Qualitative responses to the question, 'Have any good things happened because of the Coronavirus pandemic?' We focused on changes to income and financial circumstances.
- Financial stress/hardship: We used two different measures of financial stress/hardship for which longitudinal data were available to see how LSIC families fared before and after the coronavirus outbreak. The first construct measures experience of financial worry. Starting at Wave 1, P1 was also asked whether the family had serious worries about money in the last year, where responses were provided as 'yes' or 'no'. The second construct measures multi-item behavioural consequences of adverse financial circumstances. Starting from Wave 3, P1 was asked whether any of the following happened to them in the last 12 months because they were short of money.

    - Could not pay gas, electricity or telephone bills on time.
    - Could not pay the mortgage or rent payments in time.
    - Went without meals.
    - Were unable to heat or cool their home.
    - Pawned or sold something because they needed cash.
    - Sought assistance from a welfare organisation.
    - Child could not do school activities like excursion, camps.[4]

We used a single index that combines all the items. This is because the items sufficiently load onto a single factor (Eigenvalue=1.79; Cronbach's alpha= 0.71)[5], but also, for many of the items, the prevalence is too low to be analysed separately. A family was considered to be facing shortage of money if they experienced financial difficulties in relation to any of the items.

Access to essential supplies

[4] This item was not included in Wave 3.

[5] Using HILDA (Household, Income and Labour Dynamics in Australia) Survey, Butterworth & Crosier (2005) also show that a single latent factor can be derived using these items.

- Whether cost of food went up since the coronavirus pandemic.
- Whether groceries became more expensive since the coronavirus pandemic.
- Whether communities could not find essential goods since the coronavirus pandemic.

A mixed-methods analysis was used to analyse the impact of the COVID-19 pandemic. For the qualitative data, we conducted a qualitative summative content analysis. For the quantitative data, we conducted descriptive analyses to compute and describe frequencies, percentages, and averages. We also applied trend analyses to trend data on employment and financial stress. A panel data regression was fitted to psychological distress data to examine the statistical significance of overtime changes in mean of psychological distress scores. Data from free-text responses were thematically coded and analysed.

Results

The results section is divided into two parts. First, we summarise the short qualitative open-text responses to the two questions on 'whether any good things happened because of the Coronavirus pandemic' and 'how the coronavirus restrictions affected community'. Second, we analyse a range of results that provide insights into the socio-economic impacts at a specific time in the COVID-19 crisis.

Positive effects of the COVID-19 pandemic

There were 461 responses to the question 'Have any good things happened because of the COVID-19 pandemic?'. Corresponding with the interview period discussed above, the answers provided to this question focused on the lockdowns and restrictions that were implemented in Australia to manage the pandemic.

A summative qualitative coding of the short open-text responses provided by primary parents and carers identified six recurring themes (see Table 8). Examples of the open-text responses are provided in Box 2 verifying the six recurring themes. The responses provided from parents and carers to this question are clearly focused on the lockdowns and restrictions that were implemented in Australia to manage the pandemic.

Table 8 Themes emerging from summative qualitative content analysis of short open-text responses to question about whether anything positive happened during the coronavirus pandemic

Whether anything positive happened during the coronavirus pandemic	
Theme	Number
More time with family	221
Financial benefits	73
Capacity to work from home	18
Job-related benefits	27

Not really any benefits	25
Total	357

Nearly half of the responses identified ‘more time with family’ as a good outcome of the pandemic (n=221).

A high number of parents and carers identified financial benefits (n=73 or 20.4%) as a positive outcome, identifying that they were spending less money at the time and able to ‘save’, ‘pay bills’, ‘spend money on themselves’, ‘pay off debts’, and ‘manage their budgets better’. Of the 73, many referred to the positive impact of coronavirus stimulus packages aimed at remedying economic downturn, referring to the temporary increase in the payments for social assistance, such as the Coronavirus Supplement and JobKeeper Payment (n=22), while others referred to early release of superannuation (n=8). Some parents and carers identified flow-on effects from the identified financial benefits, such as capacity to purchase a large item, like a car, or to do small scale home renovations (n=7).

Twenty-seven parents and carers reported either gaining employment or an increase in hours worked. A small number identified the capacity to work from home as positive (n=18). Primary parents and carers also highlighted a diverse range of perceived positive impacts of COVID-19 restrictions for themselves and Study Youth, which could not be categorised beyond the broad theme of more time with family or major life events occurring during this period (n=87).

In a response to another question, ‘How have the Coronavirus and restrictions affected community?’, most primary parents and carers also highlighted positive impacts of the pandemic at the community level. In looking at the top two rows of Table 9, 52% of parents reported that communities got more family time and a further 19% reported that COVID-19 restrictions were good for Country.

Box 2 gives voice to a small sample of parents or carers who responded to the question of whether any positive things happened as a result of the COVID-19 pandemic.

Box 2. What parents or carers said were positive things that happened as a result of the COVID-19 pandemic

'Lot more family and be able to take a step back from everything and I like being at home.'

'Brought the family closer together, especially the kids. Home schooling opened my eyes as to where [Study Youth] is at with his learning.'

'More connected to family and more time in the day to talk to the kids about life and what going on with them it's good.'

'Access your superannuation.'

'Stimulus package, Job seeker allowance.'

'Covid-19 supplement.'

'Not running around after the kids. Saved a lot of money in petrol.'

'Bought a second hand car with financial increase due to Early Release of Super.'

'It's been good for the country - some respect - environment less carbon footprint, cleaner jobs, people have settled into this new way living.'

'Environment seems cleaner and healthier. Factories were closed during lock down so no pollution.'

Negative effects of the COVID-19 pandemic

Responses of primary parents and carers to the question, 'How have the Coronavirus and restrictions affected community?', show that COVID-19 and associated social restrictions also had negative effects on communities, see Table 9. The effects include communities being stressed (52%); not being able to access essential items (52%); high cost of food (59%); not being able to visit elders and overcrowding (8%). Parents/carers who chose the category 'other' were given the option to list specific effects via an open-text response. The majority of primary parents and carers gave specific personal answers that could not be thematically categorised (n=93). Those 'other' responses that could be categorised give some further insight into the effects of restrictions on community as follows: not being able to see friends (n=8) or family (n=7), the lack of community activities (n= 6), and no sports (n=9) (see Table 9). Six parents and carers reported that one of the effects of restrictions on community is that it caused anxiety among community members, particularly Elders.

Table 9 Impacts of COVID-19 on communities

Impact category	Number	%
More family time	422	57
It was good for country	142	19
Community stressed	397	52

Can't see Elders	316	43
Overcrowding	59	8
Cost of food went up	425	59
Can't get essentials like toilet paper and flour	396	53
Other	128	17
No change	85	11

Box 3 presents a small sample of responses identifying the effects of restrictions on community.

Box 3. What parents and carers say were the effects of restrictions on community

'We could not travel to other communities.'

'Community events ceased.'

'No community sport.'

'Missing all the get-togethers and seeing people.'

Effects on health

We begin by exploring the direct health impacts of the COVID-19 pandemic. Of the 755 parents and carers interviewed, 21 (3%) reported that someone in the family contracted COVID-19 and 112 (15%) reported that someone in the family was quarantined for being suspected of having COVID-19. Almost all infected persons isolated and recovered at home, and no one passed away.

Evidence at the population level shows that the direct health impacts of COVID-19 were not as severe for Aboriginal and Torres Strait Islander people compared to the rest of the Australian population. While accounting for 3% of the Australian population and facing multiple exacerbating issues such as morbidity, overcrowding, and poor access to health services, Aboriginal and Torres Strait Islander peoples had only 171 COVID-19 cases over the period January 2020 to June 2021, equivalent to less 1% of the total cases in Australia during that time (Australian Institute of Health and Welfare [AIHW], 2022). Dudgeon et al. note that no coronavirus-related death was reported for Aboriginal and Torres Strait Islander people in the first year of the pandemic crisis (2021, p. 486). Over the year to May 2022, coronavirus infections for Indigenous Australians only accounted for 3% of the total confirmed cases in Australia (National Interoperable Notifiable Diseases Surveillance System, 2022 cited in AIHW, 2022).

Although Aboriginal and Torres Strait Islander peoples saw low rates of coronavirus infections, there were serious concerns about adverse health risks for two main reasons. First, the growing COVID-19 cases across the general population put heightened pressure on the healthcare system, which made it difficult for Aboriginal and Torres Strait Islander persons to access regular health services. Some Indigenous people also avoided health services for fear of contracting the virus (Allan et al., 2022). Second, as well as growing concerns about contracting the coronavirus, government-induced emergency mandates were distressful as they caused disconnection from social and cultural interactions (AIHW, 2022).

Evidence for the general Indigenous population shows a substantial reduction in health service utilisation, especially in the first three months of the pandemic crisis. The number of health checks dropped by about 17%; the number of presentations to emergency departments shrank by 10%; the number of hospitalisations was lower by 10%; and the number of elective surgeries fell by 31% between March and June 2020 compared with the same period in 2019 (AIHW, 2021). LSIC data also show that the pandemic impacted health service utilisation. A total of 56 Study Youth needed a dentist but did not see one, of whom 37 (66%) did not get the service they needed due to the COVID-19 pandemic. However, the LSIC data does not provide further insights into how the virus affected service utilisation, whether services were unavailable/inaccessible, such as, due to lockdowns or travel restrictions, or whether they were avoided for fear of contracting COVID-19.

The pandemic outbreak was associated with high psychological distress for the general Australian population. There was an overall increase both in the percentage of people with a high/very high level of psychological distress and in the average psychological distress score compared with pre-pandemic levels, especially during early periods of the pandemic crisis and among young people (Australian Bureau of Statistics [ABS], 2021a; Biddle & Gray, 2021). As to the Aboriginal and Torres Strait Islander population, while it remains unclear how psychological health changed with the outbreak of the pandemic crisis, findings from LSIC data contradict the evidence for the general population at least for the latter half of the first year of the pandemic.

We noted that parents and carers experienced decreased levels of psychological distress during the COVID-19 outbreak. Figure 5 shows average psychological distress scores among 657 P1s who were interviewed both at Waves 12 and 13. Results are presented for the whole sample across Australia and by remoteness. The average score for all the 657 P1s was 8.2 in Wave 12 compared with 7.2 in Wave 13.[6] The score also decreased across all remoteness localities, with the biggest reduction in outer regional areas.

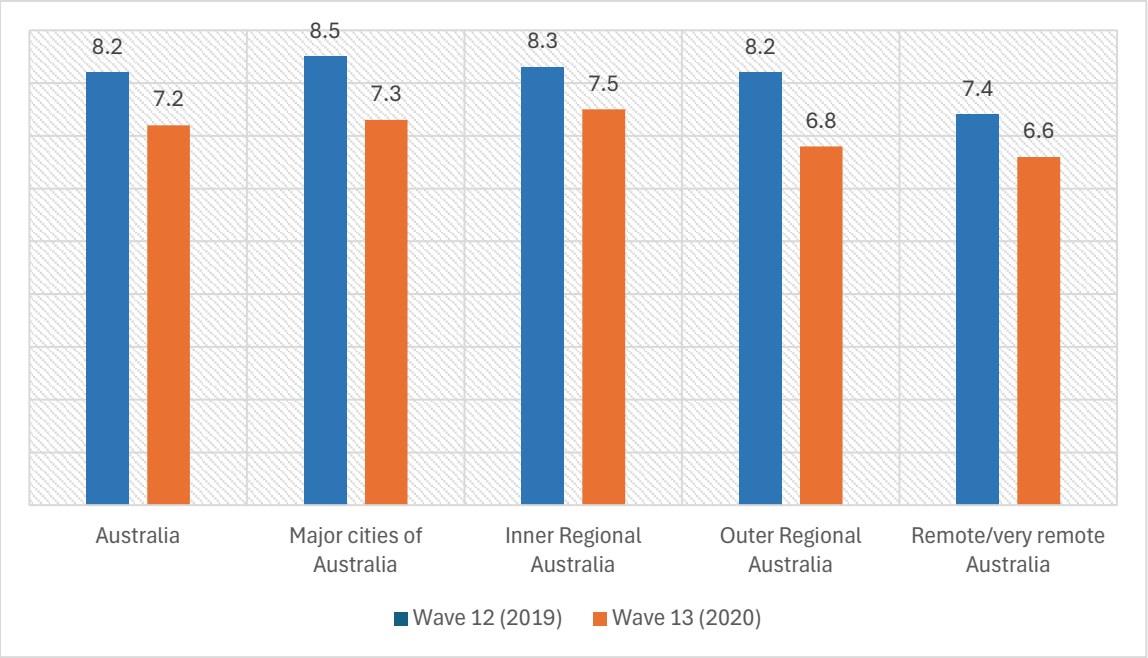
Study Youth saw improvement in their wellbeing between 2019 and 2020. Among Study Youth present in both Wave 12 and Wave 13, the proportion who reported no problems or stresses in their life was 29% in 2019 but doubled to 58% in 2020. Similarly, around 25% were not coping or coping only a little in 2019, but that dropped to around 5% in 2020. The

[6] For the Study Youth, the average score in Wave 13 was 7.0. Unfortunately, there were not Kessler measurements in Wave 12 to compare overtime changes.

proportion of Study Youth who 'agreed/strongly agreed' that they are happy also increased between 2019 and 2020 from 79% to 90%.

The findings seem at odds with prior expectations, given the unprecedented level of disruptions caused by the pandemic to all aspects of life and the ongoing disadvantages that Aboriginal and Torres Strait Islander families (including those who participate in LSIC) face. While fully understanding that the impact of the pandemic on psychological distress warrants further investigations, the findings in this article perhaps indicate psychological health improvements associated with increased family bonding and improved financial conditions (see Table 8; Box 2). Many LSIC families reported spending more time together, earning more income and saving more during the pandemic (discussed in more detail in succeeding sections).

Figure 5 Average psychological distress scores (P1)



Effects on education

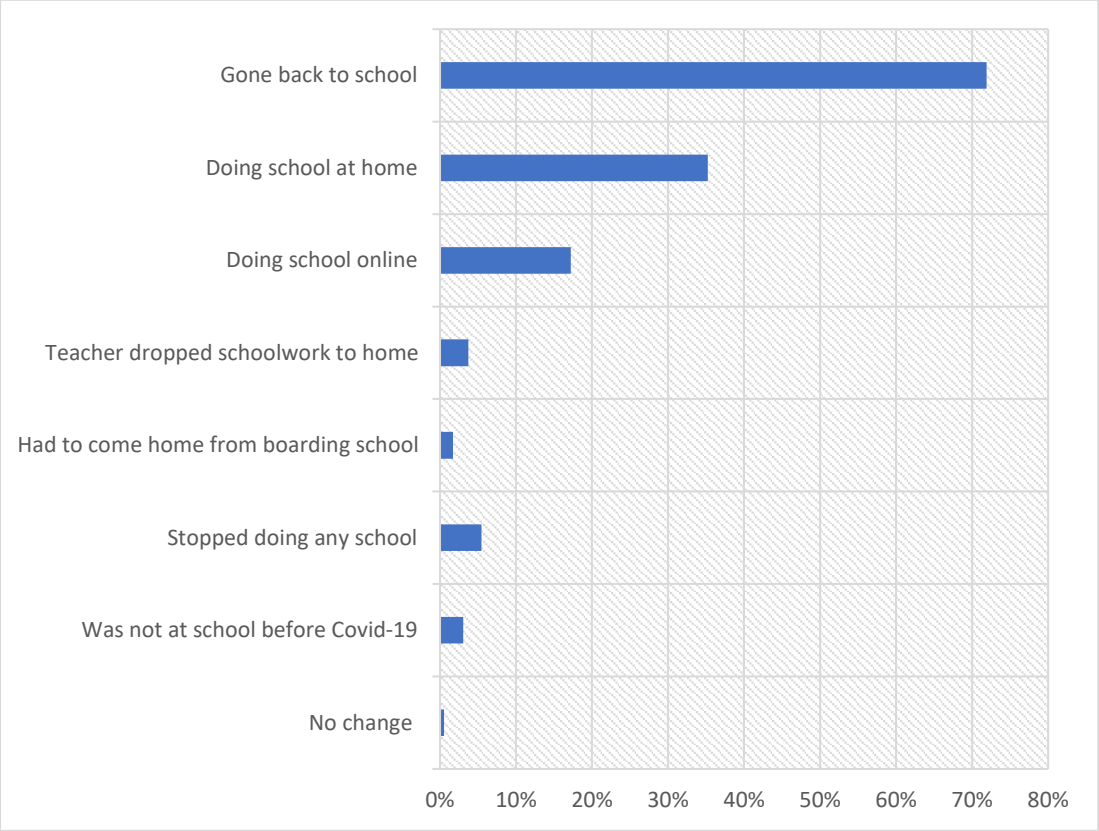
The outbreak of COVID-19 affected educational activities across Australia. Part of the national effort to contain the spread of the virus involved school closures and transition into remote learning for many students. Some students, especially in disadvantaged and remote communities, struggled to catch up with the new learning arrangements due mainly to a lack of reliable access to digital resources (computers and internet), lack of suitable physical spaces and lack of sufficient familial support (Brown et al., 2020; The Smith Family, 2020). School closures also resulted in disconnections from school-based activities and services, e.g., socialisation and school meals that are vital for learning and development (Markham et al., 2020; Goldfeld et al., 2022). There were serious concerns that the adverse impacts of COVID-19 on education would be exacerbated for Aboriginal and Torres Strait Islander

students due to inadequate digital infrastructure and less well-resourced home-learning environments (Markham et al., 2020; Moodie et al., 2021; World Vision & The Australian Literacy and Numeracy Foundation, 2020).

Though it is difficult to associate the changes with COVID-19 directly, evidence shows that the percentage of Aboriginal and Torres Strait Islander young people aged 15–19 years studying full-time dropped from 83.1 to 71.1 between 2019 and 2020 (Tiller et al., 2020). Further, a youth survey conducted in 2021 and included a sample of 952 Aboriginal and Torres Strait Islanders aged 15–19 years showed that 62.3% of Aboriginal and Torres Strait Islander youth indicated that their education was negatively impacted by COVID-19 (Filla et al., 2021).

LSIC data confirms that the pandemic has impacted education in various ways. P1s were asked whether the Study Youths' education had changed after COVID-19 broke out. Figure 6 presents a summary of their responses. Almost all parents reported some change, with those who reported 'no change' being less than 1%. Though an overwhelming majority of P1s (72%) reported that the Study Youth had gone back to school at the time of the survey, the top three pandemic-induced changes were: doing school at home (35.2%), doing school online (17.2%) and stopped doing any school (5.4%). In addition, some Study Youth's teachers dropped schoolwork at home, while others had to come home from boarding school. Finally, it is worth noting that none of the Study Youth who participated in Wave 13 did home-schooling in previous waves. Thus, it is highly likely that the pandemic was the major factor for a large number of the Study Youth to transition into staying at home during normal school hours.

Figure 6 Changes to education post-COVID-19 (multiple response question)



Note: No change is a derived variable.

Study Youth were also asked open-ended questions about how their education had changed since COVID-19 and whether there were any subjects they were unable to do because of the pandemic. Unlike the quantitative evidence, qualitative responses reveal that remote learning was a mixed experience. Of 642 youth interviewed, 37.1% reported positive experiences, 35.5% reported negative experiences, and the rest reported both negative and positive experiences. For those who reported positive experiences, the pandemic-induced transition into remote learning created a safer and better learning environment, such as fewer distractions from peers and increased focus on learning activities, flexible learning programs, greater opportunity to relax and catch up with family, and less exposure to bullying behaviours. Some of them also reported that their grades improved during the periods of online learning.

For Study Youth who reported negative experiences, the transition into online learning presented enormous challenges, such as disconnection from peers and social networks, reduced access to school-based support services, lack of sufficient learning resources and support in the home, and difficulty navigating digital technologies and online content. We have also noted that 149 (23%) of the 642 Study Youth interviewed reported that the pandemic prevented them from doing some of the subjects they were interested in learning. Physical education-sports (46.5 %), the arts (including music, dance, graphic design, and photography) (30.1%), and cooking (16.2%) were the top three subjects that students could not do because of the coronavirus. For some students, the transition into remote learning adversely impacted their grades. However, the propensity of reporting a

negative or positive educational experience during school closures was not significantly associated with key demographic, socioeconomic and geographic characteristics.
For more insights, examples of the qualitative responses are provided in Boxes 4 and 5.

Box 4. What Study Youth say were their positive educational experiences

'Did home-schooling via online. It was nice because I could sleep.'

'Good because more time to focus on my education.'

'Online schooling was good but bad when I went back due to bullying.'

'Been ok, was given work to do at home, had support from mum and we could phone the school if we needed to.'

'It has been pretty good; I haven't really been affected by doing schoolwork at home. I received a Principal's Award.'

Box 5. What Study Youth say were their negative educational experiences

'A little harder trying to work out how to use the computer.'

'Hard during lockdown as didn't know a lot of content. Now back at school catching up.'

'I missed seeing my friends.'

'I didn't like doing work from home, it was hard, could not concentrate, there was no help from the school.'
'My grade has gone down a little, online schooling was hard. I have to have a teacher to learn.'

Effects on employment

During the early stages of the pandemic crisis, emergency lockdowns and social restrictions halted business activities across several industries and resulted in dramatic upheavals in the labour market. For instance, between March and April 2020 an estimated 2.7 million people lost their jobs or saw their hours reduced for economic reasons (ABS, 2020a). It became

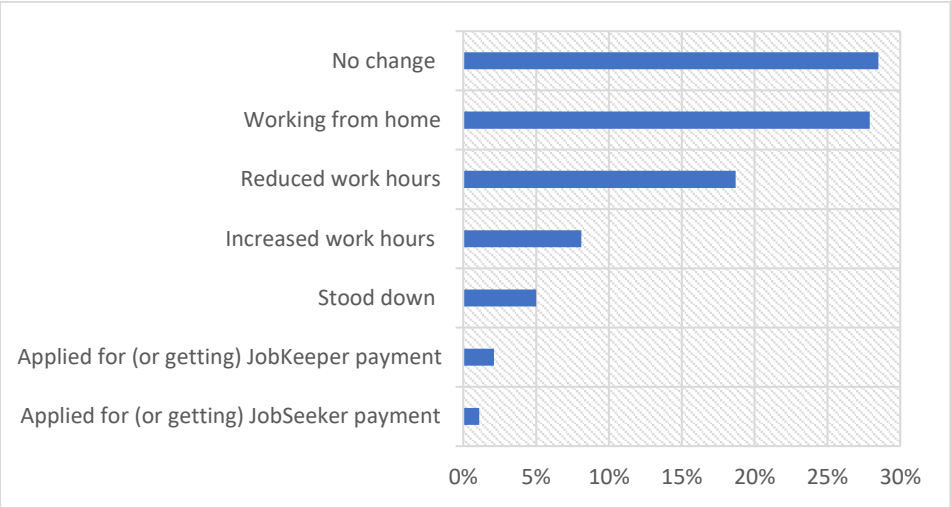
clear that Aboriginal and Torres Strait Islander peoples would be particularly impacted by the pandemic-induced labour market crisis. Pre-pandemic data show that they were over-represented among the unemployed who were having to make the transition to employment during a labour market crisis when new job openings were scarce (Dinku et al., 2020; Markham et al., 2020). The Aboriginal and Torres Strait Islander workforce also was concentrated in low-skill sectors and casual jobs which were most affected by the pandemic crisis (Dinku et al., 2020).

However, despite extensive research on the labour market impact of the pandemic crisis for the general Australian population (Birch & Preston, 2021; Borland, 2020; Borland & Charlton, 2020; Churchill, 2021; Risse & Jackson, 2021), it remains less clear as to how the Indigenous labour market survived through the early periods of the COVID-19 crisis. A lack of any Indigenous-specific official statistics collected during the early stages of the pandemic crisis made it difficult to understand the situation.[7] Apart from Dinku et al.'s speculative analysis, there is little evidence that shows how Indigenous employment fared after the outbreak of the pandemic. Using longitudinal data for a cohort of Aboriginal and Torres Strait young people, Dinku and Yap (2022) show that the pandemic did not result in a significant change in employment status; instead, it slowed down the transition into employment. A much lower proportion of young people transitioned from being non-employed to being employed between 2019 and 2020 (32–42%) compared with between 2018 and 2019 (43–60%).

LSIC provides another data source to better understand the employment impacts of the pandemic. Its longitudinal data provide a unique opportunity to examine overtime changes in employment within and between individuals. More importantly, P1s were asked in Wave 13 whether they or another carer of Study Youth had lost a job due to the COVID-19 pandemic. In addition, P1s who were employed at the time of the survey were asked if their job had changed because of the virus, while those who were not employed at that time were asked if COVID-19 was the main reason for being non-employed. P1s with a non-employed partner also, were asked if the virus was the main reason for non-employment.

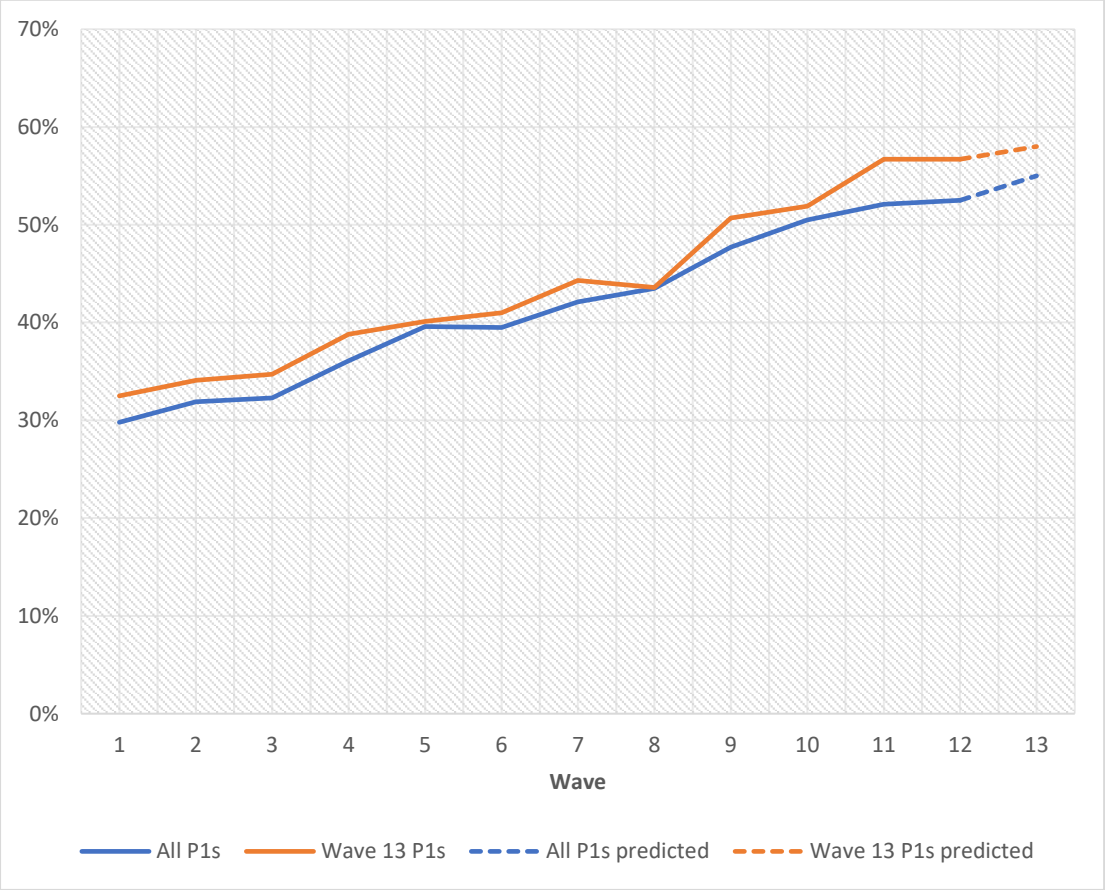
[7] The last Indigenous health survey was collected in 2018–19. The 2021 Census was also conducted between July and September 2021, during which restrictions were lifted, businesses reopened, and the labour market set on a recovery across a large part of Australia.

Figure 7 COVID-19-induced employment changes (P1)



COVID-19 impacted employment in various ways. While some lost their job, others saw their hours reduced/increased, were temporarily stood down or had to work from home. More specifically, 97 of the 755 P1s reported that either they or someone caring for the Study Youth lost a job over the last year due to COVID-19. More specifically, 10 P1s reported that they had lost their job due to the COVID-19 pandemic. Figure 7 presents data on COVID-19-induced changes to employment for 379 P1s who were in paid jobs during the survey. Of the 379 P1s, 29% did not experience any changes to their employment, 28% worked from home, 19% worked less than their usual hours, 8% worked more than their usual hours, 5% were stood down and less than 5% reported applying (or receiving) JobKeeper and JobSeeker payments. Though data is not available on the extent of reduction/increase in work hours, the proportion of P1s who lost their hours is much larger than those who got additional work hours. The increase in work hours among some P1s indicates that the employment impacts of the pandemic were not the same for everyone. It is likely that the P1s whose work hours increased worked in industries that saw expansion in business activities during the pandemic (e.g., Food Retailing; Healthcare and Social Services; and Electricity, Gas, Water and Waste Services), whereas those P1s whose work hours dropped or those who were stood down worked in industries hardest hit by the crisis (e.g., Food and Beverage; Creative and Performing Arts Activities; and Sports and Recreation Activities) (Dinku et al., 2020; ABS, 2020b).

Figure 8 Percentage of P1s in employment



A trend analysis of LSIC employment data collected at multiple time points shows that the percentage of P1s with a paid job increased over time without any interruption by the pandemic crisis. Figure 8 presents actual employment data along with linear trend lines for all P1s who were interviewed at different LSIC waves and only for P1s who were interviewed in Wave 13. For both groups, actual employment rates in Wave 13 are higher than linearly predicted rates using employment data for the previous 12 waves. In Wave 13, the actual employment rate is 59%, whereas the predicted employment rate is 56% for all P1s (including the non-Indigenous parents: 24.5% in Wave 13).The percentages of P1 who remained employed and those who transitioned from non-employment into employment were larger between Waves 12 and 13 than between Waves 11 and 12, Table 10. Post-pandemic employment transition rates were also higher across all remoteness areas, Table 11. Inner regional areas, followed by regional areas, saw the highest increment in employment transition rates, while major cities saw the lowest increment.

Table 10 Inter-survey employment transitions (in %)

		Wave 13	
		Employed	Non-employed
Wave 12	Employed	85	15
	Non-employed	29	71

		Wave 12	
		Employed	Non-employed
Wave 11	Employed	84	16
	Non-employed	18	82

The improved employment prospects for P1s are at odds with employment trends for the general population. For instance, from June to December 2020, during which LSIC's Wave 13 was conducted, the average employment-to-population ratio was lower by 1.9 points compared with the ratio during the same period in 2019 (ABS, 2020c). In contrast, the percentage of P1s in employment increased by 2.5 points between Wave 12 and Wave 13 for P1s interviewed in Wave 13. It is worth noting, however, that the results do not necessarily contradict the overall trend for the general Aboriginal and Torres Strait Islander population. For example, census data shows that the employment-to-population ratio for Aboriginal and Torres Strait Islanders aged 15–64 increased from 47% to 52% between 2016 and 2021 (ABS, 2016 & 2021b). While LSIC data for Wave 14, which corresponds to 2021, is yet to be released, Figure 8 shows that the employment rate had picked up from 51% in Wave 9 (conducted in 2016) to 59% in Wave 13 (conducted in 2020).

Table 11 Inter-survey transitions from non-employed to employed by remoteness (in %)

Remoteness category	**Waves 11–12**	**Waves 12–13**
Australia-wide	18	29
Major Cities of Australia	20	23
Inner Regional Australia	17	36
Outer Regional Australia	11	26
Remote/very remote Australia	24	31

Effects on income and finance

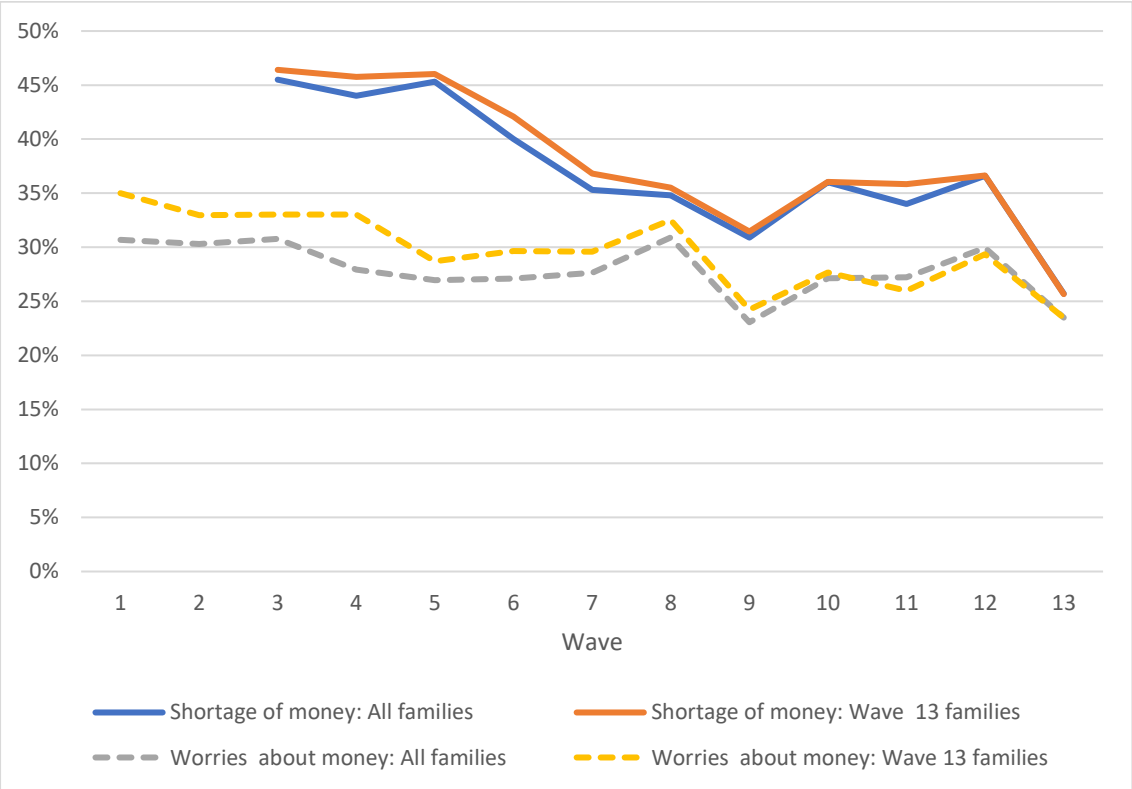
There were concerns that individuals and families would suffer income loss and financial hardship because of business shutdowns and loss of jobs that followed the emergency lockdowns and restrictions around Australia. In particular, Aboriginal and Torres Strait Islander families were expected to be among the most affected by the crisis due to ongoing economic disadvantage (Dinku et al., 2020; Markham et al., 2020). Among the general

population, total household earnings from wages (salaries) and unincorporated businesses dropped by AUD14.2 billion and AUD2.8 billion, respectively, between April and June 2020 only. However, the reduction in household income was far outweighed by cash flows from government stimulus packages and payments, which included early superannuation withdrawals, JobKeeper payments and JobSeeker Coronavirus Supplement payments (Borland & Charlton, 2020).

While the empirical evidence about the income (financial) impact of the pandemic crisis for the general Aboriginal and Torres Strait Islander population remains scant, data from LSIC's Wave 13 provide some insights into the issue. Qualitative responses to the question, 'Have any good things happened because of the Coronavirus pandemic?' suggest that the pandemic had caused a significant but positive impact on survey participants' income and financial security. For example, some LSIC participants earned more income from working extra hours during the pandemic, while others saved money from reduced travel costs and holiday expenses. Further, while there is a broad consensus that Aboriginal and Torres Strait Islander families have financial difficulties under the Australian welfare payment system (Altman & Sanders, 2018; Hunter, 2004), ironically, qualitative responses show that the COVID-19-induced economic stimulus packages and the temporary increases in welfare payments led to higher income and better financial circumstance for many LSIC participants.

For more insights, some examples are provided from the qualitative responses to the question, 'Have any good things happened because of the Coronavirus pandemic?' in Box 2.

Figure 9 Prevalence of financial stress/hardship



Quantitative data also suggest that LSIC families were much less likely to experience financial stress/hardship in Wave 13 than in the previous waves. Figure 9 presents the percentage of families with financial stress at different waves. Results are presented for all LSIC families interviewed at different waves and only for those families interviewed in Wave 13. We have noted an overall downward trend in the prevalence rates of financial stress, where the percentage of families with financial stress in Wave 13 is the lowest; this is true across the two measures and groups of P1s.

Figure 10 Inter-survey difference in the prevalence of shortage of money

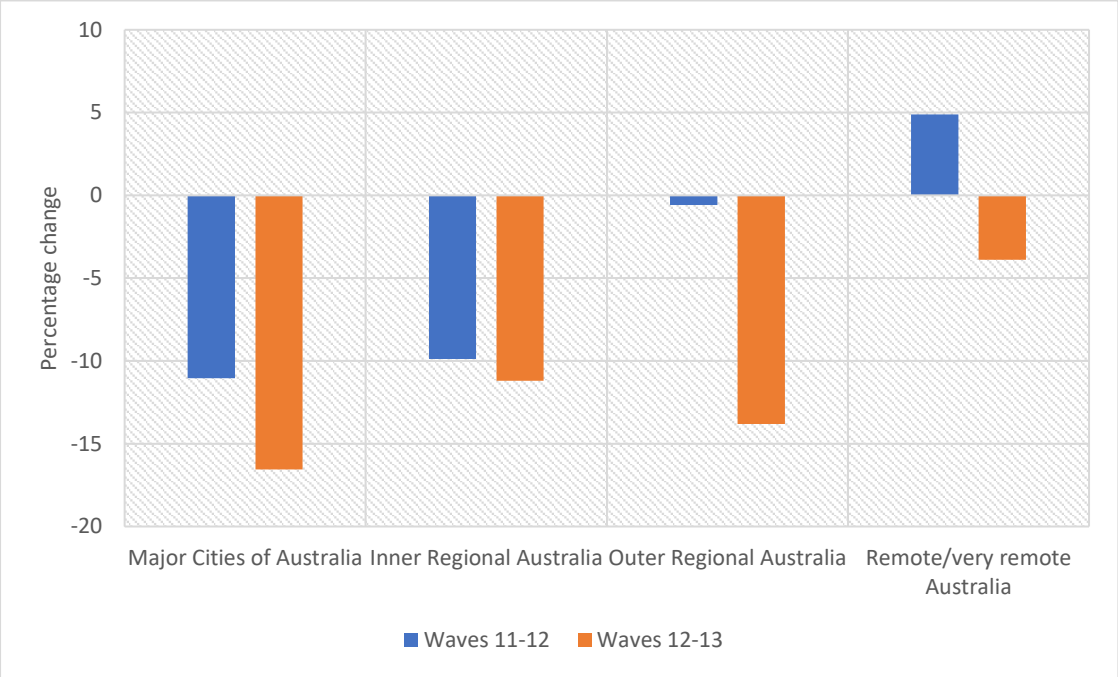
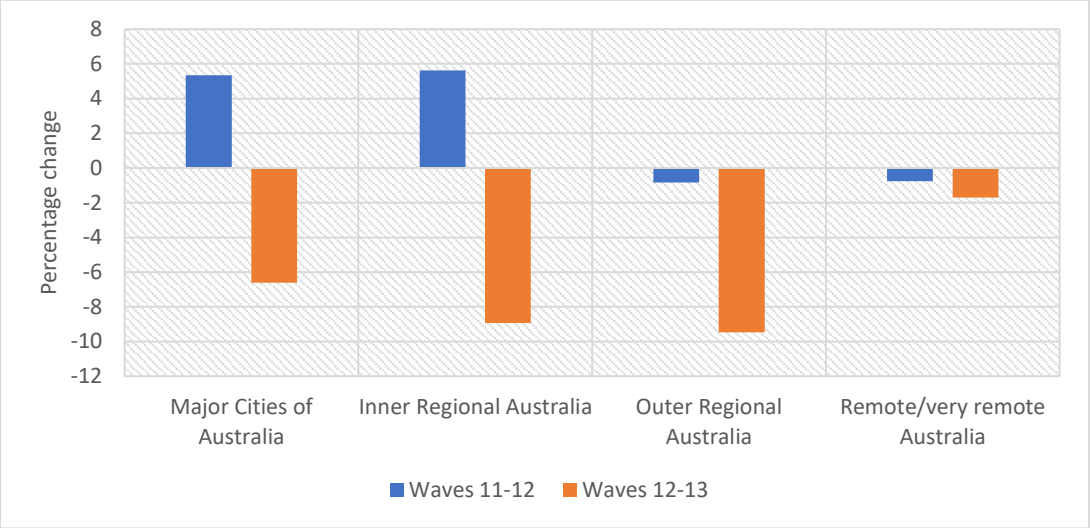


Figure 10 presents inter-survey changes in the prevalence of financial stress for different remoteness areas. Between Waves 11 and 12, the percentage of families who experienced shortage of money significantly decreased in major cities and inner regional areas, only slightly decreased in outer regional areas and increased in remote/very remote areas (by 5 percentage points). Major cities saw the largest reduction. The percentage also dropped between Waves 12 and 13, including in remote/very remote areas. However, the rate of reduction was higher in major cities than elsewhere; remote /very remote areas saw the lowest reduction. For all the remoteness areas, the reductions in the prevalence of shortage of money are higher between Waves 12 and 13 than between Waves 11 and 12. The results in Figure 11 show a more heterogeneous picture of inter-survey changes in the prevalence of financial stress. Between Waves 11 and 12, the proportion of families with serious worries about money increased in major cities and inner regions while slightly decreasing in outer regional areas and remote/very remote areas. Between Waves 12 and 13, the percentage dropped across all the areas, despite at different rates. Outer regional areas, followed by inner regional areas, saw the largest fall in the percentage of families with serious worries about money.

Figure 11 Inter-survey difference in the prevalence of worries about money



Effects on access to essential supplies

Access to essential supplies, such as food and toilet paper, became a major issue following the outbreak of the pandemic. Government-imposed public health emergency rules posed unprecedented threats to livelihood sources for individuals and families and undermined their ability to make ends meet, but also disrupted supply chains for essential goods and made them less accessible to households (Hobbs, 2020; Van Barneveld et al., 2020). During the early periods of the pandemic crisis, panic buying and stockpiling behaviours were also major contributing factors to a quick and unexpected depletion of essential items from stores and supermarkets (Louie et al., 2022; Smith, 2020). In remote communities, returnees from major cities and regional areas also put pressure on local stores (Fredericks & Bradfield, 2021).

Empirical evidence shows that, whilst affecting most Aboriginal and Torres Strait Islander communities across Australia, pandemic-induced supply chain disruptions were particularly worse in remote communities. For example, in the community of Walgett in New South Wales, the community store only received 26% of its ordered stock amidst the pandemic (Fredericks & Bradfield, 2021). The 'Report on Food Pricing and Food Security in Remote Indigenous Communities', released in December 2020 by the Standing Committee on Indigenous Affairs, shows that a community store in Gununa, Queensland, featured the following notice for at least three months to inform its customers about the dire shortage of essential items:

> Due to the coronavirus, many items in the shop are temporary not available. That means that when we do an order ½ (half) of what we order does not come in on the barge. This will continue until the end of June. We will do what we can to get as much as we can for the community (Standing Committee on Indigenous Affairs, 2020, p. 59).

The Committee also found that food prices increased in many remote communities during the pandemic due mainly to increased difficulties in doing business.

Table 12 summarises data from LSIC's Wave 13 about the experiences of families and communities in relation to access to food and other essential items. Of the 755 P1s who were interviewed, 58% reported an increase in the cost of food, 67% reported an increase in the price of groceries (that includes household essentials other than food), and a further 54% reported that they could not find essential items because of COVID-19. Disaggregating the results by geographic remoteness shows heterogeneity in prevalence rates. The proportions of P1s who reported an increase in the cost of food and price of groceries are highest in remote/very remote areas and lowest in major cities and outer regional areas, respectively. On the other hand, the proportion of P1s who could not find essential goods in the market is highest in outer regional areas and remote/very remote areas and lowest in major cities. Qualitative data suggest that spending on groceries increased due to increased spells of home cooking and panic-buying during the lockdowns, and lack of access was particularly bad in the case of fresh fruits and veggies.

Table 12 COVID-19 and access to essential supplies (in %)

Access category	Total (all respondents)	Major cities of Australia	Inner regional Australia	Outer regional Australia	Remote/very remote Australia
Cost of food went up	58	54	59	56	74
Groceries became more expensive	67	66	69	62	76
Could not find essential goods	54	52	55	60	60

Conclusion

Though initially declared as a health crisis, the COVID-19 pandemic has adversely affected societies across several aspects of life, such as socialisation, employment, education, and service utilisation, due mainly to the introduction of mandatory lockdowns and restrictions to contain the spread of the virus. While the detrimental effects of the pandemic were felt across the Australian society, it came into sharp focus that they would be particularly exacerbated for Aboriginal and Torres Strait Islander peoples and families as they were already facing multiple challenges, such as high rates of chronic disease, poor access to health and sanitation facilities, overcrowding and poor labour market engagement. In addition, lockdowns and restrictions also mean that Aboriginal and Torres Strait Islander peoples would be disconnected from kinship, extended family, country, and cultural practices, thus adversely impacting their well-being.

This article draws upon quantitative and qualitative data from LSIC to examine how individuals and families participating in LSIC fared through the pandemic crisis in terms of health, education, employment, income and finance, and access to essential supplies. We have noted that, against all odds, the pandemic has caused less adverse impacts on health,

education, employment and income and finance among the study participants. Although the current study did not attempt to establish any causal relationship, we have noted substantial group-level improvements in psychological health, employment, and financial security in the wake of the pandemic crisis. While the results suggest that families and communities have shown tremendous resilience during the pandemic crisis, it is worth noting that some individuals suffered adverse ramifications. Delving beneath the aggregate improvements reveals that some individuals were infected with the virus, missed much-needed health services, struggled with remote learning, lost jobs/hours and found it hard to make ends meet due to the COVID-19 pandemic. Most of the study participants and their communities faced difficulties accessing essential goods, including food items, due to increased prices and limited availability in the market; problems were most prevalent in remote communities.

The Wave 13 LSIC survey was conducted amid the pandemic crisis (from June to December 2020), and the findings in this study only show immediate (short-term) impacts of COVID-19. It may take several years to fully understand the long-term impact of the pandemic crisis, especially in the context of broader social and economic outcomes, including mental health and educational attainment. It is crucial, therefore, that:

- Future research focuses on a nuanced understanding of the long-term impacts of the pandemic crisis and identifying future support needs.
- Governments and service providers consider unique and varying experiences of individuals and families while developing and coordinating recovery efforts and undertake short-term recovery responses with an eye to the future.

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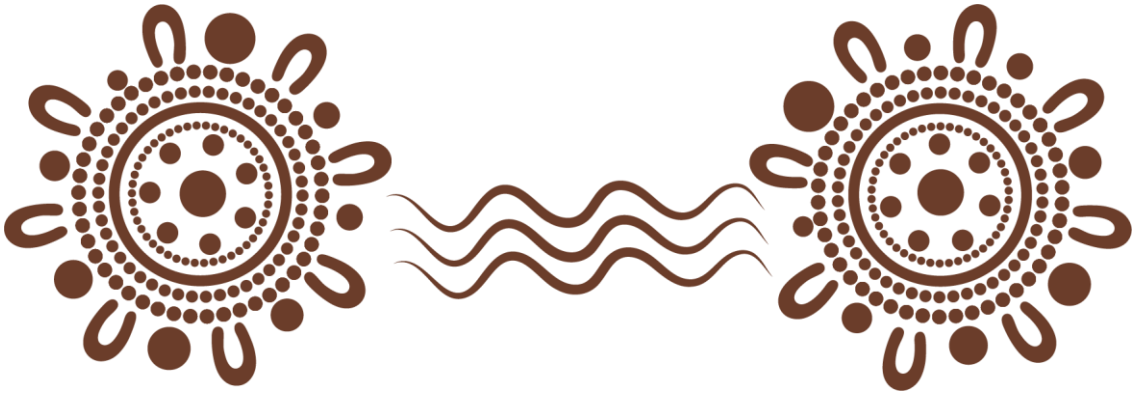


Wellbeing and Financial Hardship

Main findings

- Financial hardship was significantly associated with lower wellbeing for Study Youth and their parents/carers.
- The more frequently financial hardship events occurred, the greater threat to wellbeing they posed.
- Financial hardship affected parents'/carers' wellbeing more strongly than Study Youth's wellbeing.
- Financial hardship affected Study Youth's wellbeing partly through heighted psychological distress of parents/carers.

Introduction

Aboriginal and Torres Strait Islander peoples' wellness encompasses a balance between physical, mental, emotional, spiritual, cultural, social and economic domains of life (Loban, 2011), where financial security is considered a key underlying factor for individuals' and families' positive functioning and resilience (Australian Institute of Health and Welfare, 2009; Kelly et al., 2009; Loban, 2011; Walker & Shepherd, 2008). Unfortunately, Aboriginal and Torres Strait Islander peoples have long been subject to economic and financial disadvantages due to the historical dispossession of lands and resources as well as ongoing exclusion from the market economy (Altman, 2000; Hunter et al., 2022). A survey in 2019 showed that, compared with the general Australian population, Aboriginal and Torres Strait Islander peoples are less likely to say they have savings (44% versus 81%), less likely to have access to $2,000 during an emergency (40% versus 80%) and more likely to experience severe or high financial stress (49% versus 10%) (Weier et al., 2019).

There is a growing body of research that suggests financial hardship/stress is detrimental to children and young people (see, e.g., Edwards et al., 2009; Masarik & Cogner, 2017; Neppl et al., 2016; Webb et al., 2018; Yu et al., 2020). It limits parents' ability to invest in their children's material needs, such as nutritious food, safe housing and quality education (Conger & Donnellan, 2007; Conger et al., 2010). Financial hardship also depletes the

emotional and relational resources parents need to support positive socioemotional functioning in their children. For parents, juggling meagre resources and cutting back on basic expenses can be distressing and disrupt their parenting practice (Edwards et al., 2009; Lee et al., 2013; Kwon & Wickrama, 2014). Parents experiencing greater distress levels may have less capacity to respond to the developmental needs of their children, such as spending less time with their children (Iruka, LaForett & Odom, 2012) or being less consistent in their use of discipline (Emmen et al., 2013). If children feel unsupported and unprotected by their parents, they may withdraw and feel depressed and anxious (Young et al., 2011). Further, to the extent that children understand when their parents are stressed (Lombardi, 2020), financial hardship events could significantly diminish their sense of certainty, safety and joy.

However, very little is known about the effect of financial hardship on wellbeing for Aboriginal and Strait Islander children and young people. While the holistic approach to Aboriginal and Torres Strait Islander wellbeing suggests that a loss of financial wellbeing can be detrimental to other aspects of wellbeing, children could be protected from ramifications of financial hardship through strong family and community connections. When their immediate family is financially strained, they may receive much-needed relational and emotional resources from extended family and community members.

A bivariate analysis used in the Summary Report for the Wave 4 of *Footprints in Time* showed that social and emotional difficulties scores were significantly higher among Aboriginal and Torres Strait Islander children whose primary caregivers experienced money worries in three or four years. Drawing upon multidimensional wellbeing and financial hardship data from *Footprints in Time* and applying multiple regression analyses, the current study provides a more nuanced understanding of the effect of financial hardship on young people's wellbeing. The wellbeing variables include both negative and positive life perspectives (coping ability, life problems and psychological distress), while the financial hardship variables include both objective and subjective measures (having difficulty paying bills and other essential expenses and being seriously worried about money). Multiple regression settings are paramount for discerning the effects of financial hardship and confounding effects of key demographic, socioeconomic and geographic factors.

Data and methods

This analysis used data for Study Youth and their families in the younger and older cohorts. Data on wellbeing outcomes were sourced from Wave 13, whereas data on financial hardship came from all 13 waves. 'Don't know' and 'Refused' were also included in the response options but excluded from this analysis.

Wellbeing dimensions

Coping: Information was collected about how Study Youth think they are coping using the question, 'How well do you think you are coping?' The response categories were: not at all; a little; fairly well; very well; extremely well.

Life problems: Study Youth were asked, 'How difficult do you feel your life is at present?' The response categories were: no problems or stress; few problems; many problems; very many problems.

Kessler Psychological Distress Scale: Study Youth were asked, 'In the last 4 weeks, about how often did you feel…?'

- nervous
- without hope
- restless or jumpy
- that everything was an effort
- so sad that nothing could cheer you up.

For each question, the response scale was provided as: none of the time; a little of the time; some of the time; most of the time; all of the time.

Financial hardship measures

Money shortages: This construct measured multi-item behavioural consequences of adverse financial circumstances experienced in the 12 months prior to the interview. At each interview starting at Wave 3, P1s were asked, 'In the last 12 months, have any of these happened to you because you were short of money?'

- could not pay gas, electricity or telephone bills on time
- could not pay the mortgage or rent payments in time
- went without meals
- were unable to heat or cool their home
- pawned or sold something because they needed cash
- sought assistance from a welfare organisation
- child could not do school activities like excursion, camps.

The last item was not included in Wave 3. For each item, survey responses were recorded as 'yes' or 'no'.

Money worries: This is another measure of financial hardship in LSIC. Since Wave 1, P1s were asked, 'In the last year, has your family had serious worries about money?' Though this item does not address specific aspects of financial hardship and is a more subjective measure than the money shortages items presented above, its inclusion in the analysis provides further insights into the association between family-level financial strain and child wellbeing. Being seriously worried about money can drain parent's' emotional resources, and thus undermining a child's wellbeing.

We conducted descriptive and regression analyses to examine the relationship between wellbeing and financial hardship. We used cross-tabulation analyses to compare the

percentage distribution of Study Youth across different wellbeing categories based on their families' financial circumstances. The mean K-5 distress scores were also compared by financial hardship status. We fitted multiple regressions to estimate the extent of association between the measures of wellbeing and financial hardship. We used ordered logits for the categorical outcome variables and ordinary least square regressions for K-5 scores. Our list of covariates include:[8]

- age of the child, in years
- gender of the child
- whether P1 or their partner (if applicable) has a paid job
- P1's self-reported global health status
- number of household members
- whether moved house in the past 12 months
- geographic remoteness
- SEIFA-index of relative socioeconomic advantage and disadvantage (SEIFA-IRSAD), in deciles – higher deciles indicate greater (lower) advantages (disadvantages).

Results

Descriptive results: univariate analysis

This subsection summarises the main variables of interest.

Table 13 provides survey responses about coping. Over half of the Study Youth surveyed are coping very well/ extremely well, and a further 42% are coping fairly well. Only a minority of Study Youth (less than 5%) are coping poorly; 4.2% are coping only a little, and less than 1% are not coping at all. For the analysis of the relationship between coping and financial hardship, the first three categories were merged because of the small number of observations and the variable was redefined as: 3 if extremely well; 2 if very well; 1 if fairly well/a little/not at all.

Table 13 Extent to which Study Youth think they are coping with life in Wave 13

Coping with life	Number	%
Extremely well	78	11
Very well	290	42
Fairly well	290	42
A little	30	4
Not all	<5	n.p.*

* Not published.

[8] Data for covariates came from Wave 13, see the appendix for a detailed description.

Data about life problems is reported in Table 14. Over half of the Study Youth reported having no problems or stress, nearly 30% reported having few problems, 12% reported having some problems, and only 1% reported having many problems. For the analysis of the relationship between life problems and financial hardship, the last three categories were merged because of the small number of observations and the variable was redefined as: 3 if many/some problems; 2 if few problems; 1 if no problems/stress.

Table 14 Number of life problems Study Youth are facing in Wave 13

Number of life problems	Number	%
No problems or stress	398	58
Few problems	201	29
Some problems	83	12
Many problems	9	1
Very many problems	0	0

Figure 12 depicts survey responses for each Kessler Psychological Distress Scale item. Across all the items, over half of the Study Youth did not experience a negative emotional state in the four weeks before the interview. For example, 84–86% of Study Youth reported that they never felt without hope and sad during the past four weeks. Only 4% and 5% of Study Youth, respectively, have felt nervous and everything was an effort most/all the time. The sum of scores across the five items (K-5 score) ranges from 5 to 25 and averages 6.9, where higher scores indicate higher levels of distress, and lower scores indicate lower levels of distress. Over 9 in 10 (92%) Study Youth score between 5 and 11, which is considered a low/moderate level of psychological distress (ABS, 2013; Brinckley et al., 2021).

Figure 12 Kessler Psychological Distress Scale in Wave 13

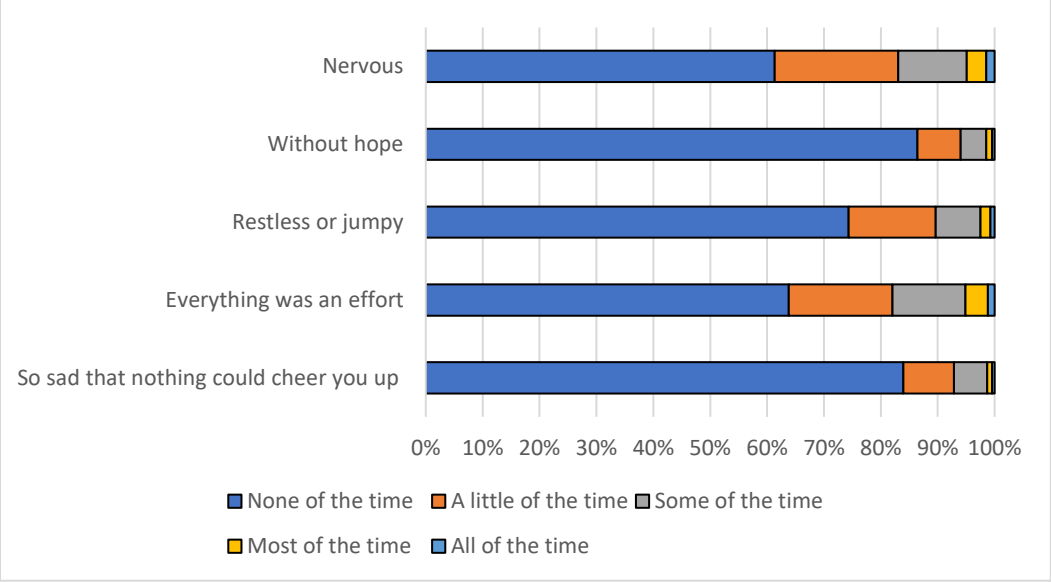


Figure 13 shows experience of money shortage from Wave 13. Over 1-in-5 (21%) parents could not pay gas, electricity or telephone bills on time (or power card ran out), and nearly 1-in-10 sought assistances from a welfare organisation. Just under 1 in 10 (8%) parents could not pay the mortgage or rent payments in time and a further 5% pawned or sold something because they needed cash. Only 1% of parents said their children could not participate in school activities, such as excursions, due to a lack of financial resources. In comparison, in Wave 12 (2019), 29% of parents could not pay gas, electricity or telephone bills on time (or power card ran out), 14% sought assistance from welfare, 11% could not pay the mortgage or rent payments in time, 11% pawned or sold something because they needed cash. Less than 1% of parents reported that their children could not participate in school activities, such as excursions, due to a lack of financial resources.

Wilkins et al. (2022) used data from the HILDA survey and showed that not being able to pay electricity, gas or telephone bills on time and not being able to pay rent or mortgage on time were also among the three most common forms of financial stress in 2020 amongst the general Australian population aged 15 years and over. However, both types of stresses occurred at a much lower rate than for *Footprints* parents and carers, 11% and 7%, respectively. The authors found that, unlike *Footprints* parents and carers, the prevalence of inability to pay electricity, gas or telephone bills on time and the prevalence of inability to pay rent or mortgage on time slightly increased between 2019 and 2020 for the general population. Using a much broader measure of financial stress (consisting of 14 items, including the six items listed in Figure 3), Phillips (2022) found that about one-third of households in Australia experienced at least one form of financial stress in 2019/20.

Figure 13 Percentage of LSIC families who experienced shortage of money in 2020 (Wave 13)

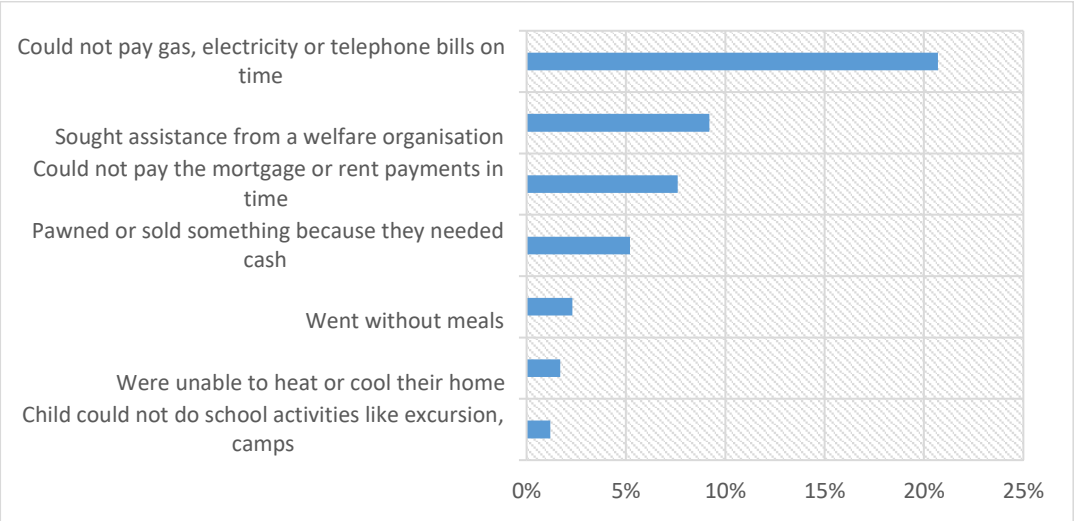


Table 15 presents data about the number of money shortage events experienced by LSIC families. Nearly three-quarters of families (74%) did not experience any of the events presented in Figure 13, 12% experienced a single event of money shortage, and the rest experienced multiple events.

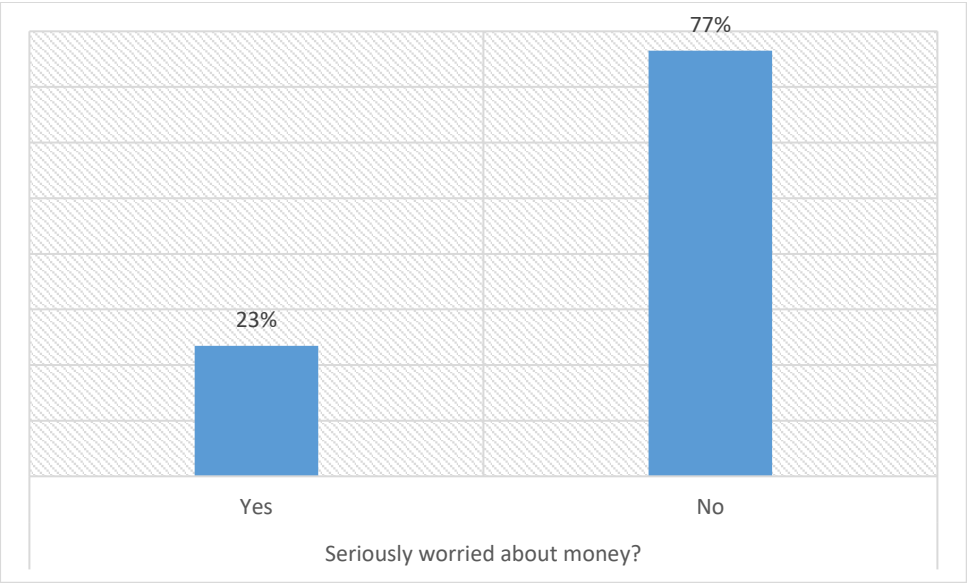
Table 15 Multiplicity of financial difficulties experienced by LSIC families in Wave 13

Number of events	Number of families	Percentage of families (%)
0	559	74
1	93	12
2	61	8
3	22	3
4	11	2
At least five	6	1

In terms of understanding wellbeing consequences of financial hardship, analysing the relationship between individual events and wellbeing can be more insightful. However, as shown in Figure 13, many of the events have very low occurrence rates. For instance, only 1% and 2% of parents reported having difficulties paying for school activities and going without meals, respectively. The prevalence needs to be higher for such events to be analysed independently. We combined all the items and derived a single measure of money shortages: 1 if a family experienced any of the events and 0 otherwise.

Figure 14 depicts data on money worries from Wave 13. We have noted that 24% of the families had money worries. To analyse the relationship between wellbeing and money worries, the variable was defined as: 1 if the family had money worries and 0 otherwise.

Figure 14 Percentage of LSIC families seriously worried about money



It should be noted that the variables for financial hardship only show whether a family has experienced a spell of financial hardship (money shortages or money worries) in the past 12 months and identify neither the frequency nor the duration of the events within that period. Nevertheless, since the same questions were asked about money worries in 13 waves and

about money shortages in 11 waves (Waves 3–13)[9], it is possible to determine whether a family has experienced financial hardship in multiple years by computing the number of years (waves) that the family has experienced money shortages and money worries. We have noted that the families in Wave 13 have experienced money worries for an average of 3.4 years and money shortages for 4.9 years. Over the 13 years to 2020, families in major cities appeared to have experienced money worries more frequently (an average of 4.2 years) than families in regional areas (3.1 years) and remote areas (2.6 years). They also tend to have experienced a more frequent shortage of money – an average of 5.5 years compared with 4.7 years in regional regions and 4.1 years in remote areas.

Overall, the data show that the majority of *Footprints* youth and families interviewed in 2020 fared well in terms of wellbeing and finance, respectively. Their circumstances also improved compared to 2019, see Table 16. The Study Youth in the K cohort who were interviewed in both waves were 1.2 times more likely to report they are coping very well/extremely well, and 1.8 times more likely to report the absence of problems/stress in their life in 2020 than in 2019. Parents/carers reported greater coping abilities and fewer life problems in 2020 compared to the previous year. For families, too, the probability of reporting financial stress dropped substantially; by 65% when dealing with money shortages and by 80% when experiencing serious money worries. While understanding the underlying sources of these changes is beyond the scope of the current analysis, positive life events that occurred during COVID-19 could be contributing factors. In the preceding article, *'COVID-19 and Consequences for Study Youth, Families and Communities in 2020',* we highlighted that many *Footprints* families were able to gain financial benefits (from the reduced expense, wage-earning as well as government transfer) and spent more family time because of the COVID-19 pandemic restrictions despite facing multiple challenges in other aspects of their life.

Table 16 Wellbeing and financial stress in 2019 and 2020

Aspect of financial stress and wellbeing	**Wave 12 (2019)**	**Wave 13 (2020)**
Coping very well/extremely well [Study Youth- K cohort]	48%	57%
No problems/stress [Study Youth-K cohort]	29%	54%
Coping very/extremely well [P1]	43%	45%
No problems/stress [P1]	22%	32%
Money shortages	37%	24%
Money worries	30%	24%

Note: At Wave 12, data on coping and life problems were not available for B cohort.

[9] Except that the item about school activities was not included in Wave 3.

Descriptive results: bivariate analysis

This subsection presents bivariate relationships between financial hardship and wellbeingoutcomes.

Figure 15 provides the relationship between coping ability and financial hardship. Study Youth in families experiencing money shortages are less likely to cope very well/extremely well with life in families with money shortages than in families without money shortages, statistically significant at the 5% level. The association between coping ability and money worries is, however, statistically insignificant.

Figure 15 Extent to which Study Youth think they are coping with life, by financial hardship status

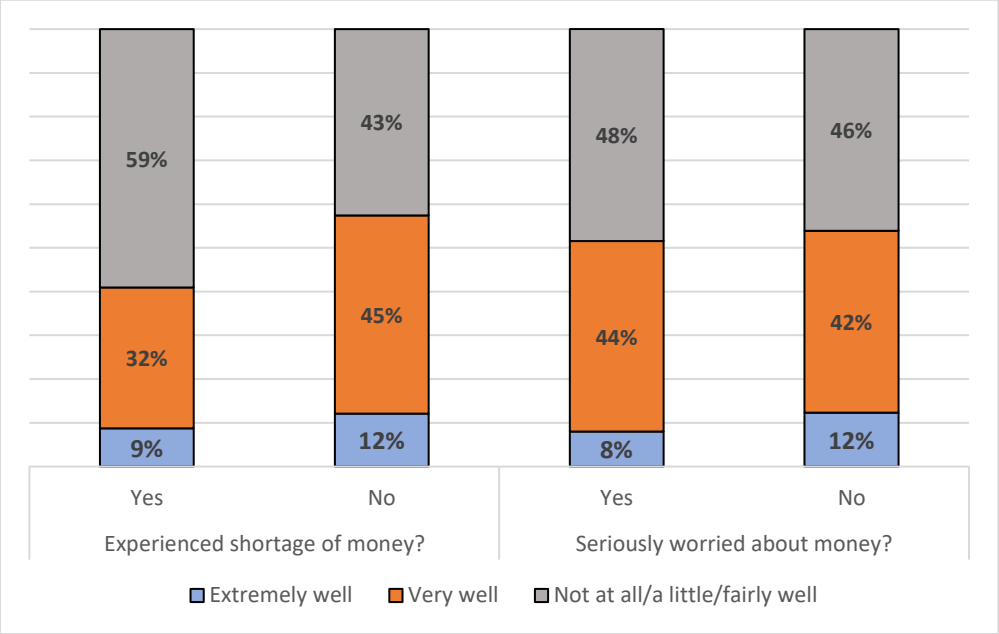
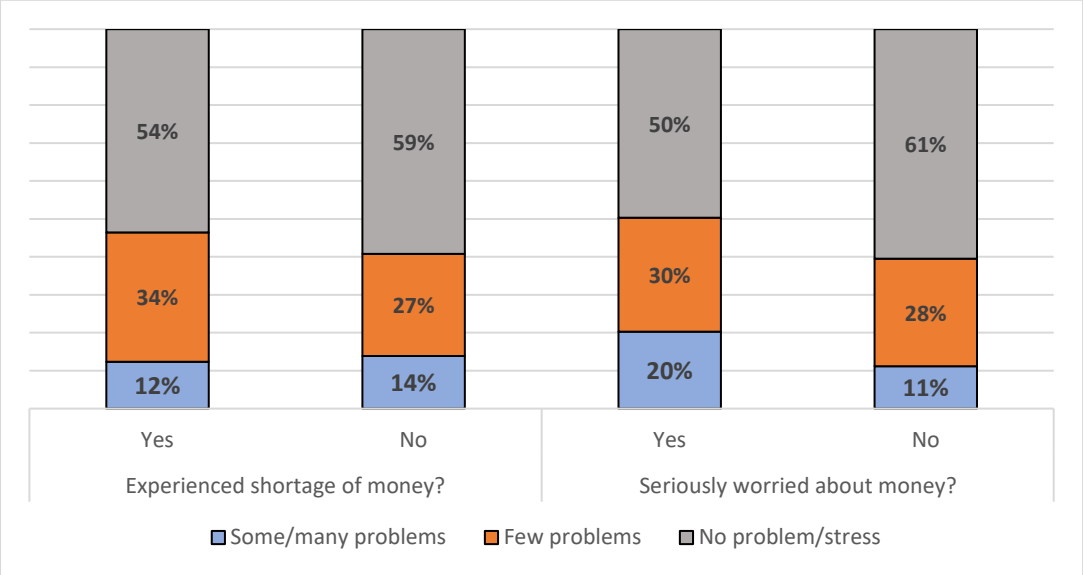


Figure 16 depicts the relationship between life problems and financial hardship. The proportion of Study Youth who reported no problems/stress in their life is lower in families with money shortages than in families without money shortages. However, the difference is not statistically significant at the 5% level. On the other hand, a significantly lower (at the 5% level) proportion of Study Youth reported no problems/stress in families with money worries than in families without money worries.

Figure 16 Number of life problems Study Youth are facing, by financial hardship status



We also compared mean values of the K-5 score by financial hardship status. Study Youth who live in families with money shortages scored an average of 7.6 points compared with 6.8 points for those in other families, a difference statistically significant at the 5% level. There is a similar difference in the average psychological distress scores between Study Youth in families with and without money worries (7.7 points versus 6.8 points), statistically significant at the 5% level.

Overall, the results obtained with bivariate analyses suggest that financial hardship and wellbeing are inversely related. Study Youth who live in families with financial hardship (experiencing either money shortages or money worries) tend to have less coping ability, more life problems and higher psychological distress than their counterparts in families without financial hardship.

Regression results

This subsection presents results obtained with multiple regression. While the focus of this study is the wellbeing of Study Youth, the wellbeing of P1s is also analysed for comparison. Separate regressions were fitted for each wellbeing dimension. The parameters reported in the tables under the variables, happiness, coping and life problems, are estimated odds ratios and their standard errors (in parenthesis). The odds ratio measures a change in the odds of success for the highest category of the outcome variable for a unit increase in the values of the corresponding predictor variable. A value less than one corresponds to a negative association between the underlined predictor and outcome variables (e.g., as the predictor of money shortages increases, the outcome of a children's sense of being able to cope decreases); a value greater than one corresponds to a positive association, and a value equal to one corresponds to no association (e.g., as money worries increase, so do reported life problems). The parameters reported under the K-5 scores are coefficient estimates and their standard errors (in parenthesis). The coefficients measure a unit change in the outcome variable for a unit change in the value of the corresponding predictor variable. A

negative sign indicates an inverse relationship between the K-5 scores and the predictor variables, and a positive sign indicates a positive relationship.

Table 17 presents regression results obtained with ordered logit regressions. Results are reported for Study Youth and P1. The full regression results are presented in the appendix to this article, Tables A2–A4. In Panel A, wellbeing outcomes were specified as a function of a spell of financial hardship in Wave 13, i.e., whether the family has experienced money shortages and money worries in the last 12 months. Here, both measures of financial hardship were included in the same regression model. The estimated Pearson correlation coefficient between them was 0.365, and there was no evidence of multicollinearity for including them in the same regression. In Panel B, wellbeing outcomes were specified as a function of cumulative spells of financial hardship, i.e., the number of years the family experienced money shortages since Wave 3 and the number of years the family experienced money worries since Wave 1. Unlike in Panel A, these two measures of cumulative financial hardship were separately included in the wellbeing models because of their strong correlation (a Pearson correlation coefficient of 0.735). The specifications in Panel B controlled for the number of years the family was interviewed in *Footprints in Time* since the respective financial hardship questions were included in the study. This is to account for differences in rates of survey participation between families present in Wave 13. The number of years in which financial hardship was reported could be more for families interviewed in all the waves than for those only interviewed in some of the waves. However, this does not mean the families have had different financial hardship experiences over the same years.

Panel A shows that, for Study Youth with experience of money shortages, the odds of coping extremely well are 0.61 times as large as the odds for Study Youth without experience of money shortages, a statistically significant result at the 5% level. For Study Youth in families with money worries, the odds of having some/many life problems 1.73 times as large as the odds for Study Youth in families without money worries. For P1s, financial hardship is strongly associated with wellbeing. When the family experiences money shortages, the odds of P1s coping are expected to decrease by a factor 0.46, whereas the odds of being on the highest category of life problem increase by a factor of 0.81. Similarly, when the family experiences money worries, the odds of P1s coping extremely well are expected to decrease by a factor of 0.55 and 0.46, respectively, whereas the odds of having some/many life problems are expected to increase by a factor of 1.96. The estimated relationships between financial hardship and wellbeing are relatively stronger (in terms of both magnitude and statistical significance) among P1s than Study Youth. This is true across all measures of wellbeing and financial hardship. For example, for P1s, money shortages and money worries are significantly associated with both wellbeing outcomes. However, for Study Youth, money shortages is only significantly associated with coping and money worries is significantly associated with life problems. Furthermore, when the family experiences money shortages, the odds of coping extremely well are expected to shrink by a factor of 0.46 for P1 compared with 0.39 for Study Youth. When the family experiences money worries the odds of having some/many problems are expected to increase by a factor of 1.96 for P1s compared with 0.73 for Study Youth.

Table 17 Results from ordered logit regressions

Variable	Study Youth wellbeing		P1 wellbeing	
	Coping	Life problems	Coping	Life problems
Panel A				
Money shortages	0.610**	1.036	0.541**	1.816***
	(0.118)	(0.191)	(0.130)	(0.333)
Money worries	0.934	1.727***	0.543***	2.964***
	(0.177)	(0.334)	(0.111)	(0.550)
Panel B				
Money shortages: number of years	0.899***	1.118***	0.860**	1.246***
	(0.034)	(0.042)	(0.034)	(0.046)
Money worries: number of years	0.935**	1.105***	0.892***	1.218***
	(0.024)	(0.029)	(0.023)	(0.032)

Note: *** significant at 1% level; ** significant at 5% level.

Results in Panel B show the association between wellbeing and persistent financial hardship, expressed by the number of years a spell of financial hardship was experienced. When the experience of financial hardship becomes more persistent, Study Youth and P1s experience less coping ability while experiencing more life problems. More specifically, results for Study Youth show that for every additional year of money shortages, the odds of coping extremely well are predicted to shrink by a factor of 0.1, whereas the odds of having some/many life problems grow by a factor of 0.12. In other words, for a one-year increase in occurrence of money shortages, we expect to see about 10% decrease in the odds of having some/many life problems and 12% increase in the odds of having some/many life problems. Similarly, for every additional year of money worries, the odds coping extremely well are predicted to decrease by a factor of 0.06 while the odds of having some/many life problems are expected to grow by a factor of 0.11. For P1s, the odds of coping extremely well are predicted to decrease by factors of 0.14, and the odds of having some/many life problems are expected to grow by a factor of 0.25 for every additional year of money shortages experienced by the family. Persistent money worries appear to have similar effects. Overall, the association between ongoing financial hardship and the three wellbeing dimensions is slightly stronger for P1s than Study Youth.

Summary of findings in Table 17:

For Study Youth

- money shortages in a single year (2020) are significantly associated with reduced perception of being able to cope
- money worries in a single year (2020) are significantly associated with increased life problems
- experiences of money shortages and money worries occurring over multiple years were significant risk factors for reduced perception of being able to cope, and increased life problems.

For parents and carers of Study Youth

- experience of money shortages and money worries both in a single year (2020) and over multiple years were significant risk factors for reduced perception of being able to cope, and increased life problems.

Table 18 presents statistical relationships between financial hardship and psychological distress (K-5) scores. The psychometric validity of using the K-5 in Indigenous contexts has been validated (Brinckley et al., 2021; McNamara et al., 2014). For example, while making slight wording changes to two of the items used in the 2018–19 NATSIHS (changing the item 'sad that nothing cheers you up' to 'sad' and the item 'without hope' to 'hopeless'), Brinckley et al. (2021) show that, overall, the K-5 has a strong dose-response association with depression (and anxiety) and happiness and can be used as a reliable diagnostic tool for psychological distress among the Indigenous population.

For the reasons mentioned previously, the measures of financial hardship in Panel A were included in the same regression, whereas those in Panel B were included in separate regressions. Full regression results are presented in the appendix, Table A5. Panel A shows that being in families experiencing money shortages is significantly associated with increased psychological distress for both Study Youth and P1s. More specifically, the K-5 distress scores are 0.71 and 0.1.2 points higher for Study Youth and P1, respectively, who live in families with money shortages compared with their counterparts in other families. Similarly, living in a family with money worries is associated with an increase in K-5 distress scores by 0.59 and 1.2 points, respectively, for Study Youth and P1s. The results in Panel B show that K-5 distress scores are predicted to increase among Study Youth by about 0.07 and 0.04 standard deviations for every additional year of money shortages and money worries, respectively.

The estimated effects of financial hardship on psychological distress are much larger for P1s, particularly in Panel B. For both measures of cumulative financial hardship, the estimated coefficients on K-5 scores of P1s are more than double the corresponding coefficients on K-5 scores of Study Youth. This may be unsurprising given that parents are primarily responsible for providing their children with the basic necessities and may internalise the guilt and shame of having to cut back on essential expenses (Ali et al., 2018; Rose & McAuley, 2019). The relatively small impacts on Study Youth imply that Study Youth are shielded from the full impact of financial hardship. That said, our analysis suggests that the relationship

between financial hardship and child wellbeing is partly mediated by parental psychological distress. We have noted that financial hardship is significantly associated with increased parental psychological distress (Table 18) and parental psychological distress, in turn, is significantly associated with increased psychological distress of Study Youth (Table A6 in the Appendix). In confirming the mediation role of parental psychological distress, coefficients associated with the financial hardship variables became smaller and less statistically significant after P1's K-5 score was included in the Study Youth's K-5 score model. For example, the estimated effect of the number of years a family experienced money worries became statistically insignificant whereas the effects of the other three financial hardship variables decreased by 14–24% and became statistically significant at the 5% level (Table A6).

Table 18 Results obtained with ordinary least squares (linear) regressions

Variable	Study Youth distress (K-5) scores	P1 distress (K-5) scores
Panel A		
Money shortages	0.711***	1.199***
	(0.261)	(0.296)
Money worries	0.587**	1.159***
	(0.262)	(0.296)
Panel B		
Money shortages: number of years	0.163***	0.391***
	(0.051)	(0.058)
Money worries: number of years	0.090***	0.314***
	(0.037)	(0.041)

Note: *** significant at 1% level; ** significant at 5% level.

Summary of findings in Table 18:

- For Study Youth and their primary carers, money shortage and money worry events that occurred both in 2020 and over multiple periods are significant risk factors for psychological distress.

Conclusion

Drawing upon both longitudinal and cross-sectional data, this article examined the relationship between financial hardship (i.e., facing a shortage of money to meet basic financial commitments, such as paying bills or rent, and being seriously worried about money) on wellbeing outcomes (life problems, coping and psychological distress). Both bivariate and multivariate analyses were employed to analyse the data. Results obtained with bivariate analyses consistently show that the Study Youth in families experiencing money shortages and/or money worries have poorer wellbeing outcomes than the other Study Youth. However, the results became mixed when key demographic, socioeconomic

and geographic differences were considered using multiple regressions. For Study Youth, family experience of money shortages is significantly associated with reduced coping and increased psychological distress, whereas family experience of money worries is significantly associated with increased life problems and psychological distress. Financial hardship tends to be more detrimental to a child's wellbeing when its occurrence becomes more persistent.

The experience of financial hardship is also significantly associated with reduced wellbeing for P1s. Financially strained parents tend to experience lower coping ability but more life problems and psychological distress. Relatively, parents' wellbeing appears to be more responsive than Study Youth's wellbeing to spells of financial hardship. It appears that financial hardship contributes negatively to child wellbeing partly through heightened parental psychological distress. Overall, the findings in this article highlight the importance of alleviating families' financial problems and enhancing parents' emotional resilience for improving Study Youth's wellbeing. More specifically, the introduction to this article indicates that Indigenous Australians are more likely than the general Australian population to experience financial stress (Weier et al., 2019), and, therefore, it is anticipated that alleviating financial stress of Indigenous families can help achieve the social and emotional wellbeing target set in the Closing the Gap initiative. Some of the initiatives that could help to improve the financial circumstances of Aboriginal and Torres Strait Islander families include:

- creating better and sustainable earning opportunities
- increasing the accessibility of culturally appropriate, safe and affordable financial services, especially in remote communities
- promoting culturally tailored money management practices.

For those families experiencing financial stress, providing culturally sensitive counselling and support services could help reduce subsequent detrimental effects on wellbeing.

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Appendix

Table A1 summarises the data on key demographic, socioeconomic and geographic attributes of Study Youth and their families for 2020 (Wave 13).

Summary of findings from Table A1:

- the average age in the sample is 14.23 years
- males account for less than half (48%) of the sample
- for 67% of the sample, either the primary carer (P1) or P1's partner has a paid job
- the primary carer has very good/excellent health among 47% of the sample.
- families of 47% of Study Youth in the sample have moved house in the past 12 months
- the average household size in the sample is about five persons
- the average decile for SEIFA-IRSAD index is 3.4
- nearly 40% of Study Youth in the sample live in major cities, about 30% in inner regional areas, 16% in outer regional areas, and the rest in remote very remote areas.

Table A1 Summary statistics

Variable	Description	Number of observations	Mean	Standard deviation
Age	Age of Study Youth in years	755	14.23	1.472
Gender	1 if male; 0 if female	755	0.488	0.500
Employed parent	1 if at least P1 or their partner (if applicable) has a job; 0 otherwise.	749	0.690	0.463
P1's health	1 if P1's health is very good/excellent; 0 otherwise	755	0.321	0.467
Moved house	1 if have moved house in the past 12 months; 0 otherwise	755	0.119	0.467
Household size	Number of household members	755	4.910	1.859
SEIFA-IRSAD	Index of relative socioeconomic advantage and disadvantage (IRSAD)	694	3.429	2.498
Remoteness	1 if major cities; 2 inner regional areas; 3 if outer regional areas; 4 if remote/very remote areas	755		
Major cities		274	0.395	0.489
Inner regional		203	0.293	0.455
Outer regional		109	0.157	0.364
Remote/very remote		108	0.155	0.363

Table A2 shows full results obtained with ordered logits. Looking at the results under Study Youth Wellbeing, it appears that Study Youth tend to face increased life difficulties as they age. With a one-year increase in age, the odds of having some/many life problems are predicted to grow about 2.85 times larger. On average, males tend to have better wellbeing outcomes than females. Being male is associated with decreased life problems, where the odds of having some/many life problems are predicted to shrink by a factor of 0.43. Parental employment is associated with increased coping ability. The odds of coping extremely well are 1.57 times larger for Study Youth with employed parents than those with non-employed parents. Having a primary carer with very good/excellent health corresponds to a reduction in the odds of having some/many life problems by a factor of 0.42 and an increase in the coping extremely well by a factor of 0.55.

Living in a larger household is associated with fewer life problems and greater coping ability. For one additional person in the household, the odds of having some/many life problems decreases by a factor of 0.15, whereas the odds of coping extremely well become increases by a factor of 0.10. Wellbeing outcomes appear to vary with geographic remoteness. For example, compared with Study Youth in major cities, those who live in outer regional areas and remote/very remote areas tend to have lower coping abilities. However, they also tend to experience fewer life problems than do their counterparts in major cities and inner regional areas.

For P1s, having a very good/excellent health status is associated with an increase in the odds of coping extremely well by a factor of 0.9, while it leads to a shrinkage in the odds of having some/many life problems by a factor of 0.52. Living with more household members is also associated with the propensity of coping extremely well. The odds of coping extremely well increase 1.11 times for every additional person residing in the household. Living in remote/very remote communities is associated with a reduction in the odds of being in the highest happiness category and coping extremely well by a factor of 0.54 and 0.76.

Table A2 Full results from ordered logit regressions using experience of money shortages and money worries in Wave 13 as predictors

	Study Youth wellbeing		**Study Youth wellbeing**	
Variable	**Coping**	**Life problems**	**Coping**	**Life problems**
Money shortages	0.610**	1.036	0.641**	1.816***
	(0.118)	(0.191)	(0.130)	(0.333)
Money worries	0.934	1.727***	0.543***	2.964***
	(0.177)	(0.334)	(0.111)	(0.550)
Age	1.083	1.134**		
	(0.057)	(0.061)		
Male	1.422**	0.569***		
	(0.220)	(0.092)		
Parental employment	1.567**	1.303	0.993	1.299
	(0.282)	(0.237)	(0.184)	(0.224)

Variable	Study Youth wellbeing		Study Youth wellbeing	
	Coping	Life problems	Coping	Life problems
Parent 1's health	1.548***	0.581***	2.934***	0.484***
	(0.260)	(0.103)	(0.507)	(0.079)
Household size	1.102**	0.852***	1.114**	0.964
	(0.048)	(0.040)	(0.051)	(0.041)
Moved house	0.939	1.412	0.759	1.152
	(0.226)	(0.330)	(0.190)	(0.260)
Remoteness				
Inner regional	0.694**	0.893	0.847	0.776
	(0.116)	(0.150)	(0.145)	(0.126)
Outer regional	0.318***	0.515*	0.576	0.626
	(0.108)	(0.187)	(0.199)	(0.193)
Remote/very remote	0.115***	0.282***	0.244***	1.035
	(0.051)	(0.130)	(0.108)	(0.357)
SEIFA-IRSAD	0.953	1.051	0.992	1.048
	(0.031)	(0.035)	(0.033)	(0.033)
/cut1	1.415	1.280	0.553	-0.654
	(0.811)	(0.834)	(0.313)	(0.296)
/cut2	3.757	2.937	3.028	1.526
	(0.824)	(0.841)	(0.342)	(0.302)
Number of observations	667	668	678	682

Note: *** significant at 1% level; ** significant at 5% level; and * significant at 10% level.

Table A3 Full results from ordered logit regressions using cumulative experience of money shortages as a predictor

Variable	Study Youth wellbeing		P1 wellbeing	
	Coping	Life problems	Coping	Life problems
Money shortages: number of years	0.899***	1.118***	0.860***	1.246***
	(0.034)	(0.042)	(0.034)	(0.046)
Number of interviews[10]	1.097**	1.078	1.058	0.928*
	(0.050)	(0.051)	(0.048)	(0.038)
Age	1.423*	0.581**		
	(0.221)	(0.094)		
Male	1.105**	1.125**		
	(0.059)	(0.061)		
Parental employment	1.544**	1.310	1.014	1.259
	(0.278)	(0.239)	(0.187)	(0.215)

[10] Not all families present in Wave 13 were interviewed in all the previous 12 waves. To account for differences in the number of times a family reported financial stress between Waves 1 and 13, we included in the model the number of times each family was interviewed over the 13 years/ survey waves.

Variable	Study Youth wellbeing		P1 wellbeing	
	Coping	**Life problems**	**Coping**	**Life problems**
Parent 1's health	1.512**	0.582***	2.885***	0.506***
	Var(0.254)	(0.104)	(0.497)	(0.083)
Household size	0.985**	1.485***	1.111**	0.969
	(0.239)	(0.349)	(0.050)	(0.040)
Moved house	1.105	0.855	0.766	1.158
	(0.048)	(0.040)	(0.191)	(0.260)
Remoteness				
Inner regional	0.663**	0.966	0.820	0.812
	(0.112)	(0.166)	(0.141)	(0.132)
Outer regional	0.311***	0.644	0.510	0.803
	(0.108)	(0.239)	(0.181)	(0.249)
Remote/very remote	0.113***	0.408	0.222***	1.228
	(0.052)	(0.195)	(0.101)	(0.436)
SEIFA-IRSAD	0.944*	1.068*	0.980	1.060*
	(0.031)	(0.036)	(0.033)	(0.033)
Variable	**Coping**	**Life problems**	**Coping**	**Life problems**
/cut1	2.356	2.648	0.656	-0.735
	(0.969)	(1.016)	(0.615)	(0.565)
/cut2	4.704	4.312	3.116	1.366
	(0.984)	(1.025)	(0.631)	(0.568)
Number of observations	667	668	678	682

Note: *** significant at 1% level; ** significant at 5% level; and * significant at 10% level.

Table A4 Full results from ordered logit regressions using cumulative experience of money worries as a predictor

Variable	Study Youth wellbeing		P1 wellbeing	
	Coping	**Life problems**	**Coping**	**Life problems**
Money worries: number of years	0.935**	1.105***	0.886***	1.207***
	(0.024)	(0.029)	(0.025)	(0.031)
Number of interviews	1.085*	1.078	1.049	0.931*
	(0.048)	(0.051)	(0.047)	(0.038)
Age	1.088	1.141**		
	(0.057)	(0.062)		
Male	1.421**	0.566***		
	(0.220)	(0.092)		
Parental employment	1.591**	1.290	1.018	1.210
	(0.285)	(0.235)	(0.188)	(0.206)

Parent 1's health	1.521**	0.593***	2.869***	0.520***
	(0.255)	(0.106)	(0.494)	(0.085)
Household size	1.100**	0.859***	1.104**	0.981
	(0.048)	(0.040)	(0.050)	(0.041)
Moved house	0.990	1.449	0.790	1.106
	(0.240)	(0.343)	(0.198)	(0.250)
Remoteness				
Inner regional	0.657**	0.993	0.782	0.870
	(0.111)	(0.171)	(0.136)	(0.143)
Outer regional	0.328***	0.635	0.528*	0.762
	(0.113)	(0.233)	(0.187)	(0.236)
Remote/very remote	0.119***	0.403*	0.223***	1.263
	(0.054)	(0.191)	(0.101)	(0.447)
SEIFA-IRSAD	0.951	1.058*	0.991	1.052
	(0.031)	(0.035)	(0.033)	(0.033)
/cut1	2.313	2.618	0.869	-1.104
	(0.967)	(1.019)	(0.604)	(0.558)
/cut2	4.657	4.293	3.344	1.042
	(0.981)	(1.028)	(0.622)	(0.558)
Number of observations	667	668	678	682

Note: *** significant at 1% level; ** significant at 5% level; and * significant at 10% level.

Table A5 Full results obtained with ordinary least squares (linear) regressions

Variable	**Study Youth distress (K-5) scores**			**P1 distress (K-5) scores**		
	1	**2**	**3**	**1**	**2**	**3**
Money shortages	0.710***			1.199***		
	(0.261)			(0.296)		
Money worries	0.587**			1.159***		
	(0.262)			(0.296)		
Money shortages: number of years		0.170***			0.387***	
		(0.053)			(0.059)	
Money worries: number of years			0.098**			0.315***
			(0.037)			0.041
Number of interviews		0.072	0.090		-0.090	-0.079
		(0.061)	(0.060)		(0.068)	(0.066)
Age	0.060	0.046	0.069			
	(0.072)	(0.073)	(0.073)			
Male	-0.853***	-0.819***	-0.841***			
	(0.211)	(0.211)	(0.212)			

Variable	Study Youth distress (K-5) scores			P1 distress (K-5) scores		
	1	2	3	1	2	3
Parental employment	0.718***	0.648***	0.588**	-0.399	-0.410	-0.484
	(0.244)	(0.243)	(0.242)	(0.272)	(0.273)	(0.268)
Parent 1's health	-0.299**	-0.338***	-0.335***	-0.708***	-0.742***	-0.670***
	(0.117)	(0.117)	(0.118)	(0.132)	(0.131)	(0.131)
Household size	-0.110*	-0.110*	-0.106*	-0.187***	-0.189***	-0.174***
	(0.061)	(0.060)	(0.061)	(0.067)	(0.067)	(0.067)
Moved house	0.192	0.191	0.195	0.423	0.342	0.295
	(0.328)	(0.329)	(0.330)	(0.366)	(0.369)	(0.365)
Remoteness						
Inner regional	-0.383	-0.294	-0.303	0.165	0.335	0.442
	(0.265)	(0.267)	(0.268)	(0.295)	(0.298)	(0.295)
Outer regional	-0.449	-0.307	-0.352	-0.715**	-0.513	-0.531
	(0.311)	(0.315)	(0.315)	(0.351)	(0.358)	(0.352)
Remote/very remote	-1.423***	-1.072***	-1.129***	-0.810**	-0.367***	-0.394
	(0.321)	(0.337)	(0.336)	(0.364)	(0.385)	(0.379)
SEIFA-IRSAD	0.036	0.049	0.036	-0.032	0.000	-0.026
	(0.045)	(0.045)	(0.045)	(0.050)	(0.050)	(0.050)
Cons	7.448***	6.274***	6.326***	8.537***	9.000***	8.836***
	(1.189)	(1.407)	(1.411)	(1.343)	(1.571)	(1.552)
Number of observations	635	635	635	680	680	680

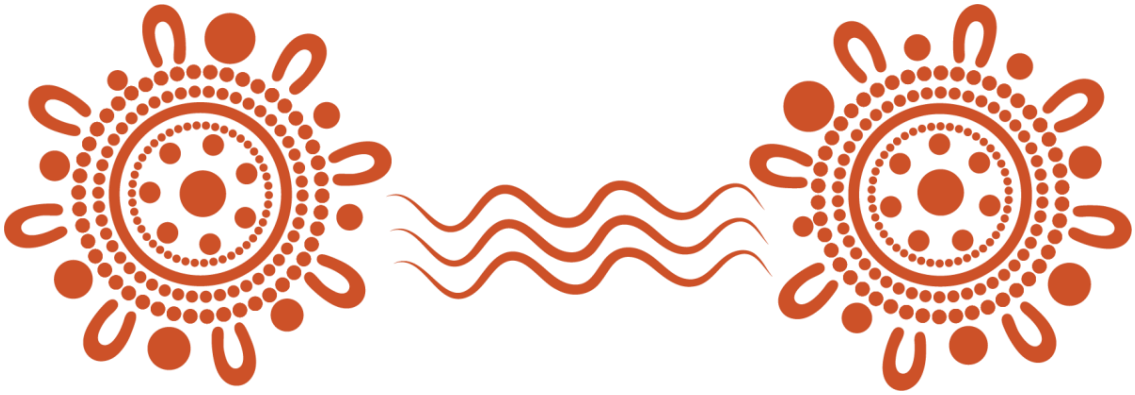
Note: *** significant at 1% level; ** significant at 5% level; and * significant at 10% level.

Table A6 P1's psychological distress as a mediating factor for effects of financial hardship on wellbeing

Variable	Coef.	Std. err.	Coef.	Std. err.	Coef.	Std. err.
Age	0.040	0.072	0.031	0.072	0.049	0.072
Male	-0.821***	0.209	-0.791***	0.209	-0.804***	0.210
P1 K-5 score	0.115***	0.035	0.121***	0.035	0.126***	0.035
Money shortage	0.546**	0.263				
Money worries	0.506*	0.263				
Money shortage: number of years			0.129**	0.054		
Money worries: number of years					0.060	0.038
Number of interviews			0.083	0.060	0.101	0.060
Parental employment	0.753***	0.243	0.688***	0.242	0.642***	0.241
Parent 1's health	-0.192	0.120	-0.225	0.119	-0.228*	0.120
Moved house	0.149	0.325	0.159	0.326	0.168	0.327
Household size	-0.085	0.060	-0.082	0.060	-0.079	0.060

Variable	Coef.	Std. err.	Coef.	Std. err.	Coef.	Std. err.
Remoteness						
Inner regional	-0.357	0.263	-0.294	0.265	-0.322	0.267
Outer regional	-0.339	0.309	-0.217	0.313	-0.262***	0.313
Remote/very remote	-1.307***	0.319	-1.001***	0.334	-1.059	0.333
SEIFA-IRSAD	0.043	0.044	0.054	0.045	0.044	0.045
_cons	6.381***	1.216	5.093***	1.426	5.115***	1.430
Number of observations	632		632		632	

Note: *** significant at 1% level; ** significant at 5% level; and * significant at 10% level.



Sleep and Major Life Events

Main findings

- About two-thirds of the Study Youth (66%) interviewed at Wave 13 had no trouble initiating sleep and staying asleep.
- Being too hyped, feeling too cold or hot and fear or anxiety were the leading causes of sleep disturbance for Study Youth.
- The majority of *Footprints in Time* families experience multiple stressful life events at a given point in time.
- Whilst not all types of life events are risk factors for sleep disturbance for Study Youth, the risk for sleep disturbance increases with the number of life events.

Introduction

Sleep is vital for individual health and wellbeing. It supports positive physical, social and emotional functioning (Adamantidis & de Lecea, 2008; Bolin, 2019; Hudson et al., 2020; Luyster et al., 2012; Maquet, 2001). Evidence shows that sleep deprivation is associated with increased risk for anxiety (Jackson et al., 2014), substance use (Edwards et al., 2015), suicidal ideation (Short et al., 2019), obesity (Vgontzas et al., 2008), as well as poor academic performance (Medic et al., 2017) among children and adolescents. For Aboriginal and Torres Strait Islander children too, inadequate sleep is found to have a strong association with poor school performance (Blunden et al., 2018) and unhealthy weight (Deacon-Crouch et al., 2018). Experiencing persistent sleep disturbance (in three or more years) is also associated with increased social and emotional difficulties (DSS, 2020). On the other hand, the absence of sleep problems is associated with better behavioural and emotional outcomes (Lovett, 2017) and better ear health (Constantinides et al., 2022).

Data from *Footprints in Time* (Wave 13) show that the majority of Study Youth (about 66%) had no trouble falling sleep or staying asleep during the previous month, and about 30% had trouble getting to sleep/staying asleep at least once a week. Evidence shows that Aboriginal and Torres Strait Islander children are more likely than their non-Indigenous counterparts to experience sleep problems (DSS, 2020; Howarth et al., 2022; Woods et al., 2015). To the extent that good sleep is paramount for overall wellbeing, improving sleep quality for

Aboriginal and Torres Strait Islander children and young people can play a critical role in closing Indigenous/non-Indigenous gaps in life outcomes (DSS, 2020). In this regard, understanding the risk factors underlying sleep disturbance can help to determine the type and level of support services that promote healthy sleep.

Previous studies show that racial discrimination, geographic isolation and stressful life events are important risk factors for sleep disturbance among Aboriginal and Torres Strait Islander children (Cave et al., 2019; DSS 2020; Fatima et al., 2023; Shepherd et al., 2017). In particular, stressful life events can trigger rumination and anxiety, thereby causing sleep disorders (Li et al., 2019; Vidal Bustamante et al., 2020). A report by DSS titled *A decade of data: Findings from the first 10 years of Footprints in Time* shows that sleep disturbance has a significant bivariate association with major life events, such as, injury or sickness in the family, a family member losing their job, alcohol or drug problems in the family, a mugging or assault in the family, worrying about money in the family and children in the family being upset by family arguments (DSS, 2020).[11] The report also shows a statistically significant association between the number of major life events experienced at the family level and sleep disturbance, implying that different types of life events can have compounding effects on sleep when occurring in the same time period.

The current study builds on DSS's findings in two ways. Firstly, *Footprints in Time* children were 4.5–10-year-old in Wave 5 (from which Data for DSS's analysis were sourced) and 12.5–17-year-old in Wave 13 (from which data for the current study are sourced). By using data from Wave 13, this study examines whether the association between sleep and major life events holds during adolescence. Secondly, by applying a longitudinal analysis to the sleep /major life events relationship, the study examines cumulative effects of major life events that occurred over multiple time periods.

Data and methods

Sleep quality data were sourced from two questions asked in Wave 13.

i. 'In the last month, have you had trouble getting to sleep or staying asleep? How often?' The response categories were most nights; two to three times a week; once a week; once a fortnight; once a month or less than once a month; other; never. 'Don't know' and 'Refused' were also provided as options though excluded from this analysis. For our analysis, two variables were derived. The first variable, 'good sleep', identifies Study Youth who had no trouble getting to sleep or staying asleep, coded as 1 and 0 otherwise. The second variable, 'troubled sleep', differentiates those who reported more frequent sleep problems from others: coded 1 if the Study Youth experienced sleep difficulties at least once a week and 0 otherwise.

ii. During the last month, do you think you usually got enough sleep? The response categories were: plenty; just enough; not quite enough; not

[11] However, only the associations with last two life events remained statistically significant when all the underlined events were included in a single regression model (DSS, 2020).

enough. ‘Don’t know’ and ‘refused’ were also provided as options though excluded from this analysis. For our analysis, we created a variable, ‘plenty of sleep’, which differentiates Study Youth who reported having plenty of sleep from others: 1 if the Study Youth got plenty of sleep and 0 otherwise.

It is worth pointing out that the original sleep variables in *Footprints in Time* were defined in multiple (more than two) categories. However, for the sake of this analysis, they were redefined only in two categories (as binary variables) because the number of observations in some of the original categories were too small to be analysed independently. As shown in Table 19 in the Results section, for example, the categories ‘once a month or less’ and ‘once a fortnight’, respectively, accounted for only 3% (22) and 1% (9) of the responses to the questions, ‘In the last month, have you had trouble getting to sleep or staying asleep? How often?’

Data on major life events were sourced from Waves 1–13. In each wave, the parent or carer (P1s) of Study Youth were asked whether ‘big’ things have happened to them, their family, or Study Youth in the past 12 months. This analysis focused on the life events presented in Table A7, in the appendix. Except for the events ‘Major weather events’ and ‘National Disability Insurance Scheme (NDIS) support package’, which were only included in Wave 13, the other events were included in all the 13 waves. Whilst a few questions were split in later waves to provide more detail for the sake of this analysis questions have been combined for consistency and longitudinal comparison across all the waves. Although information is available about to which member of the family the events happened, our analysis is only limited to family-level occurrences. This is because the individual-level prevalence is too low to provide sufficient statistical precision in our analysis. One exception is Study Youth being scared by another person’s behaviour, where 12% of Study Youth experienced the event.

The following major life event data were used for analysis:

- individual types of major life events experienced in Wave 13
- for each event type, the number of years (waves) that each family experienced the event
- for each family, the total number of types of major life events experienced in Wave 13
- for each family, the average number of types of major life events experienced per year (wave)
- for each family, the average percentage of types of major life events experienced per year (wave).

We conducted both descriptive and regression analyses. Bivariate logistic regressions were conducted to examine if sleep quality was significantly associated with:

- occurrence of an event, separate regressions were fitted for all the major life events listed in Table A7
- the number of years an event type was experienced, separate regressions were fitted for 15 events: the events 'Major weather events' and 'NDIS support package' were excluded from the analysis since they were only included Wave 13; the events 'Problem with police' and 'Arrested, jail' and 'Mugged or assaulted' and 'robbed' were combined.
- the number of types of events experienced in Wave 13
- the average number of events experienced per year (wave)
- the average percentage of events experienced per year (wave).

Results

Descriptive analysis

This subsection summarises and describes the data on sleep quality and major life events. Table 19 shows the prevalence of presence (absence) of sleep difficulties. The majority of young people in the study (about 66%) never had trouble getting to sleep or staying asleep, and about 30% had trouble getting to sleep/staying asleep at least once a week.

Table 19 Prevalence of sleep difficulties in Wave 13

Prevalence of sleep difficulties	Number	%
Never	447	66
Once a month or less	22	3
Once a fortnight	9	1
Once a week	35	5
Two to three times a week	94	14
Four to six nights a week	72	11

Figure 17 depicts reasons for having troubled sleep. The three most common reasons were: being too hyped up (32%), too hot or too cold (16%) and anxiety or fear (15%). A considerable proportion (13%) of Study Youth also mentioned the use of mobile phones and computers as a reason for having difficulty sleeping.

Figure 17 Reasons for having troubled sleep in Wave 13

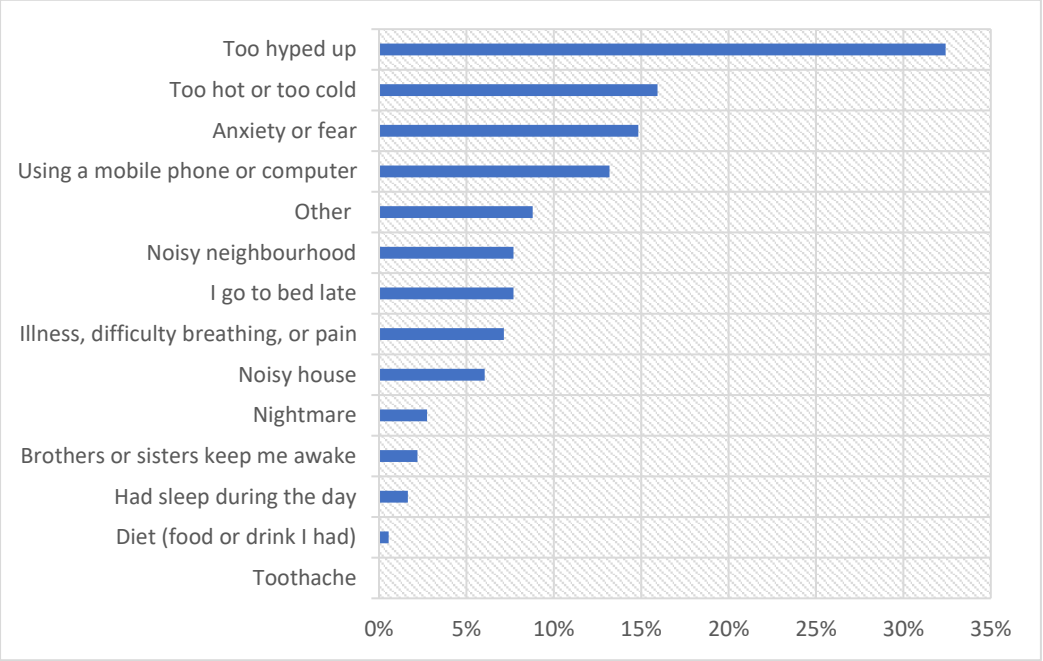


Table 20 presents data on prevalence of having enough sleep. During the last month, 42% of Study Youth got plenty of sleep, 49% got just enough sleep, and the rest did not get enough sleep.

Table 20 Getting enough sleep in Wave 13

Prevalence of having enough sleep	**Number**	**%**
Plenty	287	42
Just enough	340	49
Not quite enough	n.p.	n.p.
Not nearly enough	<5	n.p.

Figure 18 shows the percentage of families who experienced different types of major life events in Wave 13 in the past 12 months. The three most prevalent events for family members were: death (51%)[12], pregnancy (45%) and being badly hurt or sick (38%). Further data analysis shows that 98% of the time the deceased person lived outside the Study Youth's household. Similarly, 86% of the time, those who became pregnant and 61% who were severely hurt/sick do not live in the same households as the Study Youth. In Wave 13, about 95% experienced at least one major life event in the past 12 months, 82% experienced at least two major life events, 66% at least three major life events and 47% at least four major life events. The total number of types of life events experienced by families ranged from 0 to 13 and averaged 3.8.

[12] This includes death of a close friend.

Figure 18 Prevalence of major life events in Wave 13

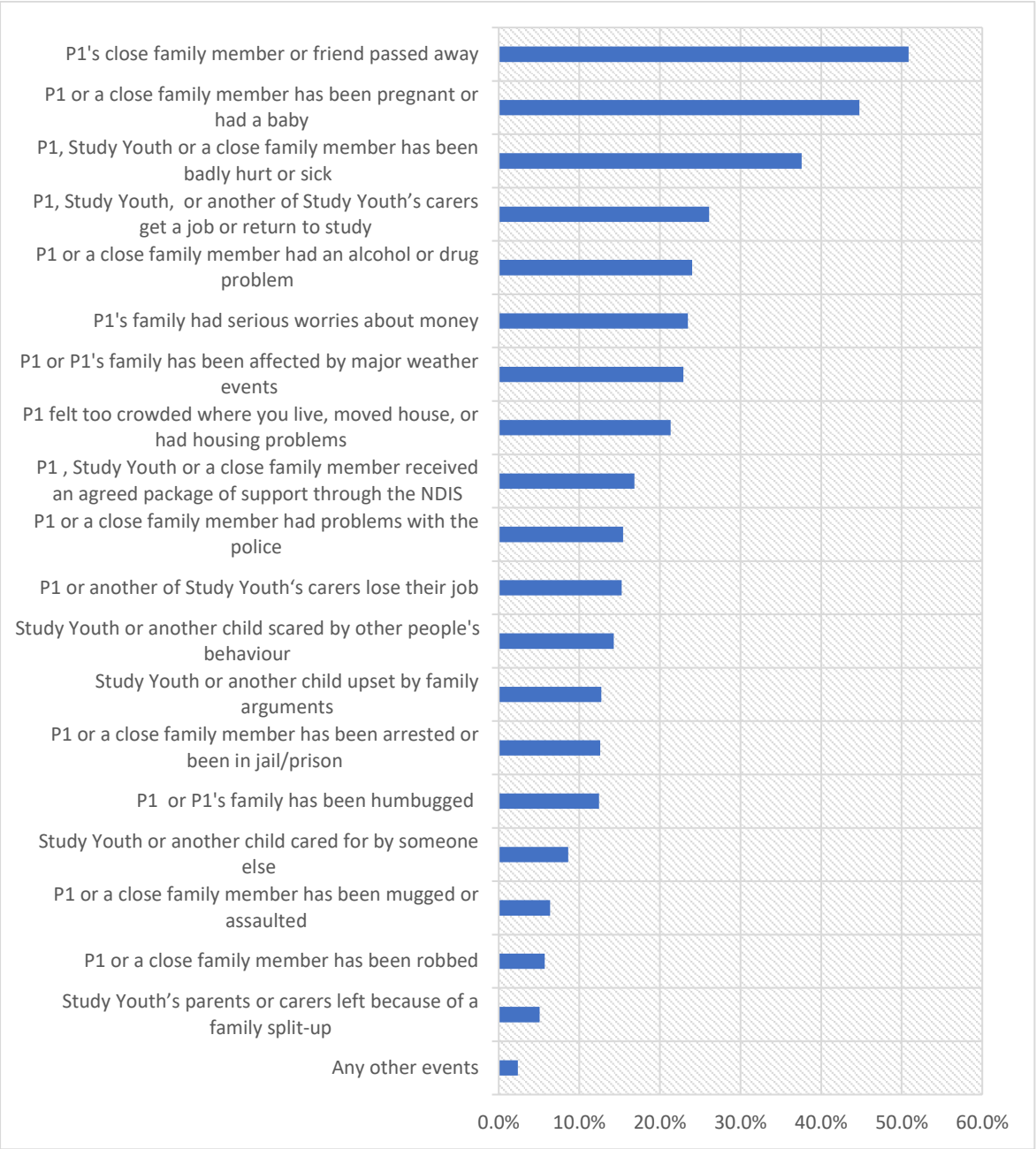


Figure 19 depicts the percentage of families interviewed at Wave 13 who experienced multiple life events. A longitudinal analysis of the life event data shows that the overwhelming majority of families experienced at least two major life events in each wave (from Waves 1 to 13), with the highest prevalence in Wave 3 (88%) and the lowest prevalence in Wave 9 (73%). A substantial proportion of families (ranging from 37%–56%) also experienced at least four major life events. Overall, the percentage of families experiencing multiple events dropped over time, except slightly rebounding in recent waves. Figure 20 presents the average number of major life events experienced by families interviewed at Wave 13, which remained consistently between three and four over the past 13 waves.

Figure 19 Percentage of families present in Wave 13 who experienced multiple major life events, by wave

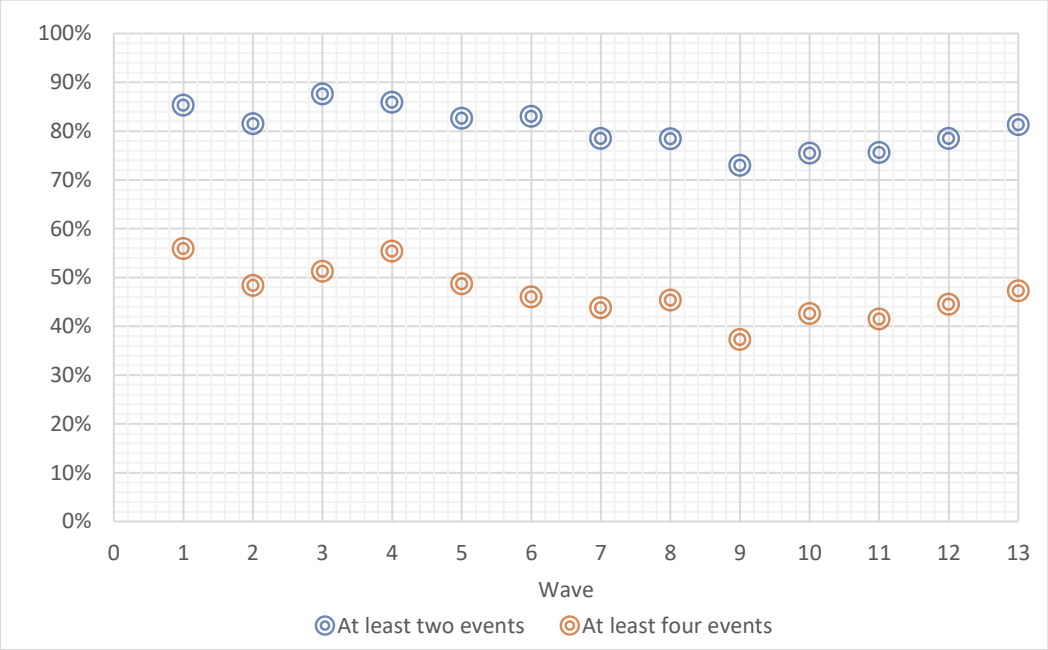
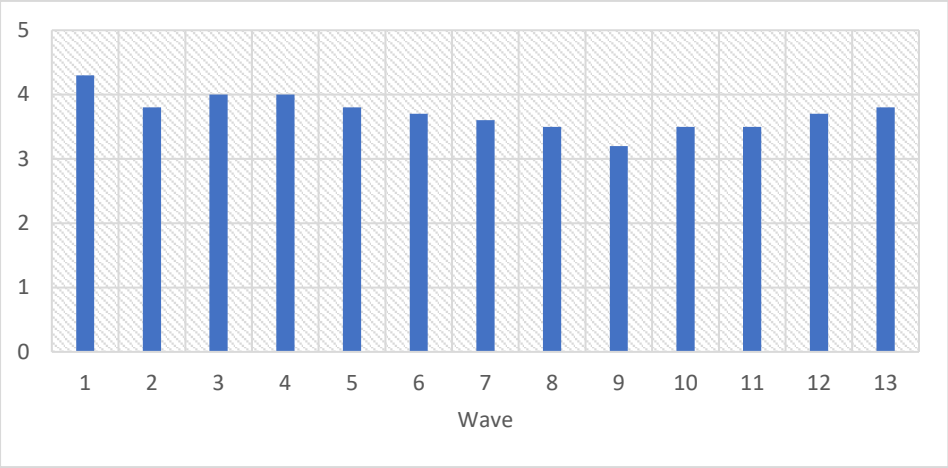


Figure 20 Average number of major life events experienced by families interviewed in Wave 13, by wave



As shown in Figure 17, Study Youth have provided reasons for having trouble sleeping. Though none of the major life events listed in Figure 18 were explicitly mentioned as a reason, we checked whether there is a statistical association between some of the trigging factors for difficulty sleeping and the major life events. Study Youth in families:

- experiencing housing problems are as likely as others to have experienced sleep problems due to feeling too hot or too cold (16% versus 16%), and

- whose members were severely hurt, or sick are more likely than others to have experienced sleep problem due to illness (9% versus 6%).

It is worth noting that information about major life events was collected from interviews with parents (P1s), whereas information about sleep was collected from interviews with Study Youth. The weak statistical relationship between the reported triggers of sleep difficulty and major life events could partly be attributed to this differing data generation process. Though the above results suggest that there may not be a strong association between exposure to major life events and sleep quality, this is yet to be investigated in the following section.

Regression analysis

This subsection presents results from logistic regressions. Parameters reported in the tables are odds ratios and corresponding standard errors (in parenthesis). Table 21 presents results obtained with logistic regressions where separate models were fitted for each life event listed in Table A7. However, for space and brevity, only events with a statistically significant relationship with the sleep variables are reported in this analysis. Despite differing levels of statistical significance, the occurrence of the following major life events is significantly associated with an increased probability of having troubled sleep: The family being seriously worried about money; someone in the family being humbugged/harassed for money; someone in the family being robbed; and a child in the family being badly scared by other people's behaviour. Getting a job or returning to study by carers of Study Youth is

associated with a higher probability of getting plenty of sleep, the only significant relationship we found for this variable. For all the above-mentioned events, except a child being scared by other people, their statistical relationship with the sleep variables turned insignificant when we became more specific about whom the events happened to: whether it is to someone who lives in the household, or the primary carer of Study Youth or Study Youth himself/herself. However, if the Study Youth is scared by other people's behaviour, the odds of having a good sleep are expected to shrink by a factor of 0.38, whereas the odds of having troubled sleep are expected to increase by a factor of 0.82. Yet, these results are not substantially different from those obtained with events measured at the family level.

Table 21 Sleep quality and experience of a specific life event in Wave 13

Major life event	Good sleep	Troubled sleep	Plenty of sleep
P1's family had serious worries about money	0.567***	1.583**	
	(0.108)	(0.298)	
P1 or P1's family has been humbugged (harassed for money)	0.613**	1.645**	
	(0.143)	(0.390)	
P1 or a close family member has been robbed	0.469**	1.795*	
	(0.155)	(0.600)	
Study Youth or another child scared by other people's behaviour	0.643**	1.591**	0.596**
	(0.144)	(0.362)	(0.140)
P1, Study Youth, or another of Study Youth's carers get a job or return to study			1.491**
			(0.260)

Note: *** indicates significance at the 1% level; ** indicates significance at the 5% level; and * indicates significance at the 10% level.

Table 22 shows statistically significant relationships between the number of years a specific major life event was experienced and sleep. The probability of having good sleep decreases as the number of years the following major life events were experienced increases: a family member being hurt; carers of Study Youth getting a job/returning to study; a family member losing a job; the family being seriously worried about money; a family member being humbugged/harassed for money; a family member having alcohol/drug problem; a family member being mugged, assaulted or robbed; a family member had problems with the police or was arrested; a child being upset by family argument; and a child being scared by another person's behaviour. There is also a statistically significant inverse relationship between having plenty of sleep and the number of years the following major life events were experienced: a child being upset by family argument; a child being scared by other people's behaviour and a child being cared for by someone else for at least a week. Overall, the results suggest that some major life events only have a significant association with sleep when experienced in multiple periods.

Table 22 Sleep quality and the number of years an event was experienced

Number of years …was experienced	Good sleep	Troubled sleep	Plenty of sleep
P1, Study Youth or a close family member has been badly hurt or sick	0.938**	1.058*	
	(0.028)	(0.032)	
P1, Study Youth, or another of Study Youth's carers get a job or return to study	0.898***	1.094**	
	(0.030)	(0.038)	
P1 or another of Study Youth's carers lose their job	0.826***	1.176***	
	(0.050)	(0.073)	
P1's family had serious worries about money	0.911***	1.100***	
	(0.024)	(0.029)	
P1 or P1's family has been humbugged	0.925***	1.110***	
	(0.027)	(0.033)	
P1 or a close family member had an alcohol or drug problem	0.947**	1.067**	
	(0.026)	(0.030)	
P1 or a close family member has been mugged, assaulted or robbed	0.839***	1.175***	
	(0.044)	(0.063)	
P1 or a close family member had problems with the police, arrested or jailed		1.065**	
		(0.034)	
Study Youth or another child upset by family arguments	0.918***	1.100***	0.938*
	(0.030)	(0.036)	(0.0310)
Study Youth or another child scared by other people's behaviour	0.888***	1.121***	0.925**
	(0.032)	(0.041)	(0.033)
Study Youth or another child cared for by someone else			0.907*
			(0.046)

Table 23 shows the relationship between exposures to multiple major life events and sleep, both cross-sectionally and longitudinally. Three separate regressions were fitted with each predictor variable for each outcome variable. The likelihood of having a good sleep (troubled sleep) decreases (increases) with the number of types of events experienced both in wave 13 and across all waves. In looking at the first row, for example, the odds of never experiencing sleep problems are expected to shrink by a factor of 0.11, whereas the odds of and experiencing sleep difficulties at least once a week are expected to grow by a factor of 0.09 for every additional major life event experienced by the family. The second row also shows that the odds of never experiencing sleep problems are expected to shrink by a factor of 0.14, whereas the odds of experiencing sleep problems at least once a week are expected to grow by a factor of 0.18 for every additional type of major life event experienced each year. The last row shows that, for every additional point increase in the percentage of major life events experienced each year, the odds of having good sleep are expected to increase by a factor of 0.02, whereas the odds of having troubled sleep are expected to grow by a

factor of 0.03. No statistically significant relationship was found between having plenty of sleep and experiencing multiple life events.

Table 23 Sleep quality and experience of multiple life events

Variable	Good sleep	Troubled sleep	Plenty of sleep
Total number of events experienced in Wave 13	0.8922***	1.0930***	0.9752
	(0.0180)	(0.0370)	(0.0312)
Average number of events experienced per year/wave	0.8632***	1.1805***	0.9360
	(0.0432)	(0.0610)	(0.0460)
Average percentage of events experienced per year/wave	0.9782***	1.0252***	0.9901
	(0.0073)	(0.0079)	(0.0072)

We investigated the results in Table 23 further to check whether the likelihood of having good sleep (troubled sleep) continues to decrease (increase) as the number of events experienced each year increases. We did this by including the square of the predictor variables in the logistic regressions. The predicted probabilities of having a good sleep are presented in Figures A1–A3 for illustration. It appears that an increase in major life events increases the likelihood of sleep difficulties. In other words, after experiencing a certain number of events, exposure to an additional event tends to have an insignificant marginal effect on Study Youth's sleep.

Conclusion

This article investigated the relationship between exposure to major life events and sleep using sleep data from Wave 13 and major life events data from all 13 waves. While most families had experienced multiple major life events in Wave 13, not all events had a significant association with sleep. Some events were found to have a statistically significant concurrent association with sleep quality (such as, initiating sleep/staying asleep and having plenty of sleep), whereas others were found to have a significant association with sleep only when experienced in multiple years. There is a strong statistical association between sleep and the total number of types of life events experienced in Wave 13 and the average number of events experienced across multiple waves. However, we have noted a diminishing return in the relationship: an increase in the number of major life events does not result in a continued decrease in sleep quality. While trying to reduce Study Youth's exposure to stressful life events and multiple disadvantages, supporting resilience could help minimise negative impacts on sleep. Service providers need to consider the impact of stressful events load for Aboriginal and Torres Strait Islander youth and implement culturally informed practices (Fatima et al., 2023).

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Appendix

Table A7 Description and summary of major life events in Wave 13 (2020)

Major life events	Label	Number of observations	Mean	Standard deviation
Have you or a close family member been pregnant or had a baby	Pregnancy	751	0.447	0.498
Have you, <Study Youth> or a close family member been badly hurt or sick?	Hurt/sick	753	0.376	0.485
Has a close family member or friend passed away?	Passed away	753	0.509	0.500
Did you, <Study Youth> or another of <Study Youth>'s carers get a job or return to study?	Get a job/return to study	755	0.261	0.439
Did you, or another of <Study Youth>'s carers lose their job?	Lose a job – No	754	0.153	0.360
Has your family had serious worries about money?	Worries about money	754	0.235	0.424
Have you or your family been humbugged (harassed for money)?	Humbugged	755	0.125	0.330
In the last year have you felt too crowded where you live, moved house, or had housing problems?	Housing problems	755	0.213	0.410
Have you or a close family member had an alcohol or drug problem?	Alcohol or drug problem	750	0.240	0.427
Have you or a close family member been mugged or assaulted?	Mugged or assaulted	752	0.064	0.245
Have you or a close family member been robbed?	Robbed	755	0.057	0.232
Have you or a close family member had problems with the police?	Problem with police	752	0.154	0.361
Have you or a close family member been arrested or been in jail/prison?	Arrested, jail	755	0.126	0.332
Has <Study Youth> or any other child of yours been involved in or upset by family arguments?	Child upset by family arguments	755	0.127	0.333
Has <Study Youth> or any other child of yours been badly scared by other people's behaviour?	Child scared by other people	750	0.143	0.350
Have any of <Study Youth>'s parents or carers left because of a family split-up?	Family split up	746	0.051	0.220

Major life events	Label	Number of observations	Mean	Standard deviation
Has <Study Youth> or any other child of yours had to be cared for by someone else for a while (at least a week)?	Your child cared for by someone	755	0.086	0.281
Have your or your family been affected by major weather events	Major weather events	755	0.229	0.421
Have you, <Study Youth> or a close family member received an agreed package of support through the National Disability Insurance Scheme	NDIS support package	749	0.168	0.374
Have any other major events or stressful situations happened to you, your family or <Study Youth> in the last year?	Any other events	755	0.024	0.153

Figure A1 Predicted probabilities (with 95% Confidence Intervals) by number of major life events experienced in Wave 13

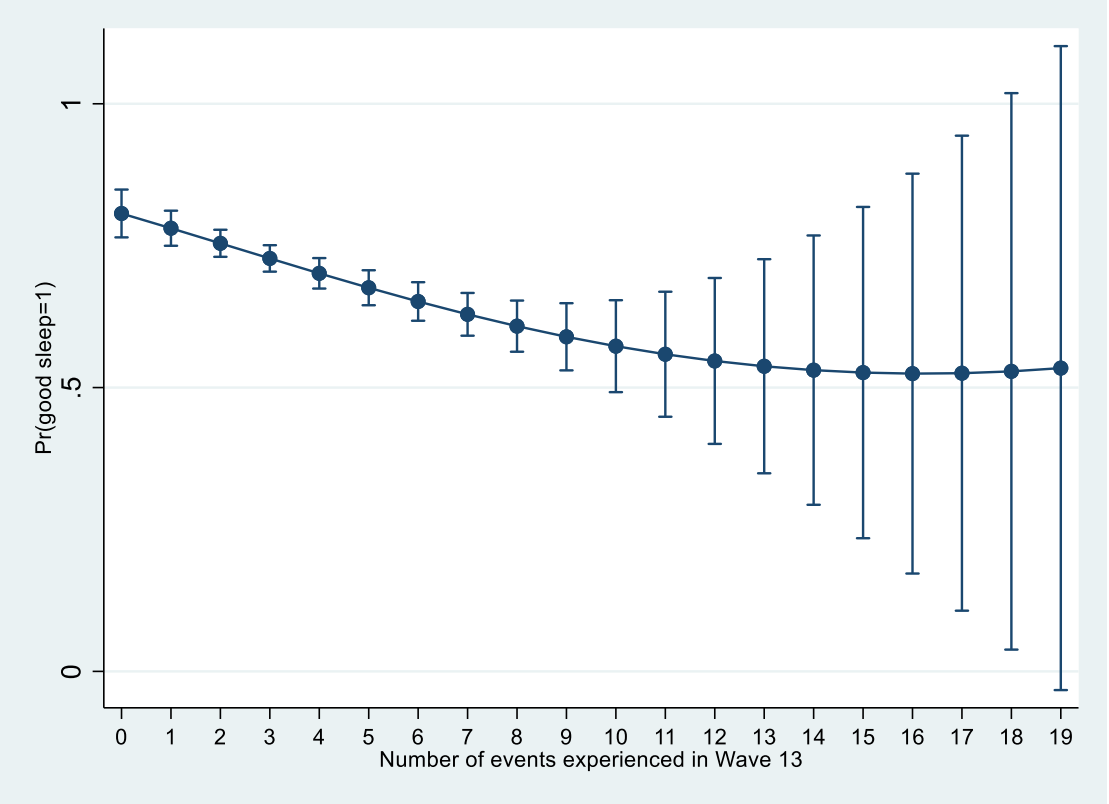


Figure A2 Predicted probabilities (with 95% Confidence Intervals) by average number of major life events experienced per wave, for families present in Wave 13

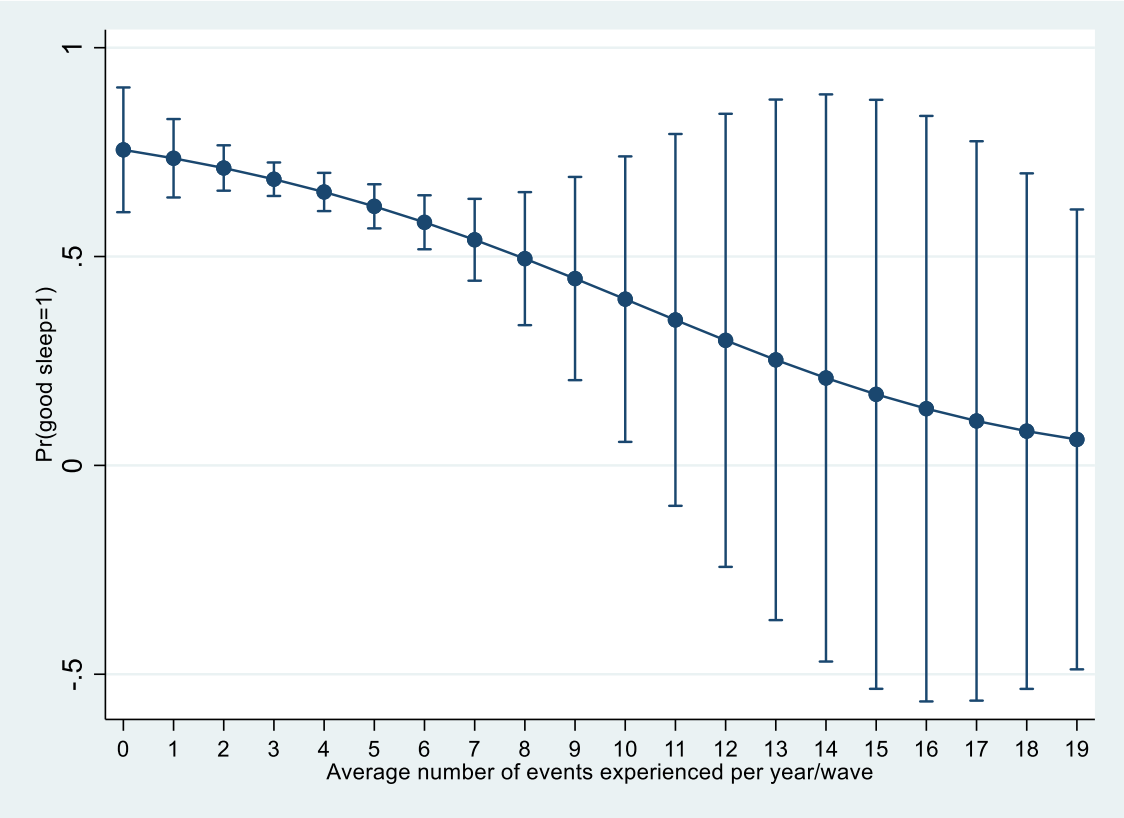
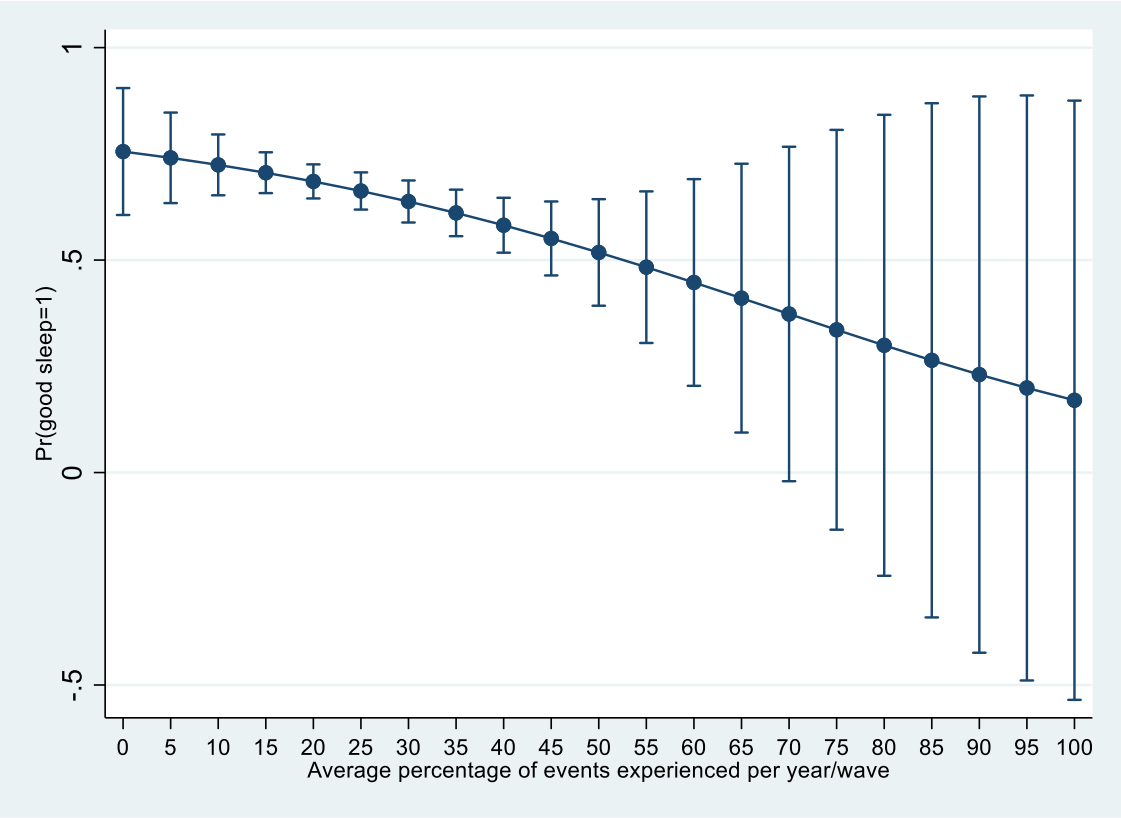
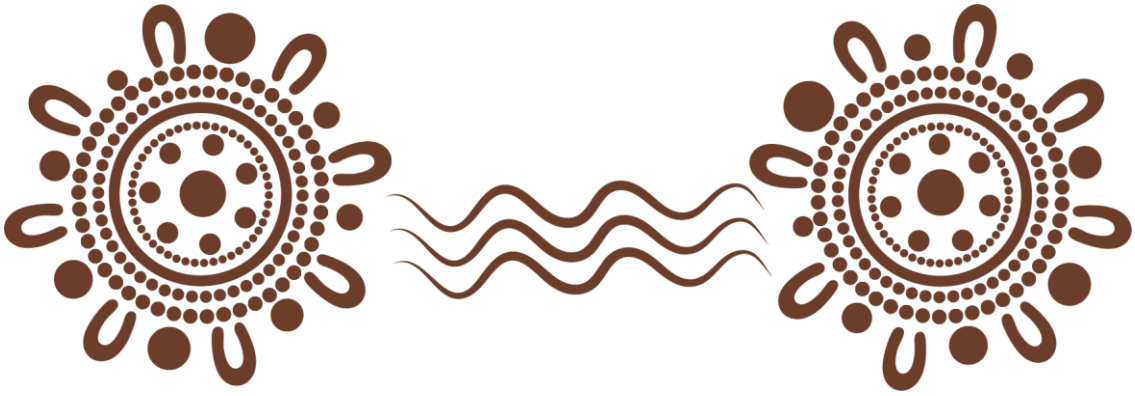


Figure A3 Predicted probabilities (with 95% Confidence Intervals) by average percentage of major life events experienced per year/wave, for families present in Wave 13





Work Participation and Future Aspirations: Patterns and Determinants

Main findings

- About 14% of Study Youth had done paid work in the 12 months prior to interview averaging 12.8 hours per week.
- Over half of them worked to support their financial needs and 17% worked to improve employment prospects.
- The majority of Study Youth (about 76%) aspired to multiple careers and skill sets whilst about 10% did not know what job they might like to do in the future.
- Occupational and educational aspirations of Study Youth are significantly associated with demographic, socioeconomic and geographic factors.

Introduction

Holding educational and career aspirations and working at a young age are important precursors of successful employment outcomes later in life (Gregg, 2001; Super, 1990). Work prepares young people for adult life through developing a good work ethic and accumulating skills (both technical and interpersonal skills) obtained from on-the-job training (Gregg & Tominey, 2005; Luijkx & Wolbers, 2009). Having educational and occupational aspirations help young people to set clear educational goals, mobilise resources and design optimal strategies to build successful career pathways (Nurmi et al., 2002). That means young people with uncertain career aspirations might be less equipped to make informed choices regarding education and work pursuits and struggle to attain better life outcomes. Therefore, though aspiration is developmental and changes across life transitions (Ginzberg, 1988), it can provide essential insights into young people's view of themselves and their future, as well as their tendency to take on opportunities available to them and engage in risk-taking behaviours (Schoon & Parsons, 2002).

This article analyses the patterns and determinants of work participation and educational and occupational aspirations among Aboriginal and Torres Strait Islander Study Youth present in Wave 13 of *Footprints in Time*.

Data and methods

Our analysis mainly drew upon data from Wave 13 (2020) for work participation and from Waves 8 (2015) and 11 (2018) for educational aspiration. The data were sourced from Study Youth in both the younger cohort and the older cohort. Work participation was assessed with the questions:

- Have you done any paid work in the last 12 months?
- Have you done any unpaid work in the last 12 months?
- How many hours a week do (did) you usually work?
- Did you work during school terms, school holidays or both?
- What are the main reasons you have worked in the last 12 months?

Work aspiration was assessed with the question: 'Thinking about work you might like to do in the future – what types of work would you like to do?' The response categories were work involving academic skills; work involving manual skills; work involving artistic expression; work involving social skills. Options also included were: don't know; refused ions. For each work category, a dichotomous variable was created as equal to 1 if the response was yes and equal to 0 if the response was maybe, no or don't' know.

Using Wave 11 data,[13] educational aspiration was assessed with the question: 'When you are older, will you…' The responses include, among other life aspirations, do Year 12, go to university and do more study or training (e.g., TAFE). In this analysis, we focused on the highest level of educational aspiration 'go to university' and created a dichotomous variable equal to one if the Study Youth intended to go to university, otherwise equal to 0. We assigned one to the educational aspiration of Study Youth who planned to go to university and to do Year 12 and/or TAFE courses. It should be noted the educational aspirations were not mutually exclusive. Some Study Youth hold aspirations for doing Year 12/TAFE courses and university attendance. In this case, we assigned 1 to the aspiration variable.

We conducted both descriptive and regression analyses. Descriptive analyses were used to analyse patterns of aspiration and between-group differences in patterns of aspiration whereas logistic regressions were used to identify factors associated with holding a particular educational and occupational aspiration. The list of covariates included in the regressions were:

- age of the Study Youth, in years
- gender of the Study Youth
- whether P1 or their partner (if applicable) has a paid job
- money worries
- P1's highest level of education attained: this variable was not included in the work aspiration models since there were no corresponding data in Wave 13; using

[13] This was the only wave that included both cohorts.

education data from Wave 12 severely reduced the sample size since education data are only available for 653 of the 755 P1s

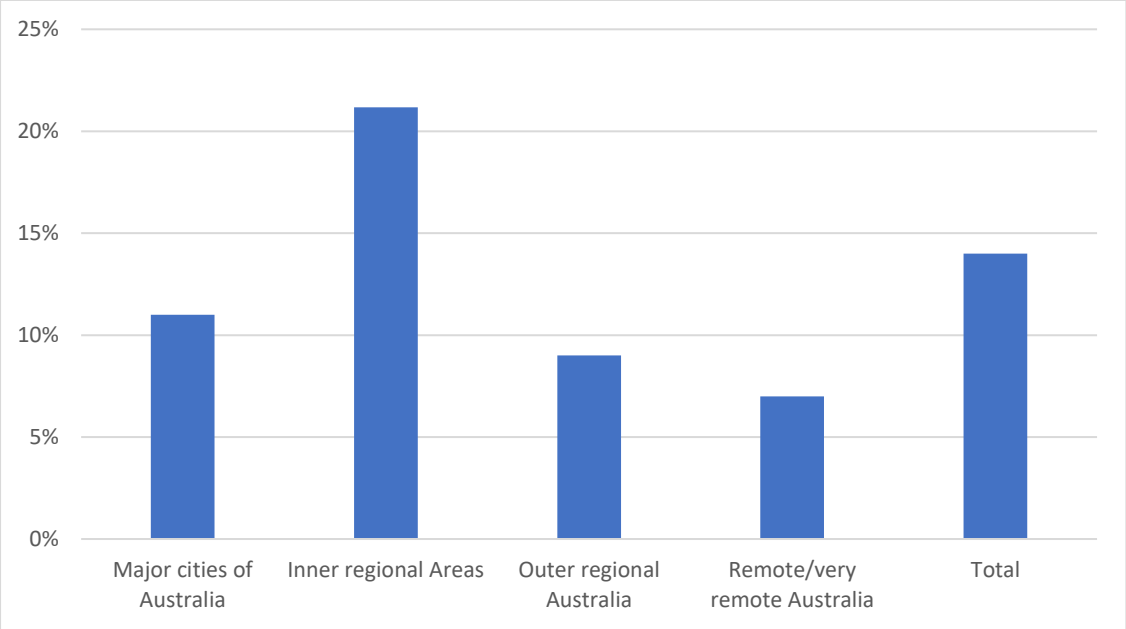
- geographic remoteness
- SEIFA-index of relative socioeconomic advantage and disadvantage (IRSAD), in deciles. Higher deciles indicate greater advantages (lower disadvantages).

Results

Work participation

While about 60% of Study Youth were younger than 14 years at Wave 13, work participation data were collected for 750 Study Youth. In the 12 months prior to interview, 14% of Study Youth in the sample had done paid work and less than 5% had done unpaid work (for their families and others). Participation in work appears to vary substantially across different demographic groups, where participation rate is higher among females (15%) than males (12%), Study Youth in the older cohort (31%) than those in the younger cohort (4%) and Study Youth with employed parents (16%) than those with non-employed parents (7%). Regarding geographic remoteness, inner regional areas have had by far the highest participation rate (21%), followed by major cities (11%), see Figure 21. Remote and very remote areas have had the lowest percentage of participation (7%).

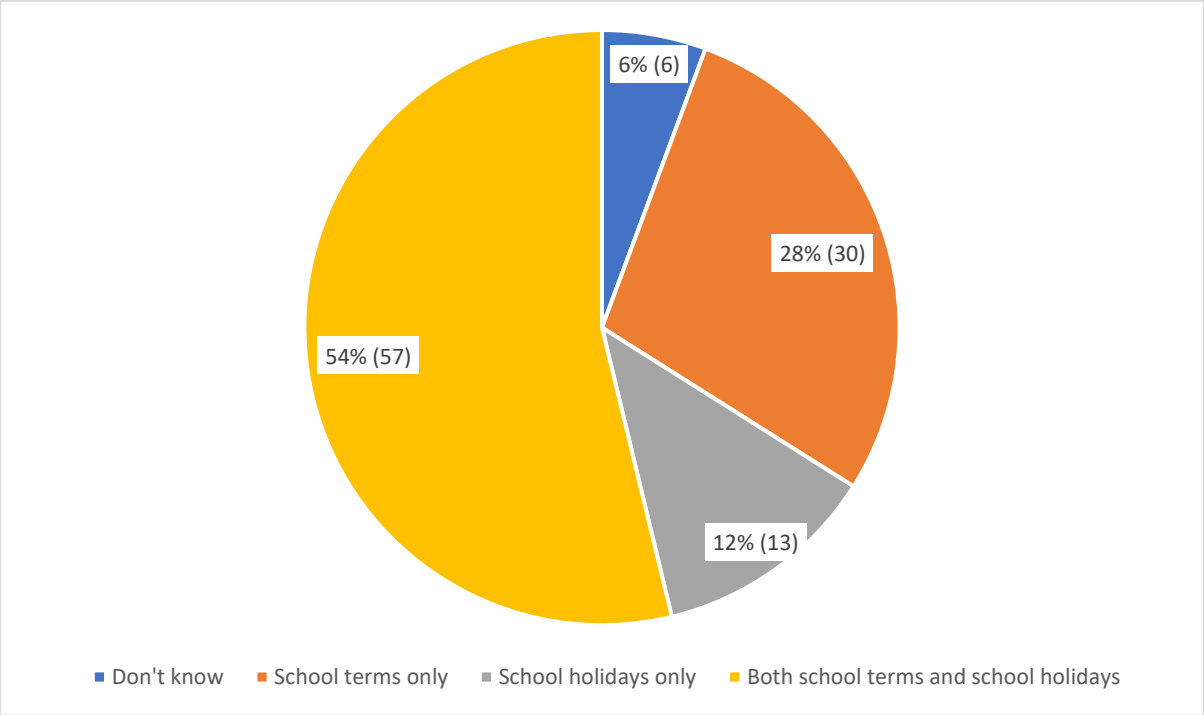
Figure 21 Percentage of Study Youth who have done paid work, by remoteness



Study Youth who participated in work and attended school/TAFE were asked whether they worked during school terms, or school holidays or both. The overwhelming majority (82%) worked during school terms, and only a small proportion worked only during school holidays (12%), see Figure 22. However, over half of Study Youth (52%) who worked during school terms worked during weekends, and the rest worked during weekdays. Regarding the number of hours worked in a particular week, 31% had worked irregular hours while the

rest had worked between five and 50 hours, averaging 12.8 hours a week. Both national and international research shows that working extended hours can be detrimental to academic progress (Robinson, 1999; Vickers, Lamb & Hinkley, 2003; Marsh & Kleitman, 2005; Staff & Mortimer, 2007; Dinku, Fielding & Genc, 2019). More specifically, Anlezark and Lim (2011) used data from the Longitudinal Study of Australian Youth and showed that combining school and work is negatively associated with Year 11 retention and TER (Tertiary Entrance Rank) scores when paid work amounts to more than five hours a week for males and more than 10-15 hours for females.

Figure 22 Percentage of Study Youth worked during school terms/school holidays



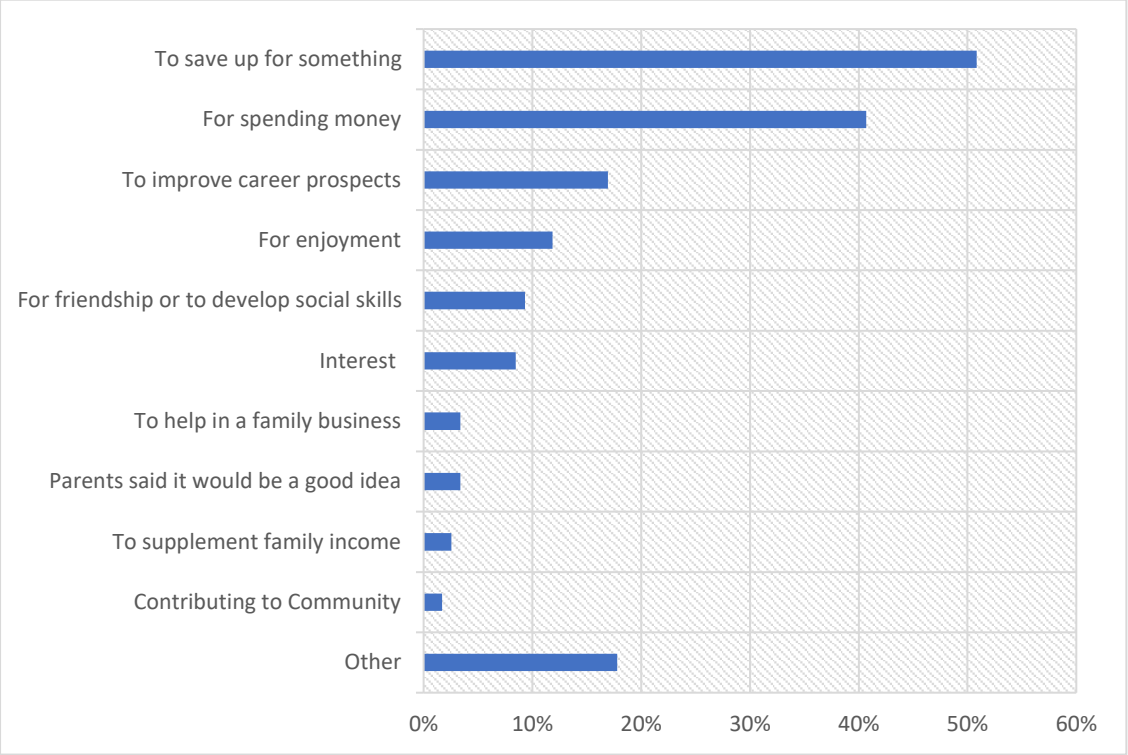
Reasons for work participation

Study Youth who have done any paid or unpaid work in the last 12 months were asked about the main reason for their participation. Figure 23 depicts their responses[14]. The most common reasons were to save money (51%), to spend money (about 41%) and improve career prospects (17%). A considerable proportion also worked for enjoyment (12%) and to build social networks and skills (9%). A higher proportion of males (73%) than females (70%), Study Youth with employed parents (72%) than those with non-employed parents (65%), Study Youth in major cities (80%) than in other areas (72%) reported that they worked either for saving up money or for spending money. Despite reports that young Australian workers are particularly vulnerable to adverse working conditions, such as harassment and exploitation (Winter, 2013; Young Workers Centre, 2017; Ruiz, Bartlett &

[14] Please note that this is a multi-response data and the percentages do not necessarily sum to 100%.

Moir, 2019), almost all (98%) of the Study Youth who had participated in paid or unpaid work reported that they feel safe at work most of the time/always.

Figure 23 LSIC Study Youth reasons for working

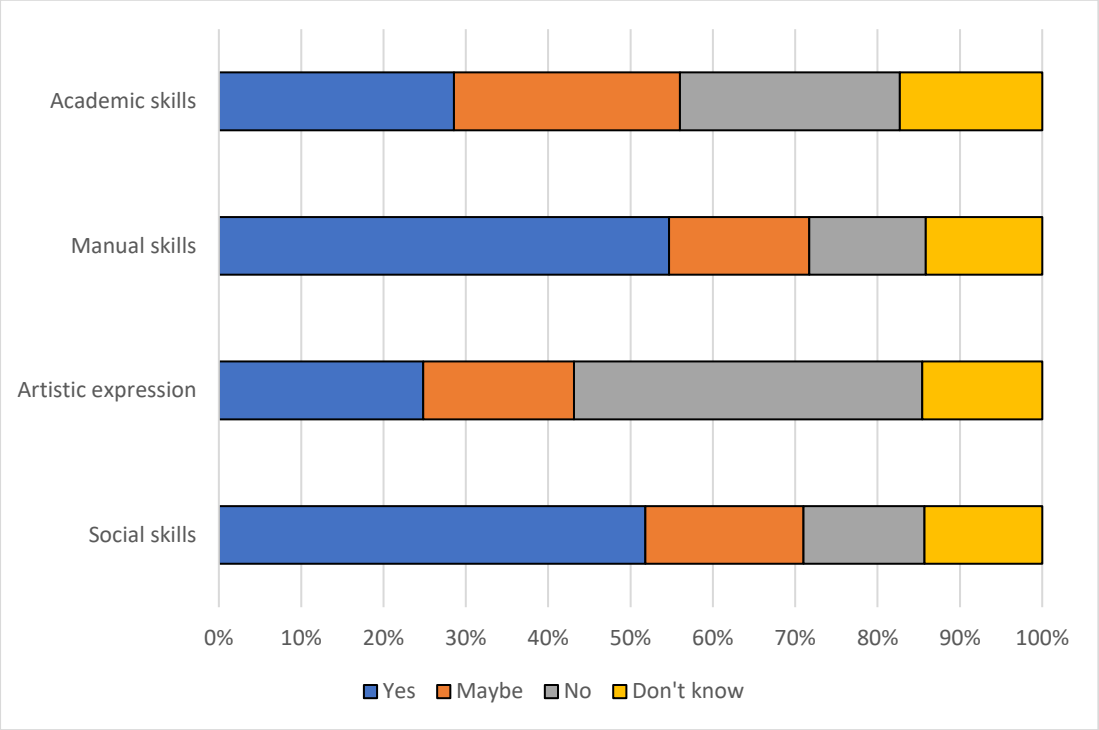


Note: The percentages do not add up to 100% since the responses are not mutually exclusive- some respondents have provided multiple reasons for getting involved in work.

Patterns of work aspiration

Figure 24 presents survey responses about work aspiration. Of the 710 Study Youth for whom work aspiration data were available, more than half said they would like to do work involving manual skills (55%) and work involving social skills (52%). About a quarter of them (26%) would like to do work involving artistic expression, and 28% would like to do work involving academic skills. The responses show that most Study Youth aspire to multiple careers and skill sets, with a relatively greater alignment between aspirations for jobs involving social skills and jobs involving manual skills. For example, of those who would like to do work involving social skills, 66.6% would like to do work involving manual skills; 37% would like to do work involving academic skills, and 34% would like to do work involving artistic expression. Overall, over 80% of Study Youth preferred at least one work category, over 50% preferred multiple work categories, 26% preferred only one work category, 10% did not know what they might like to do in the future (responded 'Don't know' to all the categories), and 6% responded maybe or no to all work categories.

Figure 24 What types of work would LSIC Study Youth like to do in the future?



Factors associated with work aspiration

The propensity to aspire to having a job, regardless of the type of job, was higher among Study Youth:

- in the older cohort (85%) than those in the younger cohort (77%)
- with an employed parent (81%) than with non-employed parent (76%)
- in families without serious money worries (83%) than families with serious money worries (78%)
- in major cities and inner regional areas (84%) than in outer regional areas (75%) and remote/very remote areas (65%).

Though a similar percentage of males and females aspired to having a job, we have noted a highly gendered pattern of aspiration concerning specific jobs or skill sets, see Figure 25. Females were much more likely than males to aspire doing work involving artistic expression, social skills and academic skills. In contrast, males were more likely than females to aspire doing work involving manual skills. These gender differentials hold even after accounting for key characteristics, such as age, parental employment, financial stress and geographic remoteness, see Table A2. It should be noted however that the differences regarding aspiration for academic jobs is only marginally significant, at the 10% level.

Figure 25 Patterns of work aspiration, by gender

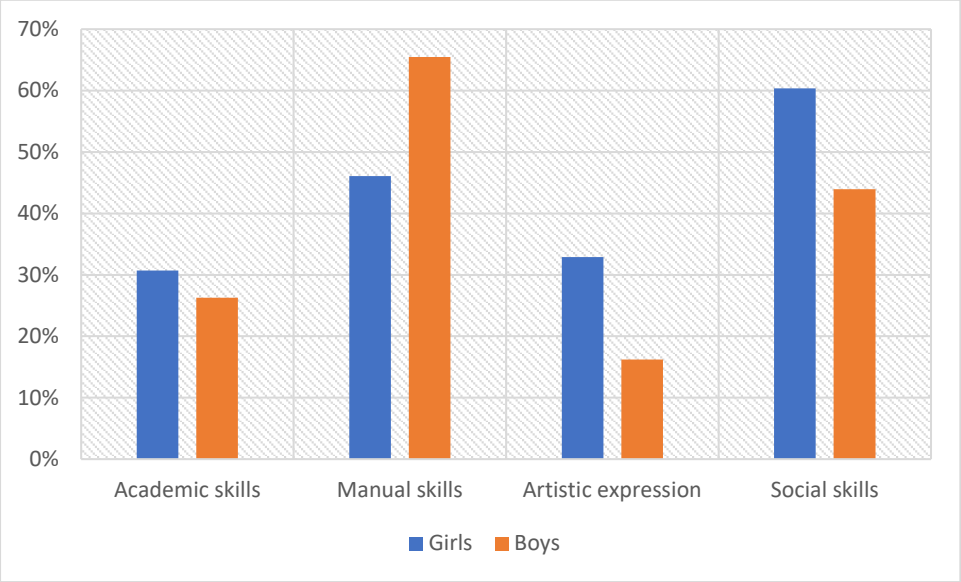


Table 24 provides factors associated with Study Youth's occupational and educational aspirations. The results are obtained with logistic regressions. Parameters presented in the table are odds ratios along with their standard errors (in parenthesis). In Columns 1–4, the outcome variable equals 1 if the Study Youth responded 'yes' they would like to do the work involving the skills in the corresponding column otherwise equals 0. As indicated above, there is a significant difference between males and females regarding the propensity of aspiring for a particular occupational category. Males are more likely than females to aspire to jobs involving manual skills. However, they are less likely than their female counterparts to aspire to jobs involving academic skills, artistic skills and social skills. The results hold after accounting for differences in age, household socioeconomic status and geographical location.

Table 24 Factors associated with Study Youth's occupational and educational aspirations

Variable	Academic skills	Manual skills	Artistic expression	Social skills	Will go to university
Age	1.100	1.136**	0.935***	1.041	0.888**
	(0.065)	(0.063)	(0.060)	(0.057)	(0.042)
Male	0.745*	2.241***	0.371	0.498***	0.545***
	(0.129)	(0.361)	(0.071)	(0.079)	(0.075)
Employed parent	1.179	0.851	0.727	1.358*	1.042
	(0.234)	(0.156)	(0.149)	(0.245)	(0.038)
Money worries	1.330	1.074	1.349	1.411*	0.767*
	(0.263)	(0.203)	(0.283)	(0.264)	(0.120)
P1's highest level of education					
Year 11 to Certificate II					1.320
					(0.268)
Certificate III-Advanced Dip.					1.493**
					(0.270)
Bachelor or higher					2.240***
					(0.592)
Remoteness					
Inner regional areas	1.076	0.799	0.915	1.040	0.464***
	(0.232)	(0.161)	(0.205)	(0.205)	(0.073)
Outer regional areas	1.495	0.438***	0.700	0.805	0.480***
	(0.373)	(0.105)	(0.196)	(0.189)	(0.119)
Remote/very remote areas	0.874	0.445***	0.559*	0.419***	0.540*
	(0.238)	(0.109)	(0.170)	(0.104)	(0.174)
SEIFA-IRSAD	1.059	0.958	1.081**	1.007	1.103***
	(0.038)	(0.032)	(0.041)	(0.034)	(0.033)
_cons	0.075*	0.241*	1.316	0.716	4.781
	(0.065)	(0.195)	(1.232)	(0.572)	(2.915)
Number of observations	685	685	685	685	954

Note: The reference category for P1's highest level of education is Year 10 and below.

*** is statistical significance at the 1% level; ** is statistical significance at the 5% level; and * is statistical significance at the 10% level

Educational aspiration

Information about Study Youth's intended educational plans is available in Waves 8 and 11 from responses to the question: 'When you get older, you will…?' The response categories were: do Year 12; go to university; do more study or training (e.g., TAFE). It should be noted, however, that only Study Youth in the older cohort were asked the question in Wave 8. A total of 213 Study Youth from the older cohort participated in both Wave 8 and Wave 13. More than one in three (69%) intended to do Year 12, 46% intended to go university and 29% intended to do more study or training, such as TAFE courses. We have noted that 644 Study Youth from younger and older cohorts participated in both Wave 11 and 13, of whom 70% intended to do Year 12, 44% intended to go to university and 31% intended to do more training such as TAFE courses. Restricting the Wave 11 sample to Study Youth in the older cohort reveals a slight shift in patterns of aspiration, where 74% intended to do Year 12, 40% intended to go to university and 29% intended to do more study or training. The fall in the percentage of Study Youth aspiring to attend university over time is perhaps because some Study Youth became less interested in attaining a university qualification or gained a more realistic understanding of the opportunities and constraints ahead of them and adjusted their aspirations accordingly (Gottfredson, 2002).

Factors associated with educational aspiration

Factors associated with aspiration of university attendance are presented in Table 24. In Column 5, the outcome variable equals 1 if the Study Youth plans go to university otherwise equals 0. The odds of aspiring to attend university are negatively associated with age; i.e., Study Youth tend to hold lower aspirations for university attendance as they get older. On the other hand, aspirations for university attendance are positively associated with being female, living in a family without serious money worries and living in major cities. The propensity to aspire to attend university also increases with parent's level of education and area socioeconomic status. Previous studies also underscore the importance of family and local contexts in shaping the formation of educational aspirations of Aboriginal and Torres Strait Islander children and young people (Commonwealth of Australia, 2005; Mission Australia, 2013). Various factors can influence the formation of educational aspirations. For example, children who hold strong beliefs in positive returns to hard work and in their ability to achieve their desired educational goal tend to have higher aspirations than others, who perhaps attribute success to luck or fate (Gutman & Akerman, 2008). Interactions with significant others such as parents, friends and neighbours, and access to enabling resources within families and communities can influence young people's aspirations (Bryant et al., 2006). Living in affluent families and communities can reinforce existing expectations and aspirations since children can experience and benefit from available social, economic and cultural capital (Kim et al., 2019).

Conclusion

This article examined patterns and determinants of work participation and aspiration amongst *Footprints* youth. We found that 14% of Study Youth surveyed in Wave 13 had done paid work in the 12 months prior to interview, for an average of 12.8 hours a week;

while fewer than 5% participated in unpaid work during the same period. The three most common reasons for working were to have spending money (51%), to save money (41%) and to improve career prospects (17%). Participation in paid work was positively associated with being female, having employed parents and living in non-remote areas. Most Study Youth held positive educational and occupational aspirations for the future. However, the level of educational qualification and type of work they aspired to varied across demographic, socioeconomic, and geographic groups. For instance, males were more likely than females to aspire to work involving manual skills and Study Youth who lived in major cities were more likely than those in regional and remote areas to aspire to attend a university.

Our findings highlight important policy contexts. *Footprints* youth worked weekly hours equivalent to the threshold above which work becomes detrimental to educational outcomes (see, e.g., Marsh & Kleitman, 2005; Vickers et al., 2003). Such long hours may mean that Footprints youth are less likely to effectively pursue their schoolwork (Stern, 1997; Robinson, 1999) and to complete Year 12 (Anlezark and Lim, 2011; Marsh & Kleitman, 2005; Vickers et al., 2003). This is relevant for Closing the Gap target five to increase the proportion of Aboriginal and Torres Strait Islander people attaining Year 12 (Closing the Gap targets and outcomes | Closing the Gap). Furthermore, the findings that holding a positive education/work aspiration correlates positively with having an employed parent, absence of financial stress and living in major cities suggest that the presence of local-level education and employment providers, and having access to someone who can be a positive role model and who can provide compelling careers advice could foster the development of aspiration for Aboriginal and Torres Strait Islander youth (Craven et al., 2005; Mission Australia, 2013).

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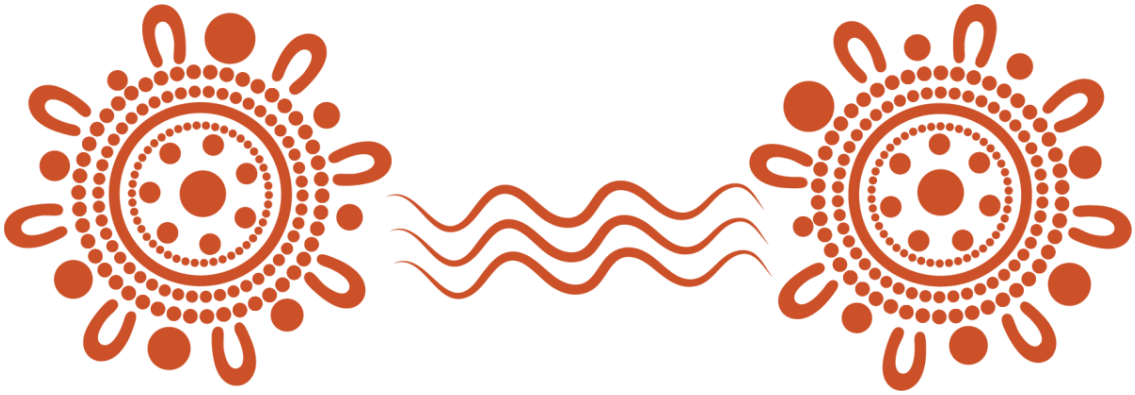

What Helps Aboriginal and Torres Strait Islander Children Continue Education?

Main findings

The main factors that help Study Youth continue their education are:

- having good friends at school
- seeing education as a pathway to achieving desired educational and career goals
- high family expectations and encouragement
- school being fun and exciting.

Introduction

There is a small body of research that shows school motivation plays a vital role in outcomes among Aboriginal and Torres Strait Islander students (Mooney et al., 2016; Munns et al., 2013; Price, 2012; Sarra, 2011; Tripcony et al., 2000). The first and largest national study to explicitly investigate educational outcomes for Aboriginal and Torres Strait Islander young peoples was undertaken by Purdie, Tripcony, Baulton-Lews, Fanshawe and Gunstone in 2000. Research since shows that a key factor in motivating Aboriginal students is education that is inclusive and respects the student's identity and culture (Sarra, 2011; Shay & Sarra, 2021). Other research observed that school motivation seeded Aboriginal and Torres Strait Islander student success (Munns et al., 2013). In this regard, understanding the factors underpinning school motivation among Aboriginal and Torres Strait Islander students can inform policy interventions to help improve their educational pathways. Using qualitative data from Wave 13, this article identifies the factors that help *Footprints in Time* Study Youth continue their education.

Data and methods

In Wave 13, Study Youth from the older and younger cohorts were asked whether they are going to school. If they responded yes to this question, Study Youth were asked what helps them to keep going with their schooling. If they responded no, Study Youth were asked if anything would get them back to school. Of 711 Study Youth, 593 provided free text responses. We thematically coded and analysed their responses in nine themes.

Results

Table 25 presents the number of Study Youth across nine different themes. It should be noted that the total number of students across all themes differs from 593 since some students reported multiple motivational factors and were grouped in more than one theme.

Table 25 Motivational factors for helping LSIC Study Youth continue with their studies

Motivational factor	Study Youth (no.)
Friends	233
Future goals	178
Family	133
Enjoy school	47
School/teachers	46
School subjects/activities	28
To learn	18
Other	24
Nothing/No choice/Dislike	25

Friends

Regular school attendance can help children and young people to make friends and strengthen friendship (Carroll, 2011; New South Wales Government, 2023). Having friends can, in turn, increase school attendance by raising a sense of belonging at school but also because children would view schools as a place to meet friends and socialise (Bamblett & Lewis, 2006; Ladd, 1990). Baxter and Meyers (2021) have shown that 'high-attending' Aboriginal and Torres Strait Islander students place a high value on friendship at school.

Our analysis also shows that 233 of the 593 Study Youth (38%) who responded to the survey question mentioned friendship as a primary reason for staying at school. They said they have kept going to school because of 'my friends', 'mates are there' or to 'see my friends'. Some expanded on their reason.

> 'My friends being so supportive and also my family being supportive.'
>
> 'My friends help me wanting to go to school but tutoring help me to go to school and I didn't want to do remote learning at all.'
>
> 'My friends, my teachers, listening to music during school - some teachers say listening to music helps children learn.'

Future goals

In most societies, schooling is seen as a future oriented investment to achieve long-term life goals (Phalet et al., 2004). For goal-oriented individuals, the need to succeed, grow and feel effective in pursuing their goals can drive their motivation to engage in schooling (Conesa et al., 2022; Ryan & Deci, 2020). Research shows that perceived values of education, task orientation and striving for excellence are among the key motivating factors for school attendance among Aboriginal and Torres Strait Islander students (McInerney, 2003; Martin, 2006).

Our analysis shows that over a quarter of Study Youth (n=178) indicated that what kept them going to school was their future in terms of employment and educational opportunities (see following examples).

> 'I looked at careers for after finished my schooling and what I need to do after graduation.'
>
> 'I think it's my second last year and want to really get schoolwork done and it's motivated me to do extra hard to get good grades.'
>
> 'I want to exceed in education so that I can get a good job.'

Family

Family contexts are central in shaping students' school motivation and engagement. For example, positive educational values and standards held by parents (Marchant et al., 2001), high parental expectations of a child's academic achievement (Dandy & Nettelbeck, 2000) and parents' encouragement of their child (van der Veen, 2003) have been found to have a positive impact on child's attitude towards school. Evidence shows that most Aboriginal and Torres Strait Islander families have high aspirations for their children's educational success (Dockett et al., 2006), implying that parents would encourage their children to attend school regularly. Previous studies have noted that parental encouragement is a key facilitating factor for school attendance and achievement among Aboriginal and Torres Strait Islander students (McInerney, 2003; Martin, 2006; Zubrick et al., 2006).

Our analysis shows that nearly one-quarter of Study Youth (23%) indicated that their parents or a family member kept them going to school. There were some variations in the responses in terms of the influence of family members, with some Study Youth indicating that a family member, mostly their mother, 'makes them' go to school. Others indicated that they stay at school because of the 'encouragement' or 'support' from family or a family member. Some expanded on their reason.

> 'My grandma always talks to us about how school is important and how it's different when she went to school.'
>
> 'My mum and grandparents, they always talk to me about education and the opportunities that are available. And my friends we help each other out.'
>
> 'Because I want a good education and show my mum to be proud of me. Do well in life.'

Enjoy school

According to the self-determination theory, joy or pleasure is a basic psychological need that underpins humans' involvement in a given action (Ryan & Deci, 2017); and students show heightened motivation to engage in school-related activities when they find them inherently exciting and enjoyable (Ryan & Deci, 2020). McInerney (2003) has noted that liking school is a significant facilitating factor for engagement and achievement among Aboriginal and Torres Strait Islander students. In line with this, Bourke et al. (2000) have suggested keeping school exciting and fun to enhance attendance.

We have noted that 47 Study Youth (8%) reported continuing their education because they enjoyed it. Some explained why.

> 'I enjoy schooling a lot and see good results come out of my learning.'
>
> 'I like school no matter what.'
>
> 'I like learning.'

School/teachers

Fostering a positive and welcoming school environment is seen as vital for increasing school attendance (Susanti et al., 2020). There is a growing body of evidence that suggests Aboriginal and Torres Strait Islander students tend to show greater school engagement when the school culture: allows them to feel welcome, safe, valued and supported; promotes and values Indigenous culture; and involves families and communities in decision making (Bourke et al., 2000; Helme & Lamb, 2011; Purdie et al., 2000). It has also been noted that teachers' understanding of preferred learning styles, friendliness and expectation of high academic performances play a vital role in inducing and maintaining school motivation among Aboriginal and Torres Strait Islander students (Bourke et al., 2000).

Our analysis shows that 46 Study Youth (nearly 8%) reported staying at school because of the 'teacher(s)' or 'school' with some elaborating their response as follows.

> 'Good teacher, – Aboriginal Education worker.'
>
> 'Support from the Indigenous Co-ordinator and support from family.'
>
> 'Teacher pushing me to get better at schoolwork, my mates encourage me to do best at school.'

School subjects/activities

Research shows that providing environments that nurture content relevance and active learning is critical for elevating school motivation (Finney & Pyke, 2008; Dadach, 2013). This includes implementing culturally pedagogies that recognise and value cultural perspectives

and experiences of students and that foster inclusivity and active learning (Harrison & Skrebneva, 2020; Howard, 2012; Morrison et al., 2019). Aboriginal and Torres Strait Islander students tend to engage with schooling when subjects and teaching approaches are relevant to their cultures and local experiences and conform to their learning styles (Bourke et al., 2000; McCluskey & Dole, 2015; Martin, 2006; Martin et al., 2013; Purdie et at., 2000). More specifically, studies, such as Sarra (2011) and Gray and Partington (2012) suggest that adopting school curriculums that Aboriginal and Torres Strait Islander students see as relevant to their cultural identity and aspiration, such as arts, sport, language and environment, has immense potential to increase school engagement.

We have noted that 28 Study Youth (about 5%) mentioned that they had been encouraged by school subjects/activities to stay at school longer (see following examples).

> 'Clontarf[15] has been really good.'
>
> 'I like my subjects and want to set a good example for my younger siblings.'
>
> 'English and maths I like doing.'

To learn

Students may show high motivation for schooling not just because it is inherently pleasant but also because they internalise its importance as a source of knowledge and skill (Ryan & Deci, 2020). As mentioned before, many Study Youth had kept going to school to build competence in fulfilling long-term goals such as attaining a desired qualification or occupation. Some Study Youth continued attending school because they wanted to learn new things. Some provided detailed responses.

> 'Learning new things, the teachers help us.'
>
> 'Learning stuff, asking questions. Making friends.'

Other

We have noted that 24 Study Youth provided responses that could not be categorised easily as part of the abovementioned themes (see following examples).

> 'I don't like to get in trouble, school can be fun, I love the lunch time talking to my friends.'
>
> 'It's going ok now, there's some bullying happening at the high school but nothing to worry about.'
>
> 'My mind.'
>
> 'It is boring at home, school to keep busy.'

[15] Clontarf Foundation aims to help Aboriginal and Torres Strait Islander boys to develop valuable life skills and positive self-concept for a successful transition into adulthood. For more information, see: https://clontarf.org.au/our-story/

Nothing/No choice/Dislike

While most Study Youth reported various reasons that motivated them to go to school, some (about 25) seemed unsure about the real reason for their school attendance and showed less school motivation (see following examples).

> 'Don't have a choice.'
>
> 'Don't really, but mum makes me.'
>
> 'I just do the schoolwork, I don't really know.'

Conclusion

The findings highlight that the following factors can be paramount for enhancing Aboriginal and Torres Strait Islander students' school engagement.

- Creating a positive learning environment where students can build supportive relationships with peers and teachers and where curriculum contents and pedagogies are contextually relevant and responsive to diverse learning preferences.
- The presence of Indigenous staff and programs (like Clontarf) at the school, which is likely to teach valuable skills, set positive examples and role models (Gower et al., 2022;Maxwell et al., 2017) and create a sense of belonging and connection to the school (Anderson et al., 2022).
- Parental involvement, setting reasonable expectations and offering positive encouragement and support.

We have identified several factors as facilitating Aboriginal and Torres Strait Islander students' school engagement. These include friendship, family encouragement, goal orientation, and a positive learning environment. Prior studies suggest making school activities enjoyable to enhance school attendance among Aboriginal and Torres Strait Islander students (Bourke et al., 2000; McInerney, 2003). While this is desirable, our findings suggest supporting young people to set future goals and to internalise the values and benefits of education in achieving their goals could keep them at school even when school-related activities are less interesting.

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