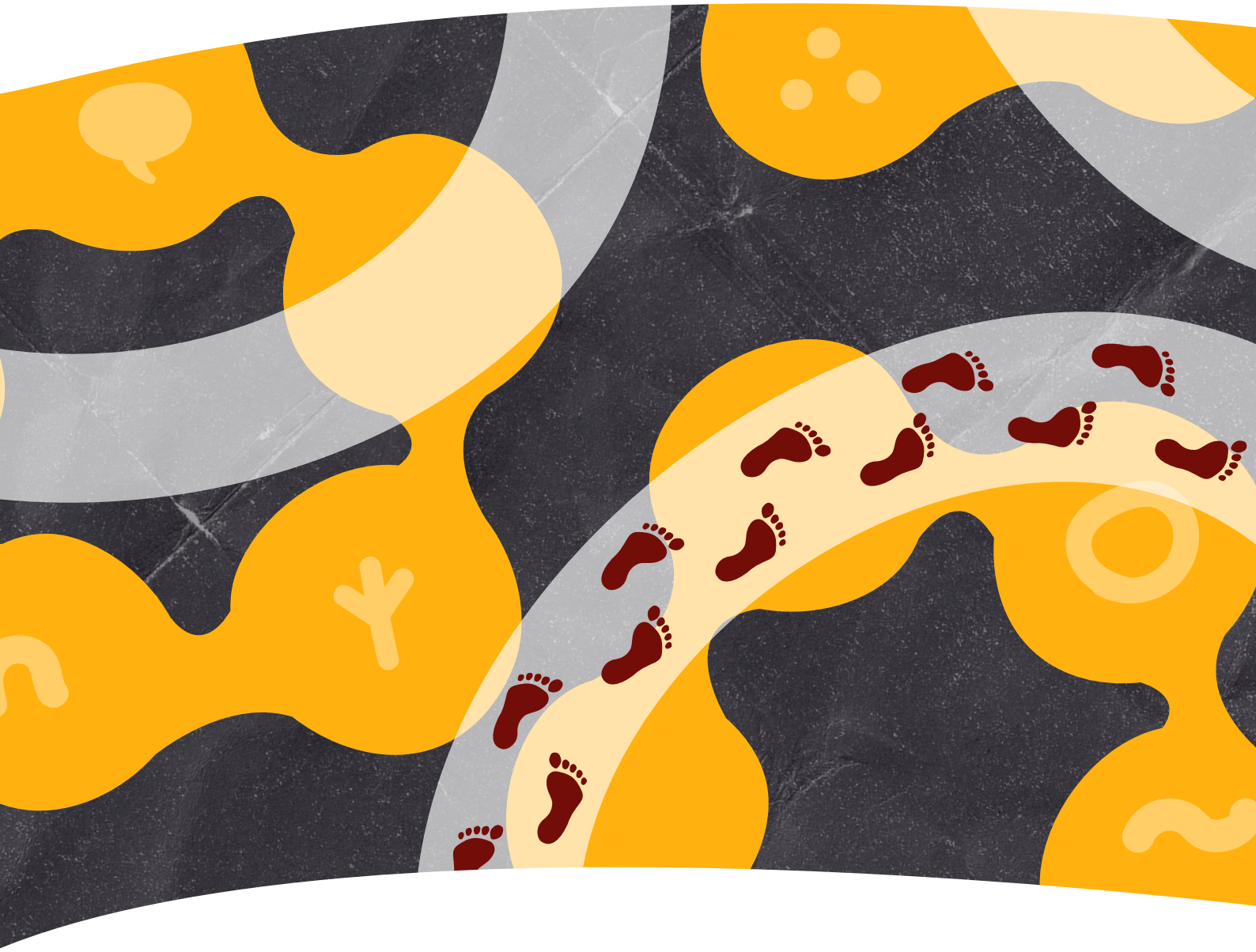
Helping Spirits Stay Strong

Footprints in Time: The Longitudinal Study of Indigenous Children

Social and Emotional Wellbeing Research Report



Y. Dinku, D. Howard-Wagner, B. Harrap, O. Wycisk, G. Buchanan, E. Malbon, V. Cooms, J. Guthrie, B. Edwards, P. Somboonsin, & M. Yap

Australian National University

Centre for Indigenous Policy Research, POLIS: The Centre for Social Policy Research | CIPR COMMISSIONED REPORT 10/2024

Series note

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CIPR is located within POLIS: The Centre for Social Policy Research, Research School of Social Sciences in the College of Arts & Social Sciences at the Australian National University (ANU). The Centre is funded from a range of sources, including ANU, the Australian Research Council, industry and philanthropic partners, and Australian state and territory governments.

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Associate Professor William Fogarty
Acting Director, CIPR
POLIS: The Centre for Social Policy Research
Research School of Social Sciences
College of Arts & Social Sciences
The Australian National University, September 2024

About POLIS

The Centre for Social Research and Method***s*** has been rebranded as ***POLIS: The Centre for Social Policy Research***. As part of this change, the Centre for Aboriginal Economic Policy Research (CAEPR) has joined POLIS and is being renamed the **Centre for Indigenous Policy Research**.

POLIS – which draws from the Ancient Greek for the administrative centre of the City-State – is designed to provide a designated space at ANU for discussion, debate and research on the formulation of social policy. The rebrand will allow POLIS to better capture and market the key work of the centre in providing research and expertise on social policy in response to community and federal and state/territory government needs and requirements.

POLIS delivers exceptionally robust data and evidence driven insights into the key challenges facing contemporary Australia. This provides the foundational cornerstones of informed social policy development amongst leading stakeholders within our modern policy: government, community groups, business representatives, and educators.

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- Centre for Indigenous Policy Research
- Centre for Social Research
- Centre for Educational Equity
- Centre for Crime and Restorative Justice
- Centre for Gambling Research
- Centre for Data, Analytics, and Evaluation
- Social Impact Hub.

About CIPR

CIPR is a unique social science research organisation and is a leading research centre on Aboriginal and Torres Strait Islander policy issues. Since being established as the Centre for Aboriginal Economic Policy Research (CAEPR) in 1990, CIPR has established an unrivalled reputation and outstanding track record in complex and challenging public policy debates of national significance. CIPR is recognised for expertise in applied policy research and analysis, place-based action policy research, and community-led evaluation with Aboriginal and Torres Strait Islander peoples and organisations, Australian federal, state, and territory governments, and international agencies.

A central goal of CIPR is to continue to build long-term partnerships with Aboriginal and Torres Strait Islander stakeholders, with a view to supporting and working with key individuals and organisations in the areas of research, education, and policy development.

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Centre for Indigenous Policy Research
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For a complete list of CIPR publications, see https://caepr.cass.anu.edu.au/research/publications

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Footprints in Time: The Longitudinal Study of Indigenous Children (LSIC) Social and Emotional Wellbeing Research Report

Y. Dinku, D. Howard-Wagner, B. Harrap, O. Wycisk, G. Buchanan, E. Malbon, V. Cooms, J. Guthrie, B. Edwards, P. Somboonsin and M. Yap

Abstract

The Centre for Indigenous Policy Research at POLIS: The Centre for Social Policy Research, the Australian National University was commissioned by the Commonwealth Department of Social Services to deliver a Research Report on the Social and Emotional Wellbeing of Aboriginal and Torres Strait Islander Children and Youth using the Longitudinal Study on Indigenous Children (LSIC) data as recorded in ***Footprints in Time***: The Longitudinal Study of Indigenous Children.

The Research Report proposes and explores a novel approach to measuring social and emotional wellbeing in LSIC. Inspired by a holistic construct of social and emotional wellbeing outlined by First Nations scholar-led team Gee et al. (2014), we used an exploratory factor analysis and structural equation model to identify which LSIC variables align with domains of social and emotional wellbeing. Although the method requires further development for conclusive and longitudinal use, our findings demonstrate that a promising factor structure exists for a series of LSIC variables in Waves 11 and 12. When modelled collectively, these factors appear to express the interconnected and interrelated framework for social and emotional wellbeing outlined by Gee et al. (2014).

Please note a Summary Report (DOI: 10.25911/AWN1-YZ78) ***and Five Fact Sheets are available to accompany this Research Report.***

Acknowledgements

We acknowledge the Traditional Custodians of Country throughout Australia and their continued connections to land, sea and community and pay respect to their Elders past, present and emerging. We also acknowledge The Longitudinal Study of Indigenous Children (LSIC) study participants for their invaluable contribution to this unique longitudinal study. We extend our acknowledgement to members of the LSIC Steering Committee and Department of Social Services colleagues for their thoughtful guidance and feedback in the development of this report. We also acknowledge the role and support of state and territory departments of education and Catholic dioceses in the collection of LSIC data.

Ethical approval for the collection of LSIC data was granted by the Research Ethics Committee of the Australian Institute of Aboriginal and Torres Strait Islander Studies and Aboriginal and Torres Strait Islander jurisdictional ethics committees.

Our team comprises the following personnel from the POLIS: Centre for Social Policy Research, Australian National University:

Associate Professor Deirdre Howard-Wagner (Research Director, Centre for Indigenous Policy Research)

Dr Yonatan Dinku (Centre for Indigenous Policy Research)

Benjamin Harrap (Centre for Indigenous Policy Research)

Oscar Wycisk (Centre for Indigenous Policy Research)

Geoff Buchanan (Centre for Indigenous Policy Research)

Eleanor Malbon (Centre for Indigenous Policy Research)

Professor Valerie Cooms (Centre for Indigenous Policy Research)

Associate Professor Jill Guthrie (Centre for Indigenous Policy Research)

Professor Benjamin Edwards (Data, Analytics and Evaluation Program Lead)

Pattheera Somboonsin (Centre for Indigenous Policy Research)

Dr Mandy Yap (Centre for Indigenous Policy Research).

Disclaimer

This Research Report has been prepared 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), who commissioned this Report. The findings and views contained within are those of the authors and do not necessarily reflect any official position of ANU, DSS or the Aboriginal and Torres Strait Islander peoples and communities involved in the LSIC study.

Acronyms

ABS	Australian Bureau of Statistics
AIHW	Australian Institute of Health and Welfare
ANU	Australian National University
CAEPR	Centre for Aboriginal Economic Policy Research
CFI	Comparative Fit Index
CIPR	Centre for Indigenous Policy Research
DSS	Department of Social Services (Australian Government)
EFA	exploratory factor analysis
ICA	Infant, Child, and Adolescent (Taskforce Implementation Program, Western Australia)
IRSAD	Index of Relative Socioeconomic Advantage and Disadvantage (ABS)
IRSEO	Indigenous Relative Socioeconomic Outcomes
KMO	Kaiser-Meyer-Olkin (score)
LSIC	The Longitudinal Study of Indigenous Children
MNW	Maiam Nayri Wingara vey
NAHSWP	National Aboriginal Health Strategic Working Party
NAPLAN	National Assessment Program – Literacy and Numeracy
NATSIHS	National Aboriginal and Torres Strait Islander Health Survey (ABS)
NATSISS	National Aboriginal and Torres Strait Islander Social Survey (ABS)
OR	odds ratio
P1	Primary Carer, most often a mother
RMSEA	Root Mean Square Error of Approximation
SC	Study Children/Child
SDQ	Strength and Difficulties Questionnaire
SE	standard error
SEARCH	Study of Environment on Aboriginal Resilience and Child Health (data)
SEIFA	Socio-Economic Index for Areas (ABS)
SEM	structural equation model
SRMR	Standardised Root Mean Residual
SY	Study Youth
TLI	Tucker-Lewis Index
US	United States
WAACHS	Western Australian Aboriginal Children Health Survey

Note on Terminology

Aboriginal and Torres Strait Islander peoples

We acknowledge the diversity of languages, beliefs and lived experiences among the Aboriginal and Torres Strait Islander peoples of Australia.

As is considered convention by many in the field, where describing academics and scholars who identify as Aboriginal and/or Torres Strait Islander, the Report uses the terminology of 'First Nations scholars'.

Where the Report refers to policy, it typically identifies this population as 'Aboriginal and Torres Strait Islander peoples'.

Where the Report refers to academics and peoples who do not have Aboriginal and/or Torres Strait Islander heritage, it uses the terminology of 'non-Indigenous'.

Study Child/Study Youth and Primary Carer

For sections that include data from Wave 1 to Wave 14, this Report tends to use the term 'Study Child. For sections that include only data from Wave 11 and Wave 14, the Report tends to use the term 'Study Youth'. Primary Carer is most often a mother. Responses from a Secondary Carer are sometimes analysed. LSIC families tend to denote the families associated with a Study Child and Primary Carer.

Report Context

Project Leadership: LSIC Steering Committee

Since its inception in 2008, the Longitudinal Study of Indigenous Children (LSIC) has been developed, designed and led by an Aboriginal-majority Steering Committee, including during the writing and collection of data. LSIC is also governed by the Human Research Ethics Committee at the Australian Institute of Aboriginal and Torres Strait Islander Studies. This Report is an analysis of LSIC data. The ANU team has been guided by the vision and direction of the LSIC Steering Committee.

A Note on Indigenous Data Sovereignty and Positionality

Maiam Nayri Wingara (MNW) set out the definitions for Indigenous Data Sovereignty as:

> ***In Australia, 'Indigenous Data Sovereignty' refers to the right of Indigenous people to exercise ownership over Indigenous Data. Ownership of data can be expressed through the creation, collection, access, analysis, interpretation, management, dissemination and reuse of Indigenous Data.***
>
> ***'Indigenous Data Governance' refers to the right of Indigenous peoples to autonomously decide what, how and why Indigenous Data are collected, accessed and used. It ensures that data on or about Indigenous peoples reflects our priorities, values, cultures, worldviews and diversity*** (see https://www.maiamnayriwingara.org/definitions).

The LSIC study is guided by the LSIC Steering Committee. The Steering Committee – which is Indigenous-led and has majority Aboriginal or Torres Strait Islander representation – provides expertise in survey content, design, collection methods, community engagement, ethics, cultural protocols, and data analysis and interpretation. Some of the founding members of MNW are also members of the LSIC Steering Committee, thus ensuring the Steering Committee has a commitment to and overall responsibility for ensuring Indigenous data sovereignty principles are met.

Our team, which included First Nations members, was guided by the LSIC Steering Committee, and other key Indigenous stakeholders throughout. In undertaking this contract with DSS to analyse data collected through LSIC, we were guided and challenged by First Nations scholars, including most notably Walter (also a founding member of MNW) and Anderson (2016), who write:

> ***Colonial settler paradigms tend to cannibalise Indigenous spaces as their own. That is to say, as non-Indigenous researchers begin to decolonise their methodologies and methods and venture into Indigenous research spaces formerly marginalised, they may begin to see these methodologies and methods as 'normal.' In these cases, those spaces, formerly Indigenous, now seem less so because white scholars come to inhabit them, physically and intellectually, and as such, claim them (p. 57).***

Our team were aware of the need to critically challenge 'the powerful influence of the usually invisible standpoints that inform what data are gathered, by whom, and for what purpose' (Walter & Anderson, 2016, p. 56) as they surround the statistical methods used.

Our team is a diverse group of people who came together to undertake the DSS contract. Collectively, we have many years of experience working and creating in the student, research, policy and/or advocacy spaces. Some of us have worked in the Indigenous policy and research space for many years, while others are relatively new to this space. As a team, we see our strengths as emanating from our different histories as well as our shared histories, including that we come from First Nations, settler-colonial and/or immigrant backgrounds; student, staff, academic, and/or professional backgrounds; neurodiverse and neurotypical, gender fluid and gender specific; abled and disabled backgrounds. We see ourselves as constantly learning, and being challenged and guided by the wealth of experience that First Nations scholars in the field bring. We see our approach as the combination of all of our epistemologies, axiologies, ontologies and social positions. This required constant reflexivity and reflection on assumptions we might have made, all the while trying our best to avoid 'overtaking' the model and process.

The non-Indigenous members of our team were guided by the LSIC Steering Committee, as well as Professor Valerie Cooms, Associate Professor Jill Guthrie and the perspectives of First Nation colleagues at DSS and within ANU. As a team, we were conscious of adopting and maintaining a decolonising approach to western statistical conventions, adapting statistical methods in a way that centred Aboriginal and Torres Strait Islander perspectives and priorities. This approach, we hope, allowed us to produce a culturally-informed analysis of the experiences that Study Children and Study Youth and their carers had of social and emotional wellbeing – both holistically and within each domain.

Statements of Positionality: CIPR team

Dr Yonatan Dinku: I am an immigrant from Ethiopia with a diverse language and cultural background. I deeply value the positive role of religion, culture and family and community networks in governing societal relationships and individual and collective wellbeing. As an economist, I have been trained to conduct research using complex mathematical and statistical models that draw on science-based and objectivist

ontological assumptions. I bring a dual perspective to my work, combining quantitative research techniques with nuances of cultural specificity. Although quantitative social research is powerful for making data-driven decisions, I am acutely aware of its limitations in capturing individual stories and perspectives. In my engagement with First Nations research, I constantly remind myself that the quantitative data I engage with represents not just numbers but the lives and realities of individuals, families and communities. I also seek advice from First Nations scholars and cultural knowledge holders to ensure that my research is relevant and culturally responsive.

Associate Professor Deirdre Howard-Wagner: I am a non-Indigenous woman with Irish and English ancestry, who grew up on unceded lands of the Ngunnawal and Ngambri peoples. I am a sociologist and socio-legal scholar with training in qualitative and quantitative research methods. Following 10 years in the Australian Public Service, I have dedicated the last 24 year of my career as an academic exposing the structural and foundational challenges the state presents for Australian Indigenous policymaking. I have produced a body of work analysing Australian policy around overcoming Indigenous disadvantage/Closing the Gap and Indigenous service delivery in urban contexts, speaking back to those policy approaches through grounded knowledge and case studies of the invaluable contribution of urban First Nations-led governance, development, economies, communities, and community-controlled organisations to First Nations people and wider society. It is a specialised body of research advancing policy and academic knowledge through partnering with and privileging the voices of First Nations peoples. I remain keenly aware of my whiteness and unconscious biases and that my presence in this space is always tenuous and is earned through genuine relationships and respect for First Nations ways of doing business.

Benjamin Harrap: I am an Anglo-Australian, non-binary person who grew up in rural England. I have lived in Australia since 2009 and completed my university education here in psychology, biostatistics, and Indigenous health and child protection. Through my role in this research, I have grappled with how, as a non-Indigenous person, my sociocultural background affects how I apply Aboriginal and Torres Strait Islander understandings of social and emotional wellbeing to LSIC data. It is always my goal to prioritise the perspectives of Aboriginal and Torres Strait Islander people and support their goals and aspirations with research, and while I continually work on decolonising the approaches I take, I am aware that who I am will always shape how I approach a research question.

Oscar Wycisk: I am a non-Indigenous MPhil scholar and Quantitative Research Officer at the Centre for Indigenous Policy Research. I have European ancestry and grew up in inner-regional Victoria. I am trained in economics, econometrics and critical Indigenous studies and while contributing to this Report, have taken my lead from the work of Palawa Scholar Maggie Walter and Métis scholar Chris Anderson to challenge the assumptions of my training. This research has instilled in me an ambition to amplify the fundamental importance of interconnected and holistic thinking when approaching Indigenous social and emotional wellbeing as I devote my career to the development of social policy in the broader Australian community.

Geoff Buchanan: I am a non-Indigenous researcher with Scottish, Irish and German ancestry and a multi-disciplinary background including geography, environmental studies, Indigenous Australian studies, social policy, and economics. I was born on Yuwibara Country in Mackay, North Queensland and have lived on the Country of the Ngunnawal and Ngambri peoples in Canberra since 2004. In over 20 years of engagement in Indigenous policy research I have sought to support the decolonisation of both policy and research through the centring of Aboriginal and Torres Strait Islander peoples, perspectives, priorities and knowledges. In doing so I have been keenly aware of the influence and limitations of my outsider perspective, social position and lived experience. In working on this project, I felt an enormous privilege immersing myself in

reading responses from over 1,000 Primary Carers to build an understanding of how culture helps Aboriginal and Torres Strait Islander children grow up strong.

Eleanor Malbon: I am a cisgender woman with majority English settler heritage, who grew up on unceded Ngunnawal land. As a researcher, I predominantly work in areas such as disability rights and aged care, which are both pressing areas for action in Closing the Gap. In my work with CIPR I aimed to prioritise Aboriginal and Torres Strait Islander voice in the LSIC, in particular through the qualitative, words-based data. Despite my ongoing efforts to decolonise my research methods, I am aware that my identity will continue to shape my approach to research questions and data interpretation, and I seek to collaborate with Indigenous colleagues and take a learning orientation at all points.

Professor Valerie Cooms: I belong to the Quandamooka people of Minjerribah or North Stradbroke Island. I have worked in Aboriginal affairs most of my life. At 17 years of age while completing my nursing training, I worked at the Aboriginal and Islander Community Health Service on a voluntary basis. I worked in Health Policy in the Department of Aboriginal Affairs and helped develop Aboriginal Health Worker Education programs for the National Aboriginal and Islander Health Organisation which later became the National Aboriginal Community Controlled Health Organisation. I have also worked in First Nations policy over many years. I was the CEO of Queensland South Native Title Services, a Member of the National Native Title Tribunal and Chair of the Quandamooka Yoolooburabee Registered Native Title Body Corporate for 12 years. I am currently a Professor of Indigenous Policy at ANU and a member of Minister Bowen's First Nations Advisory Group, Minister Burney's First Nations Reference Group and a Director of the Queensland Government's Treaty Institute and Aboriginal Hostels Limited.

Associate Professor Jill Guthrie, AM: I am a descendant of the Wiradjuri people of Western NSW. I also have Scottish and Irish ancestry and possibly English and German heritage according to some family history narrative. I have worked in the Aboriginal affairs portfolio for over 30 years – in the public service, as a ministerial advisor and as a researcher. This breadth of experience underlines for me the inextricable link between policy that is properly formulated and research that is conducted in a way that respects the histories, cultures and experiences of Australia's First Nations peoples. Our analysis of the LSIC data in this report hopefully contributes towards this important link.

Professor Ben Edwards: I am an Anglo-Australian with Jewish, English, Welsh and Scottish heritage. I was born on the land of Boonwurrung of the Kulin Nation. I have been trained as a quantitative psychologist and for most of my career I have focused on policy issues concerning children and young people. Increasingly I have been involved in supporting Indigenous scholars through my work as Editor of the Australian Journal of Social Issues where we have invited Indigenous scholars to the editorial board, and positions of Editor-in-Chief, Associate Editors and established a First Nations prize for the best paper led by an Indigenous researcher. For any research involving Indigenous people I see my role as supporting research led or informed by strong Indigenous leadership.

Pattheera Somboonsin: I am Thai-Chinese female, born in Thailand with a university background in sociology, anthropology, demography and environment studies. I have been living and studying in Canberra since 2017, which has enriched my perspective and understanding of diverse communities. As a non-Indigenous person, I recognise the potential limitations in my understanding of Aboriginal and Torres Strait Islander cultural and social dynamics. Working on the LSIC social and emotional wellbeing project, I learned valuable lessons about the culture and unique experiences of Aboriginal and Torres Strait Islander children and their families. This experience has deepened my commitment to culturally sensitive research,

highlighting the importance of valuing and respecting Aboriginal and Torres Strait Islander perspectives to positively impact their social emotional wellbeing and accurately represent their voices.

Dr Mandy Yap: I am a non-Indigenous researcher of Malaysian Chinese heritage. I am committed to working with communities and individuals to develop indicators and measurement frameworks which give priority to their lived realities and perspectives on the ground. Specifically, this has involved working in partnership with Indigenous organisations and communities in Western Australia, New South Wales and Victoria to co-produce data and information fit for their purposes and needs. This commitment grew out of years working with quantitative data and methods as an economist. It also grew out of self-reflection and query of the utility and cultural appropriateness of existing datasets and methodologies which may not create space for different knowledge systems, or place communities as equal partners in the co-creation of knowledge. Since 2013, I have been working in partnership with Eunice Yu and the Yawuru community in Broome to co-develop culturally-relevant indicators of Indigenous wellbeing. Between 2020 and 2023, I worked in partnership with Nyamba Buru Yawuru, Nagula Jarndu and Garnduwa Amboorny Wirnan to co-create a monitoring and evaluation framework centred in community priorities and aspirations for mabu liyan to explore how art, nation-building and sports contribute to wellbeing in the Kimberley.

References

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Introduction

Footprints in Time: The Longitudinal Study of Indigenous Children (LSIC) is the only Australian longitudinal cohort study on the developmental outcomes of Aboriginal and Torres Strait Islander children. It is an annual survey which studies the lives of two cohorts of Aboriginal and Torres Strait Islander children and youth born between 2003 and 2005 (older 'K' cohort) and between 2006 and 2008 (younger 'B' cohort). When the study began in 2008, these cohorts were aged 3.5–5 years old and 6 months–2 years old respectively and represented much of the geographic diversity of Aboriginal and Torres Strait Islander peoples of Australia.

LSIC collects data annually on a wide range of topics. It has built a comprehensive data resource, frequently used as an evidence base for the development of 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. The range of topics covered in the LSIC Social and Emotional Wellbeing Research Report showcases both the richness of the data and its ongoing potential for further research.

The purpose of the LSIC Social and Emotional Wellbeing Research Report (the Report) is to present technical papers that analyse LSIC quantitative and qualitative data as it relates to the social and emotional wellbeing of Aboriginal and Torres Strait Islander children (now young people and adults) who have been participating in the LSIC study for up to 16 years. The writing and analysis of the Report is a collaboration between staff within POLIS: the Centre for Social Policy Research, including the Centre for Indigenous Policy Research (formerly the Centre for Aboriginal Economic Policy Research (CAEPR)) and the Centre for Social Research Methods within the Australian National University (ANU). The ANU team was led by Associate Professor Deirdre Howard-Wagner with Dr Yonatan Dinku, Benjamin Harrap, Oscar Wycisk, Geoff Buchanan, Eleanor Malbon, Professor Valerie Cooms, Associate Professor Jill Guthrie, Dr Mandy Yap, and Professor Ben Edwards. All of whom have expertise in qualitative and quantitative data analysis and modelling.

In developing the adopted approach to analyse the LSIC data in relation to the social and emotional wellbeing of LSIC Study Children and Study Youth, Professor Valerie Cooms – a Quandamooka woman with extensive experience in working in Indigenous affairs, leading large and complex projects and conducting cutting-edge research - worked closely with CIPR's Research Director, Associate Professor Deirdre Howard-Wagner, who directed the project on a day-to-day basis and led the qualitative analysis, and Dr Yonatan Dinku, who led the quantitative analysis. As a team, we conducted an analysis of quantitative and qualitative data to present findings that draw on the longitudinal nature of the study and are relevant to current policy and programs surrounding social and emotional wellbeing. Through this LSIC data, the team had access to Study Children (SC) and Study Youth (SY), parents and/or carers, teachers, and principals survey questionnaires and a linked National Assessment Program – Literacy and Numeracy (NAPLAN) data set.[1]

Based on guidance from the LSIC Steering Committee, in this Report we avoid using Western metrics or questions that focus on a deficit perspective, like risky behaviour and Kessler scales. Instead, we have adopted an approach that emphasises strengths and cultural relevance in defining social and emotional

[1] Though the Report primarily uses Study Child, Study Youth and Primary Carer data.

wellbeing for Aboriginal and Torres Strait Islander peoples (cf. Garvey, 2008; Henderson et al., 2007). The approach moves beyond merely comparing the wellbeing outcomes of Aboriginal and Torres Strait Islander and non-Indigenous children. Instead, the Report explores the foundational aspects of social and emotional wellbeing among LSIC Study Children and Study Youth. It prioritises positive outcomes and protective factors. It respects the principles of the July 2020 Closing the Gap Agreement, which stresses the importance of Aboriginal and Torres Strait Islander leadership in data analysis (Commonwealth of Australia & Coalition of the Peaks, 2020, section 17.d).[2]

The approach we have used to achieve these goals and solve this technical and theoretical challenge of measuring holistic social and emotional wellbeing is novel. It positions the social and emotional wellbeing of Aboriginal and Torres Strait Islander peoples within the holistic approach to conceptualising social and emotional wellbeing led by the team of mostly First Nations scholars Gee, Dudgeon, Schultz, Hart & Kelly (2014). The framework encompasses the interconnected and multidimensional facets of mental, physical, social, emotional, and spiritual health and recognises the importance of balance and harmony in all dimensions of a person's life (Calma, 2009; Dudgeon et al., 2017; Gee et al., 2014; Sutherland & Adams, 2019). The proposed holistic social and emotional wellbeing framework we adopted is outlined in Section One of the Report.

Report Structure

To reiterate, this Report presents findings that (a) draw on the longitudinal nature of the LSIC study, (b) are relevant to current policy and programs, and (c) highlight the strengths of the LSIC Study Child or Study Youth. Waves 1 to 14 were considered. We conducted our analysis with the guidance and input from members of the LSIC Steering Committee, the Department of Social Services, including Aboriginal or Torres Strait Islander team members, and other stakeholders/knowledge holders.

Literature review and analysis is provided across six sections. While all sections refer to literature reviewed in Section One, each can otherwise be read independently. Tables are provided at the end of each section or in the appendix.

Please note that a Summary Report is also available. The Summary Report (DOI: 10.25911/AWN1-YZ78) provides a high-level explanation of our approach, findings and implications for each section. Five Fact Sheets are also available, covering most sections.

Section One: Conceptual Framework for Aboriginal and Torres Strait Islander Social and Emotional Wellbeing

Section One outlines the Aboriginal and Torres Strait Islander Social and Emotional Wellbeing framework developed by Graham Gee, Pat Dudgeon, Clinton Schultz, Amanda Hart and Kerrie Kelly (2014). It provides discussion on the background and measurement of Aboriginal and Torres Strait Islander social and emotional wellbeing. It also explains how the framework is adopted in the Report.

Fact sheet available at: https://hdl.handle.net/1885/733721463

[2] The Report achieves this through direct project leadership during development phases, consultative networks, literature, and framework selection.

Section Two: Fitting the Gee et al. (2014) Framework of Social and Emotional Wellbeing to *Footprints in Time* Using Structural Equation Modelling

In Section Two, the Report explains how we selected a series of LSIC variables that theoretically express the Gee et al. (2014) holistic construct of social and emotional wellbeing. The analysis seeks to use the Gee et al. (2014) concept of social and emotional wellbeing to understand social and emotional wellbeing for LSIC Study Youth.

The approach prioritises Aboriginal and Torres Strait Islander values and understandings of social and emotional wellbeing to guide three steps. First, LSIC Waves 1 to 14 were reviewed for variables that might measure one or more domains of social and emotional wellbeing. Second, exploratory factor analysis was used to identify common and unique variation among the selected variables to create factor scores for themes within each domain. Third, structural equation modelling was used to quantify how the themes within each domain were related to each other and to their domain and how the domains were related to overall social and emotional wellbeing. The process and results provide a novel contribution to international methodological literature on the measurement of holistic social and emotional wellbeing for Aboriginal and Torres Strait Islander youth.

Fact sheet available at: https://hdl.handle.net/1885/733721463

Section Three: Culture as a Determinant of Social and Emotional Wellbeing for LSIC Study Children – An Exploratory Qualitative Analysis

Section Three uses an exploratory content analysis to contribute qualitative evidence for the use of Gee et al.'s (2014) framework of holistic social and emotional wellbeing. This section considers various perspectives on the question of helping the LSIC Study Child to 'grow up strong'. The section explores Gee et al.'s (2014) notion of cultural determinants and their interaction with the seven domains of their holistic framework. The cultural importance of family connections is identified and explored. Insights about the transmission of cultural determinants are documented.

Fact sheet available at: https://hdl.handle.net/1885/733721464

Section Four: Longitudinal Analysis of the Factors Associated with Social and Emotional Wellbeing in Aboriginal and Torres Strait Islander Study Children

Section Four uses the Strength and Difficulties Questionnaire (SDQ) included in LSIC as a measure of social and emotional wellbeing to discuss and analyse associated factors. It explores trends in the risk of clinically significant emotional or behavioural difficulties that LSIC Study Children face.

This analysis also identifies the major protective, risk and predictive factors for social and emotional wellbeing. This includes consideration of the role played by the Primary Carer.

Fact sheet available at: https://hdl.handle.net/1885/733721465

Section Five: Self-Harm and Suicidal Behaviours Among LSIC Study Youth – Examining the Role of School Environment

Readers are to be aware that this section contains content that relates to self-harm and suicide.

Section Five provides a brief overview of the prevalence of self-harm and suicidality among LSIC Study Children and Study Youth. It explores gender differences in self-harm and suicidal behaviours. It also explores perceptions of the prevalence of suicide within Aboriginal and Torres Strait Islander communities.

This section considers the help that Aboriginal and Torres Strait Islander Study Children seek from others and provide to one another. It compares the help-seeking patterns of LSIC Study Children and Study Youth that do and do not experience self-harm and thoughts of suicide. As a particularly novel contribution, this section also explores the important role of safe school environments in the prevalence of self-harm and suicide.

Fact sheet available at: https://hdl.handle.net/1885/733721466

Section Six: Trajectories of Social and Emotional Wellbeing and Related Outcomes

Section Six provides an analysis of the trajectories of selected indicators of social and emotional wellbeing and related outcomes.

Fact sheet available at: https://hdl.handle.net/1885/733721462

Social and Emotional Wellbeing and Closing the Gap: Policy Relevance of this Report

The National Agreement on Closing the Gap outlines 19 socioeconomic targets across areas that have an impact on the 'life outcomes' of Aboriginal and Torres Strait Islander peoples (Commonwealth of Australia & Coalition of the Peaks, 2020). Surrounding these are contextual indicators and measures.

Closing the Gap Life Outcome 14 seeks to ensure that Aboriginal and Torres Strait Islander peoples enjoy levels of social and emotional wellbeing. The measurement target associated with Life Outcome 14 is 'significant and sustained reduction in suicide of Aboriginal and Torres Strait Islander people towards zero'. One of the contextual indicators for Target 14 is the proportion of Aboriginal and Torres Strait Islander peoples who report experiencing psychological distress. The Closing the Gap Life Outcome 14 measures social and emotional wellbeing, using suicidality.

This Report explores a holistic approach to measuring social and emotional wellbeing. In doing so, we hope to emphasise the value of broader preventative policies that target the protective and risk factors of social and emotional wellbeing, rather than a continued narrow focus on suicide prevention that has been driven by the binary measure of mortality.

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

Footprints in Time: The Longitudinal Study of Indigenous Children (LSIC) is an annual survey which studies the lives of two cohorts of Aboriginal and Torres Strait Islander children born between 2003 and 2005 (K cohort) and between 2006 and 2008 (B cohort). The study commenced in 2008 and selected an initial sample of 1,671 children from across 11 clusters of sites in Australia (see Figure 1). Though study participants were recruited through convenience sampling, sites were purposively chosen to reflect the geographic diversity of Aboriginal and Torres Strait Islander populations in urban, regional and remotes areas in 2008 (Dodson et al., 2012; Australian Government Department of Social Services (DSS), 2023). Though the location of some Study Children has changed overtime, an updated public record of their location is not published by DSS.

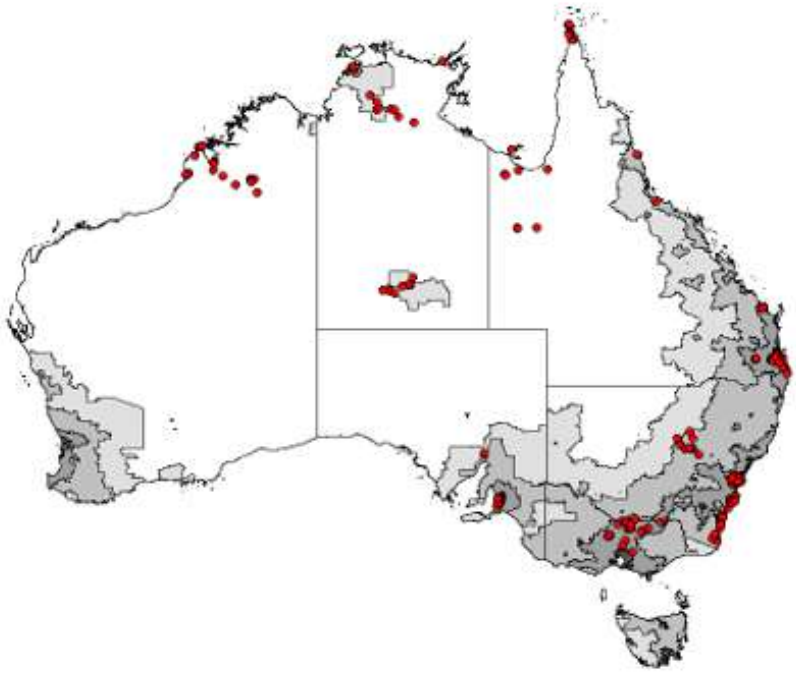

Figure 1: Geographic spread of sites and responses in LSIC Wave 1 (DSS, 2024)

Though LSIC does not provide a nationally representative sample, it generates sufficient data for general statistical analysis and an in-depth analysis of relationships between child development outcomes and social, cultural and economic contexts.

LSIC is funded and managed by DSS and guided by a Steering Committee of majority-Aboriginal and Torres Strait Islander academics, community leaders and experts (DSS, 2023). The Steering Committee advises on survey design and implementation, community engagement processes, ethical and cultural protocols, as well as data analysis, interpretation and reporting (Walter et al., 2017).

LSIC Research Questions

LSIC was developed to answer the following four overarching questions (DSS, 2023):

- What are the needs of Aboriginal and Torres Strait Islander children at the start of their life, to help ensure that they grow up strong?
- Which factors support Aboriginal and Torres Strait Islander children to stay on track and/or grow healthier, stronger and more positive?
- How are Aboriginal and Torres Strait Islander children raised in Australia today?
- What role do family, extended family and community play in the raising of Aboriginal and Torres Strait Islander children?

The LSIC Steering Committee updated the above LSIC key research questions for 2020–2025 to focus on adolescence and emerging adulthood. The Committee also added the following three questions:

- How can services and other types of support make a difference to the lives of Aboriginal and Torres Strait Islander children and young people?
- How do Aboriginal and Torres Strait Islander children and young people transition into and through adulthood?
- What does it mean to be a young Aboriginal and/or Torres Strait Islander person growing up in the 21st Century?

The survey questions in LSIC focus on one or more of the following:

- Children: physical and mental health, social and cognitive development, family and community relationships, aspirations, language and culture, and significant events,
- Children's families: health, work, values, lifestyle, and family and community connectedness
- Children's communities: facilities, services, and social and community issues, and
- Services: childcare, education, health and other services used by the child's family.

DSS uses evidence developed by LSIC as an empirical foundation for crafting policies and initiatives to enhance the quality of life for Aboriginal and Torres Strait Islander children, families and communities.

Collection Process

LSIC data are collected annually by Aboriginal and Torres Strait Islander Research Administration Officers. The Research Administration Officers also facilitate key community engagement for the study (Walter et al., 2017).

Waves 1–12 and 14 were collected through face-to-face interviews with a 'Study Child' (SC) or 'Study Youth' (SY) depending on their age. For simplicity, DSS typically refers to all respondents as Study Children though some Study Children aged 11–17 were asked the youth Strengths and Difficulties Questionnaire. In this Research Report, we typically consider Study Children in Waves 11–14 as 'youth' given the two cohorts, though where analysis includes both children and youth, we use Study Child. Additional information on the Study Child or Study Youth is collected in interviews with a Primary Carer (P1), and another adult with care-

giving responsibilities (P2), with the latter designed as a father's interview from Wave 4 onward. With the consent of P1, at times, a questionnaire has also been sent to the Study Youth's teacher or principal.

Due to health restrictions imposed through the COVID-19 pandemic, Wave 13 data were collected using COVID-safe collection methods. Although these results are valid, the participation rate of this survey was greatly reduced. Further, the time of year (typically January–March) was changed to June–December to accommodate the added administrative burden. Teacher surveys were not sent. More sensitive topics that required face-to-face rapport-building were omitted from the questionnaire and replaced with questions about the impacts of COVID-19 on the Study Child or Study Youth and their family. Collection for Wave 14 and onwards has since returned to normal.

Tables

Table 1: Number of respondents by respondent category across 14 waves of LSIC

Wave	Year	Primary Carer	Other Carer	Study Child	Teacher/Carer	Principal
1	2008	1,671	257	1,469	44	
2	2009	1,523	269	1,472	163	
3	2010	1,404	n/a	1,394	326	
4	2011	1,283	213	1,269	442	
5	2012	1,258	180	1,244	473	
6	2013	1,239	n/a	1,241	541	
7	2014	1,253	222	1,244	549	
8	2015	1,255	215	1,240	517	
9	2016	1,268	176	1,247	583	
10	2017	1,270	110	1,254	631	
11	2018	1,253	222	1,218	519	
12	2019	1,205	269	1,165	606	358[a]
13[b]	2020	757	116	711	0[c]	0[c]
14[d]	2021	936	155	906	129	190

Note: Numbers in the datasets may vary from previous releases due to administrative irregularities or if participant(s) request that their data be removed from the study. n/a – not applicable, or 'not available' in Wave 14 beta release. Data from principals was included from Wave 12.
[a] In Wave 12, some questions about a Study Child's school and community were moved to a dedicated questionnaire that was answered by the principal instead of a Study Child's teacher, this was collected from 164 survey responses and replicated to other students at these schools (358 in total) unless consent was not granted.
[b] Wave 13 responses were impacted by the COVID-19 pandemic.
[c] Surveys not collected in Wave 13.
[d] Beta data provided by the Department of Social Services.

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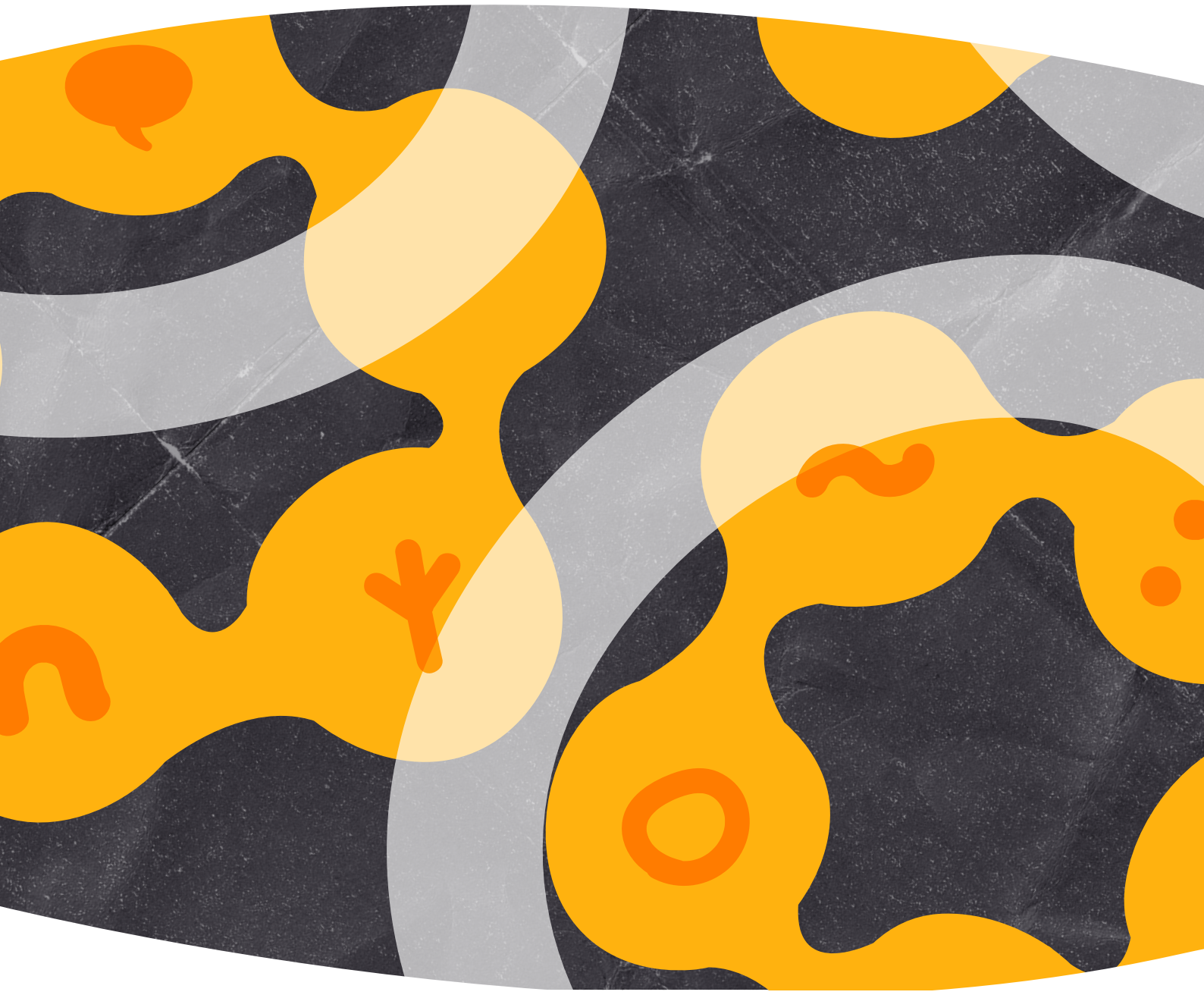
Section One:

Literature Review and Conceptual Framework for Aboriginal and Torres Strait Islander Social and Emotional Wellbeing



Section One: Conceptual Framework for Aboriginal and Torres Strait Islander Social and Emotional Wellbeing

Overview

- Social and emotional wellbeing for Aboriginal and Torres Strait Islander peoples is a holistic concept.
- This Report uses the framework developed by the predominantly First Nations scholars Associate Professor Graham Gee, Professor Pat Dudgeon, Dr Clinton Schultz, Dr Amanda Hart, and Kerrie Kelly (2014).

Conceptualising and measuring Aboriginal and Torres Strait Islander social and emotional wellbeing presents a challenge for both Aboriginal and Torres Strait Islander and non-Indigenous academics.

With the guidance of the LSIC Steering Committee, we selected the framework for Aboriginal and Torres Strait Islander social and emotional wellbeing developed by the predominantly First Nations team of scholars Associate Professor Graham Gee, Professor Pat Dudgeon, Dr Clinton Schultz, Dr Amanda Hart and Kerrie Kelly (2014).

In this section, we outline this framework, the methodological process and rationale for its selection, and its application to the social and emotional wellbeing of Aboriginal or Torres Strait Islander children.

Literature Review

Based on guidance from the LSIC Steering Committee, for selecting and developing a conceptual framework, we have focused on Aboriginal and Torres Strait Islander conceptualisations of social and emotional wellbeing. We reviewed studies and frameworks produced by, or privileging the voices of, Aboriginal and Torres Strait Islander peoples in Australia and compensated gaps with international studies of other Indigenous populations in Aotearoa/New Zealand and North America. We paid particular attention to studies which considered the social and emotional wellbeing of young Australian Aboriginal and Torres Strait Islander peoples.

The search criteria for the literature review strictly limited focus to social and emotional wellbeing, and generally prioritised studies that constructed holistic frameworks, rather than evaluations or specific relationships between factors. For instance, we prioritised studies that mapped the dimensions of social and emotional wellbeing important for Aboriginal and Torres Strait Islander youth living in urban settings (e.g., Priest et al., 2012), instead of focusing on studies which considered specific factors like how living on Country affects Aboriginal and Torres Strait Islander social and emotional wellbeing (e.g., Taylor-Bragge et al., 2021). The most recent literature was prioritised. Frameworks were collected, considered and collated into an overarching summary of various dimensions, determinants, and measurements for Aboriginal and Torres Strait Islander social and emotional wellbeing. Pertinent findings from this process are outlined below.

What is Social and Emotional Wellbeing for Aboriginal and Torres Strait Islander Peoples?

The term 'social and emotional wellbeing' in a general health context often focuses on wellbeing derived through and from the relationships and emotional states of an individual. In the context of Aboriginal and Torres Strait Islander health, it is a much more significant concept, capturing the holistic factors and dimensions that contribute to an Aboriginal and/or Torres Strait Islander person's wellbeing. In this section, the Research Report outlines the history and definition of the term, when applied to the health of Aboriginal and Torres Strait Islander peoples.

The National Aboriginal Health Strategy Working Party (NAHSWP, 1989), after comprehensive community consultation, produced the first National Aboriginal Health Strategy in 1989. According to this strategy, in Australian Aboriginal and Torres Strait Islander languages, there is no word to describe health as it is understood in a Western context (p. ix). Instead, health is a 'matter of determining all aspects of [an Aboriginal and Torres Strait Islander person's] life, including control over their physical environment, of dignity, of community self-esteem, and of justice' (p. ix). 'Aboriginal health' was subsequently defined by the strategy as:

> ***[Beyond merely] the physical well-being of an individual… [good health is] the social, emotional, and cultural well-being of the whole Community in which each individual is able to achieve their full potential as a human being (as adapted in National Aboriginal Community Controlled Health Organisation, 2011, pp. 5–6).***

Thus, improving health for Aboriginal and Torres Strait Islander peoples is not 'merely a [factor] of the provision of doctors, hospitals, medicines, or the absence of disease and incapacity' (p. ix). Health is not solely medical (Anderson et al., 2022, p. 2; Butler et al., 2019, p. 139; Haswell et al., 2013; Zubrick et al., 2014). In response, Aboriginal-led health organisations in Australia have historically prioritised improving "quality of life" as their central focus for achieving better health outcomes (see NAHSWP, 1989, p. ix). This is a 'broad [and] multidimensional construct' (Butler et al., 2019, p. 139) that 'is based on inter-relationships between people and land, people and creator beings, and between people [and other people], which ideally stipulates inter-dependence within and between each set of relationships' (NAHSWP, 1989, p. ix). Undumbi scholar Tamara Butler and a team of Aboriginal and Torres Strait Islander and non-Indigenous colleagues (Butler et al., 2019), synthesising 95 studies on Aboriginal and Torres Strait Islander Quality of Life, identifies this concept involves: (1) an individual's perceptions of their social and emotional wellbeing, (2) their physical, emotional, and social functioning, and (3) the interconnected dependence of these concepts within the broader community (p. 139).

Although all three concepts are interdependent, this Research Report focuses the bulk of its theoretical work on the first: the social and emotional wellbeing of Aboriginal and Torres Strait Islander peoples.[3]

The concept of social and emotional wellbeing began being used within Australian health literature in the 1980s (Garvey, 2008, p. 3). Today, many Aboriginal and Torres Strait Islander peoples prefer the broader construct of social and emotional wellbeing for its relevance and interconnectedness (Zubrick et al., 2014) and positive, strengths-based focus (Garvey, 2008; Thurber et al., 2019).

[3] Though it should be noted that much of the data used in this Report explores the social and emotional wellbeing of children and youth from the perspective of their primary carer.

Rather than 'problematis[ing]' Aboriginal and Torres Strait Islander existence (Garvey, 2008, p. 4) through a 'pathology focus' (Haswell et al., 2013, p. 80), social and emotional wellbeing acknowledges the importance of sociohistorical factors and personal choices involved in the 'priorities, practices and principles' of Aboriginal and Torres Strait Islander life (Garvey, 2008). It particularly recognises the role that 'underlying trauma' caused by colonisation plays within wellbeing (Salmon et al., 2019, p. 20; Yap & Yu, 2016). It also includes hard-to-categorise related factors including resilience (e.g., Lovett, 2017). The concept of social and emotional wellbeing signifies a holistic view that encompasses mental health, but also physical, social, cultural and spiritual dimensions of health (Calma, 2009; Garvey, 2008; Gee el., 2014; Dudgeon et al., 2017; Sutherland & Adam, 2019). Social and emotional wellbeing is also underpinned by the relational tenets of Aboriginal and Torres Strait Islander societies, including the links between family, kin, community, culture, Country, spirit and Ancestors (Butler et al., 2019; Gee et al., 2014; Dudgeon et al., 2017).

Measuring the Social and Emotional Wellbeing of Aboriginal and Torres Strait Islander Peoples

National statistics on Aboriginal and Torres Strait Islander peoples have been reported since the 1970s, where reporting frameworks like the population and housing census first began to include Aboriginal and Torres Strait Islander citizens (Prout, 2012, p. 319).[4] Palawa scholar Maggie Walter and Métis scholar Chris Anderson (2016) argue that all, and particularly settler-statistics, distort and often construct Aboriginal and Torres Strait Islander peoples in ways that are incongruent or untrue to their actual circumstances and self-concepts (p. 11–15; see also, Lovett et. al., 2020, p. 9; Prout, 2012, p. 318). Often this has resulted in deficit accounts, which create the aforementioned 'problem- and pathology-focused' studies and which emphasise the individual rather than the community (Haswell et al., 2013, p. 80).

The construct of social and emotional wellbeing on the other hand, promotes strength-based representations of Aboriginal and Torres Strait Islander experiences. Unfortunately, however, defining, quantifying and finding data to measure the construct remains complex and challenging (see e.g., Taylor, 2008, p. 117). In the first National Aboriginal Health Strategy in 1989, the working party considered health (and by extension social and emotional wellbeing) as 'almost def[ying] translation,' for the Aboriginal context is best considered 'health is life is health' (p. ix). Because of this, there is 'considerable fluidity regarding its constituent elements' (Locke, 2007, as cited in Priest et al., 2012, p. 180). Thus, any efforts to 'reduc[e] the notion of Aboriginal and Torres Strait Islander wellbeing to a set of conventional, measurable indicators… invisibilises many of the positive, enduring, and protective factors, associated with Indigenous ways of life' (Prout, 2012, p. 319).

For example, many empirical studies often rely on measurement constructs that silo factors within holistic social and emotional wellbeing. These measures often focus on behavioural and emotional strengths and difficulties such those captured by the Strengths and Difficulties Questionnaire or Strong Soul Questions. These measures are among the most used indicators of social and emotional wellbeing for Aboriginal and Torres Strait Island children and youth (see e.g., Gorman et al., 2021; Priest et al., 2012; Thomas et al., 2010; Williamson et al., 2016; Zubrick et al., 2005).

[4] Though collection of statistics for some Aboriginal and Torres Strait Islander peoples have occurred for the purposes of exclusion since 1901 (see Griffiths et al., 2019).

While useful (and indeed a method we describe later in this Research Report), a means to measure holistic wellbeing including its many interconnected and related factors is needed to better support the evaluation of policy that seeks to target these holistic factors. This has justified the development of numerous and varied frameworks, generally with significant community consultation, to explain, explore, conceptualise, commensurate or communicate to Australian governments various images of holistic Aboriginal and Torres Strait Islander social and emotional wellbeing.

Selecting a Framework of Social and Emotional Wellbeing to use with *Footprints in Time:* The Longitudinal Study of Indigenous Children (LSIC)

Being developed by and for Aboriginal and Torres Strait Islander peoples, LSIC produces what Walter and Anderson (2016) might call 'statistical counter-realities': a source of strengths-based and culturally-appropriate data. In the context of social and emotional wellbeing, statistical counter-realities can improve the legibility and aid the focus of policy in improving holistic and interconnected matters most important to Aboriginal and Torres Strait Islander families.

While this data exists, methodologies for using the data within an interconnected and holistic measure of social and emotional wellbeing are still being developed (e.g., Marmor & Harley, 2018). With guidance from the LSIC Steering Committee, we sought to advance this process of measuring holistic social and emotional wellbeing. We started by establishing some fundamental principles. Based on feedback from the Steering Committee, and ideas expressed across literature, the model of social and emotional wellbeing that we selected was to be a holistic conceptualisation of the many factors and experiences that contribute to the wellbeing of an individual, within a family, within a community. It was to be strengths-based, culturally appropriate, interconnected, with multidimensional facets of mental, physical, social, emotional, and spiritual health. It had to recognise the importance of balance and harmony in all dimensions of a person's life (Calma, 2009; Gee et al., 2014; Dudgeon et al., 2017; Sutherland & Adams, 2019). The construct had to have been developed by Aboriginal and Torres Strait Islander-led research and be adaptable to the experiences of Aboriginal and Torres Strait Islander youth and children as measured by LSIC.

Encapsulating these aims are the nine guiding principles created in the National Aboriginal Health Strategy (1989) that 'are foundational in culturally safe and responsive work with Aboriginal and Torres Strait Islander peoples' (Transforming Indigenous Mental Health and Wellbeing Project, 2021). These principles are:

- Health is viewed in a holistic context
- The right to self-determination is central to the provision of Aboriginal and Torres Strait Islander health services
- Culturally valid understandings must shape approaches to strengthening Aboriginal and Torres Strait Islander health
- The impact of history in trauma and loss are recognised as a direct disruption to cultural wellbeing
- Human rights must be recognised and respected
- The impact of racism, stigma, environmental adversity, and social disadvantage constitute ongoing stressors and have negative impacts on social and emotional wellbeing
- The centrality of kinship must be recognised

- The cultural diversity and many ways of living must be understood, and
- The great strengths of Aboriginal and Torres Strait Islander peoples, including creativity, endurance, and deep understandings of the relationships between human beings and the environment must be celebrated.

In summary, a framework for this Research Report as it analyses LSIC data was selected for it being:

- Aboriginal and Torres Strait Islander-developed
- comprehensive and holistic that includes personal, social, cultural, and economic determinants of wellness
- an exploration of the foundational elements of social and emotional wellbeing in the sample of Aboriginal and Torres Strait Islander children
- based on the nine principles of Aboriginal and Torres Strait Islander health service provision, care, management, and assessment, and
- of utility to the variables collected by LSIC.

Introduction to the Gee et al. (2014) Holistic Framework

Aboriginal-Chinese psychologist Associate Professor Graham Gee and his team of majority Aboriginal or Torres Strait Islander colleagues have developed a conceptual framework for the social and emotional wellbeing of Aboriginal and Torres Strait Islander peoples (Gee et al., 2014).

The framework (outlined in Figure 2) is based on the nine guiding principles noted previously and identifies seven interconnected domains of social and emotional wellbeing: Body, Mind and Emotion, Family and Kinship, Community, Culture, Country, and Spirituality and Ancestors. Central to this framework is the concept of 'self', which is deeply embedded within family, community, and broader ecological contexts. Connection to each of the seven domains tries to show the varied ways individuals 'experience and express [each] domain… throughout their lives' (Gee et al., 2014, p. 58). Despite their distinct boundaries, these domains are fundamentally interlinked and fluid, and maintaining harmony among them is essential for achieving optimal wellbeing in individuals, families and communities. Each domain consists of a series of factors.

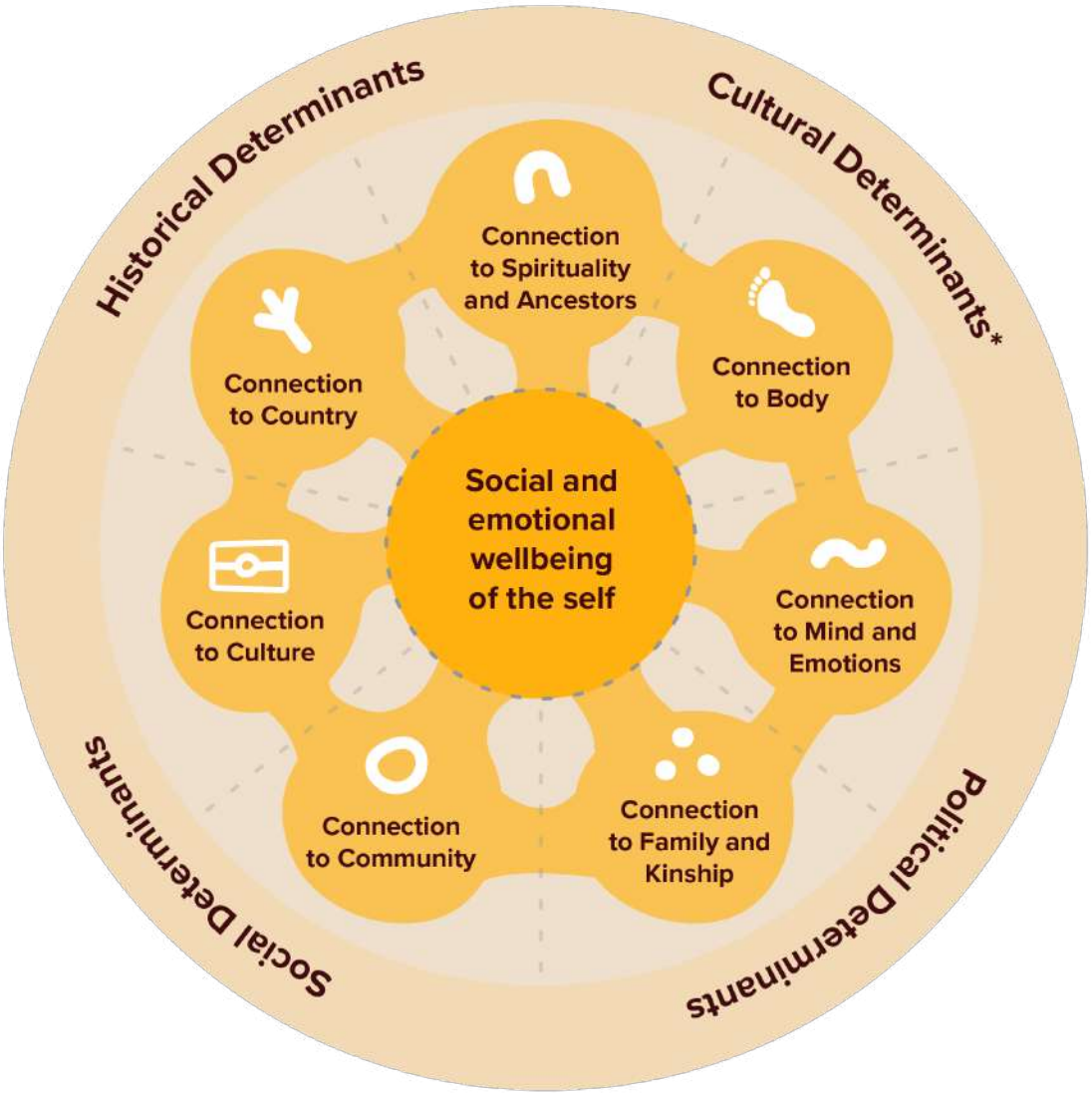


Figure 2: A conceptual framework of social and emotional wellbeing

Source: Adapted from Gee et al., (2014)

Note: *Cultural determinants do not appear in the original visual conceptualisation of the Gee et al. (2014) model; they have been added here to reflect their general discussion in Gee et al. (2014).

This model conceptualises social and emotional wellbeing for a person (inner circle) who is intrinsically connected to family and community, as the interconnected function of a series of domains (middle circle), driven by historical, social, and political determinants (outer circle). Expressions and experiences across diverse cultural groups and life experiences affect this model throughout the life-course of a person.

Drawing on Gee et al. (2014) and broader First Nations scholarship (Dudgeon et al., 2017; Dudgeon & Walker, 2015; Garvey, 2008; Grieves, 2009; Milroy, 2014; Milroy et al., 2014; Poroch et al., 2009; Sivak et al.,

2019; Sutherland & Adams, 2019; Transforming Indigenous Mental Health and Wellbeing Project, 2021), Table 2 provides a brief description of the domains and indicative examples of how 'a strong connection' might be manifest in each domain. Gee et al. (2014) recognise 'that the cultural diversity that exists amongst Aboriginal and Torres Strait Islander peoples means that no single grouping is necessarily applicable or relevant for every individual, family or community' (p. 58). Equally, that the nature and definition of each connection between 'self' and wellbeing domain 'will vary across the lifespan according to the different needs of childhood, youth, adulthood and old age' (Gee et al., 2014 p. 58) This is undoubtedly also true for different ability levels, family and community makeup (e.g., growing up in out of home care, with a single parent etc.), sexualities, genders, socioeconomic conditions, and experiences of marginalisation. Table 2 provides some examples, definitions and factors that contribute to a strong connection. Some effort has been made to ensure these are inclusive of a range of experiences. Table 2 should not be taken as true for all experiences.

Other determinants in the Gee et al. (2014) framework

Gee et al. (2014) argue that social and emotional wellbeing is impacted by social, historical and political determinants that are external to the individual, family and/or community. Social determinants include factors such as socioeconomic status, racial discrimination, housing, education and access to services. Historical determinants include legacies of colonisation and impacts of past government policies, including forced removal of children from their families, cultural dislocation and dispossession of land and resources. Political determinants include 'self-determination and sovereignty, control over resources and the unresolved issues of land, cultural security, safety' (Gee et al., 2014 p. 62).

'Broader cultural determinants' underwrite an individual or community's strength in reacting to the impact of social and historical determinants. These broader cultural determinants also affect how a person may connect with one or all domains (p. 62).

In summary, thus far the three elements of this framework most important to the technical methodology in Section Two are 'Factors' and 'Domains', which we defined as:

1. Factors: A combination of experiences (LSIC questions) that collectively reflect a Study Child or Study Youth's connection to a domain, and
2. Domains: The domains, as represented above, through which holistic social and emotional wellbeing can be understood.
3. Determinants: Broader political, historical, cultural and social conditions that affect an individual or community's connection to each domain.

Validity of the Gee et al. (2014) framework

The Gee et al. (2014) framework has been developed iteratively over decades of research, community consultation, self-determined advocacy efforts and reports. Ideas, including the nine guiding principles, appear throughout the National Aboriginal Health Strategy prepared by the National Aboriginal Health Strategic Working Party (1989), the Ways Forward report by Swan and Raphael (1995) and the National Strategic Framework for Aboriginal and Torres Strait Islander Mental Health and Social and Emotional Wellbeing (Social Health Reference Group, 2004).

The Gee et al. (2014) framework was informed by members of the Australian Indigenous Psychologists Association and extensive community consultation (Gee et al., 2014; Dudgeon et al., 2017). The framework

has also been tested by First Nations scholars in a participatory and qualitative investigation which examined each dimension and determinant of the social and emotional wellbeing of Aboriginal and Torres Strait Islander peoples (Dudgeon et al., 2017). This research found a strong alignment between participants' identified themes and the seven domains of social and emotional wellbeing incorporated in the framework (see e.g., Dudgeon et al., 2017; Sivak et al., 2019).

The framework has also been extensively referenced by First Nations scholars in academic publications (see e.g., Dudgeon et al., 2017; Dudgeon et al., 2021; Mia et al., 2017; Murrup-Stewart et al., 2019; Sivak et al., 2019; Whyman et al., 2022). It has become a standard framework for policy designers across Commonwealth and state governments including, more recently, in the:

- National Strategic Framework for Aboriginal and Torres Strait Islander Peoples' Mental Health and Social and Emotional Wellbeing 2017–2023, Commonwealth of Australia, 2017–2023
- Balit Murrup: Aboriginal Social and Emotional Wellbeing Framework 2017–2027, Department of Health and Human Services, State of Victoria, 2017
- Aboriginal and Torres Strait Islander Social and Emotional Wellbeing Cards Guide, Queensland Health, State of Queensland, 2020, and
- Infant, Child, and Adolescent (ICA) Taskforce Implementation Program, Government of Western Australia, 2022.

Adaptations to the Gee et al. (2014) Framework

Self- vs community-centred framework

Although the Gee et al. (2014) framework appears with 'self' at the centre, the authors explicitly note that 'self' is intrinsically 'grounded within a collectivist perspective that views the self as inseparable from, and embedded within, family and community' (p. 57). The fluidity between these centres to social and emotional wellbeing is very important and corrects for the fact that prior to social and emotional wellbeing, 'problem- and pathology-focused' studies typically imputed emphasis on an individual rather than the community (Haswell et al., 2013, p. 80).

Although some studies advocate for the centring of community in Aboriginal health services provision and assessment (e.g., Cox et al. (2021) who amplified the voices of 12 Tasmanian Elders who speak in terms of community health in a study on cultural wellbeing), LSIC data centres around the child and their experiences. While it may be possible to measure and identify a degree of community wellbeing through questions included in LSIC, the survey instrument will be best used for considering an individual as they interact and exist within their family and community.

Human-centred vs human and non-human-centred

Throughout this earlier discussion, emphasis is placed on human-to-human interactions. This arguably fails to incorporate the ontological ways of being and doing which constitute Aboriginal and Torres Strait Islander society (feedback, LSIC Steering Committee, 2023) and is an implicit weakness to the hierarchy of importance that the demands and design of Western academia creates, as it responds to siloed policy development. While attempts were made to include non-human interactions with Study Children, this study and subsequent model are limited to experiences recorded in LSIC.

Gee et al. (2014) framework and adaptation to the Aboriginal and Torres Strait Islander lifespan

As already noted above and touched on in Table 2, although the Gee et al. (2014) framework is generalised and designed to represent the social and emotional wellbeing of all ages, we note that the nature of each connection 'will vary across the lifespan according to the different needs of childhood, youth, adulthood and old age' (Gee et al., 2014 p. 58).

Palyku scholar Professor Helen Milroy underscores the importance of considering childhood development stages when assessing mental health issues in Aboriginal and Torres Strait Islander children (Milroy, 2014). A report by the Healing Foundation and Emerging Minds identifies four key developmental stages for children:

- Perinatal – two years: Strong attachment and emotional bonding with the mother (Primary Carer)
- 3–5 years: Reduced attachment to parents; a sense of independence; more interaction with other family (e.g., grandparents)
- 6–12 years: Acquiring life skills; controlling emotions and behaviours; forming friendships, and
- 13–18 years: Understanding sexual and gender identities/ roles; transition to adulthood (Healing Foundation and Emerging Minds, 2020).

This highlights that as children develop, the influence and definition of various social and emotional wellbeing domains may shift. For instance, inferring from this summary of Milroy's work, one possible development trajectory for these domains begins with a strong connection to family. In the second phase, connections to body and community may become more pronounced. Between the ages of 6 and 12 years, a deeper connection to mind and emotions could emerge. In adolescence, further and broader associations and connections develop.

Nonetheless, in this Research Report, we adopt the Gee et al. (2014) model as it was, recognising that we lacked the expertise or scope to modify it for changing definitions across childhood stages. We took care to specify the age of the children in each section, acknowledging that this could account for variations in the measurement and experience of holistic social and emotional wellbeing.

Applying the Gee et al., (2014) framework to other literature on Aboriginal and Torres Strait Islander children's social and emotional wellbeing

A growing body of evidence finds elements of the social and emotional wellbeing of Aboriginal and Torres Strait Islander children and youth that are applicable to the Gee et al. (2014) framework. Evidence is outlined below.

First Nations scholars Milroy, Dudgeon, and Walker (2014) underscore the importance of strengthening Aboriginal and Torres Strait Islander children's connection to culture, ancestry, and spirituality to enhance their resilience against grief and trauma.

Zubrick et al. (2014)[5] apply Milroy et al.'s (2014) model to explain how the health and development of individuals is shaped by an array of factors over time – and by place and life course stage, including child development. Zubrick et al. (2014) identify three major facilitators and four main constraints of optimal wellbeing in children and young people. These include 'intellectual flexibility coupled with an outgoing,

[5] Including among co-authors, First Nations scholars Gee, Dudgeon, Paradies and Walker.

easy temperament; good language development; and emotional support, especially in the face of challenge' (p. 97). The authors argue that the 'four main constraints on optimal wellbeing in children and young people are stress that accumulates and overwhelms, chaos, social exclusion (including racism), and social inequality' (2014, p. 97).

Yorta Yorta and Dja Dja Wurrung scholar Muriel Bamblett and colleagues (2012) emphasise the positive impact of preserving children's ties to family, community and culture on their wellbeing, and draw on findings from action research that involved Aboriginal and non-Aboriginal individuals and service providers. They recommend that these connections should be reflected in the criteria of social and emotional assessment tools.

Williamson et al. (2010) examine the acceptability of the Strengths and Difficulties Questionnaire (SDQ)[6] as an emotional and behavioural screening tool for children in Aboriginal Community Controlled Health Services in urban NSW. Individuals involved in the study proposed that the screening tool incorporate elements like connections with extended family, Aboriginal heritage, belongingness to the Aboriginal community, and encounters with racism. This integration would facilitate a broader and culturally sensitive evaluation of social and emotional wellbeing.

Williamson et al. (2016) identify that a child experiencing mental health challenges is associated with physical health, being raised by a foster carer, and having lived in four or more homes since birth. The psychological distress of the surveyed person with responsibility for care also impacts the mental health of children surveyed.[7] These last factors may change the definition or experience of a connection to family and community in social and emotional wellbeing. The team use the Study of Environment on Aboriginal Resilience and Child Health (SEARCH) data for Aboriginal children aged 4–17 years in New South Wales.

Zubrick et al. (2005) show that children cared for by a person other than an original parent and those who had lived in five or more different homes since birth were at a high risk of clinically significant emotional or behavioural difficulties. Factors such as self-esteem, larger household size, residing in highly isolated areas, and having a primary caregiver who speaks an Aboriginal and Torres Strait Islander language serve as protective measures against significant emotional or behavioural issues. Living in remote areas and speaking an Aboriginal and Torres Strait Islander language are seen as indicators of strong cultural ties. The authors draw on data from the Western Australian Aboriginal Children Health Survey (WAACHS), the most comprehensive and longest survey into the health, wellbeing and development of Aboriginal children in Western Australia (e.g., The Kids Research Institute Australia, 2024).

De Maio et al. (2005) also draws on WAACHS data to show that children whose Primary Carer was forcibly separated from their natural family are more likely to be at high risk of clinically significant emotional or behavioural difficulties than other children.

The Healing Foundation and Emerging Minds (2020) substantiate De Maio et al. (2005) to note that the forced removal of Aboriginal and Torres Strait Islander children from their natural family has caused an intergenerational disconnection from kinship, Country, spirituality and culture and loss of parenting practices that can have detrimental consequences for children's wellbeing.

[6] Developed by Goodman (1997), SDQ is a 25-items behavioural screening tool among 2–17-year-olds.

[7] The mental health and psychological distress of other carers, family and kin are also likely to play a role in a child's definition and experience of Connection to Family.

Further, the Healing Foundation and Emerging Minds (2020) report highlights the need for creating a social and emotional framework that embed the 'whole child' within the context of their culture, family and community (p.11). This is consistent with the whole-of-life view of health articulated in Gee et al.'s (2014) framework. Together, and not exhaustively, this research demonstrates that every child's experience of holistic social and emotional wellbeing will be different, with different definitions and degrees of connection to each domain.

Alternatives to the Gee et al. (2014) Framework

As noted previously, other frameworks, models and conceptualisations have been developed to improve academic and policy understanding of Aboriginal and Torres Strait Islander social and emotional wellbeing. Examples include the Interplay Wellbeing Framework (Cairney et al., 2017) shown in Figure 3, and the Social and emotional wellbeing of urban Indigenous youth framework (Priest et al., 2012) shown in Figure 4. Systematic literature reviews digest a range of further frameworks (see e.g., Butler et al., 2019).

When compared to the Gee et al. (2014) framework, rarely are these frameworks, models and conceptualisations sufficient in each quality are:

a) developed, tested, and validated by Aboriginal and Torres Strait Islander communities and experts over a long period of time

b) based on the nine guiding principles of Aboriginal and Torres Strait Islander Health Service provision (e.g., Swan & Raphael, 1995; Social Health Reference Group, 2004) and understanding, including broadly applicable across the diversity of Aboriginal and Torres Strait Islander culture and language groups

c) led by First Nations scholars

d) legible to governments and service providers as evidenced by its frequent adoption, and

e) adaptable for use with the LSIC data.

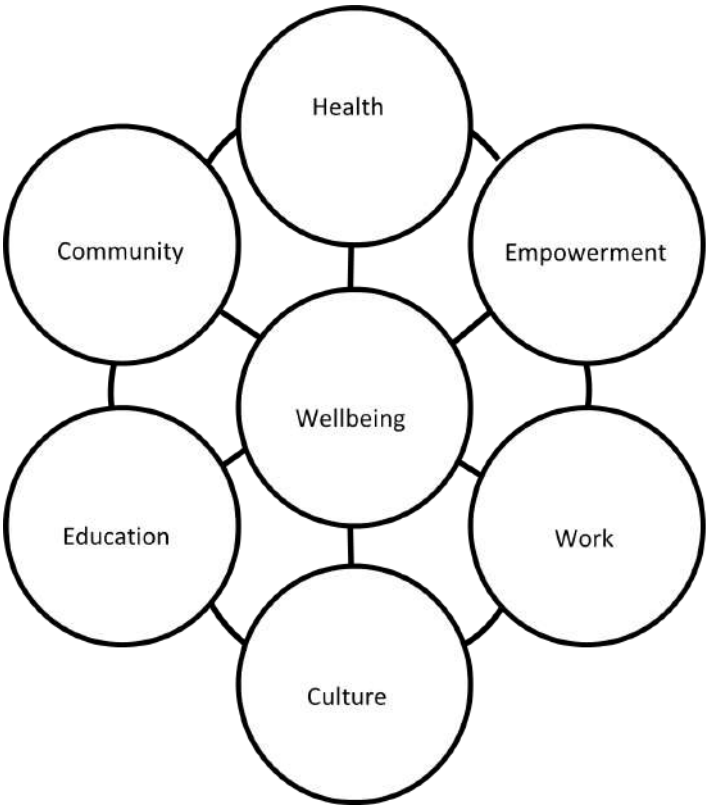


Figure 3: Interplay wellbeing framework

Source: Cairney et al., (2017)

Note: Work, education and health are coloured different to community, empowerment and culture in the original diagram. This is to delineate the priorities of government, and the priorities of community.

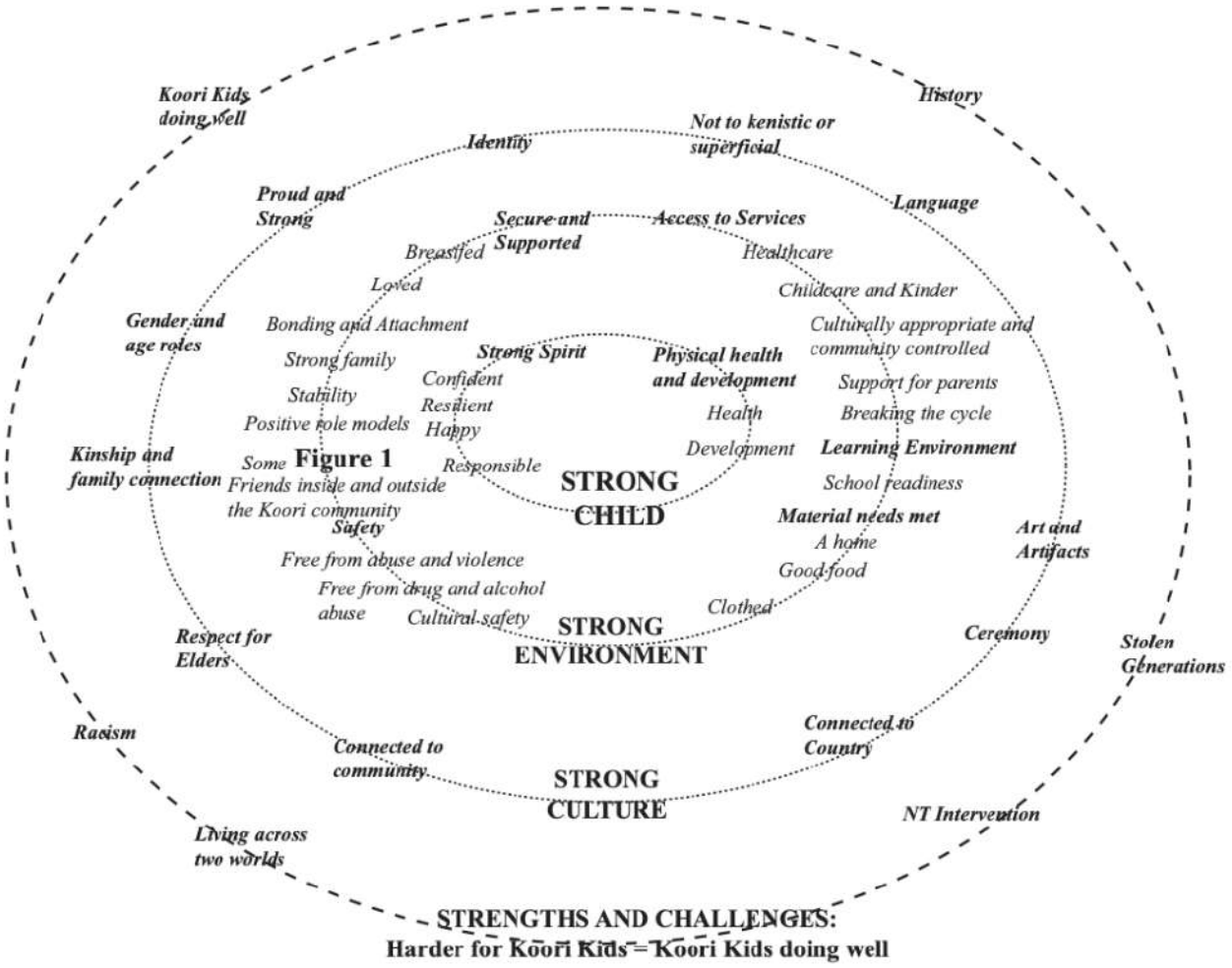


Figure 4: Conceptual framework for urban Koori children's social and emotional wellbeing

Source: Priest et al. (2017)

Note: Koori is a word used by Indigenous peoples of southern New South Wales and Victoria to collectively describe themselves. Note figure is as it appears in the source, including "Figure 1".

Other studies have also attempted to measure social and emotional wellbeing using LSIC data. Marmor and Harley (2018) used a conceptual framework similar to the Gee et al. (2014) framework and focus on how external factors affect social and emotional wellbeing. Standing in contrast to our method in Section Two, Marmor and Harley (2018) create a surrogate measure of social and emotional wellbeing rather than a comprehensive set of measures for each individual domain. They argue for a 'dual continuum model' in which mental health is seen as correlated with, but distinct from, mental disorder. They find however, that measuring these concepts alone still fail to quantify an Aboriginal and Torres Strait Islander concept of social and emotional wellbeing. In adding a third continuum measured through reducing a child's connection to Country, community, culture in a single dimension they are unable to reach a good measure for social and emotional wellbeing. They further note that using SDQ scores alone do not perform well as a proxy for social and emotional wellbeing.

A Note on Use of Gee et al. (2014) in this Report

In Section 2, this Research Report develops Gee et al.'s (2014) framework for the analysis of social and emotional wellbeing as expressed by respondents in LSIC. The Research Report uses the Gee et al. (2014) model as it is defined in the literature. Without the opportunity for a rigorous, and Aboriginal or Torres Strait Islander led framework development process, we did not attempt to explicitly adapt the definitions or design of the model to suit the experiences of Study Children from the onset of the project. We did, however, make some adaptions based on data availability. Further, although unfortunately the analysis proves the framework is suitable for use with LSIC, a series of factors prevent its use as a longitudinal tool. These include the availability of applicable variables, and their repeat appearance in multiple waves.

Consequently, later in the Report, longitudinal and other analysis is based on measures of social and emotional wellbeing explicitly defined in LSIC. These include the Strengths and Difficulties Questionnaire (SDQ). Further explanation of the appropriateness and justification for these measures is outlined in Section Four. The Report does however continue to be grounded by the Gee et al., (2014) framework.

In Section Three, for instance, with the guidance of First Nations colleagues, we analysed the qualitative data to explore the effects of broad cultural determinants on the LSIC Study Child or Study Youth's experience of social and emotional wellbeing.

In Section Four, as described in the Gee et al. (2014) framework, we consider the impacts of a range of social, historical, cultural, and political determinants on social and emotional wellbeing, despite the latter being measured by the SDQ.

In Section Five, we consider the factors that influenced self-harm and suicide. These are again applied to Gee et al.'s (2014) holistic measure of social and emotional wellbeing through the acknowledgement of social, historical, and political impacts on mental health.

Tables

Table 2: Domain definitions for generalised social and emotional wellbeing

Domain	Description	Example for strong connection
Connection to Body	Experiences relating to the body, including the physical and biological aspects of health within culturally-bound definition.	Feeling physically strong and healthy; eating well; being physically active; being able to physically participate in life as fully as possible. Definition and strength of connections will vary based on ability, illness, injury, nutrition and physical exercise.
Connection to Mind and Emotions	Engagement and expression of emotions; good mental health within Indigenous culturally-bound definition; the experience of safety and security; experience of joy.	Being able to engage with thoughts and emotions within the definition of your standpoint; feeling resilient, mentally strong, and peaceful; having and using a process for experiencing grief or loss; control or mastery of the mind; strong self-esteem; truth-telling; feeling your human rights recognised and respected; finding meaning and purpose.
Cont. over page	Cont. over page	Cont. over page

Domain	Description	Example for strong connection
Connection to Family and Kinship	The sense of identity and belonging one derives from their connection to family and/or kinship lines; the support given and received through caring, sharing and reciprocity; the recognition of age and gender roles.	Effective communication; knowledge of skin and other systems; strong sense of identity as situated within a family (may have varied definitions); trust and reliance in relationships. Experiences and definitions will differ between different types of family makeup and experiences.
Connection to Community	Collective spaces and places that, through participation, contribution or support, create a sense of belonging, inclusion, support, guidance, and communal responsibility/obligation; a source of identity and resilience generated through this belonging.	Respect for one's obligation to the collective; community engagement; support provided by the community; community-control and self-determination. Definitions and connections will vary for different types and sizes of communities.
Connection to Culture	Having continuity and security in one's identity as it is defined by culture; participation in cultural expression, knowledge and identity. Participating in a body of collectively shared values, practices, customs and traditions. A sense of heritage.	Having the opportunity and capacity to be a custodian for, maintain or revive cultural practices, rights, responsibilities, language, and tradition. Derive identity from the heritage and ongoing practices of culture.
Connection to Country	The spiritual, cultural, and physical relationship one shares with their ancestral (or any) land and place; the relationships shared with a surrounding natural environment/Country.	Knowing where one is from; being (spending time) on (any) Country and caring for (any) Country. This connection may also provide a sense of identity and belonging. It may be affected by external impacts on the environment and climate.
Connection to Spirituality and Ancestors	The strong sense of belonging, pride and purpose generated from spirituality and Ancestors; the presence of inner peace and resilience.	Participation/attendance in spiritual events and ceremonies; rituals; stories; arts; traditional healing practices. This connection may provide a sense of purpose and meaning. Some sources note critical transitions may occur in the definition and experience of this domain from childhood through adulthood and other stages of life.

Source: multiple sources including Gee et al., (2014), Dudgeon et al. (2017), Sivak et al. (2019) and State of Victoria Department of Health and Human Services (2017). Table reviewed by LSIC Steering Committee during early stages of analysis development.

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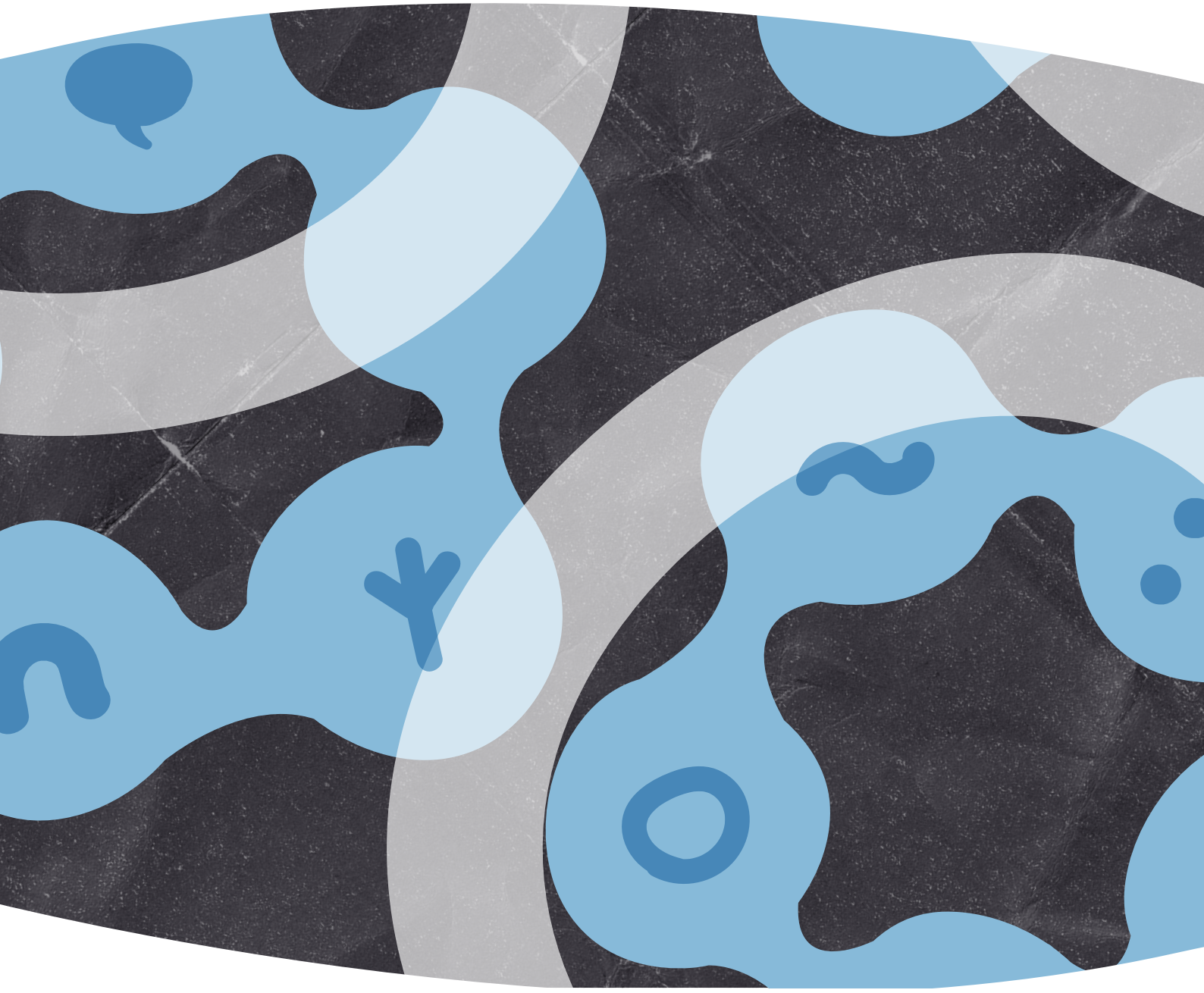
Section Two:

Fitting the Gee et al. (2014) Framework of Social and Emotional Wellbeing to *Footprints in Time* Questions using Structural Equation Modelling



Section Two: Fitting the Gee et al. (2014) Framework of Social and Emotional Wellbeing to *Footprints in Time* Using Structural Equation Modelling

Key findings

- This section successfully completes a methodological exploration of how LSIC data can measure social and emotional wellbeing as understood by the Gee et al. (2014) framework of social and emotional wellbeing for Aboriginal and Torres Strait Islander children.
- By using the Gee et al. (2014) framework and an exploratory factor analysis to categorise LSIC questions, this section creates five domains that each express a component of holistic social and emotional wellbeing in the LSIC data.
- By using a structural equation model based on the Gee et al. (2014), this section also demonstrates the interrelatedness of each domain as they express holistic social and emotional wellbeing.
- The analysis identifies the positive relationship between social and emotional wellbeing and its expression through each domain. Policies seeking to improve social and emotional wellbeing for Aboriginal and Torres Strait Islander children will need to holistically focus on strengthening all domains.
- Centring Aboriginal and Torres Strait Islander perspectives within quantitative methods, as this Report has done, must underpin all future analyses of social and emotional wellbeing as captured in the LSIC and other datasets.
- This Report uses the framework developed by the predominantly First Nations scholars Associate Professor Graham Gee, Professor Pat Dudgeon, Dr Clinton Schultz, Dr Amanda Hart, and Kerrie Kelly (2014).

Footprints in Time: the Longitudinal Study of Indigenous Children (LSIC) was created to 'improve the understanding of, and policy response to the diverse circumstances faced by Aboriginal and Torres Strait Islander [peoples], their families, and communities' (Australian Government Department of Social Services (DSS), 2024). The overarching goal of this analysis is to use questions and data from LSIC to learn about the social and emotional wellbeing of Aboriginal and Torres Strait Islander study cohort children. This section also wanted to find out what supports positive social and emotional wellbeing for Aboriginal and Torres Strait Islander children.

The LSIC data include lots of information on health and wellbeing. Some information explicitly measures certain constructs of wellbeing, like the 'Strengths and Difficulties Questionnaire (SDQ) scores, 'Strong Souls' questionnaire, and the Kessler Psychological Distress Scale (for use in measuring social and emotional wellbeing, see e.g., Marmor & Harley, 2018). Other information theoretically corresponds with the holistic construct and domains of social and emotional wellbeing discussed in the Gee et al. (2014) framework (see Section One: Conceptual framework).

However, the scope of LSIC extends far beyond social and emotional wellbeing and thus has not been specifically designed to measure some nuanced aspects of social and emotional wellbeing, including as conceptualised by Gee et al. (2014). This created three challenges for the present project:

1. We could not directly measure each domain of social and emotional wellbeing as they are embedded (latent) in a child's life. Consequently, we could not directly identify how they each express a component of Gee et al.'s holistic construct. We therefore needed to identify LSIC questions that could be used to approximately measure each domain.
2. We could not know, a priori, whether LSIC variables (such as those measuring different aspects of physical health) had a consistent structure and represented a single dimension (such as 'Connection to Body').
3. Some of Gee et al.'s domains of social and emotional wellbeing may not have had enough questions in LSIC to be sufficiently measured as a latent factor.

These three broad problems will be addressed in detail in the following sections on 'Variable Selection', 'Exploratory Factor Analysis' and 'Structural Equation Modelling'. Each step is preceded by the below icon (Figure 5), to orient the reader in our method.

To begin, in attempting to measure the unobservable latent domains of Gee et al.'s framework, our first step was to identify the questions (variables) in LSIC which may possibly be indications of each domain(s).

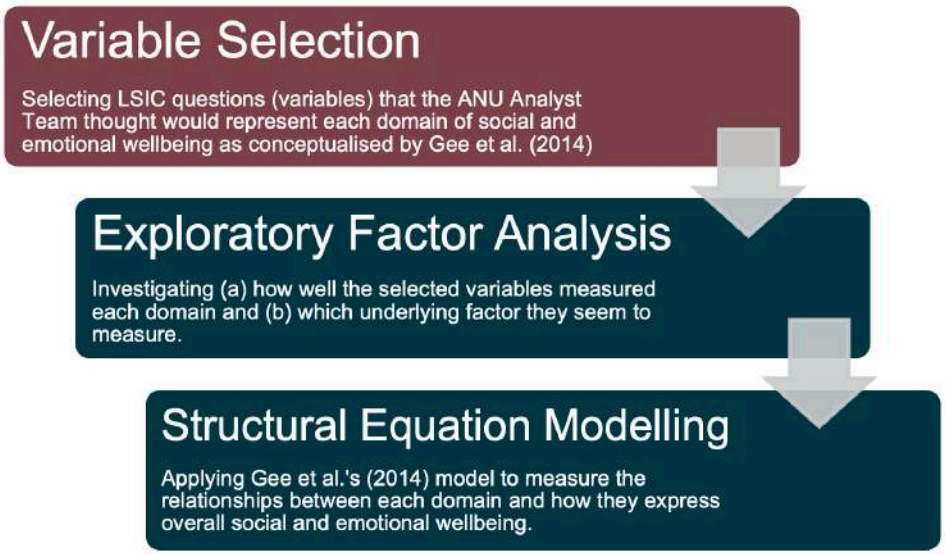


Figure 5: Staged methodological approach (step one highlighted)

Step 1: Variable Selection

We used an iterative process to identify LSIC variables appropriate for approximating the holistic framework of social and emotional wellbeing outlined in Gee et al. (2014). The DSS LSIC team advised us that the comprehensive feedback provided by Professor Gawain Bodkin-Andrews and Professor Steven Zubrick were sufficient for guiding this Report's process. Throughout the variable selection, we valued the input of First Nations team members and ANU's research partners at DSS. This included performing variable selection individually, later reflecting on the identified variables in the context of the Gee et al. (2014) model and engaging in group discussion with both Aboriginal and non-Indigenous members of our

team to review the identified variables. Each step of the analytical process is detailed for transparency and to demonstrate where our perspectives shaped the approach. The approach used is outlined below, and in the Appendix.

Choosing relevant variables

To reiterate, the goal of the following process was to select variables from LSIC that could represent domains of Gee et al.'s (2014) social and emotional wellbeing conceptual framework.

Identifying and categorising variables into domains

We defined each domain as per Table 2 (Section One: Conceptual Framework). To begin this process, two team members (Dr Yonatan Dinku and Benjamin Harrap), using the LSIC Data Dictionary and Raw Questionnaires to review LSIC variables, separately and systematically looked at the wording, theme and supporting information for each question to decide which domain it might represent. They followed criteria from the LSIC Steering Committee to make these decisions:

- strengths-based
- important for strengthening policy
- important for peoples and communities, and
- forefront culture and the idea of culture.

They also prioritised variables that captured the perspective of the LSIC Study Youth (or the Primary Carer), where it was considered that this perspective would reasonably proxy that of the Study Youth – e.g., 'how many times the Study Child has visited the hospital this year'). In the case that a variable could reasonably be a representation of multiple domains, a decision was made to choose the domain which was most likely represented through the variable. To reduce the impact of the subjective assessment, after both reviews were completed, the team met to discuss discrepancies and whether the criteria were met. Collectively, we arrived at a set of variables for inclusion in the next step.

Applying refinement criteria

Using this set of identified variables, a second set of criteria that considered number of responses, which LSIC cohorts were asked, the number of waves a question appears in, were applied. See Table 3 for details.

After applying these criteria, few variables remained for the individual domains Connection to Country, Connection to Culture, and Connection to Spirituality and Ancestors. However, many of the variables had been considered potential measures of multiple of these domains. Thus, in consultation with DSS, we decided to combine these three domains into one Culture/Country/Spirituality and Ancestors domain. This created a larger pool of variables with which to measure this combined domain.

Seeking DSS input on decisions and suggestions for additional variables

We consulted with DSS for their input on method and variable selections. Some additional variables were added through this process, including adding variables from early waves that would be static over time (e.g., afh6_* – Study Child knows mob, as discussed in Table 3).

Recoding and deriving variables

This step of data cleaning included:

- recoding variables to ensure that all set 0 as their reference level, for example changing a scale that ranges from 1 to 4, to range from 0 to 3
- transforming negatively-coded variables to be positively-coded, such that an increasing value of a given variable resulted in an increasing connection to the given domain, and
- reducing the number of categories used in a variable where some level of duplication of information existed.

These cleaning steps made sure that factor loadings would consistently show in the same direction during the following exploratory factor analysis step. It is necessary to note that this recoding process was not only about avoiding deficit measurements or transforming deficit measurements into positive measurements. It also focused on keeping variables coded consistently within each latent domain. Further explanation and examples of each cleaning process can be found in Table A24 and Table A25 in the Appendix.

For greater simplicity, we also derived seven new variables from existing LSIC data. This typically intended to reduce a large number of questions relating to the same topic into a single variable. Each derived variable is summarised in Table A26 in the Appendix.

Step 2: Exploratory Factor Analysis

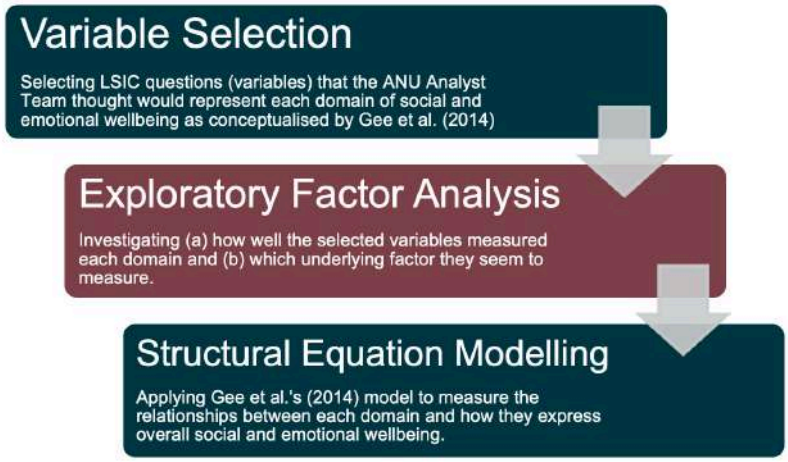


Figure 6: Staged methodological approach (step two highlighted)

With these subjectively identified variables, we then conducted an exploratory factor analysis (EFA). The goal of an EFA is to identify groups of variables which share common variance such that this common variance represents some underlying structure in the phenomenon being observed. The main purpose of EFA is to simplify complex data by reducing the number of variables into fewer factors by determining the number of continuous latent variables that are needed to explain the correlations among a set of observed variables.

There are many ways to perform EFA. As with the previous variable selection process, it also involves a degree of subjectivity. For example, EFA results might suggest a range between two and four for factor

solutions.[8] In such a circumstance, the analyst must examine which variables fall into the different factors for each solution, and through inductive reasoning balance the trade-off between variance explained and interpretability of the factors. In addition to these two aspects of EFA decision making, we prioritised keeping variables which we believed would measure an important component of social and emotional wellbeing under the Gee et al. (2014) framework when they would not be retained according to purely statistical reasoning. After this process, we ended up with a final set of variables.

For each domain, we first assessed the variables by examining their Spearman rank correlations. This characterises the strength and direction of the relationship between two variables and works with continuous and ordinal variables. For binary and ordinal variables, we conducted cross-tabulations to check the number of cases in each cell and detect instances with limited or no variation. Following this assessment, we examined the suitability of each variable for factor analysis using the Kaiser-Meyer-Olkin (KMO) score (Kaiser & Rice, 1974), which indicates how much variance among a set of variables may be common, thus indicating whether they are suitable for factor analysis. The KMO score was calculated via the ***psych*** R package (Revelle, 2024) and the proportion of missing data (where any negatively coded value was treated as missing data). Variables with a high proportion of missing data were removed before completing the EFA.

The number of factors used in the EFA process was determined by visually assessing scree plots. Scree plots present the eigenvalues for several factors, where the eigenvalue represents the amount of variance in the data accounted for by a given factor. The scree plot presents factors in order of most (largest eigenvalue) to least (smallest eigenvalue) variance explained and the point at which the plot levels off indicates the suitable number of factors to extract. This is because any further factors do not explain enough variance to warrant their extraction. In instances where this levelling off was unclear, EFA solutions with different numbers of variables were computed and the solution which contained factors that were the easiest to interpret conceptually was selected.

We conducted exploratory factor analysis using the ***efa()*** function from the ***lavaan*** R package (Rosseel, 2012). Variables which were either binary (such as a yes/no question) or ordinal (such as a Likert scale) were entered into the model as ordered variables using the ordered option. This uses the weighted least squares mean, and variance adjusted estimator to calculate each factor loading. All models used 'oblimin' rotation as correlations between factors were expected. Model fit was assessed using scaled versions of the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Standardised Root Mean Residual (SRMR) and Root Mean Square Error of Approximation (RMSEA). In instances of missing data, 'listwise deletion', or 'complete case analysis', was used. This meant that the sample used in the analysis of each domain had varying numbers of respondents.

Model fit was evaluated using criteria proposed by Browne and Cudeck (1992) and Hu and Bentler (1998) where model adequacy is indicated by:

- ***p***-value from the model chi-square ($\chi 2$) test being greater than 0.05 considered good fit
- an RMSEA below 0.05 for good fit and between 0.05 and 0.08 considered acceptable

[8] In the context of exploratory factor analysis (EFA), the results of an analysis may indicate that the optimal number of factors (or latent constructs) to explain the patterns in the data fall within a range of two to four. This suggests that the data may be well-explained by either two, three, or four underlying factors, each capturing distinct patterns or dimensions of variability in the observed variables. The specific number of factors within this range would be determined based on various criteria, such as the magnitude of factor loadings, eigenvalues, scree plot, interpretability of the factors, and theoretical considerations.

- an SRMR below 0.1 being adequate and below 0.05 indicating good fit
- a TLI close to 1 indicating good fit, and
- a CFI above 0.9 being acceptable and above 0.95 indicating good fit.

In cases where the total variance explained was similar across models with different numbers of factors, we favoured factor structures that were more easily interpretable over attempting to identify a set of variables that maximized the variance explained. Variables with a factor loading above an absolute value of 0.3 (Acock, 2013; Costello & Osborne, 2019) were automatically included in their given factor. Aboriginal and Torres Strait Islander understandings of social and emotional wellbeing took greater priority than applying routine statistical practices to the data. Given this, variables with factor loadings below 0.3 were reviewed, with variables we considered to be important for a given domain assigned to the most appropriate factor.

Once factor structures were identified for each domain, we created a total factor score for each factor to be used in the structural equation model. Total factor scores were calculated as sums of the component variables after scaling them by multiplying the component variables by their factor loadings. The total factor scores were then standardised to have a mean of 0 and standard deviation of 1. Variables that cross-loaded on more than one factor were only included in one factor based on its loading values and our judgement on where it conceptually fitted best.

Results of the exploratory factor analyses

Connection to Body

Several of the KMO scores were near or below 0.5 and could have been removed prior to the factor analysis process, however we sought to keep as many variables as possible. For example, the ***aoc5*** variable, which asks whether the Study Child is involved with their parent's exercise, was removed due to a large amount of missing data. The ***ahc2ahp*** variable, which asks whether a Study Child had any health problems, was initially included but caused issues with negative variance estimates when fitting the factor analysis model. This is possibly due to collinearity with the ***ahc2****** variables that asked about specific health conditions. We elected to retain the other ***ahc2****** variables, which ask about specific health problems. KMO scores are available in Appendix Table A27.

The majority of variables had poor Spearman correlations. The ***ahc3_**** variables were correlated with each other, which should be expected as they all relate to the types of help a Study Child needs due to a health condition. The ***ahc2dis*** variable indicates whether the Study Child has a disability and was correlated with the ***ahc3_**** variables, which makes sense where a child's disability means they need additional help. The ***ahc2dis*** variable also correlated somewhat with the ***ahc2dev*** variable, which asks whether a Study Child has any developmental delay. The ***aac76*** and ***aac78*** variables had a degree of correlation, where both variables measure how often a Study Child engages in physical activity. The scree plot for the Connection to Body variables is presented in Appendix Figure A50 and suggests that four or five factors were appropriate.

The five-factor solution could not be computed, so we initially proceeded with a four-factor solution. While this four-factor solution was able to be computed, the variable ***ahc3***_2 appeared to be a Heywood case, which is where the variance was estimated to be negative and the standardised factor loading greater than one. Given the problem Heywood cases pose for model validity, omitting one or several of the ***ahc3_**** variables was explored, however the factor structures/variable loadings of the four-factor solution became

harder to interpret with the omission of any one of these variables. To resolve this issue, the Report omitted the ***ahc3***_* variables in their entirety and proceed with a three-factor solution. While we recognise this choice reflects a statistical decision (i.e. prioritising model integrity), we considered it important to do so in order to be confident in the factor analysis output as a whole. Study Youth with health conditions that result in them needing additional help in different areas of their life would still have experiences of Connection to Body, that we anticipated would be represented in the other factors of the model.

The three-factor solution had a Comparative Fit Index (CFI) of 0.955, a Tucker Lewis Index (TLI) of 0.924, and RMSEA of 0.019. This indicated that the three-factor model performed reasonably well. The proportion of variance explained by the four-factor solution was 0.316. Factor loadings are presented in Table 4. These factor loadings for the remaining three factors are almost identical to the loadings seen in the previously discussed four-factor model, both in terms of which constructs the variables loaded on as well as the magnitude of their loadings.

Factor 1 seemed to identify the experience of good physical health, or the absence of ill-health, with the ***ahc2dev***, ***ahc2eye***, and ***ahc2dis*** variables being binary indicators of the absence of developmental delay, eye problems, skin problems, and disability, and ***cs2*** being an indicator of good sleep. The variable ***aac78*** being a measure of physical activity made logical sense to us given increased physical activity is related to improved physical health. All of these variables were based on Primary Carer responses.

Factor 2 measured health in a hospital context: the ***aho1a10*** and ***aho4hos*** variables identify visiting hospital and seeing a health professional in a hospital setting. The ***ahc2inj*** variable loading here could be that sustaining injuries may also mean visiting a hospital or emergency department. The ***ahc1*** variable is a general rating of a Study Youth's health from poor to excellent, which in the context of this factor is consistent with where we expected better overall health to mean a lower likelihood of going to hospital. All of these variables were based on Primary Carer responses.

Factor 3 seemed to measure activities related to experiencing a healthy body, including the two physical activity variables ***aac76*** and ***aac78*** which were Primary Carer questions, and a measure of whether children eat breakfast at home (variable ***cnu45***_3) which was answered by the Study Youth.

The variables ***ahd4***_7 and ***ahc2skn*** fell below the loading cut-off of |0.3|, however we assigned them to Factor 1, given they also related to the experience of good physical health. The variable ***ahc2ear*** was excluded because its strongest factor loadings were both very weak and did not make conceptual sense given our interpretation of the factors.

Connection to Mind and Emotions

Except the ***cse12_derived*** variable, all variables had excellent KMO scores. The ***cse12_derived*** variable also had a large amount of missing data, and thus was omitted from the factor analysis. We removed one variable from the collection of variables asked as part of the Strong Souls questionnaire. The variable we removed was 'You get used to big changes fast' (variable ***css1_c***) due to having a higher number of missing responses compared to the other Strong Souls variables. This is consistent with findings from Thurber et al. (2019), who examined the construct validity for the Strong Souls questionnaire using LSIC data and found this item did not load strongly onto any factors. The KMO scores are available in Appendix Table A28.

Almost all variables for the Connection to Mind and Emotions domain had some degree of correlation. The ***cse11****** variables correlated highly with each other, which is to be expected as they measure aspects of a child's self-efficacy. All Strong Souls items correlated with each other between ***r***=0.2 and ***r***=0.4. The ***css1_i***

variable (Study Child knows about family, history & culture) having the weakest correlation with other Strong Souls items. The scree plot for the Connection to Mind and Emotions domain strongly identified one factor. It is available in Appendix Figure A51.

The one-factor solution had a CFI of 0.906, TLI of 0.892, and RMSEA of 0.085, indicating that the model performed well. The proportion of variance explained by model was 0.374. Factor loadings are presented in Table 5. While ***csqpros*** had the weakest loading at 0.386, all variables had loadings high enough to warrant using them to create a total score for this domain.

Given that this single factor constituted predominantly of the positive Strong Souls questions and the ***lcse11_**** variables, which are listed as measuring self-efficacy in the LSIC data dictionary, we interpreted this factor to be measuring self-efficacy and resilience. All questions were answered by the Study Youth.

Connection to Family and Kinship

Most of the variables for the Connection to Family and Kinship domain had good KMO scores: only ***cia1_6*** (When you're older, will you be a Mum/Dad?) had a score below 0.6. We excluded ***cff15_2*** (Dad spends enough time with Study Child) and the ***cff33_**** variables due to high numbers of missing responses. The KMO scores are available in Appendix Table A29.

The ***cff32_**** variables had strong correlations with each other, which was expected given they measure aspects of a Study Child's relationship with their mum. The variables ***cia_6***, ***cff3_derived***, and ***cff4_derived*** were poorly correlated with most other variables except each other. The ***cff_16*** and ***cff_17*** variables both ask about how family get along with each other and were strongly correlated. The scree plot for the Connection to Family and Kinship domain suggested one strong factor and potentially one or two further factors, so we examined both two- and three-factor solutions. The scree plot is available in Appendix Figure A51.

The three-factor solution had a CFI of 0.994, TLI of 0.988, and RMSEA of 0.035, indicating that the model performed well. The proportion of variance explained by three-factor model was 0.5. Factor loadings are presented in Table 6.

The difference in the proportion of variance explained between the two- and three-factor solutions was small at 0.07. The factor loadings for the two-factor solution were difficult to interpret, whereas the three-factor model seemed to be: identifying how well a Study Child gets on with their family (Factor 1); the Study Child's relationship with their mum (Factor 2); and how many family members a Study Child talks to about good and bad things (Factor 3). Factor 1 was a mix of both Study Youth and Primary Carer responses, while Factors 2 and 3 were solely based on Primary Carer responses.

The derived variable, ***cffring_score***, which measured the proportion of family members that were in a Study Child or Study Youth's closest ring, fell below the cut-off. Despite the statistical criterion, we felt it important to retain this variable as it may measure an important element of Connection to Family and therefore assigned this to Factor 1 as it thematically fitted there. The variable ***cia1_6***, which asks whether a Study Youth aspires to be a parent, was not included in the final set of variables due to not fitting thematically into any of the identified factors and not loading strongly on any factor.

Connection to Community

The variables that we identified for Connection to Community all had mediocre[9] KMO scores. This suggested that they may not perform well in the factor analysis. We re-visited our initial selection of variables for this domain and added in ***ahm10*** and ***ahm11*** to supplement the original four ***csa26***_* variables. The KMO scores are available in Appendix Table A30.

The ***csa26***_* variables (Study Youth's opinions on their community) were reasonably well correlated with each other, as were the ***ahm**** variables (Primary Carer's opinions on whether their community is good for children). The scree plot for Connection to Community suggested one or two factors (see Appendix Figure A53).

The two-factor solution had a CFI of 0.883, TLI of 0.56, and RMSEA of 0.253, indicating that the model was a poor fit. The proportion of variance explained by two-factor model was 0.486. Factor loadings are presented in Table 7. We assessed both one- and two-factor solutions, opting to use the two-factor solution. In the two-factor solution, ***csa26_1*** (Do you think where you live/in your community that there is nothing to do?) had a weak loading on both factors and a high proportion of unique variance. This, in addition to being a negatively framed variable, led us to exclude use this variable in calculating the total score. The two factors seemingly being identified were a Study Youth's positive opinions on their community (Factor 1) and a Primary Carer's positive opinions on their community (Factor 2).

Irrespective of the factor analysis metrics suggesting this was a poor fit, due to having revisited the LSIC Wave 11 data several times to identify variables which might suitably measure Connection to Community, we elected to continue with the variables identified in this process. Since LSIC is not designed around the Gee et al. (2014) model, these variables represent our best efforts to identify those which might measure this domain.

Connection to Culture, Country, Ancestors and Spirituality

We excluded ***apl14a***, ***cia2_4***, and ***anu4b*** due to the large amount of missing data. We excluded ***afh6_4*** (Study Child knows mob – Yes, other) due to having a poor KMO score and being unclear in what it measured relative to the other ***afh6***_* variables. KMO scores for the remaining variables were varying but generally mediocre, with the ***csc41***_* variables (a question about cultural identity in the classroom) having the best scores at around 0.75. The KMO scores are available in Appendix Table A31.

There were weak-to-no correlations between most variables. The ***af6***_* variables however were correlated with each other, as were ***csc41_1***, ***cff4_14*** and ***cff5_14***. The scree plot for Connection to Culture, Country, Ancestors and Spirituality domain suggested up to four factors (see Appendix Figure A54). We compared the factor analysis results for both three- and four-factor solutions.

The four-factor solution explained an additional 10% of the total variance over the three-factor solution and the factors were easier to interpret. The four-factor solution had a CFI of 0.99, TLI of 0.978, and RMSEA of 0.028, indicating that the four-factor model performed well. The proportion of variance explained by four-factor model was 0.558. Factor loadings are presented in Table 8.

[9] Mediocre is the suggested wording for scores presenting this way (see e.g., https://en.wikipedia.org/wiki/Kaiser%E2%80%93Meyer%E2%80%93Olkin_test)

Factor 1 seemed to relate to learning about being Aboriginal and Torres Strait Islander, with loadings from ***cff4_14*** and ***cff5_14*** (whether the Study Child talks to Elders in certain situations), and ***cff7_derived*** (a sum of the different people from whom the Study Child learns about being Aboriginal and Torres Strait Islander).

Factor 2 constituted solely of ***csc41_**** variables, indicating Factor 2 relates to a Study Child's experience of being Aboriginal or Torres Strait Islander in a classroom setting.

Factor 3 was harder to interpret. It could possibly represent a child's experience of their culture. The derived variable ***anu4_total*** measures the variety of bush tucker a child eats, ***apl21a*** asks whether the child has a Connection to Country, and ***cpl41*** measures whether they speak an Aboriginal or Torres Strait Islander language at home.

Factor 4 seemed to measure a child's knowledge of their mob and was strongly loaded on by the three ***afh6**** variables brought forward from Wave 8.

Factors 1 and 2 were based on Study Youth responses, while Factors 3 and 4 were based on Primary Carer responses, except for ***cpl41*** which was answered by Study Youth. The variable ***cia1_7*** (Aspirations – Study Child will stay in this area) did not load strongly on any of the factors. We also could not assume that 'this area' related to a Study Child's own Country – thus, we chose to exclude it.

Final variable selection

Table 9 provides an overview of the results of EFA process. For the full list of variables in each domain, including response distributions, see the Appendix to Section Two (Table A32). While each summary of the EFA process for each domain describes any variables that were not retained, they are listed here again for reference, along with the reason why they were not retained.

1. ***ahc2ahp***, which asks if the Study Youth had any health problems. Not retained because it caused problems with model estimation, likely due to being collinear with the other included ahc2* variables that ask about specific health conditions.
2. ***ahc3_1***, ***ahc3_2***, and ***ahc3_3***, which ask whether a Study Youth required assistance due to a health condition. Not retained because as an entire measure the ***ahc3_**** variables were causing problems with model integrity.
3. ***css1_c***, the Strong Souls item 'You get used to big changes fast'. Not retained due to existing research demonstrating its weaker relationship with the other items in the measure and the larger proportion of missing data for this variable.
4. ***csa26_1***, which asks Study Youth if they think 'there is nothing to do' in their community. Omitted due to being negatively framed and having poor loadings on the identified Connection to Community factors.
5. ***cia1_7***, which asks Study Youth if they intend to stay 'in the area' when they grow up. Excluded because 'the area' does not necessarily mean their Country and the item had poor loadings on the identified Connection to Culture, Country, Ancestors and Spirituality factors.

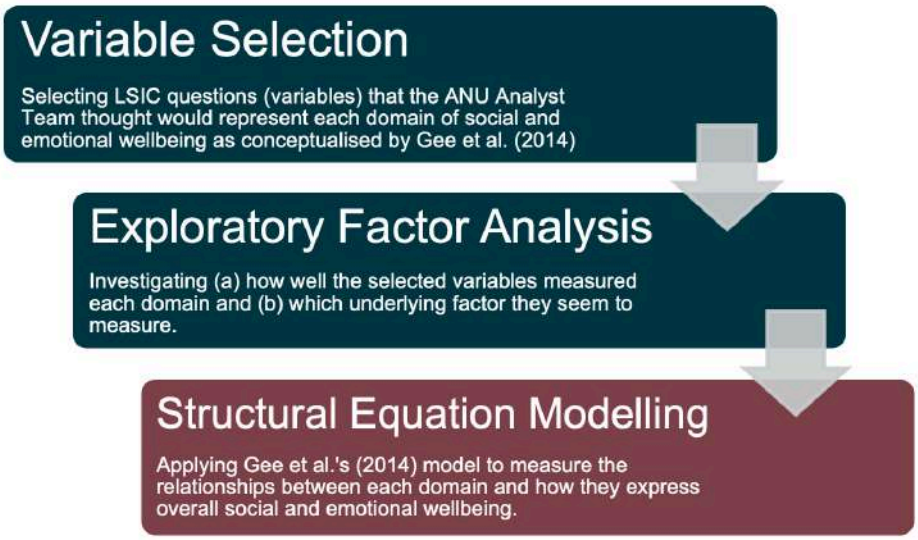


Figure 7: Staged Methodological Approach (step three highlighted)

Structural Equation Modelling

In a similar manner to EFA examining how individual LSIC questions might be measuring different aspects of a given domain by considering patterns of variation among the observed variables, structural equation modelling (SEM) can be used to examine how latent variables (the domains) are related by examining patterns of variation among them. Based on the Gee et al. (2014) framework and the variables identified in the variable selection and EFA steps, we initially conceptualised the relationship between the latent and observed variables as depicted inFigure 8.

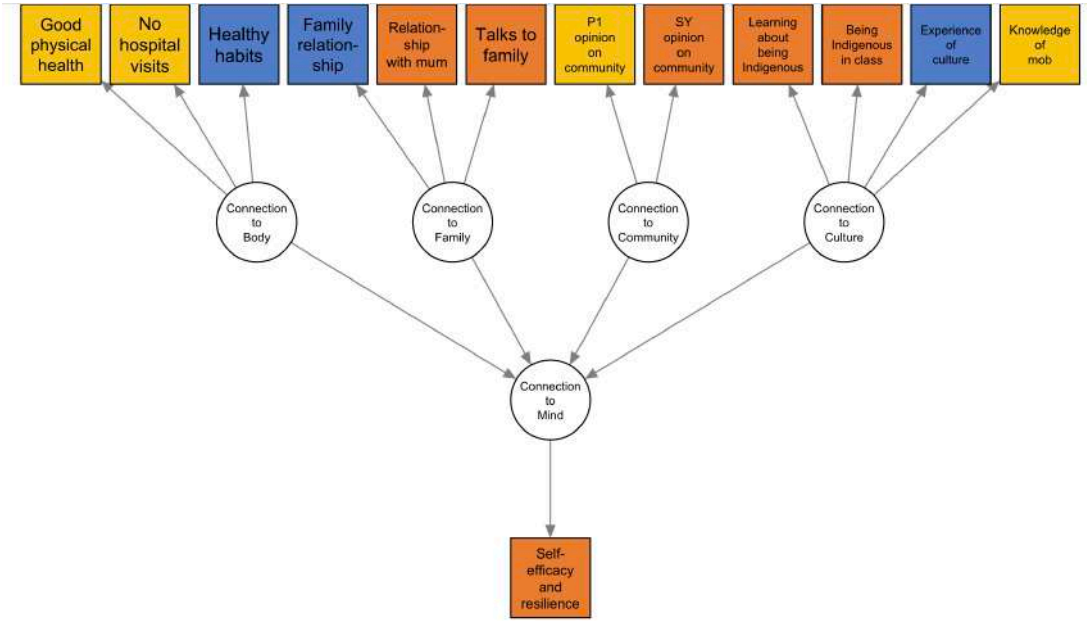


Figure 8: Relationship between latent and observed variables

Note: Orange boxes indicate factors based on Study Youth (SY) responses, yellow indicate Primary Carer (P1) responses, blue indicates a mix of both. Connection to Family includes 'Connection to Kinship', Connection to Mind includes 'Connection to Mind and Emotions', Connection to Culture includes 'Connection to Country/Ancestors/Spirituality'.

The weighted and standardised factor scores arising from the EFA step were used to fit a SEM in R. We used ***lavaan***'s '***sem()'*** function with full-information maximum likelihood estimation and robust standard errors (SEs). This method uses all available information, rather than excluding observations which have missing data on at least one measure. This meant the analysis was based on 1,217 Study Youths.

Model fit was assessed using the same criteria as for the EFA. Please note that, although we included Connection to Mind as a latent variable for the purposes of illustrating the relationships between each domain, because it only has one factor score, the estimates are effectively the relationships between each of the domains in Wave 11 and the good mental health factor score in Wave 12. Further, the Connection to Body measures were initially included without any covariance terms between them, as depicted in Figure 8, however due to the exclusion of the ***ahc3_**** variables in the EFA stage following feedback on our analysis, the SEM had problems with negative values in the covariance matrix. To overcome this, we included a covariance term between the Connection to Family measure "Talks to family" and the Connection to Culture, Country, Spirituality and Ancestors measure "Learning about being Indigenous", which was the covariance term with the largest modification index.

The results of the SEM are presented in Figure 9. The multi-directional arrows going between each of the Wave 11 domains represent their correlations. The unidirectional arrows leading from the domains measured in Wave 11 to Connection to Mind (measured in Wave 12) represent partial correlations; that is the unique association between a given domain in Wave 11 and Connection to Mind and Emotions in Wave 12. The arrows going from the domains to their constituent factors represent factor loadings based on the variance standardisation method described previously.

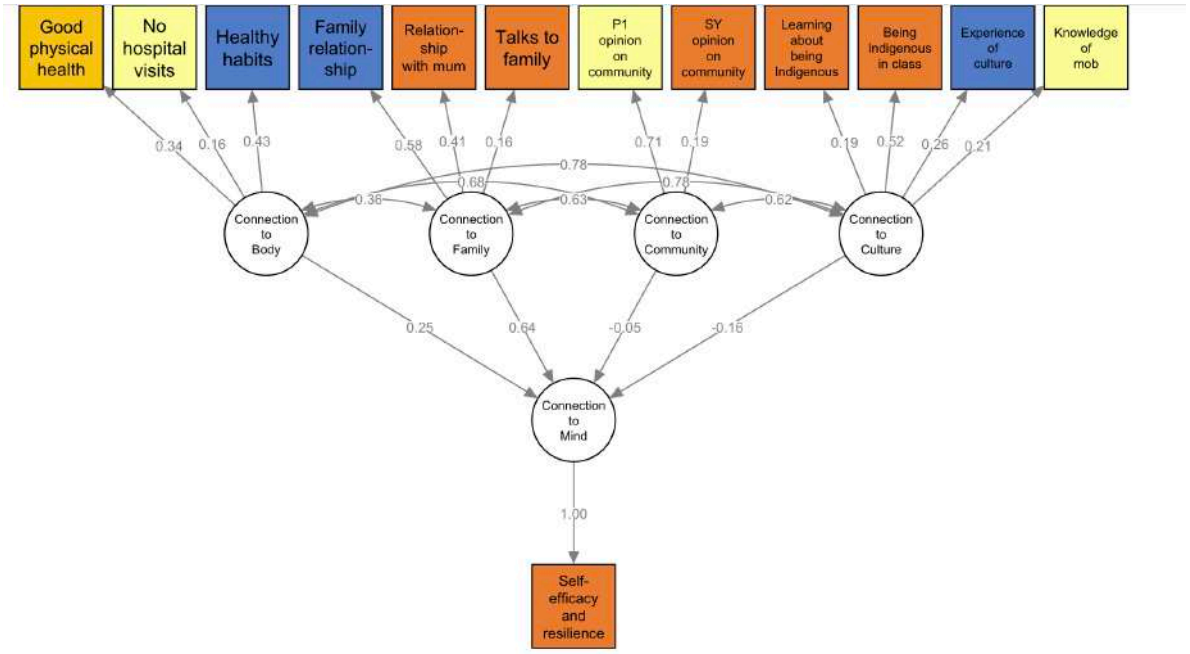


Figure 9: Results of the structural equation model

Note: Orange boxes indicate factors based on Study Youth (SY) responses, yellow indicate Primary Carer (P1) responses, blue indicates a mix of both. Connection to Family includes 'Connection to Kinship', Connection to Mind includes 'Connection to Mind and Emotions', Connection to Culture includes 'Connection to Country/Ancestors/Spirituality'.

Model fit indices suggested the model overall was a poor fit. Although the RMSEA (0.05) and SRMR (0.05) were adequate, the model χ^2, CFI and TLI indicated poor fit (***p***<0.001, 0.82 and 0.74 respectively).

From the SEM we identified that the latent representation of the four domains measured in Wave 11 are all strongly positively correlated with each other. This means that increasing levels of any one domain is associated with increasing levels of the other domains. Connection to Body is correlated with Connection to Family (***r***=0.36 (95% CI 0.1 to 0.63)), Connection to Community (***r***=0.68 (95% CI 0.35 to 1)), and Connection to Culture, Country, Spirituality and Ancestors (***r***=0.78 (95% CI 0.39 to 1)). Connection to Family and Kinship is correlated with Connection to Community (***r***=0.63 (95% CI 0.42 to 0.84)), and to Connection to Culture, Country, Spirituality and Ancestors (***r***=0.78 (95% CI 0.53 to 1)), and Connection to Community is correlated with Connection to Culture, Country, Spirituality and Ancestors (***r***=0.62 (95% CI 0.34 to 0.9)).

Only Connection to Family and Kinship has a moderate partial correlation with Connection to Mind and Emotions (***r***=0.64 (95% CI -1 to 1)). All other domains have weak partial correlations with Connection to Mind and Emotions. Given the Gee et al. (2014) framework of social and emotional wellbeing states that all domains are concurrently shaped by each other, conceptually we expected all domains to be interrelated. This interrelatedness can have consequences for statistical models, in particular multicollinearity. Multicollinearity happens when several highly correlated variables are included in a statistical model, meaning there may be little to no variance in the outcome (Connection to Mind) that is unique to any of the correlated variables (the Wave 11 domains). Because there is a high correlation between each Wave 11 domain, their weak correlations with the Wave 12 measurement of Connection to Mind (see Figure 8) are likely a consequence of multicollinearity. To further confirm this point, we examined variance inflation factors where a score of 4 indicates multicollinearity. All Wave 11 domains had variance inflation factors greater than 50, indicating severe multicollinearity.

Improved framework

An improved implementation of the Gee et al. (2014) framework may be to incorporate a higher-order latent variable for social and emotional wellbeing. This higher-order latent variable might better reflect the holistic nature of social and emotional wellbeing as characterised by Gee et al. (2014), by explicitly defining a latent variable for social and emotional wellbeing that is related to each domain. A visual representation of this is presented in Figure 10. Note that in this framework, social and emotional wellbeing is based on Wave 11 measurements and is then used to predict Wave 12 Connection to Mind. The difference here is that the four domains measured in Wave 11 are explicitly represented as expressions of social and emotional wellbeing. The estimates are then the correlation between Wave 11 social and emotional wellbeing and each of the domains measured in Wave 11. These correlations can be thought of as representing how strongly changes in holistic social and emotional wellbeing are associated with changes in an individual domain. In Figure 8 and Figure 9 on the other hand, social and emotional wellbeing is not explicitly identified but assumed to be underlying the covariance between each of the domains in Wave 11.

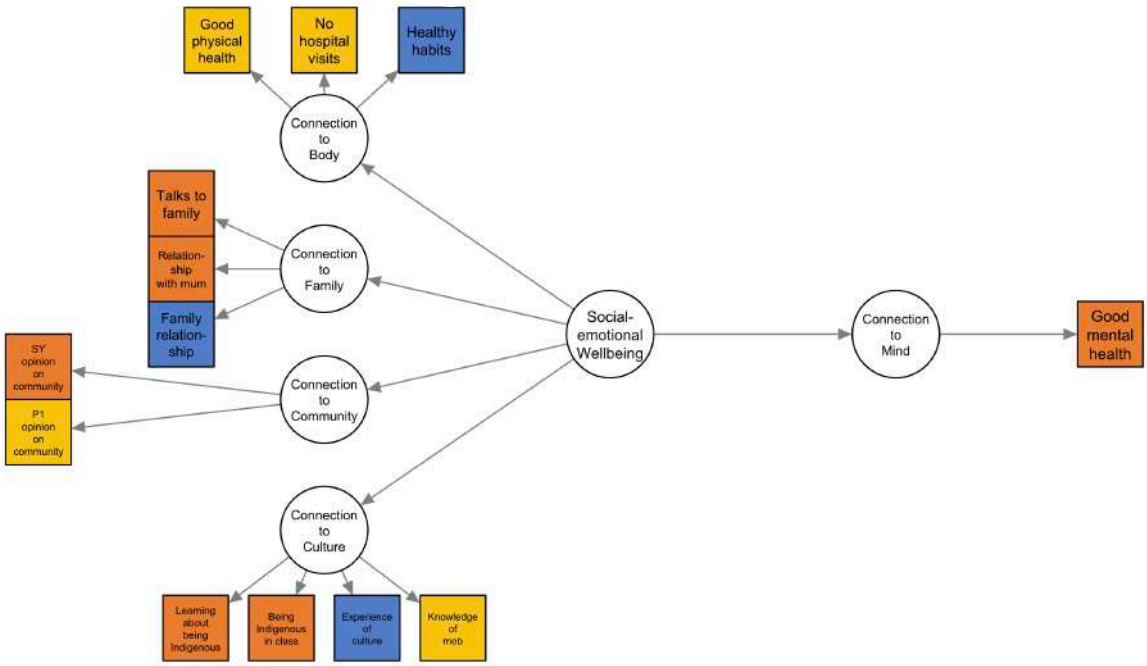


Figure 10: Structural equation modelling with higher-order latent variable

Note: Orange boxes indicate factors based on Study Youth (SY) responses, yellow indicate Primary Carer (P1) responses, blue indicates a mix of both. Connection to Family includes 'Connection to Kinship', Connection to Mind includes 'Connection to Mind and Emotions', Connection to Culture includes 'Connection to Country/Ancestors/Spirituality'.

The results of the structural equation model with social and emotional wellbeing as a higher-order factor are presented in Figure 11. Compared with the previous model, this model's fit indices still indicated poor fit (***p***<0.001, CFI 0.63, TLI 0.53, RMSEA 0.06, SRMR 0.06), however the estimates of the relationship between the higher-order social and emotional wellbeing construct and each domain were clearer.

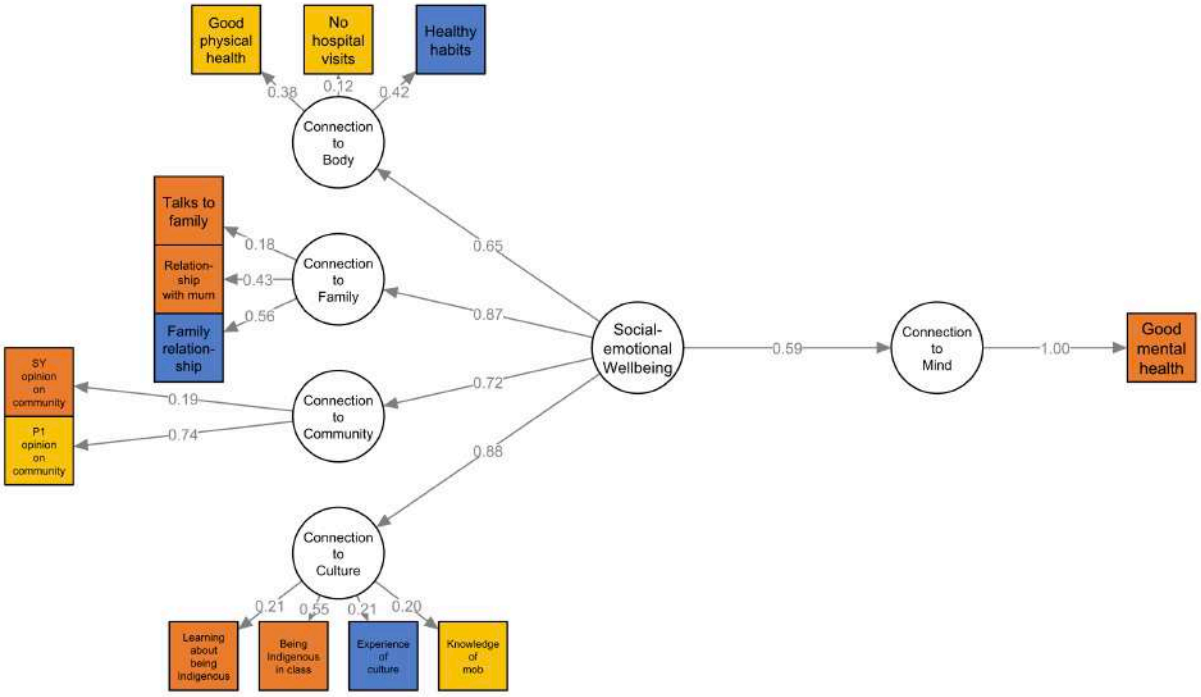


Figure 11: Structural equation modelling with higher-order latent variable results

Note: Orange boxes indicate factors based on Study Youth (SY) responses, yellow indicate Primary Carer (P1) responses, blue indicates a mix of both. Connection to Family includes 'Connection to Kinship', Connection to Mind includes 'Connection to Mind and Emotions', Connection to Culture includes 'Connection to Country/Ancestors/Spirituality'.

The estimates for the unidirectional arrows between social and emotional wellbeing and each domain are correlations. These were ***r***=0.65 (95% CI 0.43 to 0.87) for Connection to Body, ***r***=0.87 (95% CI 0.72 to 1) for Connection to Family and Kinship, ***r***=0.72 (95% CI 0.48 to 0.97) for Connection to Community, and ***r***=0.88 (95% CI 0.69 to 1) for Connection to Culture, Country, Spirituality and Ancestors. That social and emotional wellbeing is strongly positively correlated with each domain measured in Wave 11 is consistent with the Gee et al. (2014) framework used to conceptualise the relationships in the model. In SEM, the latent variable, represented here as the holistic, higher-order latent variable for social and emotional wellbeing, is measured by how it is expressed through each domain, via the LSIC questions identified in the EFA. The arrow that connects the latent measure of social and emotional wellbeing to its domains represents the strength and direction of these expressions. In this instance, each domain is strongly linearly correlated, meaning that increases in social and emotional wellbeing as a whole would typically be associated with increases in the expression of, or connections to, each domain.

We examined this second model's modification indices (see Figure A55). Modification indices identify how changes or additions to the model specification could improve the fit indices, as the second model's fit indices were poor. A review of the modification indices suggested specifying covariances between individual factor scores, such as 'Healthy habits' and 'Experience of culture'. We added five covariance terms at the measurement level for the following reasons.

a) Including a covariance term between 'Talks to Family' and 'Learning about being Indigenous': we theorised that children who had more family members that they spoke to would also have more family members to learn about being Aboriginal or Torres Strait Islander from.

b) Including a covariance term between 'Healthy habits' and 'Experience of culture': we theorised that part of physical activity could be hunting for bush tucker or spending time on Country. Additionally, eating breakfast at home in the morning could be the time that children eat bush tucker.

c) Including a covariance term between 'Experience of culture' and 'Knowledge of mob': we theorised that children who speak an Aboriginal or Torres Strait Islander language at home and have a Connection to Country are also more likely to know their mob.

d) Including a covariance term between 'Talks to family' and 'Experience of culture': we theorised that children who speak an Aboriginal or Torres Strait Islander language at home are likely to be talking with their family.[10]

e) Including a covariance term between 'Primary Carer's opinion on community' and 'learning about being Indigenous': we theorised that communities where children can spend time talking to Elders and where there are more people who a child can learn about being Aboriginal and Torres Strait Islander from may be seen more positively by parents.

Incorporating these modifications to the SEM, the CFI and TLI improved to 0.91 (from 0.63) and 0.87 (from 0.53) respectively. Although the RMSEA and SRMR measures were already acceptable, they also improved marginally to 0.03 (from 0.06) and 0.04 (from 0.06) respectively. The estimates of the correlations between the domains and the higher order social and emotional wellbeing construct changed minimally – Connection to Body increased from ***r***=0.65 to ***r***=0.67, Connection to Family and Kinship remained unchanged at ***r***=0.87, Connection to Community increased from ***r***=0.72 to ***r***=0.73, and Connection to Culture, Country, Ancestors and Spirituality increased from ***r***=0.88 to ***r***=0.93.

The original and higher-order structural equation models demonstrate that the four domains of social and emotional wellbeing measured in Wave 11 are highly interrelated. It also demonstrates the underlying conceptualisation that each of the domains of social and emotional wellbeing will contemporaneously inform one other is consistent with our findings. While Connection to Mind and Emotions was measured in the following wave, both models demonstrated a strong relationship between social and emotional wellbeing in Wave 11 and Connection to Mind in Wave 12.

Summary

The findings presented here are based on our interpretation and application of the Gee et al. (2014) framework of social and emotional wellbeing. We consider this a framework and model through which to conceptualise social and emotional wellbeing as it is experienced by Aboriginal and Torres Strait Islander youth participating in the LSIC Study. By assuming the Gee et al. (2014) framework underpins how social and emotional wellbeing is experienced by the Study Youth, our findings should not be interpreted as an examination of whether the model is true: the analysis here assumes that it is. Instead, our analysis has demonstrated that the Gee et al. (2014) framework can be used to identify sets of variables within LSIC that measure social and emotional wellbeing.

Having identified individual LSIC questions that we believed fit into the Gee et al. (2014) framework, we used exploratory factor analysis to create factor scores. Each factor score represented the different ways in which each domain might be expressed in a child's life and experience. By designing the structural equation models to reflect the Gee et al. (2014) framework, we identified that each of the four domains

[10] Assuming that in many cases, an Aboriginal or Torres Strait Islander child who lives at their 'home', lives with some form of relative.

measured in Wave 11 were strongly interrelated with each other. We further identified that social and emotional wellbeing as measured by these four domains was strongly correlated with Connection to Mind and Emotions in Wave 12.

We provide a designed depiction of our findings in Figure 12.

Figure 12: Our adaption of Gee et al.'s (2014) framework using LSIC responses

The broad themes which map onto each domain are summarised in Figure 13.

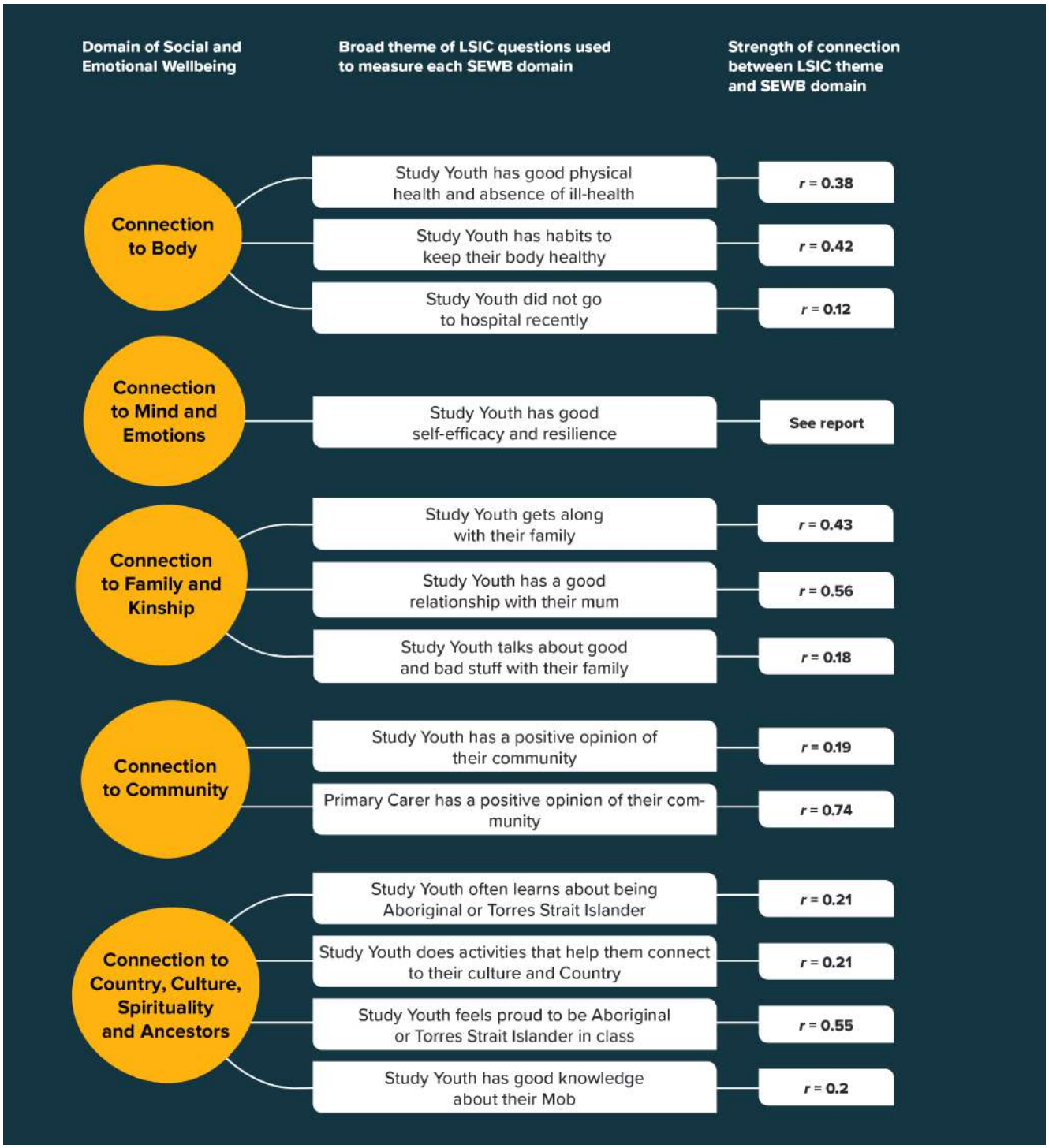


Figure 13: A summary of the themes and how they map onto each domain in our model

Methodological implications

Application of the Gee et al. (2014) framework

We demonstrate that using the Gee et al. (2014) framework to identify measures of social and emotional wellbeing in LSIC is possible. Given sufficient time and resources, the framework could be used to identify measures across all currently collected waves in retrospect and used in the design and development of future waves and questions. In doing so, developing a set of new measures or categorising existing

measures can also incorporate differences in how children and youth experience social and emotional wellbeing across the ages. This would be a highly technical and time-consuming process. However, if further research into social and emotional wellbeing with LSIC data is planned, an internally-developed classification for each variable in each wave that says which, if any, domain(s) it could be used to measure, would improve the consistency and speed at which users of LSIC data could conduct their research.

Although we decided to combine the Connection to Country, Connection to Culture, and Connection to Spirituality and Ancestors into a single domain, it may be possible to identify sufficient questions for the separate measurement of each of these domains.

Consistency of measurement

As indicated above, while we were about to measure the inter-relationship of domains of social and emotional wellbeing using LSIC data, the biggest challenge was the inconsistency in which questions were asked and the waves they appeared in. In our review of the available questions across all waves that might act as a measure of a domain of social and emotional wellbeing, we commonly found that the number of questions available in a wave for a given domain was too limited, or that measures of other domains were not available in sufficient number.

We acknowledge there are many and sometimes competing priorities that come with designing a longitudinal survey and that the purpose and direction of LSIC will ultimately be the decision of the study's Steering Committee. However, if it is the intention of LSIC to continue to use a holistic framework like Gee et al.'s (2014) framework as a model to measure social and emotional wellbeing, our recommendation is that LSIC confirms a preferred framework (like Gee et al. (2014)) and core set of appropriate variables which map onto each domain. These variables may then appear in repeat waves for longitudinal analysis.

Generalisability of findings

The Aboriginal and Torres Strait Islander population includes diverse languages, peoples, and experiences. Future research could examine how these findings vary between study sites. However, developing findings that are generalisable to the full Aboriginal and Torres Strait Islander population rely on a representative sample. Currently, as acknowledged in the LSIC data user manual (DSS, 2023), LSIC was not designed to be nationally representative. Consequently, this study, and any future site specific studies may not be appropriate for generalisation to all Aboriginal and Torres Strait Islander peoples.

Policy implications

Addressing all domains simultaneously

We demonstrate, based on the Gee et al. (2014) framework, the interconnectedness of measures for social and emotional wellbeing. Policies aimed at enhancing the wellbeing of Aboriginal and Torres Strait Islander children will require strengthening their connection to each domain simultaneously. For instance, a program targeting physical health may positively impact a child's Connection to Body, while having little effect on overall social and emotional wellbeing due to only impacting one domain. Further to this, while we only consider social and emotional wellbeing at the individual child level, the family- and community-level social and emotional wellbeing will also be important.

Role of Connection to Family and Connection to Culture

Although all domains had significant and positive correlations with the proposed holistic construct of social and emotional wellbeing, the domains Connection to Family and Connection to Culture demonstrated the strongest correlations. The implications and interpretation of this require further investigation and may be a valuable insight for the development of future social policy. This is because these findings are the result of a unique methodological process for a specific period in the LSIC cohort's lives. Whether these findings are true at different ages and consistent in other cohorts of Aboriginal and Torres Strait Islander children and youth should be explored.

Including Aboriginal and Torres Strait Islander voices in policy

Developing policies to enhance the social and emotional wellbeing of Aboriginal and Torres Strait Islander children requires the active leadership of Aboriginal and Torres Strait Islander peoples. If this or similar frameworks for social and emotional wellbeing are to be used in further LSIC research or development, or policies inspired by these findings, we urge for real collaboration and partnership with Aboriginal and Torres Strait Islander peoples, including those of the framework's authors, in this process. Aboriginal and Torres Strait Islander peoples should be leading the development and evaluation of policy that affects them, consistent with the principle of self-determination and Priority Reform 1, formal partnerships and shared decision-making, of the National Agreement on Closing the Gap.

Community-led solutions

We also stress the importance of Aboriginal and Torres Strait Islander community control in the design and implementation of policies and programmes for strengthening social and emotional wellbeing. Our model does not prescribe 'one right way' for individuals to experience good social and emotional wellbeing. Instead, it shows how good social and emotional wellbeing is expressed through a series of domains. These expressions do, and must, vary between individuals and communities, and any intervention designed to support this must therefore also be designed and supported locally, consistent with the principle of self-determination.

This is not to suggest that communities be solely responsible for building programs to support and enhance social and emotional wellbeing, particularly when many of the factors leading to poor social and emotional wellbeing are the consequence of historic and ongoing colonisation, including historic and intergenerational trauma, and systemic and institutional racism. Despite these consequences, Aboriginal and Torres Strait Islander communities have always and continue to be best positioned to care for their children. This includes developing programs that mitigate factors causing poor wellbeing and support factors that enhance wellbeing; state, territory, and federal governments have a responsibility to listen to communities and support them to develop the solutions they need.

Considerations

Although variables aligned with the Gee et al. (2014) framework appear in each wave of LSIC, rarely do all variables appear in the same wave. Our variable identification process resulted in the finding that Wave 11 had sufficient measures for four out of five domains, with Wave 12 containing measures for the final domain. What we were assuming in designing the analysis around these four domains measured in Wave 11 is that social and emotional wellbeing can still be measured when only some of the domains are measured. The results of the structural equation models appear to confirm this as the Wave 11 domains were all strongly positively correlated with each other and with Connection to Mind and Emotions in Wave 12,

despite this domain being measured a year later. This assumption could be further verified by building measures of each domain using fewer LSIC questions but having them all measured in the same wave. If this proved possible, it could be further extended to examine the longitudinal trajectories of social and emotional wellbeing.

The analysis presented here examines the LSIC cohort as a whole and does not consider how effects may vary within the communities represented in the surveys. The results of the exploratory factor analysis and structural equation models therefore present the estimated average effect sizes for the whole cohort. Further work could examine how these findings vary for each community, as there may be important variation across these groups. For example, the types and availability of bush tucker will vary across the communities in LSIC, which was not incorporated in our use of this question for the current analysis.

Tables

Table 3: Criteria used to filter LSIC variables

Criteria	Explanation	Justification	Exceptions
Number of responses (total)	A restriction criterion that only allows variables where the variable response rate is at least 50% of the total survey response rate.	Without sufficient sample size, data would be insufficient for meaningful analysis.	
Variable includes both 'B' and 'K' cohorts	Respondents surveyed need to be from both cohorts.	Our framework will try to capture holistic wellbeing. It needs to include both age groups.	
For each domain, variables appear in a common wave	The wave with the most variables recorded for a given domain is selected as the 'domain's dominant wave.'	As underscored by Gee et al. (2014), social and emotional wellbeing is a holistic view that captures seven dimensions. It is important that the latent variables are inferred from measurements made at a fixed point in time. Unfortunately, there are a limited number of questions consistently asked across social and emotional wellbeing domains and across waves. We selected each domain to ensure that variable waves were consistent.	There were some cases in which a variable recorded in an earlier wave would still apply in the domain's dominant Wave. For example, the variable cluster afh6_* records the extent to which a Study Child knows their mob. The cluster is recorded in Wave 8. The latent variable for the relevant domain 'Connection to Culture' was derived from Wave 11 data. In discussion with the Department of Social Services, the generally accepted argument was that it is unlikely a child will forget their mob in between Wave 8 and Wave 11.[11] Subsequently, this variable could be included in the derivation.
Variable is available for longitudinal comparison	Chosen variables are ideally available in both the dominant Wave and an additional	The RFQ for this project emphasises the importance of a longitudinal analysis of social and emotional wellbeing outcomes.	

[11] We acknowledge this assumption may not hold across the full diversity of Aboriginal and Torres Strait Islander lived experiences. Certainly, if this research were being conducted on children of the past, policies like the 'stolen generations' would render this assumption invalid.

Criteria	Explanation	Justification	Exceptions
	Wave for trend analysis.		

Table 4: Connection to Body standardised factor loadings

Variable	Short description	Good physical health	No hospital visits	Healthy habits
ahc2dis	SY did not have a disability	0.860		
ahc2dev	SY did not have any developmental delay	0.744		
ahc2eye	SY did not have any eye problems	0.426		
cs2	SY does not have difficulty sleeping	0.363		
aac78	Frequency of SY doing physical activity	0.309		0.382
aho4hos	SY did not see medical professionals at a hospital		0.855	
aho1a10	SY did not go to hospital		0.783	
ahc2inj	SY did not have any injuries		0.445	
ahc1	SY overall health rating		0.311	
aac76	Hours SY is active on a weekday			0.749
cnu45_3	SY eats breakfast			0.345
adh4_7	SY did not have teeth or gum problems			
ahc2ear	SY did not have any ear problems			
ahc2skn	SY did not have any skin problems			
ame2a	No family members were sick in the last year			

Note: Values below |0.3| are suppressed. Short description is worded to reflect what increasing values of the variable represent, noting this may differ from the LSIC data dictionary due to variables being positively recoded. SY = Study Youth.

Table 5: Connection to Mind and Emotions standardised factor loadings

Variable	Short description	Self-efficacy and resilience
csqpros	SDQ prosocial score	0.386
css1_i	SY knows about family, history & culture	0.396
css1_f	SY laughs and jokes a lot	0.508
css1_e	SY knows someone who is a good person	0.570
css1_g	SY is really into something (like music)	0.575
css1_l	SY has lots of friends	0.577
css1_m	SY has someone to talk to when upset	0.579
css1_h	Sy is a good son or daughter to their family	0.614
css1_a	Something can cheer SC up	0.618
css1_b	SY has a strong family	0.620
cff8_1	SC makes friends easily	0.621
css1_k	SY has got an older person looking out for them	0.631

Variable	Short description	Self-efficacy and resilience
css1_j	People say SY is good at something	0.668
cse11_1	SY can work out problems	0.669
cse11_4	SY feels good about the future	0.720
cse11_3	SY has many things they do well	0.724
cse11_2	SY can do most things they try	0.776

Values below |0.3| are suppressed. Short description is worded to reflect what increasing values of the variable represent, noting this may differ from the LSIC data dictionary due to variables being positively recoded. SY = Study Youth.

Table 6: Connection to Family and Kinship standardised factor loadings

Variable	Short description	Family relationship	Relationship with mum	Talks to family
are8	SY gets along with siblings/cousins	0.416		
cff17	SY's family get along with each other	0.569		
cff16	SY gets along with their brothers/sisters/cousins	0.706		
cff15_1	SY's mum spends enough time with them		0.497	
cff32_4	SY's mum spends time with them		0.780	
cff32_1	SY's mum understands them		0.793	
cff32_7	SY talks to their mum about how they feel		0.799	
cff32_2	SY trusts their mum		0.919	
cff32_3	SY's mum helps when they have a problem		0.926	
cff4_derived	Number of family members SY would talk to about good things			0.739
cff3_derived	Number of family members SY would go to if they felt sad or upset			0.758
cffring_score	Proportion family members SY considered to be in their closest ring			
cia1_6	SY thinks they will be a mum or dad when they get older			

Values below |0.3| are suppressed. Short description is worded to reflect what increasing values of the variable represent, noting this may differ from the LSIC data dictionary due to variables being positively recoded. SY = Study Youth.

Table 7: Connection to Community standardised factor loadings

Variable	Short description	SY opinion on community	P1 opinion on community
csa26_2	SY thinks there are lots of fun things to do	0.566	
csa26_4	SY feels safe at night	0.733	
csa26_3	SY feels safe during the day	0.889	
ahm10	P1 thinks the community is good for kids		0.701
ahm11	P1 thinks there are good places in the community		0.775
csa26_1	SY thinks there is nothing to do		

Values below |0.3| are suppressed. Short description is worded to reflect what increasing values of the variable represent, noting this may differ from the LSIC data dictionary due to variables being positively recoded. SY = Study Youth, P1 = Primary Carer.

Table 8: Connection to Culture, Country, Spirituality and Ancestors standardised factor loadings

Variable	Short description	Learning about being Aboriginal or Torres Strait Islander	Being Aboriginal or Torres Strait Islander in class	Experience of culture	Knowledge of mob
cff7_derived	Number of people SY learns about being Indigenous from	0.364			
cff5_14	SY would talk to Elders if they were being bullied	0.763			
cff4_14	SY would talk to Elders if something good happened	0.998			
csc41_2	SY wants to share things about being Indigenous		0.751		
csc41_4	SY wants classmates to know they are Indigenous		0.810		
csc41_1	SY feels good about being Indigenous in class		0.818		
csc41_3	SY feels safe being Indigenous in class		0.834		
anu4_total	Number of different bush tucker eaten			0.403	
apl12a	SY has a connection to Country or place			0.449	
cpl41	SY speaks an Indigenous language at home			0.942	
afh6_2	SY knows their people				0.635
afh6_1	SY knows the name of their clan or tribe				0.748
afh6_3	SY knows their family stories or history				0.948
cia1_7	SY wants to stay in the area when they are older				

Values below |0.3| are suppressed. Short description is worded to reflect what increasing values of the variable represent, noting this may differ from the LSIC data dictionary due to variables being positively recoded. SY = Study Youth, P1 = Primary Carer.

Table 9: Overview of the exploratory factor analysis process for each domain

Domain	Number of factors	Variables used in EFA	Variables retained	SC variables	P1 variables	Number of observations	Number of complete observations
Connection to Body	3	18	14	2	15	1,188	996
Connection to Mind	1	17	17	17	0	1,060	882
Connection to Family	3	13	12	11	1	1,177	815
Connection to Community	2	6	5	3	2	1,188	1,055
Connection to Culture, Country, Spirituality and Ancestors	4	14	13	8	5	1,254	724

Note: EFA = exploratory factor analysis, SC = Study Child, P1 = Primary Carer.

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Section Three:

Culture as a Determinant of Social and Emotional Wellbeing for LSIC Study Children: An Exploratory Analysis

Section Three: Culture as a Determinant of Social and Emotional Wellbeing for LSIC Study Children – An Exploratory Qualitative Analysis

Key Findings

- This section of the report shows that LSIC gathers valuable data from both LSIC Primary Carers and Study Children, at various stages in the children's lives, which offer insights into the role and significance of culture and other factors/determinants to the social and emotional wellbeing of Aboriginal and Torres Strait Islander children.
- Our qualitative content analysis of over 1,000 LSIC Primary Carers' (predominantly mothers') responses provides valuable insights into what Primary Carers see as making up culture and the role that these different elements of culture play in supporting the social and emotional wellbeing of Aboriginal and Torres Strait Islander children.
- The ways that culture helps the Study Child to grow up strong as expressed by LSIC Primary Carers aligns with many of the cultural determinants outlined in Gee et al.'s (2014) framework of holistic social and emotional wellbeing. By connecting the cultural activities that help a child grow up strong to each domain, we show how culture is a determinant of social and emotional wellbeing and connect those cultural determinants to the domains in the Gee et al. (2014) framework.
- The perspectives of LSIC Primary Carers on the 'What is it about Aboriginal and Torres Strait Islander culture that will help (STUDY CHILD) grow up strong?' question asked in Waves 1 and 8 frequently reflect the importance of Connection to Family for strengthening culture and growing up strong. Inversely, there are also a range of cultural elements that strengthen Connection to Family and help a child grow up strong.
- The perspectives of LSIC Study Youth in Wave 13 on 'what growing up strong means to them' reflects both social and cultural determinants, and a range of factors categorisable across the domains of the Gee et al. (2014) framework of holistic social and emotional wellbeing. For example, in Wave 13, Study Youth frequently mention the importance of the social determinant 'good education' – and factors within the domain Connection to Culture/cultural determinants that affect other domains like 'keeping culture strong' – to growing up strong.
- Our finding reinforces the arguments presented in the Culture is Key Review Report which called for the embedding of cultural determinants in policy across the whole-of-government (Lowitja Institute, 2021).
- Our findings echo the importance of not only Aboriginal and Torres Strait Islander children staying connected to family, community, culture and country as central, and even fundamental, to the child's sense of identity, belonging and wellbeing expressed in numerous commissioned reports and research publications to date, but also the maintenance of cultural connections to a child's wellbeing. The findings particularly emphasise the necessity of maintaining cultural connections to a child's wellbeing. For example, our findings reinforce the vital importance of Aboriginal and Torres Strait Islander children remaining in contact with their family, including extended families, and members of

the community who are considered family in out-of-home-care as called for in the Family as Culture Review Report (Davis, 2019, p. 322).

- Our findings show how 'connection' to culture is gained through social experience and involves interaction with families, grandparents, Elders and communities.
- Our findings point to the important role of schools in providing not only educational opportunities but also opportunities for Aboriginal and Torres Strait Islander children to engage in cultural activities and programs.
- Our analysis is exploratory, identifying how existing and future LSIC data can be used to provide an evidence base for policy driven by the cultural determinants of health and wellbeing for Aboriginal and Torres Strait Islander children and youth, contributing to holistic social and emotional wellbeing.
- By linking the experiences of Aboriginal and Torres Strait Islander young people to the Gee et al (2014) domains of social and emotional wellbeing, our analysis extends work done by Dudgeon et al. (2017) and Sivak et al. (2019) which explored the definitions of each domain of social and emotional wellbeing.

Introduction

In 2021, the Lowitja Institute released their Culture is Key report which called for the embedding of cultural determinants in policy across the whole-of-government (Lowitja Institute, 2021). This call drew on the social and emotional wellbeing framework (authored by Gee et al., 2014) alongside an emerging framework on the Cultural Determinants of Health (built from the Mayi Kuwayu National Study of Aboriginal and Torres Strait Islander Wellbeing; see Salmon et al., 2019).

While there is already a prominent body of scholarship that points to the place of social, historical and political determinants in Aboriginal and Torres Strait Islander peoples' social and emotional wellbeing, this work above points to a significant body of First Nations scholarship that centralises cultural determinants in Aboriginal and Torres Strait Islander peoples' social and emotional wellbeing (Lowitja Institute, 2021). This includes Yagoot et al. (2022), who explore the central place of cultural determinants to the social and emotional wellbeing of Aboriginal and Torres Strait Islander children. Given that cultural determinants are identified as the protective factors that enhance resilience, strengthen identity, and support good health and wellbeing (Salmon et al., 2019), this section of The Longitudinal Study of Indigenous Children (LSIC) Social and Emotional Wellbeing Report examines the LSIC study data as it documents the role of cultural determinants in the social and emotional wellbeing of LSIC Study Children.

To clarify the distinction between this analysis and the structural equation model in Section Two, Gee et al. (2014) suggest that cultural determinants of social and emotional wellbeing play a different but related role compared to the domain 'Connection to Culture'. Where a strong Connection to Culture represents one of a series of interrelated expressions of social and emotional wellbeing, cultural determinants theoretically drive and integrate across every domain of holistic social and emotional wellbeing, helping foster the individual's strong connection with each (Gee et al., 2014). This section explores how cultural determinants drive and interlink through each expression of an LSIC Study Child's or Study Youth's social and emotional wellbeing by supporting a strong connection to each domain.

While there have been many qualitative questions that go to the social and emotional wellbeing of the Study Child, such as what makes the Study Child happy or what makes the Study Child sad, this section draws on seven LSIC study questions: three short answer qualitative questions and four multiple choice quantitative questions asked over the lifetime of the LSIC study. These questions gather insights into what it means to 'grow up strong', including its cultural determinants. They also document the activities parents, carers, and family members engage in with the Study Child to teach them about culture and pass cultural knowledge to them. These are:

- text responses from LSIC Primary Carers (P1) in Waves 1 and 8 in relation to what it is about Aboriginal and/or Torres Strait Islander culture that will help the Study Child grow up strong
- text responses from LSIC Primary Carers (P1) in Wave 5 relating to the activities that parents/carers and family members do with the Study Child to help them learn about Aboriginal and/or Torres Strait Islander culture
- text responses from LSIC Study Children and Study Youth in Wave 13 relating to what 'grow up strong' means to them, not just in a physical sense[12]
- multiple choice responses from LSIC Primary Carers (P1)-+ in Waves 3, 6, and 12 relating to what it is about Aboriginal and/or Torres Strait Islander culture they would like to pass on to the Study Child
- multiple choice responses from LSIC Study Youth to three questions from Wave 11 that relate to the importance of Aboriginal and/or Torres Strait Islander culture and identity to Study Youth.

Our review of LSIC questions and the responses, together with the literature indicated that 'growing up strong' serves as a proxy for social and emotional wellbeing of Aboriginal and Torres Strait Islander children. For example, The Healing Foundation, an Aboriginal community-controlled organisation, highlights the strong interconnection between social and emotional wellbeing and children growing up strong. They propose:

> ***The use of social and emotional wellbeing is a holistic term that encompasses connection to kinship, culture, country and spirituality which is necessary for growing kids up strong with healthy connections and attachment (The Healing Foundation and Emerging Minds, 2020, p. 6).***

For qualitative questions with text responses, we used an inductive approach to content analysis. It aimed to provide a rich picture of the role of culture in helping children grow up strong by identifying themes through our analysis of LSIC Primary Carer responses (see 19 themes identified in Table 14) and LSIC Study Children and Study Youth (see 27 themes identified in Table 12). This approach sought to build our understanding from the ground up, privileging and amplifying the voices of the LSIC Study Children, Youth and Primary Carers. Our qualitative analysis was complemented by quantitative data from LSIC multiple-choice questions. Overall, the qualitative and quantitative analysis presented insights into: Primary Carers' views on the aspects of culture that support Study Children's social and emotional wellbeing; activities that Primary Carers and other family members do with Study Children to help them to learn about their culture; aspects of culture that Primary Carers want to pass on to their children; Study Child and Study

[12] 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.

Youth views on what it means to 'grow up strong'; and Study Youth views on the centrality and importance of Aboriginal and/or Torres Strait Islander culture and identity in their lives.

Our analysis aimed to highlight the realised and potential value of LSIC data to inform policy and program development in relation to the social and emotional wellbeing of Aboriginal and Torres Strait Islander children.

This Section of the report outlines our selection of LSIC questions, approach to content analysis of the qualitative responses, and use of basic quantitative analysis for comparative findings. The section also identifies some methodological issues.

Section Three then presents the results of our analysis of the three qualitative and four quantitative LSIC questions outlined above followed by a brief conclusion.

Approach

This section documents a qualitative analysis of select open-ended questions from LSIC. To strengthen insights, we also used a simple quantitative analysis of closely related closed-ended, multiple-choice questions. The value of this included creating a comparison of perspectives of Primary Carers, Study Children and Study Youth; a comparison between qualitative responses; and insights into the methodological implications of asking open- and closed-ended questions. Drawing on the cultural domains and determinants outlined in the social and emotional wellbeing framework (Gee et al., 2014), the primary criteria for selecting the qualitative and quantitative questions for analysis was that they have a strengths-based approach to the role of culture in promoting social and emotional wellbeing. Our secondary selection criteria were that the questions:

- provide a wealth of cultural content, and/or
- have policy relevance.

In identifying and prioritising open-ended questions for qualitative analysis, we focused on identifying questions that would be rich in cultural content expressed in respondents' own words. We intended for these to be a source of analysis, and act as a complement to the preceding quantitative analysis by amplifying the voices and perspectives of LSIC Primary Carers and Study Children.

To select questions for analysis, we sorted all LSIC questions into the domains of Gee et al.'s (2014) framework. To refine the selection of open-ended questions, we analysed a random set of responses to each short-listed question and checked again against the selection criteria. The final selection of questions for content analysis is outlined in Table 10. The final selection of questions for basic quantitative analysis is outlined in Table 11. Although we selected questions on 'growing up strong' for both the Primary Carer (Wave 1 and Wave 8) and Study Child (Wave 13), the questions were worded differently for Primary Carers (Wave 1 and 8) and for Study Children (Wave 13). The question posed to Primary Carers was 'What is it about Aboriginal and Torres Strait Islander culture that will help (Study Child) grow up strong?'. The question asked of Study Youth in Wave 13 was 'What does "grow up strong" mean for you? Not just physically.' Please also note that, although it was possible to delineate responses by disability and other lived experiences, we chose not to make these distinctions in their qualitative analysis in the interest of ensuring confidentiality.

We used qualitative content analysis as our primary method of analysis. Hsieh and Shannon (2005) outline three distinct approaches to qualitative content analysis: conventional, directed or summative. Our analysis

included elements of all three approaches. Conventional content analysis is an inductive approach that allows themes to emerge from the data during analysis rather than being pre-determined (Hsieh & Shannon, 2005). This was undertaken to ensure that emergent themes reflected responses, rather than being pre-defined either by the predominantly non-Indigenous researchers in the team or even by the social and emotional wellbeing domains (Gee et al., 2014).[13] This is a key distinction between an inductive conventional approach and a directed deductive approach to content analysis. To achieve a summative content analysis, we quantified content through an initial use of the Word Frequency Query function in NVivo. This created a snapshot of the most frequently used words from the responses to each question. We also calculated the frequency of responses relating to identified themes. In addition to quantification, summative content analysis involves 'latent content analysis' which focuses on 'discovering underlying meanings of the words or the content' (Hsieh & Shannon, 2005, p. 1284. The conventional content analysis and associated immersive reading of a combined total of 3,932 text responses gave important insights into the latent meaning of some words or phrases, while caution was taken in making any definitive interpretation.[14]

Each text response was linked with one or more themes. These themes shifted and changed iteratively, through the inductive, ground-up approach. We sought to ensure that the final set of themes remained true to the words used by survey respondents. Content analysis facilitated the identification and categorisation of prevalent notions (e.g., the importance of knowing who you are and where you come from), interpersonal relationships (e.g., time spent with Elders), and cultural activities (e.g., fishing, hunting, and gathering bush/island foods and medicines) into thematic groups. Due to the diversity contained within individual responses, many responses were classified into multiple themes. This fit with our understanding that the social and emotional wellbeing domains are interrelated, interconnected and overlapping (Gee et al., 2014; Commonwealth of Australia, 2017). Once all text responses were read and linked to a theme (or themes), the frequency of responses linked to each theme was calculated and transformed into a proportion of the total number of responses. By examining the variety and overlap of themes, the analysis underscores the richness and complexity of the relationship between the seven cultural domains of social and emotional wellbeing.

For the quantitative analysis of selected closed-ended questions,[15] the selection of questions was based on the same criteria as for the quantitative questions. Selection also evaluated a question's potential to provide further insights and a point of comparison with the qualitative analysis.

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[13] Although the Report selected variables for their applicability to Gee et al. (2014), this did not affect the conventional inductive content analysis.

[14] As noted here, a Word Frequency Query in NVivo was used as an initial step to get a sense of the most frequently used words across all responses to a question prior to commencing the coding process. Given the large amount of text responses to be analysed, this was a valuable way to get a sense of what some of the likely key themes would be. Initial coding of a sample of responses was then undertaken by one member of our team (Eleanor Malbon (EM)) across the short-listed open-ended questions which identified an initial set of potential themes. This was followed by time-intensive, manual, immersive reading of all responses to the final selection of open-ended questions other members of our team (Deirdre Howard-Wagner (DHW) and Geoff Buchanan (GB)) to further develop the themes. DHW undertook content analysis of Study Child and Youth responses to the question 'What does 'grow up strong' mean for you? Not just physically' from Wave 13 (2020). GB undertook content analysis of Primary Carer responses to the question 'What is it about Aboriginal and Torres Strait Islander culture that will help (Study Child) grow up strong?' from Waves 1 (2008) and 8 (2015); and also to the question 'What sort of activities does (Study Child) do with you or other family members to learn about Aboriginal/Torres Strait Islander/Aboriginal and Torres Strait Islander culture?' from Wave 5 (2012). Another member of our team (Dr Jill Guthrie (JG)) completed an immersive reading and coding of responses to one of the questions 'What is it about Aboriginal and Torres Strait Islander culture that will help (Study Child) grow up strong?' from Wave 8 (2015). This was a check and balance.

[15] Quantitative analysis of selected closed-ended questions was also undertaken by three of our team (Pattheera Somboonsin (PS) and GB.

Study Youth Perspectives on What it Means to 'Grow Up Strong'

In Wave 13, an open-ended question asked LSIC Study Youth, 'What does "grow up strong" mean for you? Not just physically'. A total of 553 Study Children and Study Youth, aged between 12 (B cohort) and 17 (K cohort) at the time, responded to this question.

The themes emerging from the inductive content analysis of Study Youth responses to this question cross-over with themes that emerged from the inductive content analysis of Primary Carers' responses in Waves 1 and 8 to the question 'What is it about Aboriginal and Torres Strait Islander culture that will help (Study Child) grow up strong?' (see Table 14). Common themes include such things as: family connection; connection to grandparents and Elders; identity and belonging; pride and self-confidence; care and support; strength, resilience, and independence; cultural knowledge and learning; and Connection to Country; and life direction and opportunities. Study Children and Study Youth responses also align significantly with the social and emotional wellbeing framework's seven cultural domains.

As shown in Table 12, there are clear connections between the 27 identified themes from LSIC Study Youth and the Gee et al. (2014) social and emotional wellbeing domains. Again, in assigning these themes to specific domains of the social and emotional wellbeing framework we note, as do the creators of this framework, that this separation is 'somewhat artificial' (Gee et al., 2014, p. 58) and they are interrelated, interconnected and overlapping. Also, the question asked of LSIC Study Youth was not designed to test the applicability of the Gee et al. (2014) model – and the 27 themes are those that appear frequently within LSIC Study Youth responses to this question. While there is no representation of Connection to Country and Connection to Spirituality and Ancestors as themes, this mostly comes as a result of our thematisation or categorisation of the data. There are a small number of LSIC Study Youth responses that would fit within those two domains.

In expressing their perspectives on what it means to 'grow up strong', Study Youth not only identify the domains key to social and emotional wellbeing but broader social determinants of social and emotional wellbeing. Social determinants identified by Study Youth as intrinsic to growing up strong, include a 'good education' and a 'good job', along with 'doing one's best', 'achieving goals', and 'doing the right thing'. This is different to the response of LSIC Primary Carers who were asked about 'What is it about Aboriginal and Torres Strait Islander culture that will help (Study Child) grow up strong?', which led to Primary Carers identifying the cultural determinants of what it means to grow up strong. In the Primary Carer responses, we were able to categorise these across Gee's domains of social and emotional wellbeing.

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.'

Next, we summarise the descriptions of the 17 themes identified through our inductive content analysis and present examples of LSIC Primary Carer responses (Table 14). The example responses are the full text responses given to the question, so they often contain references related to other themes. In those cases, the Primary Carer's response has been linked to each relevant theme as part of the analysis.

Primary Carer perspectives on How Culture Helps Children 'Grow Up Strong'

Primary Carers in Wave 1 (n=1,324) and Wave 8 (n=1,075) were asked 'What is it about Aboriginal and Torres Strait Islander culture that will help the Study Child grow up strong?' The themes identified by us were

compared and revised based on a cross-analysis of the results.[16] Our collaborative cross-analysis resulted in a final set of 17 identified themes.

Table 13 sets out these themes and shows the proportion of responses linked to each theme for each wave. Where the proportion of responses linked to a particular theme changed between waves, the overall relative 'position' of this theme among all themes is identified in column three. Descriptions of each theme and examples of quotes are provided further below.

Across both waves, the five themes that had the most responses remained consistent in position, with some variation in proportions. These were: family connection; identity and belonging; cultural knowledge and learning; pride and self-confidence; and respect, morals, protocols. 'Connection to Country' and 'Connection to Grandparents and Elders' remained in the same position across both Waves at 7 and 8 respectively. Most other themes saw a minor change in position, though some changed significantly. In Wave 8, the proportion of responses linked to 'bush tucker/island food', 'language' and 'storytelling' increased significantly in proportion and position, while responses linked to 'care and support' and 'cultural practices, traditional ways' had the most significant drop in proportion and position.

The broad nature of some themes is likely to explain differences in their frequency and position. For example, the broad theme of 'cultural knowledge and learning' and the more specific theme of 'art and craft' were expected to have different frequencies. In future, there is potential for combining some of the less frequently referenced themes together or incorporating them into a broader theme.

In presenting these results, we note that this is not the first time that research has performed content analysis on responses to this LSIC question – or at least for Wave 1 (2008). Colquhoun and Dockery (2012) used automated content analysis through using Leximancer software to generate a thematic map from responses to this question from Wave 1. Martin (2017) undertook content analysis of responses to this question from Wave 1 to produce a set of eight themes: family; culture; personality traits; identity; heritage; relationships; history; and land/Country. Prehn et al. (2021) conducted content analysis of Dads' responses to this LSIC question from Waves 1 (2008) and 7 (2014) which identified 10 themes: learning culture; family; identity; values; being proud; Country; language; community; spirituality; and other.

Following the inductive content analysis, we reflected on the relationship between themes and the Gee et al. (2014) social and emotional wellbeing framework. As shown in Table 14, there are clear connections between the identified themes and the social and emotional wellbeing domains, although we note – as do the creators of the Gee et al. (2014) framework – that the separation between domains is 'somewhat artificial' (Gee et al., 2014, p. 58) as the domains are interrelated, interconnected and overlapping. Thus, allocation is somewhat arbitrary. For example, we decided to list bush tucker and island food under Connection to Body rather than, for instance, Connection to Country or Connection to Culture due to 'hunting and gathering, traditional diets and medicines' being identified as sources of restoration under this domain (Transforming Indigenous Mental Health and Wellbeing Project, 2021, p. 4).

We present the descriptions of each social and emotional wellbeing cultural domain under each of their headings below. These descriptions and examples of disruptions and restoration are drawn from the fact

[16] A collaborative cross-analysis was undertaken with GB analysing Wave 1 and Wave 8 responses and JG analysing Wave 8 responses. There was a significant alignment and agreement between their sets of themes. The breadth of themes sought to avoid being overly reductive and losing the richness of the cultural content and the voices of respondents. Our selection of themes sought to limit the reductive nature of content analysis while still providing a meaningful and accessible view of how culture is central to Aboriginal and Torres Strait Islander children growing up strong.

sheet on social and emotional wellbeing produced by the Transforming Indigenous Mental Health and Wellbeing Project (2021). They are also reflected in the domain definitions discussed in Section Two (see Table 2).

Connection to Family and Kinship

> ***...Includes the importance of family and group relations, kinship attachment systems of reciprocity and caring, gender and age roles, including respect for Elders and heritage.***
>
> ***Disruptions include removal of children from their families. Restoration includes connecting with family history, strong parenting and family programs, spending time with Elders, and developing healthy relationships with significant others (Transforming Indigenous Mental Health and Wellbeing Project, 2021).***

Family connection

The importance of family connections and extended family networks was the theme which had the highest proportion of responses linked to it across Waves 1 and 8. Strength derived from close-knit family ties is considered crucial for the growth, strength and resilience of Aboriginal and Torres Strait Islander Study Children. Family connection was associated with all other themes identified in our content analysis. For example, family was seen to provide access to a network of care and support. This provided a sense of belonging fundamental for building confidence and pride in their cultural identity.

Box 2: Family Connection

> '[Name]'s family are very family orientated. I grew up the same way with my [Name of Nationality] family. It is fantastic. We can learn how to take care of each other and always lookout for each other. Culture is family' (Wave 1).
>
> 'Learning about his culture through the family' (Wave 1).
>
> 'Knowing that your family is there for you, to teach them what is right and wrong' (Wave 1).
>
> 'Well, I try to keep her more connected than I have been, she is living with her elders at the moment, which is very positive, the guidance and spending a lot of time with family, we get together with them lots, our biggest thing in aboriginal culture is family.' (Wave 8).

Connection to grandparents and Elders

While the qualitative analysis identified Study Child's connection to grandparents and Elders as a distinct theme, Box 3 gives voice to Primary Carers in relation to how grandparents and Elders were identified as having a special role to play in helping children grow up strong through their Connection to Culture.

Box 3: Connection to grandparents and Elders

> 'Always around his grandmother who tell him about his culture and what land/country they are from' (Wave 8).
>
> 'Going out hunting spending time with elders and other family members' (Wave 8).
>
> 'Family get-together from the grandmother, the uncles. Mum is always teaching language to the children' (Wave 8).
>
> 'Knowing his family and his grandparents teaching him what he can do and can't' (Wave 8).
>
> 'Having strong female role models e.g., Grandmother, cousins, Aunties, friends who are the backbone of the family. Knowing family will always be there to support you' (Wave 1).

Family history

Children knowing their family history was seen as an important part of growing up strong, especially in terms of identity and the notions of 'knowing who you are and where you come from'. Responses also referred to the need for children to appreciate what their Elders and ancestors had gone through, highlighting the strength and resilience of Aboriginal and Torres Strait Islander peoples. Examples of the responses of Primary Carers are presented in Box 4.

Box 4: Family History

> 'Finding out a lot about family, history of this country and how it impacted on our family and our identity, importance of extended family' (Wave 1).
>
> 'Knowing where his grandparents come from and to understand the struggles with living and discrimination that they had to live with' (Wave 8).

Care and support

Care and support – helping and looking out for each other – had clear links to family connections and respect, morals and protocols. Many respondents used the term 'family values'. Care also extended to mob, community and to Country. The responses of Primary Carers indicated that this was a core and distinctive part of Aboriginal and Torres Strait Islander cultures. Noting the significant overlap with themes related to family, mob and community, the responses also aligned with the conception of self within the social and emotional wellbeing framework 'as grounded within a collectivist perspective that views the self as inseparable from, and embedded within, family and community' (Gee et al. 2014, 57). Box 5 gives voice to a sample of LSIC Primary Carers who referred to the importance of care and support.

Box 5: Care and Support

'Family & community looking out for one & other' (Wave 8).

'From my own understanding, the respect and care for one another from the traditional practices, but not the stuff that we see now. Being helpful etc.' (Wave 1).

'[Aboriginal and Torres Strait Islander] kids are drawn to each other and look after each other at school, he will have hurdles as gets older like to get jobs and socialising so he will get resilience from his friends to give him this' (Wave 8).

'I believe the nurturing of the culture and the sharing and the caring. If he comes into trouble, he knows his family will there for him, that kinship stuff' (Wave 1).

'Their sense of community and how they stick together and look after each other' (Wave 1).

'Connectedness – who are where come from, inherent values – what it means to be an Aboriginal person. Notion of reciprocity – helping others out. – Not an individual – you are someone's relative – relationship based. Sense of pride…' (Wave 1).

'The love of family and having that support that you don't get in non-indigenous support' (Wave 1).

'Strength and support that Aboriginal people give to one another. Love and friendship' (Wave 1).

'the closeness and togetherness of Aboriginal families in the community, everybody tends to give a helping hand 'cause we are all brothers and sisters' (Wave 1).

Identity and belonging

A strong sense of identity and belonging emerged as another central theme in the relationship between culture and growing up strong. While 'identity' and 'belonging' were often mentioned specifically by some LSIC Study Primary Carers, the notions of 'knowing who you are' and 'knowing where you come from' were also commonly found in the text responses. Following Priest et al. (2012) and Martin (2017), the notion of identity in our analysis included children knowing who they are and where they come from, while appreciating that this also has links to other themes such as family connection, family history, and connections to mob, community and Country. Notions of identity also had very strong links to the theme of pride and self-confidence – the importance of the Study Child having pride in their identity. Box 6 gives voice to a small sample of LSIC Primary Carers who connected culture and growing up strong to a strong sense of identity and belonging for the Study Child.

Box 6: Identity and belonging

'Being and knowing who you are and where you come from and knowing your Identity' (Wave 8).

'Family, knowing who she and where she comes from' (Wave 1).

'Knowing who he is and where he comes from' (Wave 8).

'To learn and know her culture and where she comes from. To be proud of who she is and to know her family and connections to land' (Wave 1).

'Knowing about family and the background and the roots from where you come from' (Wave 1).

'A sense of belonging, being part of a group. Being able to identify more with a group/family as there are other people around who can't find their past or heritage' (Wave 1).

'Having his identity and belonging to the land and knowing this is his country and has been for generations, this land is our mother land' (Wave 8).

'Make her more confident in how she presents herself, to know herself, to identify with herself and her culture will be a great confidence for her' (Wave 1).

'Being proud of being Aboriginal, knowing her Aboriginality and it's that sense of doing and being a leader, showing people don't be shame to do the same things as a non-Indigenous person. I teach her to be proud of who she is' (Wave 8).

Respect, morals, protocols

Many Primary Carers noted that respecting others and following cultural morals and protocols are important for the LSIC Study Child to grow up strong (see Box 7). This was often expressed in terms of respecting Elders, but also extended to respect for family, for culture, for Country, and for self as well as respect for difference and diversity (e.g., in terms of tolerance and non-judgement). Responses indicated that respect was a central element of a cultural system of morals and protocols which set out such things as right from wrong, who children could and could not talk to, and where they could go and what they could do on Country. This system was sometimes explicitly linked to the theme of 'Ancestors, Ceremony, Spirituality' in terms of Law and ceremony, women's and men's business, and Christianity.

Box 7: Respect, morals and protocols

‘Respect would be number one, to grow to know her culture’ (Wave 1).

‘Respect her family, elders, culture, and traditional ways of the [Tribe Name] people’ (Wave 1).

‘The stories that tell you right from wrong and keeping you connected to home’ (Wave 8).

‘The laws, stay in community stick together and keep strong, all the morals e.g., respect your elders and the land’ (Wave 1).

‘Knowing her identity, be aware of her cultural protocol and respect’ (Wave 8).

‘Keep telling her who she is and what and who to talk to and who not talk to in cultural way’ (Wave 8).

‘Stories and listening to things about the past and our ancestors. My dad tells him about where to go and what is not allowed to do on country’ (Wave 8).

‘Traditions, initiations, men’s business – lead to respecting family’ (Wave 1).

‘The morals they get passed and being part of a family and having respect for different people’ (Wave 8).

‘Respecting Elders, families, and the environment Christian values’ (Wave 8).

Connection to Community and Connection to Mob

> *Includes cultural structures of responsibility and obligation, social inclusion, and relationships. Community cohesion and community-based cultural revitalisation strengthen cultural identity.*
>
> *Disruptions include lateral violence, family feuding, and isolation. Restoration includes self-determination and community-control, and utilising community to be engaged with others and as a place to give and seek support from others (Transforming Indigenous Mental Health and Wellbeing Project, 2021).*

Similar to family connection, the Study Child’s connection to community was often identified by Primary Carers as important to the child growing up strong. Being accepted within community, connected with community and with mob also indicated a link to the Study Child’s ‘sense of belonging’. While Primary Carers frequently used the terms ‘sense of belonging’, ‘mob’, and ‘community’, they did not define these terms and at times the term community and mob were used interchangeably – for example, community was used to represent ‘mob’ using the words ‘my community’. Examples of Primary Carer quotes are presented in Box 8.

Box 8: Community connection

> 'Community and the love and support she will always have from the community and the respect, and the knowledge of her people will lead her on to her own little path in life' (Wave 1).
>
> 'It's a strong community here and everyone sticks together and makes us feel welcome' (Wave 8).

Connection to mob or knowing mob was also associated with a 'sense of belonging' or knowing who you are; examples of Primary Carer quotes are presented in Box 9.

Box 9: Connection to Mob

> 'Knowing who she is and being proud of who she is. Know who her mob is as this is gives her a sense of belonging' (Wave 1).
>
> 'Knowing what mob he is from' (Wave 8).
>
> 'Knowing who she is and where her mob come from' (Wave 8).

Connection to Culture

> ***Includes cultural expression (yarning, ceremony, fire, art, dance, song, storytelling); cultural knowledge (language, protocol, sociocultural norms, lore, moral and ethical practices) and cultural identity (pride, belonging, values).***
>
> ***Disruption includes cultural genocide and cultural clash. (Transforming Indigenous Mental Health and Wellbeing Project, 2021).***

Cultural knowledge and learning

Many Primary Carer responses highlighted the importance of the Study Child learning about their culture and building their cultural knowledge. Many responses likely contained an underlying meaning related to the importance of the Study Child's cultural identity, though our analysis could not formally confirm it. Other more specific themes we identified capture areas of cultural knowledge that were seen as important for children to learn, such as kinship and skin systems, stories, procuring bush/island foods, performing and visual arts, spiritual knowledge, knowledge of Country, and language. While not identified as a theme, some responses indicated the importance of living in two worlds and learning culture alongside Western or mainstream knowledge as part of growing up strong. Some responses also indicated the importance of the Study Child being able to pass on their cultural knowledge to the following generations as well. While learning culture from parents, Elders and family was the most common means of gaining cultural knowledge, some responses also the noted the important role of a school that values Aboriginal culture and provides opportunities for the Study Child to engage in cultural activities and programs. Box 10 gives voice to a small sample of Primary Carers who referred to the importance of cultural knowledge and learning.

Box 10: Cultural knowledge and learning

'Knowing culture and her background history will make her a strong person. This will also give her confidence' (Wave 8).

'Learning everything about his culture' (Wave 1).

'To learn and know her culture and where she comes from. To be proud of who she is and to know her family and connections to land' (Wave 1).

'Knowing about culture and learning culture through my mother' (Wave 1).

'Learn his culture and law, ceremonies, learn mainstream' (Wave 1).

'Learning knowledge of culture from her elders (both sides of the family)' (Wave 1).

'Learning from me and my parents about culture so that she can carry it on to her family when she is older' (Wave 8).

'Teach him about all the cultural things. Teach him how he is Grandfather. Teaching him Totem and where he is part of this land through Totem' (Wave 8).

'Being a part of the community being recognised, being a part of a school the acknowledges indigenous culture' (Wave 8).

'Strong family network full of information, cultural classes at school also learning local Aboriginal language' (Wave 8).

'Get involved in cultural programs at school' (Wave 8).

'Do Language and Dance at school' (Wave 8).

'SC is starting to learn more about her culture at school that will help her grow up strong' (Wave 8).

'Respect her family, elders, culture, and traditional ways of the [Tribe Name] people' (Wave 1).

School often appears in Primary Carer responses as a place where Study Children were learning and engaging with culture. The responses of Primary Carers point to the important role of schools in providing not only educational opportunities but also opportunities for Aboriginal and Torres Strait Islander children to engage in cultural activities and programs. This is consistent with and supports the assertion of Gee et al. (2014) that schooling is a social determinant of social and emotional wellbeing. Although this question was asking the Primary Carer about cultural determinants, it appears that social determinants were also articulated. This reiterates the interconnected nature of social and emotional wellbeing.

Cultural practices, Traditional ways

The Primary Carer responses also showed a strong link between cultural knowledge and cultural practices and traditional ways. This may relate to the conception of culture as interconnected ways of knowing, being and doing. Primary Carers' responses also indicated that cultural practices and traditional ways were likely to relate to a wide range of things captured by some of the more specific themes identified in our analysis, such as: dancing, singing and music; art and craft; hunting, fishing, and gathering bush/island food and medicine; and ceremony. Responses also indicated a strong relationship with the theme of

respect, morals, and protocols. Examples of LSIC Study Primary Carer statements about the importance of cultural practices, traditional ways are presented in Box 11.

Box 11: Cultural practices, traditional ways

> 'Traditional ways and culture keep kids strong, learning his heritage, language, and culture' (Wave 1).
>
> 'Learning traditional ways e.g., hunting and fishing' (Wave 8).
>
> 'To know our customs and traditions through performance of songs and dances' (Wave 1).

Language

Sitting outside of the broader themes, 'learning', 'using', 'maintaining', 'knowing', 'teaching' 'respecting', 'speaking' language was one of the more specific areas of cultural knowledge and practice that was articulated in the Primary Carer responses. Relevant responses indicated links between language and other elements of the Study Child's connection to culture and their identity, in terms of, for example connection to country and the Study Child knowing their culture through their language as illustrated in quotes from Primary Carers presented in Box 12. Those responses also indicated the importance of connection to grandparents and Elders for many children learning language through their family.

Box 12: Language

> 'If I can get her taught a language group and old-time stories it will teach her culture. She needs to know where she is from' (Wave 1).
>
> 'Knowing about her culture though her language [Name of Tribe]' (Wave 1).
>
> 'To know his identity, country, language, land, lore, people and respect for all' (Wave 1).
>
> 'Learning language and other Aboriginal things, storytelling, dancing, cultural things and know where his family has come from' (Wave 1).
>
> 'Doing her cultural stuff, singing in language' (Wave 8).
>
> 'Dancing, family support, traditional food, speak TSI creole' (Wave 8).
>
> 'Language; teaching them language names for animals and plants and what skin they are' (Wave 8).
>
> 'Would like her to learn her own language as it was denied us, extra schooling before kindergarten' (Wave 1).
>
> 'A sense of belonging and pride. She's learning everyday about her own culture, especially her language. that's been a real development for her lately' (Wave 8).
>
> 'Speaking his language, listening to older people, and understanding their ways and continue following his culture and language' (Wave 8).
>
> 'Family get-together from the grandmother, the uncles. Mum is always teaching language to the children' (Wave 8).

Storytelling

Telling children stories was another specific theme identified in terms of what LSIC Study Primary Carers viewed as an important part of culture in helping the Study Child grow up strong. Primary Carers often linked stories with other themes such as: cultural knowledge and learning; family history; Connection to Country; identity and belonging; and ancestors, ceremony, and spirituality. Some Primary Carers identified how stories could also be means of teaching children about respect and cultural morals and protocols. Stories also were a way in which the connection between the LSIC Study Child and their grandparents and Elders manifested. Responses also indicated that song and dance could also be a form of telling stories. Examples of quotes from Primary Carers related to the importance of storytelling are presented in Box 13.

Box 13: Storytelling

'Talking Aboriginal stories to him to help him grow strong, show white people what bush tucker is that help us to keep strong' (Wave 1).

'That he has a large family who he can learn from and be supported from. His cultural has lots of stories to help his spirit stay strong' (Wave 1).

'Him knowing who he is and where he comes from knowing his stories from his country' (Wave 8).

'Her stories from her country and her family's stories and knowledge about her culture' (Wave 1).

'Family connection, known his dreamtime stories, respect for his elders' (Wave 8).

'Knowing where they come from and know their culture. Get grandparent to teach her stories. Knowing to look forward to in life' (Wave 1).

'He loves to go hunting and fishing, dreamtime stories that his grandmother tells him' (Wave 8).

'[Aboriginal and Torres Strait Islander] dancing and songs which tells us stories in them songs, language' (Wave 8).

'Strong family values, language, spiritual connection, maintaining stories through song and dance' (Wave 8).

'Knowing where she comes from and knowing her family. Art and stories will help her' (Wave 8).

Dancing, singing, music

Dancing, singing, and music was identified by some Primary Carers as helping the Study Child to grow up strong by connecting them to their culture and identity, instilling a sense of pride. Dancing and singing were also linked with storytelling, and singing was sometimes noted as being done in language. These forms of cultural practice were also often positioned in the context of connecting with family, mob, or community. Examples of Primary Carers' statements about the role of dancing, singing and music in connecting the Study Child to their culture and identity are presented in Box 14.

Box 14: Dancing, singing, music

> ‘Dancing and singing and this will teach him his culture’ (Wave 1).
>
> ‘Traditional Island dancing, he’s very proud of being part of it and his culture, he draws his family totem. Also during Mabo day’ (Wave 8).

Art and craft

Arts and crafts such as painting and weaving were identified by some Primary Carers as ways of connecting the Study Child to their culture and Country. It was sometimes seen as a means of passing on stories. These activities also often involved the passing on of knowledge and skills from parents and Elders to children. Examples of Primary Carer statements about the role of painting and weaving to connecting the Study Child to their culture and Country are provided in Box 15.

Box 15: Art and Craft

> ‘Learning about her culture and watch me doing the rainbow serpent painting which is part of our culture and making necklace’ (Wave 1).
>
> ‘Learning to respect land and look after everything. Passing on my painting to my children this is one way that we communicated in history’ (Wave 8).

Connection to Country

> ***Includes a deep experience of belonging to Country, there is a traditional or spiritual association to kin and culture and a contemporary yearning to heal country.***
>
> ***Disruptions include dispossession of land. Restoration includes returning to land as a way of healing body, mind, spirit, reconnecting with community, and cultural renewal (Transforming Indigenous Mental Health and Wellbeing Project, 2021).***

Connection to Country

The Study Child’s Connection to Country was identified by many Primary Carers as an important part of knowing who they are and where they are from. Connection to Country was also linked to a sense of belonging. Country was also a site of much cultural learning and cultural practice and provides a connection to ancestors, with connection to Country sometimes referred to as a spiritual connection. There was also a clear link between connection to Country and hunting, fishing, and gathering of bush/island foods and medicine. The theme of connection to Country included physical, spiritual, ancestral, and historical connections that may or may not have involved being or living on Country. Box 16 gives voice to a small sample of the Primary Carers who referred to the Study Child’s connection to Country as an important part of knowing who they are and where they are from.

Box 16: Connection to Country

> ‘Connection to land, culture, and family’ (Wave 1).
>
> ‘It will be good to know where her mother's country and where she comes from’ (Wave 1).
>
> ‘Learning his culture, knowing his connection to land, and knowing his family’ (Wave 1).
>
> ‘[Study Child] is connected by country culturally and spiritually and he is taught his family, extended family, and clan's cultural history’ (Wave 8).
>
> ‘having his identity and belonging to the land and knowing this is his country and has been for generations, this land is our mother land’ (Wave 8).
>
> ‘If he learns his culture, he will understand more about the land he stands on and it will help him grow up strong’ (Wave 8).
>
> ‘Land and the food’ (Wave 8).

Connection to Spirituality & Ancestors

> ***Includes knowledge and belief systems, the Dreaming, and cultural healing practices, and value of wisdom and hope.***
>
> ***Disruptions include the impact of mission life and assimilation. Restoration includes accepting evolving expressions of Indigeneity and expressions of spirituality coexisting with Christianity or mindful practices that enable peace and balance (Transforming Indigenous Mental Health and Wellbeing Project, 2021).***

As noted above in Connection to Country, some Primary Carers referred to the Study Child’s connection to culture and Country as a spiritual connection. This connection was sometimes noted in terms of participation in ceremonies, rituals or initiation and the learning of women’s and men’s business. Primary Carers who made this connection explained that for the Study Child this connection was also fostered through storytelling, especially in relation to the Dreaming, which often involved time spent with Elders. Some Primary Carers also noted the role of Christianity and Christian values and connection to church in helping the Study Child grow up strong. Examples of Primary Carer statements about connection to culture and Country as a connection to the spiritual and to ancestors are provided see Box 17.

Box 17: Connection to Spirituality & Ancestors

> ‘The spirituality of our culture and the connection with family’ (Wave 1).
>
> ‘Ceremonies, Learning women’s business’ (Wave 8).
>
> ‘Learning culture and history. Elders telling dreamtime stories’ (Wave 8).

Connection to Body

> *Includes normal biological markers of physical health such as diet and exercise.*
>
> *Disruptions include smoking and chronic and communicable diseases and exclusion from health systems. Restoration can include sports, hunting and gathering, traditional diets and medicines, and accessing services (Transforming Indigenous Mental Health and Wellbeing Project, 2021).*

Bush Tucker/Island Food

The Study Child's involvement in harvesting, preparation, cooking and/or consuming of bush tucker and island food and medicines was identified by many Primary Carers as an important means of helping children to grow up strong. Hunting, fishing, and gathering of bush foods and medicine were often linked with the Study Child's connection to Country (though not necessarily the Study Child's own Country). Examples of Primary Carer perspectives on the importance of bush tucker and island food or medicines are presented in Box 18.

Box 18: Bush Tucker/Island Food

> 'Live of the sea, belonging to country, family ties, Live off the land, culture, and traditions' (Wave 1).
>
> 'Knowing how to get bush tucker knowing where her country is, knowing the land and the history, knowing how to cook, knowing her own language' (Wave 8).
>
> 'Learning culture like hunting, fishing, camping' (Wave 8).
>
> 'Go out hunting and fishing and he will learn his culture through this way' (Wave 1).
>
> 'Bush medicine, culture, background, know her history, know her family tree' (Wave 1).
>
> 'Learning about hunting and fishing and normal island things. Dancing & singing too. Being true to himself' (Wave 1).

Connection to Mind and Emotions

> *Extends beyond mental health, to include recognising culture-bound disorders and the importance of positive emotions, self-confidence and experiencing of joy, rather than just the absence of disorder.*
>
> *Disruptions include threats to safety, cultural trauma symptoms, and racism. Restoration includes accessing supports, education, truth-telling, and recognition of human rights (Transforming Indigenous Mental Health and Wellbeing Project, 2021).*

Pride and self-confidence

Many Primary Carer responses highlighted the role of Aboriginal and Torres Strait Islander culture in fostering pride and self-confidence in the Study Child, as illustrated in quotes from Primary Carers presented in Box 19. Through learning about their culture, history, and the adversities faced by their ancestors, the Study Child was seen as gaining strength and a sense of pride in their identity. Some Primary Carer responses indicated that this pride and self-confidence was crucial for navigating challenges in life, including racism and discrimination.

Box 19: Pride and self-confidence

> 'He is just so proud of being Aboriginal' (Wave 8).
>
> 'Be proud of who she is and her culture and where she came from' (Wave 1).
>
> 'Be proud and hold their head up high and don't care what people say about them being indigenous. They can prove people wrong, use their words instead of violence' (Wave 1).
>
> 'Feel proud of their culture and who they are and hold their head up high and not feel like they have to act in a different way because they are Aboriginal' (Wave 1).
>
> 'Sense of identity knowing about culture, help here feel confident, she will grow up being empowered knowing about it' (Wave 1).
>
> 'Being able to show what she has learnt through dance which makes her happy and gives her confidence and happy to show her culture' (Wave 8).
>
> 'Being Aboriginal teaches them resilience and I think it also gives her a lot of pride and confidence' (Wave 8).

Strength, resilience, independence

Culture was identified by some Primary Carers as a means for the Study Child to gain strength, resilience, and independence. Independence in this context appeared to maintain a collectivist sense of self intertwined with family and community. Strength was often related to a sense of pride in identity. Strength and resilience were often connected back to the Study Child's family history of dealing with adversity. Examples of the response of Primary Carers who referred to strength, resilience and independence as important to growing up strong are presented in Box 20.

Box 20: Strength, resilience, independence

> 'To know who he is. It will make him a strong independent person' (Wave 1).
>
> 'Being Aboriginal teaches them resilience and I think it also gives her a lot of pride and confidence' (Wave 8).

Life directions and opportunities

While one of the less common themes, there were a number of Primary Carers who indicated that fostering the Study Child's sense of identity and connection to culture would open opportunities for them in life and/or give them a sense of direction or purpose, as illustrated in quotes from Primary Carers presented in Box 21. Primary Carers' answers sometimes also made a reference to the notion of living in or between both worlds.

Box 21: Life directions and opportunities

> 'More Opportunities, Strong Family & Culture' (Wave 1).
>
> 'To learn mostly stories of the past history both Aboriginal and non-Indigenous and to get a better education to go on to the better in school and career' (Wave 8).

Summary

Our content analysis of Primary Carers' responses, mostly the mothers of the LSIC Study Children, provides valuable insights into what Primary Carers see as making up culture and the role that these different elements play in supporting the social and emotional wellbeing of Aboriginal and Torres Strait Islander children. It also highlights the interrelationships that exist between these cultural elements, providing a holistic view of Aboriginal and Torres Strait Islander cultures including their diversity. These insights have been built from the ground up, directly from the words of over 1,000 Primary Carers. They show that the way Primary Carers see culture and the role that culture plays is very much aligned with the social and emotional wellbeing framework; its seven cultural domains; and the notion of cultural determinants of social and emotional wellbeing in the specific context of raising Aboriginal and Torres Strait Islander children.

Bringing Primary Carer and Study Youth perspectives together

When considered together, the perspectives of Primary Carers and Study Youth give rich insights into the cultural determinants of each domain of social and emotional wellbeing and 'growing up strong'. Some perspectives are depicted in Figure 14

Figure 14: Study Youth and Primary Carer perspectives on the cultural determinants of 'growing up strong' and social and emotional wellbeing

[1] Quotes from Study Youth's perspective in 533 responses to the question "What 'growing up strong' means to you, not just physically?" Wave 13 (2020), respondents aged between 12 and 17.

[2] Quotes from Primary Carer's perspective in 2,399 responses to the question "What is it about Aboriginal and Torres Strait Islander culture that will help your Study Child grow up strong?" Responses from Wave 1 (2008) and Wave 8 (2015).

Next steps

Having explored Primary Carers' perspective on the relationship between culture and growing up strong, we decided it was valuable to investigate how parents and family helped children to learn about Aboriginal and Torres Strait Islander culture. We also examined the elements of culture which Primary Carers wished to pass on to their children.

Passing Culture on to Children

To further explore the relationship between culture and the social and emotional wellbeing of Aboriginal and Torres Strait Islander children, this section analyses a question from LSIC Wave 5 (n=980) which asked Primary Carers: 'What sort of activities does (Study Child) do with you or other family members to learn about Aboriginal/Torres Strait Islander/Aboriginal and Torres Strait Islander culture?'. This question provided rich cultural content in respondents' own words about supporting cultural knowledge and learning. The analysis of responses followed the same process as previous content analyses, with GB reading all 980 text responses to develop themes using an inductive approach, informed by collaborative content analysis of previous LSIC questions.

Our analysis identified 15 themes that sought to capture the breadth of activities that parents and family members did with children to help them learn about Aboriginal and/or Torres Strait Islander culture. The themes and the percentage of responses that related to each of them are presented in Table 15 along with examples from the text responses and their alignment with the seven social and emotional wellbeing cultural domains. This part of the section will not provide the same level of detail as in the previous content analysis section because this question does not offer as direct an insight into how culture supports the LSIC child's social and emotional wellbeing. The main purpose here was to explore how LSIC can help to build up a detailed picture of the place of culture in the lives of Aboriginal and Torres Strait Islander children and their families. The responses to this question provide insights into how culture is being passed on to the Study Child. These insights are important in view of the role that culture is seen to play in helping children grow up strong. It also helps highlight how the focus and wording of survey questions might provide a view of culture from a different angle which is important in terms of gaining a more holistic view of culture and its importance, as well as highlighting the limitations of what we could interpret from the responses of Primary Carers.

As was expected, there is significant alignment between themes identified around the role of culture in growing up strong and the themes identified around the activities that help children learn about culture. This analysis raised the question of whether the frequency of responses related to the identified themes provides an indication of their level of importance or priority both as a means of passing on culture and supporting the Study Child's social and emotional wellbeing. For example, while the theme of storytelling and yarning emerged as the most frequent type of activity Primary Carers referred to as helping children learn about culture, the Study Child's family connection was the aspect Primary Carers most frequently mentioned in describing how culture helps children grow up strong.

Gender is also an important consideration in relation to the perspectives of family members and carers about the role of culture in helping children grow up strong, and the types of activities done with children to learn about Aboriginal and/or Torres Strait Islander culture. While the question analysed asked LSIC Primary Carers what they or other family members do with the Study Child to learn about Aboriginal and/or Torres Strait Islander culture, it is important to note that LSIC Primary Carers are predominantly the mothers of the Study Child. It was valuable to be able to compare our analysis with those from Prehn et al.

(2021) who undertook content analysis of the responses of 114 Aboriginal and/or Torres Strait Islander Fathers in Wave 4 (2011) to the question: 'What sorts of things do you do to pass on Aboriginal and/or Torres Strait Islander culture to (Study Child)?'. Prehn et al. (2021) identified 18 typologies that overlap significantly with the 15 themes we identified. The typologies identified by Prehn et al. (2021, p. 602) are presented here in order – from highest to lowest – of the number of responses (shown in brackets) related to each typology:

- collecting foods (39)
- yarning and stories (27)
- teaching Indigenous knowledge and culture (18)
- socialisation and role modelling (17)
- family (14)
- dancing/music/singing (13)
- Country (12)
- cultural events (12)
- identity (11)
- teaching language (11)
- teaching generally (11)
- other (11)
- respect (8)
- community and events (6)
- inaction (6)
- painting/drawing (5)
- Elders (3), and
- books (3).

To explore Primary Carer perspectives on culture further in relation to their children, we undertook basic quantitative analysis of a closely related closed-ended question that has been asked in multiple LSIC waves, though in two different ways. In Wave 3, Aboriginal and/or Torres Strait Islander Primary Carers were asked 'What is it about (Aboriginal and/or Torres Strait Islander) culture that you (and your partner) would like to pass on to (Study Child) at this age?'. A list of 13 pre-defined options were presented to respondents, which were as follows:

- knowing Country
- family history
- singing, music, dance
- painting or weaving
- traditions & ceremony
- speaking language

- bush tucker, hunting, fishing
- family networks
- storytelling & yarning
- pride in identity
- showing respect
- spiritual beliefs, and
- other.

Up to five answers could be selected but no order of importance was specified.

This same question was asked of all LSIC Study Primary Carers in Waves 6 and 12 with the same 13 response options. In a slight but significant change from Wave 3, in Waves 6 and 12 Primary Carers were asked to choose five answers from the list AND to number them in order of importance from 1 to 5. It is necessary to note that the 12 specific response options originally presented in Wave 3 were based on an analysis of the most common open-ended responses provided in Wave 1 to the question 'What is it about Aboriginal and Torres Strait Islander culture that will help your child grow up strong?' (Department of Families, Housing, Community Services, and Indigenous Affairs, 2012 p. 56). This helps explain significant alignment between the 12 responses options and the 20 themes developed through our content analysis of the same question from Waves 1 and 8. Figure 15 presents results across the three waves. In doing so, it should be noted that the results are based solely on respondents having selected a response within their choice of five variables regardless of its ranking of importance by respondents in Waves 3, 6 and 12.

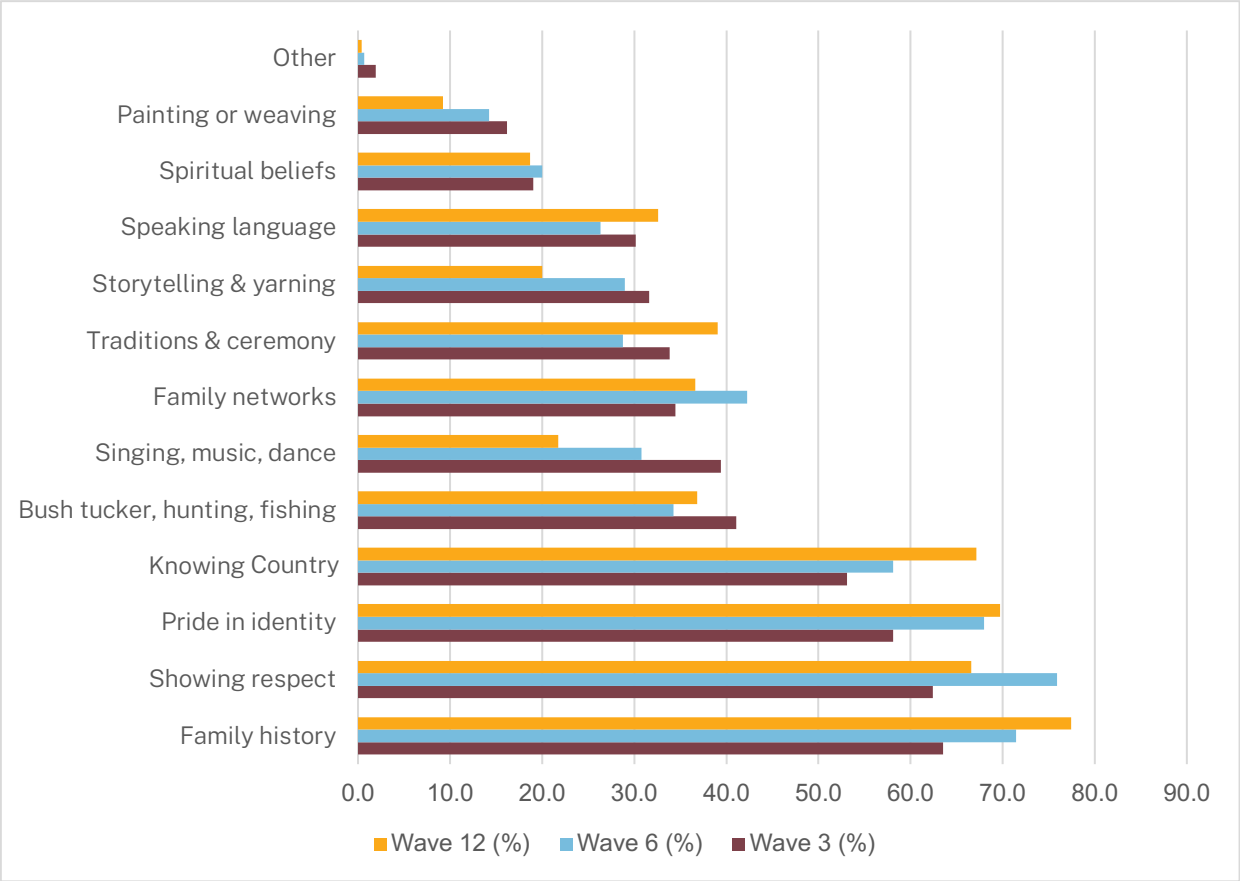

Figure 15: Percentages of Wave 3, 6 and 12 responses linked to selected themes – aspects of culture to pass on to child

Note: As each person could select five aspects, percentages are calculated as the number of aspects identified out of the total number of aspects identified divided by 5.

While the order varies across the three waves, this analysis shows that four aspects of culture were consistently selected by more than half of the Primary Carers as things they would like to pass on to the Study Child: family history; showing respect; pride in identity; and knowing Country. Over the three waves, the fifth position alternated between: bush tucker, hunting, fishing; family networks; and traditions and ceremony. These results present yet another ordering of similar cultural themes, aspects, or activities when compared to our qualitative analysis of text responses in relation to what aspects of culture will help Study Child to grow up strong and what activities will help the Study Child to learn about Aboriginal and/or Torres Strait Islander culture.

We also considered this question by gender, remoteness and socioeconomic status (Indigenous Relative Socioeconomic Outcomes scores – an index of socioeconomic outcomes for Indigenous peoples by area). We found that there was very little difference between genders in each wave. Although we only disaggregated remoteness for Wave 12, we found that 'family history' was approximately 10% more likely to be reported in major cities than remote areas (with regional areas sitting somewhere in between) by Study Youth, and 'bush tucker, hunting and fishing' about 45% more likely to be reported in remote areas than major cities (with regional areas closer to major cities) by Study Youth. Some differences were similarly prominent when disaggregating by socioeconomic status. Study Youth living in an area with higher IRSEO scores (higher advantage) reported higher rates of 'family history' (~15%) and 'pride in identity' (~25%) than their peers from a lower socioeconomic area. On the other hand, 'speaking language'

and 'bush tucker, hunting and fishing' were much more frequently reported among Study Youth from lower socioeconomic areas, with the later almost 45% higher than for peers from higher socioeconomic areas.

Table 16 provides a comparison of the four most frequently identified themes across the three Primary Carers' LSIC questions relating to culture that have been presented so far.

As well as there being a difference based on questions being open- or closed-ended, the variation in question wording is also important to note in terms of the value of any comparison or interpretation of results:

- What is it about Aboriginal and Torres Strait Islander culture that will help (Study Child) grow up strong?
- What sort of activities does (Study Child) do with you or other family members to learn about Aboriginal/Torres Strait Islander/Aboriginal and Torres Strait Islander culture?
- What is it about Aboriginal/Torres Strait Islander/Aboriginal and Torres Strait Islander culture that you (and your partner) would like to pass on to (Study Child) at this age?

The text responses to the first question were used to develop the 12 response options for the last question. This raises a new question: might Primary Carers' selection and ranking of response options change if the original Wave 1 question wording was used? Specifically, would Primary Carers' choices differ if asked which five aspects were most important for helping their child grow up strong, compared to selecting and ranking aspects of culture they want to pass on to their child?

Although a problematic comparison, one aspect that stands out is the apparent switch in the rankings of family connection/networks and family history in responses between the first question (how culture helps children grow up strong) and the last question (what it is about culture that you would like to pass on to your child). Through our content analysis we found that across Waves 1 and 8, family connection was by far the most frequently mentioned aspect of culture that would help children grow up strong, but this cannot necessarily be assumed to reflect Primary Carers' views of its relative importance. The term 'family history' is a category provided within the survey for Primary Carers to select and was not defined.

While in-depth, inductive and immersive, the analysis presented in this Report was also limited in the sense that we did not explore the influence of demographic or geographic differences on responses, for example, by age, gender, or level of relative isolation. Such analysis would be of significant value especially in recognition of the diversity that exists within Aboriginal and Torres Strait Islander cultures as is acknowledged within the social and emotional wellbeing framework (Gee et al. 2014). Analysis of some of the same LSIC data by other analysts has found some variation in responses to the question 'What is it about Aboriginal/Torres Strait Islander/Aboriginal and Torres Strait Islander culture that you (and your partner) would like to pass on to (Study Child) at this age?' in Wave 3, when taking into account respondents' level of relative isolation and whether an Aboriginal or Torres Strait Islander language was spoken in the home (Department of Families, Housing, Community Services and Indigenous Affairs, 2012; Martin, 2017). Also, we did not attempt any longitudinal analysis – though this would be limited somewhat by some questions being asked in only one or two waves. Perhaps the most significant gap in the questions analysed so far in this section is in terms of providing any insight into the views of the Study Child and/or Study Youth about the role that culture plays in helping them to grow up strong.

Study Youth Perspectives on the Importance of being Aboriginal and/or Torres Strait Islander

Wave 11 of LSIC included three closed-ended questions that we identified as being particularly relevant to improving our understanding of the relationship between culture and social and emotional wellbeing from the perspective of the LSIC Study Youth.

The first question analysed was asked of LSIC Study Youth (cohort K) (n=423) in Wave 11: 'Is being Aboriginal and/or Torres Strait Islander: [1] Central to who you are; [2] Important, but not the only thing; [3] Something you don't know enough about and want to know more about; [4] Something you rarely think about'. In response, over one-third (36.6%) of Study Youth indicated that being Aboriginal and/or Torres Strait Islander was central to who they were and just under one-third (31.4%) said that it was important, but not the only thing (see Figure 16).

The second question asked of LSIC Study Youth (cohort K) (n=434) in Wave 11 was: 'Would you say being Aboriginal and/or Torres Strait Islander is: [1] Not very important to me; [5] Extremely important to me'. In response, three-quarters (74.9%) of Study Youth indicated that 'being Aboriginal and/or Torres Strait Islander' was either important or extremely important to them (see Figure 17). The difference in question wording proves meaningful when comparing the response rates: that is, while 36.6% of Study Youth saw 'being Aboriginal and/or Torres Strait Islander' as central to who they are, a far higher proportion (74.9%) saw being Aboriginal and/or Torres Strait Islander as extremely important.

Consistent in both questions was a higher tendency for females, Study Youth from remote and regional areas, and Study Youth living in the lower socioeconomic areas to respond that being Aboriginal and/or Torres Strait Islander was 'central to who [they] are' and 'extremely important to [them].'

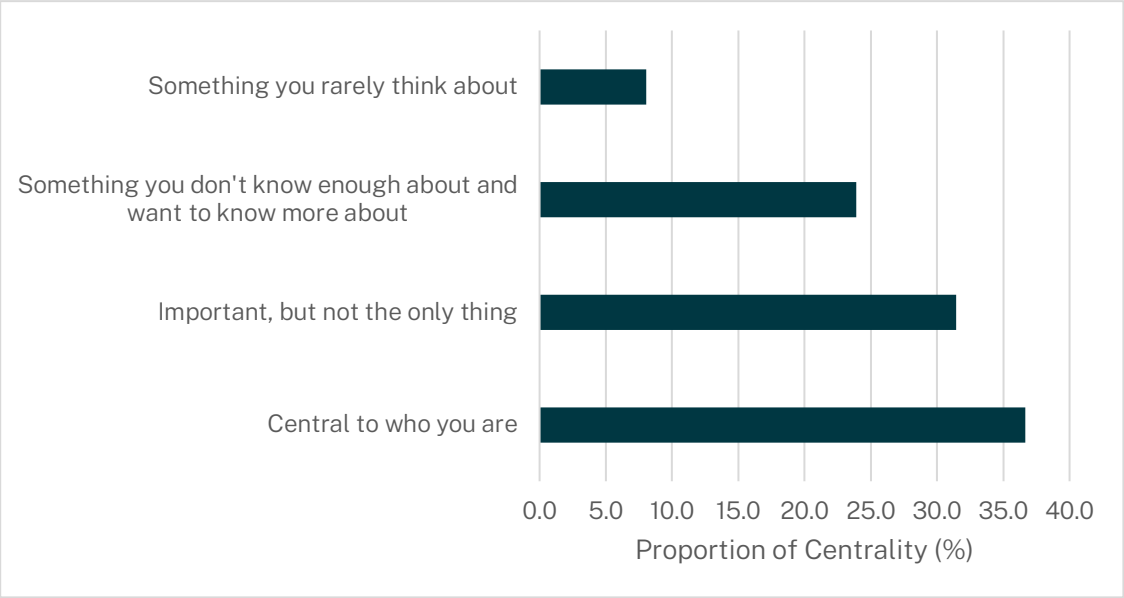

Figure 16: Proportion of response to Centrality of 'being Aboriginal and/or Torres Strait Islander' to Study Youth, Wave 11 (%)

Note: Percentage is calculated as the number of responses to each category, of total responses.

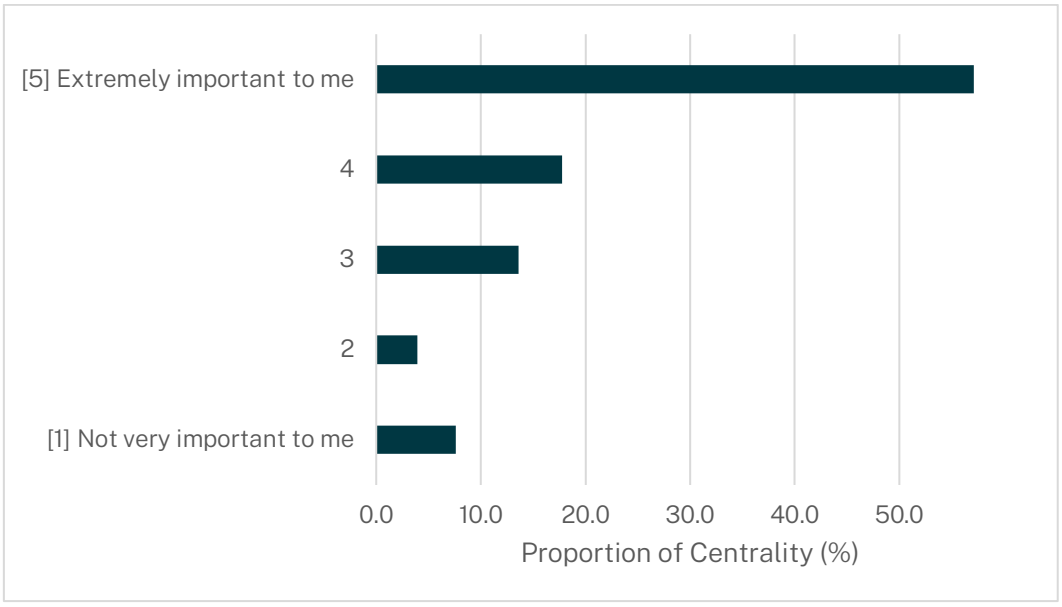

Figure 17: Proportion of response to Importance of being Aboriginal and/or Torres Strait Islander to Study Youth, Wave 11 (%)

Note: Percentage is calculated as the number of responses to each category, of total responses.

The third question we analysed aligned closely with the questions asked of Primary Carers presented in the previous part of this section. This question asked Study Youth: 'When you think about being Aboriginal and/or Torres Strait Islander, how important to you are:

- your people, your Mob
- your Country

- knowing about your Indigenous family connections
- learning from strong Indigenous role models
- ways and laws of Indigenous ancestors
- knowing the Indigenous stories
- Indigenous events
- being strong and deadly
- knowing about your community connection
- having Indigenous friends
- knowing the language of your people
- bush foods, medicine
- the Aboriginal/Torres Strait Islander flag
- Indigenous symbols, design and artwork, and
- news/media organisations that tell about culture.'

Respondents were asked to indicate the level of importance of each of these variables on a scale from 1 (not very important to me) to 5 (extremely important to me). For the analysis, we combined values 4 and 5 into one category to show how many Study Youth saw each theme as being of either high (4) or extreme (5) importance (see Figure 18).

When disaggregated by gender, socioeconomic status and remoteness, more females than males ranked almost every category the highest degree of importance (except 'your people, your Mob'). This was also true for Study Youth living in areas with the lowest socioeconomic conditions and remote areas (except the categories for 'Aboriginal and Torres Strait Islander flag', and 'being strong and deadly').

The results across these three questions show very clearly the importance of cultural identity to LSIC Study Youth, revealing that this is made up of various cultural connections which, again, align with the cultural domains of the social and emotional wellbeing framework. Prominent too was a general trend for females, Study Youth from lower socioeconomic areas, and Study Youth with various degrees of remoteness, to rank various themes more highly than their respective peers.

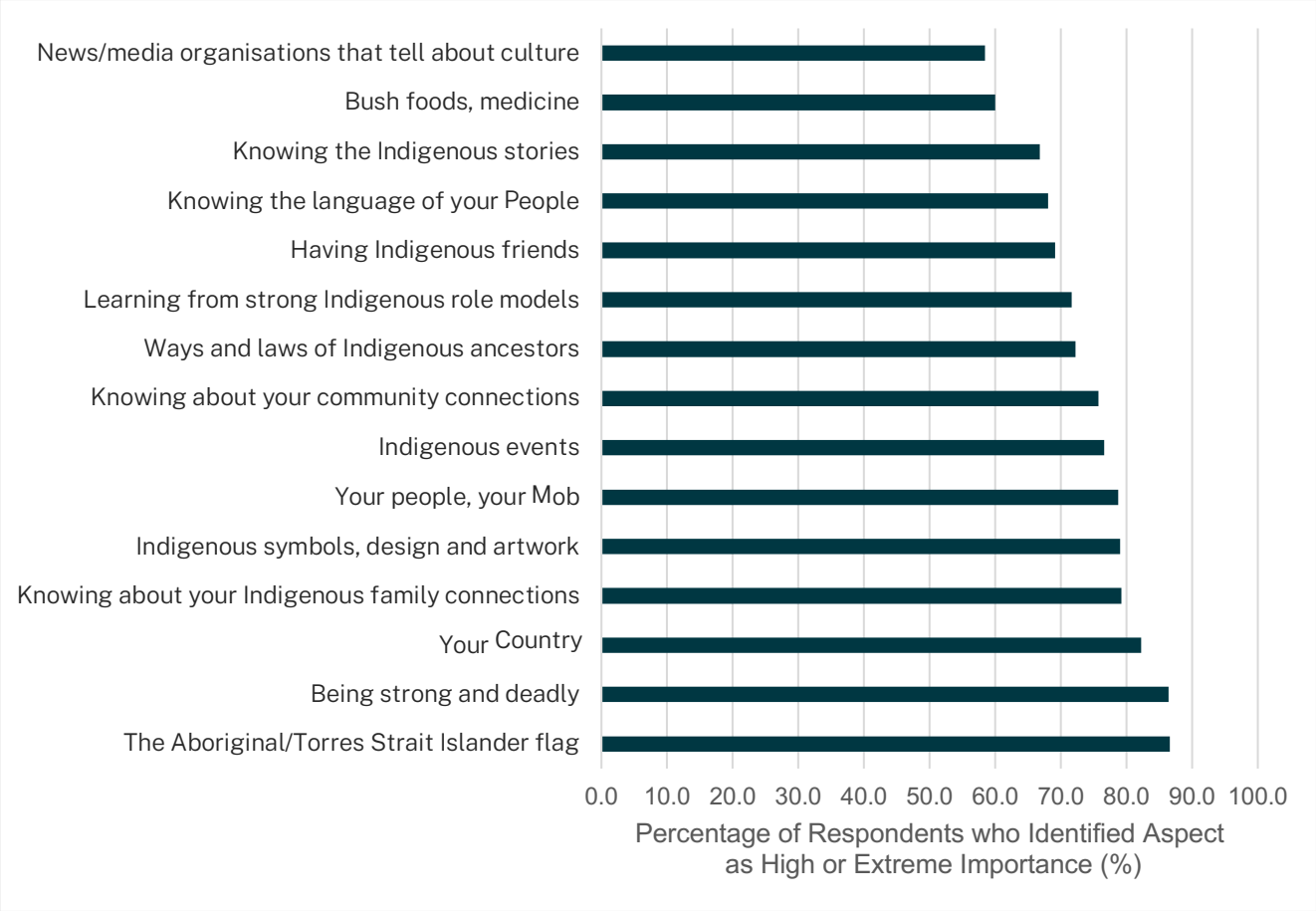

Figure 18: Aspects of Aboriginal and Torres Strait Islander identity of high or extreme importance, Cohort K, Wave 11 (%)

Note: Percentage is calculated as the total of people responding to each aspect of identity that rank the given aspect highest.

Conclusion

LSIC provides a rich source of data that can help to build understandings of the role that culture plays in supporting the social and emotional wellbeing of Aboriginal and Torres Strait Islander children. LSIC data is especially rich as it allowed this section of the Report to look at culture from many different angles and perspectives. Here the section of the Report has looked at culture in terms of: how Primary Carers see culture as helping the Study Child grow up strong; what grow up strong means to Study Children; activities Primary Carers and other family members do to help the Study Child learn about their culture; what aspects of culture Primary Carers want to pass on to their children; what aspects of being Aboriginal and/or Torres Strait Islander do LSIC Study Youth see as important; and how central or important being Aboriginal and/or Torres Strait Islander is to LSIC Study Youth.

The combination of qualitative content analysis and basic quantitative analysis in this section of our report explores barely beyond the surface of the rich LSIC data. In doing so, this section has revealed valuable insights that make a further contribution to the Report's overall argument in relation to the role that culture plays in helping Aboriginal and Torres Strait Islander children to grow up strong. The use of inductive content analysis aimed to ensure that identified themes emerged from the data itself. Our inductive content analysis has sought to reflect and amplify Aboriginal and Torres Strait Islander peoples' voices and the ways of knowing, being and doing that make up their cultures. Our analysis presented in this

section of the Report has highlighted the significant alignment between LSIC Study participants' views of culture and its role in helping children grow up strong and the seven cultural domains of the social and emotional wellbeing framework (Gee et al., 2014). LSIC Study Primary Carers' responses also revealed the interrelatedness, interconnection and overlap among themes and domains. While the social and emotional wellbeing framework presents seven distinct cultural domains its original authors note that this is an 'artificial separation' (Gee et al., 2014, p. 58). The views of LSIC Study Primary Carers, Study Children and Study Youth on what it is about culture that helps children grow up strong that are explored in this section of the Report's analysis from Waves 1 and 8 and in Wave 13 provides an important evidence-base on the cultural determinants of Aboriginal and Torres Strait Islander children's social and emotional wellbeing.

There are many other questions within LSIC that we have not analysed or discussed in this section of the Report – both open- and closed-ended – that would help provide further insights, including points of comparison between the views of LSIC Study Primary Carers and the views of LSIC Study Children and Study Youth. And, there are many other ways of exploring the data that would provide insights into any differences and diversity across demographic and geographic characteristics, which have not been undertaken here.

Nonetheless, our analysis shows that LSIC data provides a valuable contribution to the evidence base to support Aboriginal and Torres Strait Islander peoples' longstanding and ongoing efforts to achieve decolonisation and self-determination in health and mental health as well as across broader policy at a whole-of-government level. The LSIC data provides important insights into how culture supports Aboriginal and Torres Strait Islander children's social and emotional wellbeing. Better understanding this can help inform government policy, funding programs and partnerships with Aboriginal and Torres Strait Islander organisations and communities aimed at improving the social and emotional wellbeing of Aboriginal and Torres Strait Islander children, while ensuring self-determination at the community level – noting that the right to self-determination is one of the nine guiding principles that underpin the Gee et al., social and emotional wellbeing framework (Gee et al., 2014). As we state above in the key findings section, our findings reinforce the arguments presented in the Culture is Key report which called for the embedding of cultural determinants in policy across the whole-of-government (Lowitja, 2021).

Our findings echo the importance of not only Aboriginal and Torres Strait Islander children staying connected to family, community, culture and Country as central, and even fundamental, to the child's sense of identity, belonging and wellbeing as expressed in numerous commissioned reports and research publications to date – but also the maintenance of cultural connections to a child's wellbeing. The findings particularly emphasise the necessity of the maintenance of cultural connections to a child's wellbeing. For example, our findings reinforce the vital importance of Aboriginal and Torres Strait Islander children remaining in contact with their family, including extended families, and members of the community who are considered family in out-of-home-care as called for in the Family as Culture Review Report (Davis, 2019, p. 322).

Our findings show how 'connection' to culture is gained through social experience and involves interaction with families, grandparents, Elders and communities.

Our findings also point to the important role of schools in providing not only educational opportunities but also opportunities for Aboriginal and Torres Strait Islander children to engage in cultural activities and programs.

Tables

Table 10: LSIC questions selected for qualitative analysis

LSIC Question	Respondent	Wave/Year	Cohort
aaac11_t What is it about Aboriginal and Torres Strait Islander culture that will help (Study Child) grow up strong?	P1	01/2008	B (younger cohort) & K (older cohort)
haac11_t What is it about Aboriginal and Torres Strait Islander culture that will help (Study Child) grow up strong?	P1	08/2015	B&K
eacp26_t What sort of activities does (Study Child) do with you or other family members to learn about Aboriginal/Torres Strait Islander/Aboriginal and Torres Strait Islander culture?	P1	05/2012	B&K
cia6_t What does "grow up strong" mean for you? Not just physically.	SC	13/2020	B&K

Note: P1= Primary Carer, SC = Study Child.

Table 11: LSIC questions selected for quantitative analysis

LSIC Question	Respondent	Wave/Year	Cohort
capl31a_m What is it about (Aboriginal and/or Torres Strait Islander) culture that you (and your partner) would like to pass on to (Study Child) at this age? Up to 5 answers could be selected but no order was specified.	P1 (Aboriginal or Torres Strait Islander)	03/2010	B&K
fapl31a2_m2 What is it about Aboriginal/Torres Strait Islander/Aboriginal and Torres Strait Islander culture that you (and your partner) would like to pass on to (Study Child) at this age? Please choose 5 answers from the list below and number in order of importance from 1 to 5.	P1	06/2013	B&K
lapl31a2_m2 What is it about Aboriginal/Torres Strait Islander/Aboriginal and Torres Strait Islander culture that you (and your partner) would like to pass on to (Study Child) at this age? Please choose 5 answers from the list below and number in order of importance from 1 to 5.	P1	12/2019	B&K
cpl30 Is being Aboriginal and/or Torres Strait Islander: [1] Central to who you are; [2] Important, but not the only thing; [3] Something you don't know enough about and want to know more about; [4] Something you rarely think about	SC	11/2018	K
cpl39 Would you say being Aboriginal and/or Torres Strait Islander is: [1] Not very important to me; [5] Extremely important to me	SC	11/2018	K
cpl40_1_15 When you think about being Aboriginal and/or Torres Strait Islander, how important to you are: [13 response options]	SC	11/2018	K

Note: P1 = Primary Carer, SC = Study Child.

Table 12: Comparison of themes identified from LSIC Study Youth responses to the question: 'What "growing up strong" means to you, not just physically?'

Connection to Body	Connection to Mind and Emotions	Connection to Family and Kinship	Connection to Community	Connection to Culture
Good health	Resilience	Family connection	Respect community	Keeping culture strong
Physically strong	Mentally & emotionally strong	Connection to grandparents & Elders	Role model for the community	Being proud
Eating well	Strong character (role modelling)	Supportive family	Staying with the community	My grandparents and Elders teaching me culture
	Happy & safe	Good family relationships		Learning my culture
	Being independent	Learning from family		Confident in my culture
	Confidence			Knowing my culture
	Being positive			Proud of my culture
	Perseverance			Learning/knowing my language

Table 13: Themes identified from responses to the question: What is it about Aboriginal and Torres Strait Islander culture that will help (Study Child) grow up strong?

Theme (in order of frequency in Wave 1 responses)	Wave 1 percent of responses (n=1,324) linked to theme	Wave 8 percent of responses (n=1,075) linked to theme	Ranking of response frequency (Wave 1 rank ~ Wave 8 rank)
Family connection	45.7	35.8	1~1
Identity and belonging	36.0	31.3	2~2
Cultural knowledge and learning	20.8	19.6	3~3
Pride and self-confidence	9.9	11.0	4~4
Respect, morals, protocols	7.9	10.6	5~5
Care and support	7.7	5.5	6~13
Connection to Country	6.9	9.7	7~7
Connection to grandparents and Elders	6.5	8.8	8~8
Cultural practices, traditional ways	5.6	3.9	9~17
Bush tucker/Island food (including hunting, fishing and gathering)	5.4	10.5	10~6
Family history	4.4	5.0	11~14
Strength, resilience, independence	4.2	4.4	12~15
Community connection	3.9	4.0	13~16
Language	3.9	7.6	14~9
Dancing, singing, music	3.7	7.1	15~11
Ancestors, Ceremony, Spirituality	2.4	5.7	16~12
Storytelling	2.0	7.3	17~10
Life direction and opportunities	2.0	0.3	18~20
Connection to Mob	1.9	3.3	19~18
Art and craft	1.2	1.3	20~19

Note: Percent of responses considers how many Primary Carers mention a given theme within their answer as a proportion of the total number of answers given (e.g., Wave 1 = 1,324 and Wave 8 = 1,075). As a Primary Carer may mention more than one theme in their answer, the total percentage may exceed 100%. Rank refers to the ranking of the relative proportion of responses that include a given theme. For instance, 'Art and craft' was the 20th most common theme in Wave 1, and the 19th in Wave 8.

Table 14: Proposed alignment of themes with the social and emotional wellbeing framework cultural domains: What is it about Aboriginal and Torres Strait Islander culture that will help (Study Child) grow up strong?

Connection to Body	Connection to Mind and Emotions	Connection to Family and Kinship	Connection to Community	Connection to Culture	Connection to Country	Connection to Spirituality and Ancestors
Bush tucker/Island food (including hunting, fishing, gathering)	Pride and self-confidence	Family connection	Connection to community and to Mob	Cultural knowledge & learning	Connection to Country	Ancestors, Ceremony, Spirituality
	Strength, resilience, independence	Connection to grandparents and Elders		Cultural practices, traditional ways		
	Life direction & opportunities	Family history		Language		
		Care & support		Dancing, singing, music		
		Respect, morals, protocols		Storytelling		
		Identity & belonging		Art and craft		

Table 15: Themes identified from responses to the question: What sort of activities does (Study Child) do with you or other family members to learn about Aboriginal/Torres Strait Islander/Aboriginal and Torres Strait Islander culture?

Theme (in order of frequency)	Wave 5 percent of responses (n=980) linked to theme)	Example response	Social and Emotional Wellbeing Domain affected by Cultural Determinant
Storytelling and yarning	41.2	Storytelling and yarning with his dad and his pop	Connection to Culture
Bush tucker/Island food	33.9	Goes on walks learns about the bush foods and medicines goes fishing and learns the seasons and tides	Connection to Body and Behaviour
Dancing, singing, and music	21.3	Singing and island dance	Connection to Culture
Language	16.1	Language and they teach him sign language for animals also	Connection to Culture

Cultural activities and events (including NAIDOC)	13.8	I take her to NAIDOC day and the [Aboriginal and Torres Strait Islander] festival	Connection to Community
Camping and bushwalking	12.7	We just always go walking in bush, camping, to the beach, everywhere we go we take grandpa to tell the kids stuff	Connection to Country
Art and craft	12.3	Teach him to Aboriginal paintings and talk to him about Aboriginal stories	Connection to Culture
Time with grandparents and Elders	11.6	Grandmother tells them story for the old days, speaking [language], knowing bush food, and bush animals, elders teaching them language	Connection to Family and Kinship
Books, documentaries, NITV	9.0	They watch NITV which tells them about Aboriginal stories	Connection to Culture
School and childcare programs	8.3	Learning culture through the school and weekends by going fishing and hunting	Connection to Culture
Kinship, identity, and respect	7.6	Speaking language, teaching him respect poison cousin relationship and to respect our culture	Connection to Family and Kinship Connection to Mind and Emotions
Time with family and/or mob	7.4	Spend time with their father's family and go to [location]	Connection to Family and Kinship
Ceremonies (including funerals)	6.5	Go hunting and have taken him to a law ceremony	Connection to Spirituality and Ancestors
Connecting to Country (and significant places)	4.3	We go back to homelands, Aunties tell them stories, talk to a lot of Elders here in our local area and learn stories	Connection to Country
Living culture everyday	2.6	We are Aboriginal we live that is how we learn to be Aboriginal	Connection to Culture

Note: Frequency is calculated as number of responses from Primary Carers that mention theme.

Table 16: Four themes most frequently linked to Primary Carer's responses across three LSIC culture questions analysed

What is it about Aboriginal and Torres Strait Islander culture that will help (Study Child) grow up strong?	What sort of activities does (Study Child) do with you or other family members to learn about Aboriginal/Torres Strait Islander/Aboriginal and Torres Strait Islander culture?	What is it about Aboriginal/Torres Strait Islander/Aboriginal and Torres Strait Islander culture that you (and your partner) would like to pass on to (Study Child) at this age?
Family connection	Storytelling and yarning	Family history
Identity and belonging	Bush tucker/Island food	Showing respect
Cultural knowledge and learning	Dancing, singing, and music	Pride in identity
Pride and self-confidence	Language	Knowing Country

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Section Four:

Longitudinal Analysis of the Factors Associated with Social and Emotional Wellbeing Using the Strengths and Difficulties Questionnaire (SDQ) in Aboriginal and Torres Strait Islander Study Children

Section Four: Longitudinal Analysis of the Factors Associated with Social and Emotional Wellbeing in Aboriginal and Torres Strait Islander Study Children

Key findings

- The proportion of LSIC Study Children at a high risk of clinically significant emotional or behavioural difficulties dropped from 22% at the age of 2–7 years (Wave 3) to 17% at the age of 11–16 years (Wave 12).
- Major protective factors for social and emotional wellbeing include very good/excellent physical health, a Primary Carer with positive mental health, high socioeconomic status (within the family and locally), strong cultural connection, positive and close relationships, and a positive school climate.
- Major risk factors for social and emotional wellbeing include poor physical health (e.g., conditions arising from disability), multiple life events, financial stress, poor housing conditions, bullying/unfair treatment, and racial discrimination.
- A strong connection to culture significantly predicts a high level of social and emotional wellbeing independent of demographic attributes, physical health, socioeconomic status, major life events, and geographic location.
- Primary Carer's mental health and bullying featured as the strongest predictor of LSIC Study Child's social and emotional wellbeing.

Introduction

As mentioned in the preceding sections, we draw on a holistic view of social and emotional wellbeing, such as the one underpinned by the conceptual framework of Gee et al. (2014). Therefore, our analysis of the determinants of social and emotional wellbeing would ideally use a quantitative measure of social and emotional wellbeing that is reflective of the holistic concept. In the factor analysis section of this Report, although we demonstrate that Connection to Community, Connection to Family and Kinship, Connection to Body and Connection to Culture/Country/Spirituality and Ancestors as measured at Wave 11 sufficiently tap a single dimension, a lack of contemporaneous data on the other domain of social and emotional wellbeing (Connections to Mind and Emotions) made it impossible to fully measure social and emotional wellbeing as articulated by Gee and colleagues. Further, a lack of consistent measurement for the domains we did use across multiple waves (Connection to Body, Connection to Family and Kinship, Connection to Community, and Connection to Culture) prevented us from developing a longitudinal multidimensional measure of social and emotional wellbeing.

For conducting empirical quantitative analysis, different studies have measured the social and emotional wellbeing of Aboriginal and Torres Strait Islander peoples differently, often using subjective wellbeing scales related to mental health, psychological distress, and life satisfaction (see e.g., Biddle & Swee, 2012; Jamieson et al., 2011; Priest et al., 2011). More specifically, studies that have examined determinants of the mental health and social and emotional wellbeing of Aboriginal and Torres Strait Islander children and youth have used the Strength and Difficulties Questionnaire (SDQ) score as an outcome variable (see e.g., Coffin, 2019; Macedo et al., 2019; Priest et al., 2012; Williamson et al., 2014;

Zubrick et al., 2005). The SDQ is a screening tool for social and emotional difficulties in children and young people (Goodman, 1997). This will be discussed further in the methods part of this section.

This section of the Report followed the above literature and used SDQ scores as a measure of social and emotional wellbeing of The Longitudinal Study of Indigenous Children (LSIC) Study Children. While this section of the Report acknowledges that the SDQ provides a narrower construct of social and emotional wellbeing than that which is articulated by Gee et al. (2014), it constitutes a vital dimension of social and emotional wellbeing. The fact that SDQ scores have been measured consistently across multiple waves also makes it easy to better understand the dynamics in children's emotional and behavioural development, which is an important precursor to other aspects of life. Studies show that Aboriginal and Torres Strait Islander children and youth with lower scores of emotional and behavioural difficulties tend to achieve higher in numeracy, PAT-Maths scores[17] (Anderson et al., 2017) and are less likely to show self-harm and suicidal behaviours (Islam et al., 2022; Zubrick et al., 2005). Evidence in non-Indigenous contexts also show that children and adolescents with healthy emotional and behavioural development tend to form secure attachments with family and peers, be more mentally and physically active, and be less prone to succumbing to peer pressure (Goodman, 2010; Roberts et al., 2014). They are also more likely to be successful in academic and career progression, and less likely to engage in risky behaviours such as crime, violence and substance use during early adulthood (Hammerton et al., 2019; Murray et al., 2015; Mundy et al., 2017; Rodwell et al., 2018).

From a policy perspective, therefore, supporting children to achieve healthy social and emotional wellbeing not just enhances social and emotional wellbeing but also improves overall wellbeing. Understanding the underlying factors (both protective and risk) for social and emotional wellbeing in Aboriginal and Torres Strait Islander children is a prerequisite to gaining policy-relevant insights and optimising the type and quantity of service provision.

Zubrick et al. (2005) provide perhaps the earliest and most comprehensive account of the determinants of social and emotional wellbeing in Aboriginal children. Drawing on cross-sectional data from the Western Australian Aboriginal Children Health Survey (WAACHS), Zubrick et al. show that a myriad of factors influence the social and emotional wellbeing of Aboriginal children in Western Australia. They find that factors including disability and functional impairment, poor parental health, challenges in family functioning, being cared for by a person other than a biological parent, living in multiple homes since birth, and being exposed to multiple life stressors are risk factors for being at a high risk of clinically significant emotional or behavioural difficulties. On the other hand, they also find that having a sense of self-esteem, living with more people in the household, living in extremely isolated locations and having a Primary Carer who can converse in an Aboriginal or Torres Strait Islander language are protective factors against risk of clinically significant emotional or behavioural difficulties. Other studies show that a history of forced removal of Primary Carers from their natural family, racial discrimination, socioeconomic status of parents/families, being raised in foster care, participation in cultural events, frequent housing mobility are key underlying factors for the social and emotional wellbeing of Aboriginal and Torres Strait Islander children (Cave et al., 2019; Department of Social Services, 2015; De Maio et al., 2005; Lovett, 2017; Macedo et al., 2019; Shepherd et al., 2012; Williamson et al., 2016).

[17] PAT-Maths score: Progressive Achievement Tests (PAT) in numeracy skills for students from Year 3 to Year 10 provided by Australian Council for Educational Research (ACER). Using data from LSIC Wave 6 for the K cohort, Anderson and colleagues (2017) found a statistically significant inverse relationship between emotional and behavioural difficulties and numeracy skills.

The present study sheds further light on social and emotional wellbeing determinants in Aboriginal and Torres Strait Islander children by using strengths-based and comprehensive data and methodological approaches. The list of predictor variables includes child, family and community characteristics spanning across demography, health, education, employment, financial stress, major life events, housing, culture and identity, social relationships, bullying and racism, school climate, local area socioeconomic status and geographic remoteness. Social and emotional wellbeing is measured using the Strengths and Difficulties Questionnaire (SDQ) score. The analysis draws on five waves of LSIC data (Waves 3, 6, 8, 10 and 12)[18] and employs mixed-effects logit models. To the best of our knowledge, this is the first study to quantify the effect of school environments on social and emotional wellbeing in Aboriginal and Torres Strait Islander children.

Methods

As indicated above, the analysis used five waves of LSIC data. Across the five waves, a total of 6,322 observations (an average of 1,265 children per wave) were considered in the analysis.

Outcome variable

Social and emotional wellbeing is measured through Primary Carer responses to the SDQ, a screening tool for emotional and behavioural difficulty in children and young people (Goodman, 1997). In LSIC, the SDQ consists of 25 items, with each item being scored on a 3-point scale from not true (0), somewhat true (1) to certainly true (2). The 25 SDQ items are divided between two main scales: the SDQ Total Difficulties Score and the SDQ Prosocial Score. The former scale aggregates the 20 SDQ items related to emotional and behavioural difficulties into a total score ranging between 0 and 40. Higher scores indicate greater levels of psychological distress or behavioural difficulties. The latter scale aggregates the remaining five SDQ items related to prosocial behaviour and has a score ranging between 0 and 10. Higher scores indicate a lower level of emotional or behavioural difficulties.

The current analysis focuses on the SDQ total difficulty score. This score has been widely used as a measure of mental health, resilience, and more broadly, social and emotional wellbeing among Aboriginal and Torres Strait Islander children and youth (see e.g., Cave et al., 2019; Lovett, 2017; Macedo et al., 2019; Shepherd et al., 2012; Williamson et al., 2016; Zubrick et al., 2005).

Though the SDQ total difficulties score can be used as a continuous variable, for ease of assessing emotional and behavioural health risks, it is often classified into normal (0–13), borderline (14–16) and abnormal (17–40) ranges. The normal range corresponds to being at low risk of clinically significant emotional or behavioural difficulties. Borderline and abnormal ranges correspond to being at moderate to high risk of clinically significant emotional or behavioural difficulties (Goodman & Goodman, 2009; Goodman et al., 2000). Zubrick et al. (2005), Shepherd et al. (2012), Lovett (2017) and Cave et al. (2019) have used a similar classification for the SDQ score of Aboriginal and Torres Strait Islander children in their analysis of determinants of mental health and wellbeing in Aboriginal and Torres Strait Islander children.

Since the present study focused on identifying the factors that promote/deter positive social and emotional wellbeing, we used a binary wellbeing measure that differentiated children with a low risk of clinically significant emotional or behavioural difficulty from those a moderate to high risk. In so doing, we

[18] This is because social and emotional wellbeing was only consistently measured in these waves.

followed Shepherd et al. (2012), Lovett (2017) and Cave et al. (2019) and combined the borderline and abnormal ranges to create a binary outcome variable that equals '1' if SDQ scores are in the normal range (called normative SDQ scores)[19] and equals '0' if SDQ scores are in the borderline or abnormal range.

Covariates

The LSIC provides a wealth of information about individual, family and community characteristics that could be associated with social and emotional wellbeing. As we were interested in assessing longitudinal associations between the outcome of interest and the background characteristics, only variables observed at least at two timepoints are included in the analysis. The list of covariates follows.

Age: Age of the Study Child in years [Waves, 3, 6, 8, 10 and 12].

Gender: 1 if male; 2 if female, meaning male was the reference category [Waves, 3, 6, 8, 10 and 12].

Child physical health:[20] 1 if the Study Child has very good/excellent overall health; 0 otherwise [Waves, 3, 6, 8, 10 and 12].

Practicing culture: A factor score derived from an exploratory factor analysis (EFA) of the Primary Carer responses to three questions: How often does the Study Child go to Aboriginal or Torres Strait Islander cultural events, ceremonies or sorry business? (***apl8***). How often does Study Child learn about Aboriginal or Torres Strait Islander activities like collecting food or hunting? (***apl9***). How often does Study Child learn about Aboriginal or Torres Strait Islander arts like painting, dance, singing or making ceremonial dress? (***apl10***). Possible responses were Never; Occasionally; Often; Very often. Separate factor analyses were conducted for each wave. Higher scores indicate assumed to indicate stronger cultural attachment [Waves 10 and 12].

Cultural knowledge: A factor score derived from an EFA of the following three variables: whether the Study Child knows the name of his/her clan/tribe (***hafh6_1***); whether the Study Child knows his/her people (***hafh6_2***); whether the Study Child knows his/her family stories and history (***hafh6_3***). Higher scores are assumed to indicate greater cultural knowledge. It is worth acknowledging, however, that since data for the above variables are only available at Wave 8, the derived variable is treated as fixed for the rest of the waves [waves 10 and 12]. This may be a strong assumption as a Study Child's knowledge of culture at Wave 8 may not necessarily remain the same over the next four years.

Closeness of relationships: The number of persons in ring one of a relationship circle, i.e. the number of people having the closest relationship with the Study Child. Study Children were asked to rate the closeness of their relationship with a list of people that they may know (including parents, siblings, extended family members, friends, teachers and Aboriginal and Torres Strait Islander support workers) by placing the people across five different rings of a relationship circle, where the people closest to them appeared in ring one [Waves 10 and 12].

Interpersonal skill: A factor score derived from an EFA of four variables loading onto a single factor: Study Child makes friends easily (***cff8_1***); Study Child gets along with kids easily (***cff8_2***); Other kids want Study

[19] We borrowed the term 'Normative SDQ' from Lovett (2017). Professor Raymond Lovett is a First Nations scholar who has been extensively researching on the social and emotional wellbeing of First Nations peoples.

[20] A variable that shows whether the child had any health problems in the 12 months before interview was also included as an alternative indicator of physical health, see 'Results', below.

Child to be their friend (***cff8_3***); Most other kids like Study Child (***cff8_4***). Possible responses were Always; Most of the time; Fair bit; Little bit; Not much; Never. Separate factor analyses were done for each wave. The variables were reverse coded so that higher scores indicate greater ability to make friends [Waves 10 and 12].

Primary Carer/partner employment: 1 if the Primary Carer or their partner (if any) has a paid job; 0 otherwise. This variable is derived from a combination of responses to two questions about the employment status of the Primary Carer (***awo1***) and their partner (if they are partnered) (***awo12***) [Waves, 3, 6, 8, 10 and 12].

Primary Carer's education: 1 if the Primary Carer has completed a post-school qualification; 0 otherwise [Waves, 3, 6, 8, 10 and 12].

Primary Carer's physical health: 1 if the Primary Carer has very good/excellent overall health status; 0 otherwise. [Waves 3, 10, 12].

Primary Carer's mental health: A factor score obtained from an EFA of seven variables: the Primary Carer has stopped liking things that used to be fun (***asw2***); the Primary Carer has felt like everything is hard work (***asw3***); the Primary Carer has felt worried and sick (***asw4***); the Primary Carer has felt worried and had difficulty breathing (***asw5***); the Primary Carer has felt angry or wild real quick (***asw6***) ; the Primary Carer has felt so sad that nothing could cheer them up (***asw7***); Primary Carer has done silly things they feel shame about (***asw8***). Possible responses were Never, Sometimes, Fair bit and Lots of times. Separate factor analyses were conducted for each wave. The items were reverse coded prior to conducting the EFA so that higher scores would mean better lower risks of mental health problems [Waves 3, 6, 8 and 10].

Financial stress: 1 if the family experienced any event of financial stress; 0 otherwise. This variable is derived from the Primary Carer's response to the question, 'In the last 12 months, have any of these happened to you because you were short of money?' The response options were : Could not pay gas, electricity or telephone bills on time (***hafi9_1***); Could not pay the mortgage or rent payments in time (***hafi9_2***); Went without meals (***hafi9_3***); Were unable to (could not) heat or cool your home (***hafi9_4***); Pawned or sold something because you needed cash (***hafi9_5***); Sought assistance from a welfare or community organisation (***hafi9_6***); Child could not do school activities (e.g., excursions, camps) (***hafi9_8***) [Waves, 3, 6, 8, 10 and 12].

Major life events: The total number of major life events experienced by Study Child's family in the last year.[21] In each wave, Primary Carers were asked whether 'big' things have happened to them, their family, or Study Child in the past 12 months. The structure of the questions/responses changed after Wave 9. For example, the life events 'problems with police' and 'arrested, jail' were included in a single question at Waves 1–9 but in two separate questions starting at Wave 10. Similarly, the events 'mugged or assaulted' and 'robbed' were included in a single question at Waves 1–9 but in separate questions in Waves 10–14. For this analysis, we combined the disaggregated responses at waves 10 and 12 consistency and longitudinal comparison across all five waves [Waves, 3, 6, 8, 10 and 12].

[21] Individual types of life events were also considered for analysis, see the results section.

Housing issue:[22] 1 if the Primary Carer reported they felt overcrowded where they live; moved house or had housing problems in the past 12 months; 0 otherwise [Waves 3, 6, 8, 10 & 12].

School climate: A factor score derived from an EFA of five variables loading onto a single factor: School is good for Study Child (***csc46_1***); School has safe places (***csc46_2***); School has people Study Child trusts (***csc46_3***); School has people who help each other (***csc46_4***); School helps Study Child learn (***csc46_5***). Possible responses were Always; Most of the time; Fair bit; Little bit; Not much; Never. Separate factor analyses were done for each wave. The variables were reverse coded so that higher values indicate better school climate. [Waves 10 and 12].

Bullying and racism: 1 if Study Child had not been bullied or unfairly treated; 2 if Study Child had been bullied or unfairly treated but not for being Aboriginal or Torres Strait Islander; 3 if Study Child had been bullied or unfairly treated for being Aboriginal or Torres Strait Islander. This variable was derived from two bullying/racism variables. The first variable (***ace50***) shows whether the Study Child had been bullied or treated unfairly at school. For Study Child who was bullied or treated unfairly, the second variable (***ace50a***) shows whether the Study Child had been bullied or unfairly treated because they are Aboriginal or Torres Strait Islander [Waves 8, 10, 12].

Local area socioeconomic status: This is measured based on the Socio-Economic Index for Areas–Index of Relative Socioeconomic Advantage and Disadvantage (SEIFA-IRSAD). The index is developed by the Australian Bureau of Statistics (ABS) and measured in deciles. A low decile indicates relatively greater disadvantage or a lack of advantage in general (e.g., many households with low incomes, or many people in unskilled occupations, or a few households with high incomes, or few people in skilled occupations), whereas a high decile indicates a relative lack of disadvantage and greater advantage in general (e.g., many households with high incomes, or many people in skilled occupations, or few households with low incomes, or few people in unskilled occupations) (ABS, 2016b) [Waves, 3, 6, 8, 10 and 12].

Area remoteness: 1 – if the Study Child lives in major cities; 2 – if inner regional areas; 3 – outer regional areas; 4 – remote areas; 5 – very remote areas [Waves, 3, 6, 8, 10 and 12].

Analysis

The analysis assumes that Study Children experience different levels of social and emotional wellbeing due to a wide range of interrelated factors. As such multivariate regression analysis were conducted to account for the interactive effects of the different factors and discern the independent effect of a variable of interest. Multivariate analysis also allows comparing the relative importance of the covariates in predicting social and emotional wellbeing. It is worth pointing out that children may experience different levels of wellbeing, perhaps because they also differ in certain characteristics that are not measured/observed in the LSIC data. Since most Study Children (98%) were observed at multiple time points, we used two-level mixed-effects logit models to account for individual-specific unobserved sources of variation.

LSIC provides randomly generated culture variables ***arclus*** (Waves 1–10) and ***arclus2016*** (Waves 9–12), to allow for capturing area-level unobserved confounders (DSS, 2018). There is, however, no evidence of within-area correlation, and area-level random effects only account for approximately 5% of the total

[22] Additional housing variables were also included in the analysis, see the results section.

residual variance in social and emotional wellbeing. Child-level random effects on the other hand compose about 50% of the variance.

Dummy variables for survey waves were included as control variables to account for unobserved year-to-year variations that might correlate with both the predictor variables and social and emotional wellbeing. These could include time-specific factors not captured in the LSIC data, such as major policy changes, macrocosmic shocks (e.g., the Global Financial crisis and the COVID-19 pandemic), natural disaster events, etc. In longitudinal studies, participant attrition can lead to biased research findings if the individuals who dropped out are different from those who stayed in the study. We note that 399 (24%) of the LSIC Study Children who were interviewed in Wave 3 were not reinterviewed in Wave 12. However, although attrition is significantly and positively linked to age, being male, having poor physical health, and living in remote areas, it is not significantly associated with social and emotional wellbeing, SDQ scores (see Table A40, columns 2 and 3). Therefore, when age, physical health, and remoteness are included as control variables in the multivariate models, it is highly unlikely for attrition to cause bias in this study.

As indicated in the methods section, not all covariates were measured across the five waves under consideration. To retain as much information as possible in the analysis, we ran separate regression models with four different sets of covariates:

- Specification 1: using covariates available at the five waves
- Specification 2: adding covariates available at four waves to Specification 1
- Specification 3: adding variables available at three waves to Specification 1
- Specification 4: adding variables available at two waves to Specification 1.

Results

Table 17 summarises the SDQ total difficulty score across the five LSIC survey waves under consideration. For the pooled sample across all selected waves, the mean SDQ total difficulties score is 11.1. The wave-specific mean score ranges between 10 at Wave 12 and 12.3 at Wave 3. Across all the waves, the highest SDQ score does not exceed 35. This is almost approximately one standard deviation below the maximum possible score of 40.

Figure 19 depicts a histogram for the SDQ total difficulties score (with overlaid normal density curve) over the pooled data for the five waves. The distribution is slightly right skewed (with a median score of 10 and a mean score of 11.1). The shape of the distribution is similar for the pooled data and the wave-specific data.

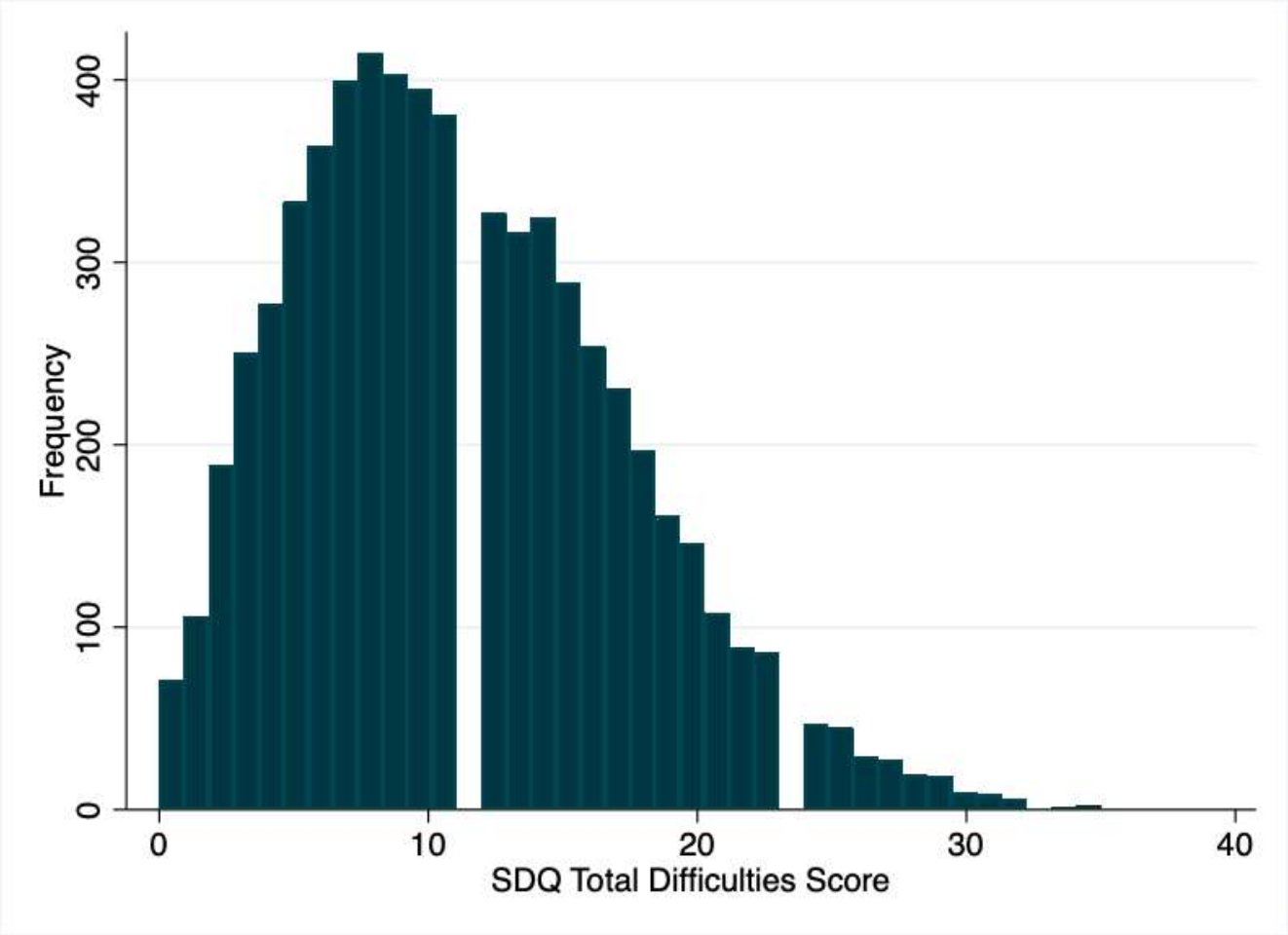

Figure 19: Histogram of Strength and Difficulties Questionnaire total difficulties score

Grouping the SDQ scores by risk classifications show that 67% of children are in the normal SDQ range, 14% are in the borderline and 19% are in the abnormal range, see Figure 20. The proportion of children under each category varies across the five waves. The proportion of children in the normal range increased over time, for example, 61% at Wave 3 to 67% at Wave 8 and 73% at Wave 12.

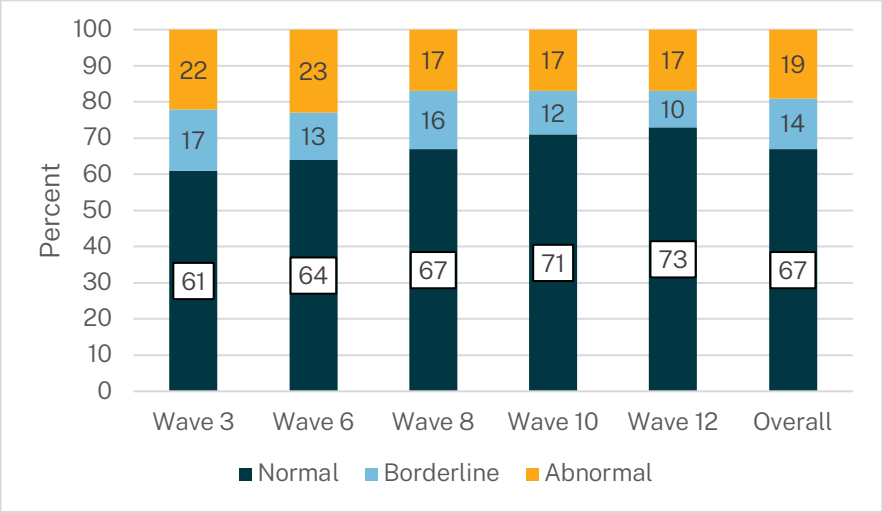

Figure 20: Proportion of Study Children across Strength and Difficulties Questionnaire score risk categories

Table 18 presents regression results obtained with the main predictor variables listed in the methods section. Results obtained with additional measures of child health, housing problems and major life events are reported in the Appendix. The first two columns of Table 18 show results from bivariate regressions and the last two columns show results from multivariate regressions. See the

Appendix to Section Four for the full regression results of the multivariate analysis. The reported parameters in Table 18 are estimated odds ratios (ORs) and their standard errors (SEs). The OR measures the changes in the odds of success (a Study Child having a positive social and emotional wellbeing) for a unit increase in the values of the corresponding predictor variable. A value greater than one corresponds to a positive association between the underlined predictor and outcome variables; a value less than one corresponds to a negative association; and a value equal to one corresponds to no association.

Child age and gender

LSIC children aged 2–7 years (averaging 4.4 years) at Wave 3 and 11–16 years (averaging 13.2 years) by Wave 12. Females accounted for 51% of the sample at Wave 3. This changed to 50% by Wave 12.

Theoretically, both age and gender differences can be significant predictors of social and emotional wellbeing. Younger children may have difficulty regulating their emotions and expressing themselves verbally, leading to tantrums or clinginess (Egger & Angold, 2006). As children grow older, they develop better emotional regulation and communication skills. However, they may also face new challenges such as peer pressure, academic stress, and identity formation. Each can impact their emotional wellbeing. Adolescents in particular may experience heightened emotions and risk-taking behaviours as they navigate the transition to adulthood (Rudolph, 2002). In terms of gender, societal gender norms and expectations may influence how children express their emotions. For example, boys may be expected to suppress emotions like sadness or fear, leading to increased aggression, whereas girls may face pressure to conform to stereotypes of being nurturing or accommodating, affecting their assertiveness and self-confidence and leading to internalising emotions such as sadness and anxiety (Brody and Hall, 2008; Chaplin & Aldao, 2013; Rose & Rudolph, 2006). In Aboriginal children, Zubrick et al. (2005) show a higher prevalence of clinically significant emotional or behavioural difficulties among 4–11-year-olds than 12–17-year-olds (26.3% versus 20.5%). They also show a higher prevalence for males (27.3%) than females (20.5%). Lovett (2017), using LSIC data, also shows that being female is associated with lower social and emotional problems.

In this section's regression analyses, age is again found to have a significant association with social and emotional wellbeing both in the bivariate and multivariate regression analyses. As children age by a year, the odds of having normative SDQ scores increase by about 12% (OR 1.12; p=0.003). There also appears to be a gender differential in the social and emotional wellbeing of LSIC children: the odds of having normative SDQ scores is 58% larger for females than for males (OR 1.58; p<0.001).

Child physical health

LSIC data show that the proportion of Study Children with very good/excellent self-reported health was 45% at Wave 3 and 41% at Wave 12. The proportion of Study Children who reported having a physical health problem (such as eye, ear and skin problems and/or a disability, developmental delay and injury) decreased from 62% at Wave 3 to 55% at Wave 8 and 53% at Wave 11.

Physical health can be crucial for social and emotional wellbeing (Zubrick et al., 2005; Zubrick et al., 2014; Macniven et al., 2023). Study Children with good physical health tend to have more energy and vitality, making it easier for them to engage in social activities, connect with others, and offer support when needed. They also tend to have a positive self-image, which could lead to more assertive and positive social interactions. Conversely, low self-esteem or reduced mobility due to physical health conditions could reduce social participation, leading to social isolation. Pain or discomfort from illness and injury could lead

to frustration, irritability, and depression (Bernstein & McNally, 2018; Cheng et al., 2023; Park & Maner, 2009; Van Campen & Van Santvoort, 2013).

For Aboriginal children, Zubrick et al. (2005) show that physical health problems, such as challenges with asthma, speech, vision, disability and functional impairment are significantly associated with increased risks of having clinically significant emotional or behavioural difficulties. Using a cross-sectional analysis of data for Aboriginal and Torres Strait Islander youth aged 16–20 years living in the Top End of the Northern Territory, Jamieson et al. (2019) find that having poor oral health is a significant predictor of risk of mental health problems. Using data for Aboriginal children aged 4–17 years in urban New South Wales, Williamson et al. (2016) find that having good mental health is positively associated with having good physical health and eating two or more servings of vegetables daily. Lovett (2017) finds that children having very good/excellent overall health are less likely to be at a high risk of clinically significant social and emotional difficulties, whereas those experiencing health problems tend to experience social and emotional difficulties.

In our results, physical health status is found to have a statistically significant association with social and emotional wellbeing. Having a very good/excellent overall health status is associated with a 47% increase in the odds of having normative SDQ scores (OR 1.47; $p<0.001$). On the other hand, experiencing a health problem is associated with a 36% reduction in the odds of having normative SDQ scores (OR 0.64; $p=0.088$), though this is only statistically significant at the 10% level. The reduction is particularly large for children with a disability, 79% (OR 0.21; $p<0.001$).

Primary Carer socioeconomic status

This shows that between Waves 3 and 12, the proportion of the Primary Carers holding a non-school qualification more than doubled (from 25% to 51%). The proportion of the Primary Carer who were employed or had an employed partner increased from 55% to 69%. The importance of Primary Carer socioeconomic status (measured in such outcomes as education level, employment and income) for children's development is well documented (Tamura et al., 2020; Treanor & Troncoso, 2022). Higher socioeconomic status is often associated with better access to resources (such as healthcare and housing) and reduced life stressors, promoting positive development in children (Letourneau et al., 2013). Conversely, lower socioeconomic status can lead to increased life stressors such as financial strains, inadequate housing and transport, and limited access to health and recreational services. This leads to higher levels of stress and behavioural issues in children (Holtz et al., 2015; Steele et al., 2015).

Shepherd et al. (2012) found that there are lower risks of clinically significant social and emotional or behavioural difficulties among Aboriginal children in Western Australia whose Primary Carers have a job. They do not find a clear association between Primary Carer's education and children's social and emotional wellbeing. Lovett (2017) also finds a significant positive association between having an employed Primary Carer and having normative SDQ scores in Aboriginal and Torres Strait Islander children.

These regression results show a statistically significant association between Primary Carer socioeconomic status and children's social and emotional wellbeing. More specifically, having an employed Primary Carer (or partner) is associated with a 19% increase in the odds of normal social and emotional wellbeing (OR 1.19; $p=0.068$), though only significant at the 10% level. Primary Carer education is also found to have a positive association with social and emotional wellbeing in LSIC children. Having a Primary Carer holding a non-school qualification leads to a 27% increase in the odds of normal social and emotional wellbeing (OR 1.27; $p=0.016$). As can be seen, the estimated effect of Primary Carer education is smaller in the multivariate

analysis than in the bivariate analysis. This is mainly attributed to the inclusion of the Primary Carer/partner employment variable into the multivariate analysis, implying that Primary Carer education affects social and emotional wellbeing in children partly by enhancing Primary Carer employability.

Primary Carer health

Our analysis shows that the mean score of mental health for the LSIC Study Primary Carer slightly decreased from 24.6 (range: 9 to 28) at Wave 3 to 24 (range: 7 to 28) at Wave 12. Here, larger scores indicate better mental health conditions. The proportion of the LSIC Study Primary Carer with self-reported very good/excellent health decreased from 45% at Wave 3 to 41% at Wave 12. Theoretically and in the literature, parents experiencing poor health may find it difficult to adequately respond to the developmental needs of their children. For example, they may spend less time with their children (Iruka et al., 2012) and/or become more erratic in their use of discipline (Emmen et al., 2013; Kelly et al., 2013). This may pose feelings of neglect and abuse in children and lead to social and emotional problems (Young et al., 2011). Zubrick et al. (2005) and Shepherd et al. (2012) show that Aboriginal children whose Primary Carer suffers poor mental and physical health outcomes tend to be at a higher risk of clinically significant emotional or behavioural difficulties. A finding by Lovett (2017) shows a significant positive association between children's normative SDQ scores and the physical health of their Primary Carer.

The mental health of the LSIC Study Primary Carer is found to be a significant predictor of the social and emotional wellbeing of the LSIC Study Children. Noting that the LSIC Study Primary Carer's mental health is measured in standardised scores, these results show that a one-standard-deviation increase in the mental health score is associated with an 86% increase in the odds of normal social and emotional wellbeing in LSIC Study Children (OR=1.86; $p<0.001$).

The physical health of the Primary Carer is only significantly associated with normative SDQ scores in the bivariate analysis (OR 1.36; $p=0.001$). The relationship becomes statistically insignificant (OR 1.14; $p=0.127$) when the Primary Carer's education and the total number of major life events are included in the multivariate model.

Financial stress

In LSIC, the proportion of families who experienced at least one event of money shortage (such as not being able to pay utility bills, rent or mortgage) in the past 12 months was 45% at Wave 3 and 37% by Wave 12. The proportion of families having had serious money worries in the past 12 months remained stable, 31% at Wave 3 and 30% at Wave 12. By way of comparison, 40% of Aboriginal and Torres Strait Islander households in the Australian Bureau of Statistics' (ABS) National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) 2018–19 had days without money for basic living expenses in the 12 months preceding the survey. A further 54% could not raise $20,000 during an emergency.

Financial stress can have profound effects on social and emotional wellbeing in children. Financial difficulties diminish the material, emotional and relational resources of parents needed to foster positive social and emotional wellbeing in their children. Financially constrained parents not only struggle to provide nutritious food, safe housing and quality education to their children (Conger et al., 2010; Conger & Donnellan, 2007), but also become distressed and have their parenting style disrupted for having to juggle with inadequate resources and cutting back on basic expenses (Edwards et al., 2009; Kwon & Wickrama, 2014; Lee et al., 2013). Financial stress can also impact family dynamics, leading to conflict and tension in the family (Chzhen et al., & 2022). As a result, children may exhibit behavioural changes such as aggression, withdrawal, or difficulty concentrating. Zubrick et al. (2005), Shepherd et al. (2012) and Lovett (2017) show

that Aboriginal children of families facing financial difficulties are more likely to experience an elevated risk of clinically significant emotional or behavioural difficulties.

In LSIC Study Children, financial stress – measured as having to experience at least one event of money shortage – is inversely associated with social and emotional wellbeing. The odds of having normative SDQ scores decrease by 26% (OR 0.75; p=0.001) when the family experiences a shortage of money to meet basic financial commitments. Results obtained with an alternative measure of financial stress confirm the importance of families' financial circumstance as a key underlying factor for children's social and emotional wellbeing. In the Major Life Events module, the LSIC Study Primary Carer was asked whether their family had serious worries about money in the 12 months before the interview. Results from the analysis of their response in the multivariate model shows that the odds of having normative SDQ scores decrease by 30% (OR 0.70; p<0.001) when the family experience serious worries about money.

Major life events

LSIC data show that LSIC Families experienced different types of major life events in the past 12 months (see the list of life events in Appendix Table A35). The average number of major life events experienced was 4.1 (range: 0–13 events) at Wave 3 and 3.8 (range: 0–15) by Wave 12. At Wave 3, 97.4% of LSIC Families experienced at least one major life event; the proportion dropped to 93.1% by Wave 12.

Major life events, whether positive (such as getting a job or returning to study) or negative (such as death and illness of a family member), can pose changes to normal routines in the lives of parents and children. This can catalyse adaptive social and emotional responses (Garnefski et al., 2001; Obradović & Boyce, 2009). Events such as the death of a family member can cause grief and sadness. Illness can cause pain, discomfort and a limitation of daily activities which in turn motivate feelings of isolation, frustration, anxiety, and sadness.

Our regression result shows a statistically significant negative association between the number of major life events experienced by the family, and social and emotional wellbeing in children. On average, one additional major life event experienced at the family level leads to an 11% shrinkage in the odds of normal social and emotional wellbeing (OR 0.86; p<0.001).

Figure 21 depicts predicted probabilities of having positive social and emotional wellbeing along with 95% confidence intervals, where predictions were made at the mean values of the other predictor variables in the model. The probability continuously decreases as the number of major life events experienced by the family increases. For example, the probability of a child having positive social and emotional wellbeing is predicted to be 79% when no major life events are experienced, 63% when seven life events are experienced and 35% when 15 life events are experienced. The graph depicted in Figure 21 approximating a downward-sloping straight line means there is no diminishing return to the adverse effect of major life events (or at least for the number of events observed in the data).

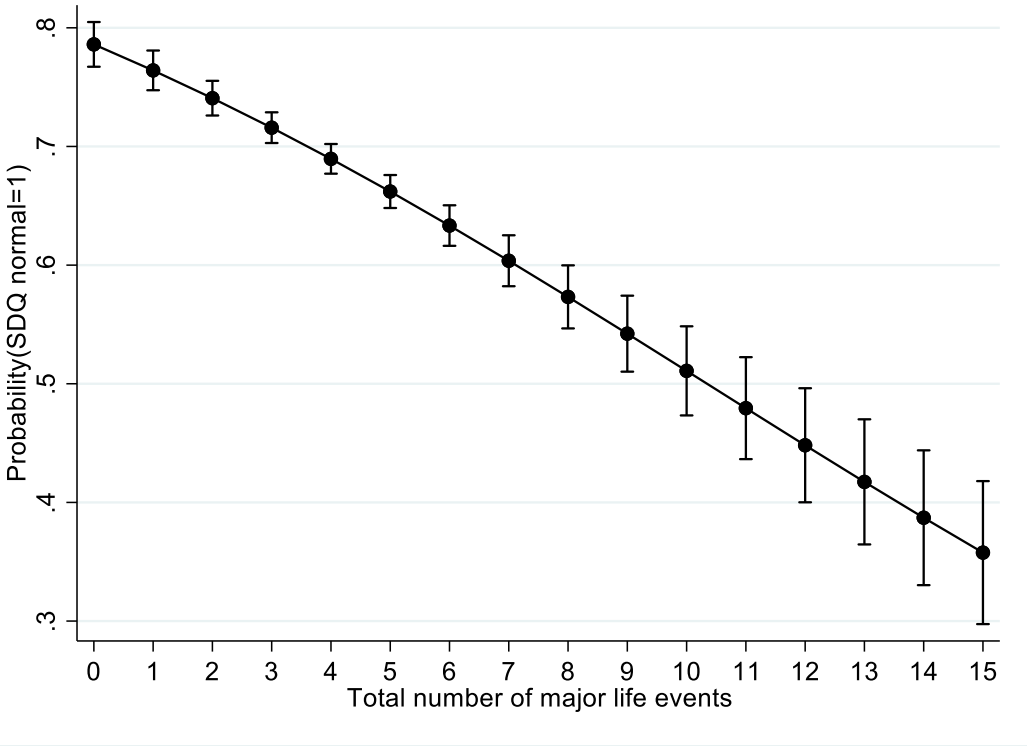

Figure 21: Predicted probabilities and 95% confidence intervals

We also conducted multivariate analyses using individual types of major life events. In the bivariate analysis, all but two life events (getting a job/returning to study and losing a job) have a statistically significant inverse association with social and emotional wellbeing. In the multivariate model however, only the following major life events have a statistically significant relationship with social and emotional wellbeing: the family being seriously worried about money (OR 0.72; ***p***<0.001); the Study Child or any other child of the Primary Carer being involved in or upset by family arguments (0.67; ***p***=0.001); the Study Child or any other child of the Primary Carer being badly scared by other people's behaviour (OR 0.59; ***p***<0.001);[23] the Primary Carer or a close family member having alcohol or drug problem (OR 0.81; ***p***=0.091); and, the Primary Carer or a close family member having problem with police or, being arrested/imprisoned (OR 0.82; ***p***=0.090).

Overall, these results suggest that not all major life events are equally important in influencing the social and emotional wellbeing of LSIC children. This shows that perhaps what matters more for a child's social and emotional wellbeing is the simultaneity of the events experienced rather than the type of event. Zubrick et al. (2005) identify multiple life events tend to be more difficult to cope with and prevent their flow-on effects on children than isolated events.

Housing problems

LSIC data shows that 12% of LSIC Study Primary Carers surveyed felt too crowded in their house, 19% moved house and 9% had 'housing problems' at Wave 6. By Wave 12 the proportion was 13% for overcrowding, 12% for moving house and 8% for having housing problems. The proportion of LSIC Study

[23] The LSIC data show that 15% of the Study Children were involved in or upset by family arguments and 18% were scared badly by other people's arguments.

Primary Carers considering moving house within the next 12 months was 27% at Wave 6 and 21% at Wave 12. The proportion of those who reported that their house needed major repairs was 35% at Wave 5 and 36% at Wave 8. Of the LSIC Study Primary Carers (66%) who live in houses that need major repairs, two-thirds find it difficult to get repairs done, with the most common reason being the landlord, council or housing commission taking a long time/too long to complete the repairs.

The prevalence of housing issues appears to have also dropped among the general Aboriginal and Torres Strait Islander population between 2012–13 and 2018–19, corresponding Waves 6–12 of the LSIC survey. The 2012–13 NATSIHS showed that 23% households lived in houses where at least one extra bedroom is needed, 40% lived in houses with at least one major structural problem and 22% lived in houses with two or more major structural problems. By 2018–19, NATSIHS showed improvements, with 18% of households needing at least one extra bedroom, 36% living in houses with at least one major structural issue, and 19% in houses with two or more major structural problems.

Housing conditions can be a major underlying factor for social and emotional wellbeing in children. Children in good quality housing are less likely to experience stressors related to inadequate living conditions. These include overcrowding or exposure to environmental hazards. They also may have more space for play and relaxation, which can support healthy social and emotional wellbeing. Stable housing conditions can foster a sense of stability and predictability, leading to improved behaviour and overall wellbeing in children. Conversely, poor housing circumstances, such as overcrowding, inadequate sanitation or exposure to environmental hazards, can lead to increased stress, anxiety and feelings of insecurity. Children living in substandard housing may also experience more frequent illnesses, which can further affect their emotional wellbeing. Unstable housing situations, such as frequent moves or homelessness, can disrupt a child's social connections and sense of stability and security. This can lead to behavioural issues like aggression or withdrawal (Baker et al., 2016; Bratt, 2007; Dockery et al., 2015; Evans et al., 2001; Harker, 2007; Taylor & Edwards, 2012). For Aboriginal children too, home ownership, and stable and good quality housing conditions are found to be significantly associated with reduced social and emotional difficulties (Shepherd et al., 2012; Zubrick et al., 2005).

These regression results show that housing is an important predictor of social and emotional wellbeing in LSIC children. Living in a family experiencing housing problems is associated with a 34% decrease in the odds of having normative SDQ scores (OR 0.76, ***p***=0.002). Results obtained with specific measures of housing problem confirm that poor housing conditions are among the major determinants of social and emotional wellbeing in LSIC children. For example, overcrowding is associated with a reduction in the odds of normative SDQ scores by 39% (OR 0.61; ***p***=0.001). Living in a house that requires major repairs has a very similar association (OR 0.61; ***p***=0.001)[24]. Interestingly, an expected future move of house is more consequential for children's social and emotional wellbeing than a past move. The odds of having normative SDQ scores decrease by only 8% (OR 0.92; ***p***=0.500), which is also statistically insignificant, if the family had moved house in the 12 months before the interview. However, they decrease by 24% (OR 0.76; ***p***=0.042) if the family is considering a house move in the coming 12 months. This is perhaps because, for children, future housing changes cause uncertainty and worries about leaving friends, changing schools or adapting to a new environment. Overall, these findings highlight the critical role of a quality home environment in fostering children's social and emotional development. Stable, safe and spacious housing is

[24] The most common problems around housing maintenance are highlighted in the next section.

essential for the healthy development of Aboriginal and Torres Strait Islander children as is creating a home environment free from financial stress, violence, and alcohol and drug abuse.

Connection to Culture

LSIC data show that the proportion of children who often/very often attended cultural events, ceremonies or sorry business was 39% at Wave 10 and 34% at Wave 12. Those who often/very often learned traditional practices such as collecting food or hunting was 39% at Wave 3 and 37% at Wave 12. Those who learned often/very often about traditional arts was 40% at Wave 3 and 36% at Wave 12. Furthermore, 53% of LSIC children surveyed at Wave 8 (2016) knew the name of their clan/tribe, 74% knew their people, and a further 46% knew their family stories and history. By way of comparison, the ABS 2014–15 National Aboriginal and Torres Strait Islander Social Survey (NATSISS) shows that 48% of Aboriginal and Torres Strait Islander children aged 3–17 identified with a clan, tribal or language group and 69% participated in selected activities (like fishing, gathering, hunting, making arts and crafts and performing music, dance or theatre) in the 12 months preceding the survey (ABS, 2016c).

Aboriginal and Torres Strait Islander cultures form a vital part of Indigenous identity, worldviews, and ways of living. Aboriginal and Torres Strait Islander peoples have repeatedly asserted connections between better life outcomes for First Nations individuals, families and communities and culture (see e.g., Cox et al., 2021; Gee et al., 2014; Lovett, 2017; Murrup-Stewart et al., 2021). For example, the Warlpiri-patu-kurlangu Jaru explain in their submission to the House of Representatives Standing Committee on Aboriginal and Torres Strait Islander Affairs National Inquiry into Language Learning in Indigenous Communities that (2012, p. 11):

> ***Knowing that our own language and culture play the biggest role in growing our spirit, our connection to our land and the stories of our grandmother and grandfathers. With our language we know where we belong, we know the names from our country and Jukurrpa (Dreaming stories and designs). Young people can't lead a good, healthy and happy life without this. Language and culture come first. When kids feel lost, and their spirit is weak then they can't learn well or be healthy. They need to feel pride in their language and culture and know that they are respected. That's the only way to start closing the gap.***

For young Aboriginal and Torres Strait Islander peoples, having a strong cultural identity and knowledge is found to be paramount for forming a sense of connection and belonging to family and community (Renshaw, 2019). This further enhances resilience, self-esteem and good mental health (Dudgeon & Walker, 2010; Smallwood et al. 2023). Murrup-Stewart et al. (2021), Yarning with 20 Aboriginal and/or Torres Strait Islander people aged 18 to 28 years and living in Narrm, find that Connection to Culture, acknowledgment and recognition of being Aboriginal and spending time on Country are precursors to the positive expressions of social and emotional wellbeing that include feeling safe, calm and happy. In particular, Fatima et al. (2022), using data from LSIC (Wave 8), showed that high scores on cultural identity (using a composite measure of feeling good about being Aboriginal and/or Torres Strait Islander in class, sharing things about being Aboriginal and/or Torres Strait Islander in class, feeling safe about being Aboriginal and/or Torres Strait Islander in class and wanting other people in class to know about being Aboriginal and/or Torres Strait Islander) and cultural knowledge (using a composite measure of participation in cultural events as well as learning about traditional practices and arts) are significantly associated with low scores on emotional and behavioural difficulties in Aboriginal and Torres Strait Islander children. Lovett (2017) shows that attending cultural events very often is positively associated with normative SDQ scores for Aboriginal and Torres Strait Islander children.

These regression results show that a one standard deviation increase in the cultural participation score (where higher scores indicate higher participation) is associated with a 20% (OR 1.12; ***p***=0.056) increase in the odds of normal SDQ scores. Though this is only significant at the 10% level. In comparison, a similar increase in the cultural knowledge score (where higher scores indicate higher cultural knowledge) is associated with a 43% increase in the odds (OR 1.43; ***p***=0.02).

Social relationships

Social relationships are pivotal in the development of the social and emotional wellbeing of children, acting as a fundamental pillar for identity formation and social learning. Positive interactions with peers, family members, and significant others offer vital opportunities for children to develop communication skills and the ability to understand and respond to the emotions of others. This fosters empathy, the sharing of emotional regulation and conflict resolution (Noble & McGrath, 2011; Rees, 2010). Positive relationships also significantly enhance a child's self-esteem and sense of belonging, reducing the risk of social and emotional difficulties (Haddow, Taylor, & Schwannauer, 2021). Evidence shows that children with high social competence (such as the ability to make friends and be accepted by peers) tend to exhibit high conflict resolution skills, positive affect and low aggression (Barry & Wigfield, 2002).

The role of social relationships in the development of social and emotional wellbeing for Aboriginal and Torres Strait Islander children cannot be overstated. In Aboriginal and Torres Strait Islander communities, family relationships serve as the primary conduit through which cultural identity, values, and social norms are transmitted (Walker & Shepherd, 2008). To the extent family encompasses extended family members, the closeness of family relationships provides children with a rich network of support. This bolsters a sense of collective identity, emotional security, and resilience (Gee et al., 2014; Miller et al. 2020; Milroy, 2014; Prout, 2012; Williamson et al., 2010).

LSIC data show that, at Wave 10, most Study Children reported having high social competence: always/mostly being able to make friends easily (78%); being able to get along with kids easily (75%); other kids wanting to be their friends (71%) and being liked by other kids (72%). At Wave 12, the respective proportions were 74%, 70%, 60% and 66%. In terms of closeness of relationships, the average number of people in ring 1 (the closest circle of relationship) was six (ranging from 0 to 21) at Wave 10 and five (ranging from 0 to 19) by Wave 12.

Our analysis shows a statistically significant association between the closeness of social relationships and social and emotional wellbeing. Having one more person in ring one of a child's relationship circle is also associated with a 6% (OR 1.06; ***p***=0.035) increase in the odds of having normative SDQ scores. Having a level of interpersonal skill is also associated with improved social and emotional wellbeing. More specifically, a one standard deviation increase in the social competence score is associated with a 35% (OR 1.35; ***p***=0.004) increase in the odds of having normative SDQ scores.

Bullying and racism at school

LSIC data show that, at Wave 3, 28% of children experienced bullying/unfair treatment in the past 12 months, of whom 16% were unfairly treated for being Aboriginal and Torres Strait Islander. The bullying/unfair treatment prevalence rates increased to 31% and 25%, respectively, by Wave 12. In the 2018/19 NATSIHS, 23% of Aboriginal and Torres Strait Islander peoples aged 15 years and over reported experiencing unfair treatment in the previous 12 months for being Aboriginal and/or Torres Strait Islander. The prevalence of racial discrimination is 24% for Aboriginal and Torres Strait Islander young people aged 15–17 years.

Both bullying and racism can lead to emotional disorders such as low self-esteem, anger, anxiety, and sadness. They can also promote maladaptive behavioural responses such as aggression, withdrawal and substance use (Bodkin-Andrews et al., 2012; Cave et al., 2019; Nyborg & Curry, 2003; Lodge & Feldman, 2007; Priest et al., 2013; Tobler et al., 2013). There is empirical evidence that bullying, and racism are detrimental for social and emotional wellbeing in Aboriginal and Torres Strait Islander children: Zubrick and colleagues (2005) show that frequent experience of bullying within school is associated with substance use and heightened levels of anger and sadness. Using a cross-sectional analysis of data for Aboriginal and Torres Strait Islander youth aged 16–20 years living in the Top End of the Northern Territory, Priest et al. (2011) find that having experienced racism is associated with poorer mental health. This includes anxiety, depression and suicidal behaviour. Cave et al. (2019), using pooled panel data from LSIC (Waves 2–8), show that first exposure to racial discrimination is positively associated with an increased risk of mental health problems in later years. The study highlights that the younger the exposure age is, the larger the effect. Macedo et al. (2019) also applied pooled-panel regression to LSIC data (Waves 6, 7 and 8) and find that exposure to racism is significantly associated with increased emotional or behavioural difficulties after one to two years. Shepherd and colleagues (2017), using LSIC data, find that being exposed to persistent racial discrimination is associated with having heightened levels of clinically significant emotional or behavioural difficulties.

In the present study, our analysis found that being bullied or unfairly treated is negatively and statistically significantly associated with social and emotional wellbeing. More specifically, the odds of normative SDQ scores are expected to shrink by 76% (OR 0.24; $p<0.001$) when a child is unfairly treated in general and by 70% (OR 0.30; $p<0.001$) when unfairly treated for being an Aboriginal or Torres Strait Islander person specifically.

Positive school environment

Most LSIC children reported experiencing a positive school climate at Wave 10: always/mostly their school is good for them (89%), has safe places (89%), has people they trust (83%), has people who help each other (82%) and helps them to learn (91%). The proportions are slightly lower at Wave 12, ranging between 76% for 'school[s] having people helping each other' to 84% for 'school helping Study Children to learn'.

Schools play a critical role in shaping children's social and emotional wellbeing. A positive school environment provides a safe, supportive, and inclusive space where children can thrive not just academically but also culturally, socially and emotionally (Aldridge et al., 2016; Lester & Cross, 2015; Kutsyuruba, Klinger, & Hussain, 2015). It promotes positive relationships among students and between students and teachers, fostering a sense of belonging and support (Bonell et al., 2013; Markham & Aveyard, 2003; Prati et al., 2018). A good school climate also encourages diversity, empathy, respect, and cooperation and reduces bullying, racism, aggression, and stress. Together this thereby improves social and emotional outcomes (Durlak et al., 201; Modin et al., 2018).

There is a small but growing body of qualitative evidence that links positive school environments with a strong sense of identity, resilience and good mental health for Aboriginal and Torres Strait Islander children and youth (Brown & Shay, 2021; Rabaa, 2010; Renshaw, 2019). In the present study, we found a positive association between self-reported school climate and social and emotional wellbeing, where a one-standard-deviation increase in the positive school climate score is associated with a 42% (OR 1.42; $p<0.001$) increase in the odds of normative SDQ scores. This suggests that positive school environments which foster a sense of safety and belonging can provide protection against the adverse effects of negative school environments where bullying and racism are prevalent.

Local area socioeconomic status

The social and economic conditions of the area where children live can impact their development in various ways. For example, children growing up in low socioeconomic status areas may have limited access to essential services for their overall development (such as healthcare and recreational facilities). They may also experience adverse childhood conditions such as poor family functioning, negative peer influence and unstable living conditions, all of which can have communicative adverse effects on their social and behavioural development (Edwards & Bromfield, 2009; Fan & Chen, 2012; Schneiders et al., 2013; Singh & Ghandour, 2012). For Aboriginal children, Shepherd et al. (2012) show that children who live in more disadvantaged areas are at a higher risk of developing clinically significant social and emotional difficulties than those who live in less disadvantaged areas.

LSIC data show that, at Wave 3, 55% of LSIC children lived in areas with the bottom 40% of the IRSAD and 3% lived in areas in the top 40% of the index. By Wave 12, 54% of children lived in areas in the lowest 40% of the IRSAD, and 4% lived in areas in the top 40% of the IRSAD, implying a slight decrease over time in the level of area-level disadvantage that LSIC children are facing. These regression results confirm that local-level socioeconomic advantages/disadvantages could play a vital role in shaping the social and emotional wellbeing of children. Our analysis found that living in areas with greater advantage (lower disadvantage) is associated with a higher chance of having positive social and emotional wellbeing (OR 1.08; ***p***=0.012).

Figure 22 presents predicted probabilities along with 95% confidence intervals, where predictions were made at the mean value of all the other predictor variables. The probability of having normal social and emotional wellbeing becomes higher when there are more (less) local-level socioeconomic advantages (disadvantages); for example, 68% in most disadvantaged/least advantaged areas compared to 75% in most advantaged/least disadvantaged areas.

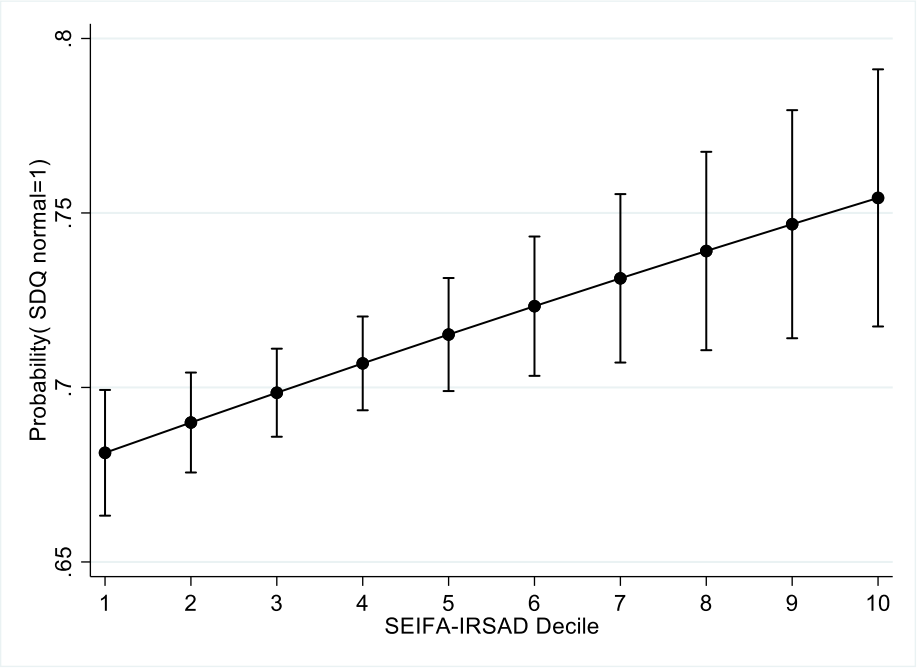

Figure 22: Predicted probabilities of living in the relative socioeconomic advantage and disadvantage areas and 95% Confidence Intervals

Area remoteness

According to the ABS, the area remoteness variable provides a relative measure of geographical access to services, where an area's access to services decreases as the remoteness of the area increases (ABS, 2016a). In this context, we expected geographic remoteness to have a complex relationship with social and emotional wellbeing in Aboriginal and Torres Strait Islander children. On the one hand, living in remote areas could mean having limited access to services, making it challenging for children to receive the social and emotional support they need, thereby leading to stress and anxiety (Kelly et al., 2009). On the other hand, living in remote areas could mean greater access to Country and stronger community ties and cultural connections (ABS, 2016c). This promotes resilience and positive social and emotional wellbeing in children. Using an index of relative isolation, which is similar to the ABS's measure of area remoteness and access to services, Zubrick et al. (2005) find an inverse association between living in areas of extreme isolation and risk of clinically significant emotional or behavioural difficulties, where children in most isolated areas of Western Australia were 83% less likely to be at a high risk of clinically significant emotional or behavioural difficulties than were their counterparts in the Perth metropolitan area.

The LSIC data shows that 27% of Study Children lived in major cities, 25% in inner regional areas, 12% in outer regional areas, 13% in remote areas and 21% in very remote areas at Wave 3. The sample was clustered around non-remote areas by Wave 12, where 29.5% of children lived in major cities, 25% in inner regional areas, 17% in outer regional areas, 10% in remote areas and 18.5% in very remote areas.

These regression results do not show a clear association between geographic remoteness and social and emotional wellbeing in LSIC children. Living in outer regional areas and social and emotional wellbeing are positively associated in both the bivariate and multivariate analyses, but only marginally statistically significant in the latter. Living in very remote areas and social and emotional wellbeing are negatively

associated in the bivariate analysis (though only significant at the 10% level) but positively associated in the multivariate analysis (though not statistically significant).

Conclusion

Evidence shows that social and emotional wellbeing is pivotal for achieving successful life outcomes both during childhood and later in life. Children with normative social and emotional wellbeing tend to form strong social relationships, perform better academically and be less involved in risky behaviours. The LSIC data show that about two-thirds of children (67%) are within a normative range of social and emotional wellbeing trajectory, and about one-fifth (19%) are at a high risk of clinically significant emotional or behavioural difficulties. This study examines the factors that are significantly associated with social and emotional wellbeing using five waves of data from LSIC. Social and emotional wellbeing is measured by SDQ scores, where being at a low risk of clinically significant emotional or behavioural difficulties (or having SDQ scores 1–13) is considered a positive social and emotional wellbeing. The analysis included various child, family, and community characteristics as predictor variables. Mixed-effects logistic regressions were used to identify the factors that significantly predict social and emotional wellbeing while accounting for child-level unobserved confounders.

Several child, family and community factors feature significantly as predictors of social and emotional wellbeing. Child demography, health, Connection to Culture, and social relationships are found to have significant association with social and emotional wellbeing. In particular, having very good/excellent overall health is significantly associated with an increased level of social and emotional wellbeing. Having a health problem on the other hand is associated with reduced wellbeing. The deleterious effect of having poor health is particularly strong in the case of disability. Connection to Culture (measured by participation in cultural practices and knowing one's own family identity) is positively associated with improved social and emotional wellbeing, as are high levels of interpersonal skills and closeness of relationships.

Family-level factors associated positively with social and emotional wellbeing include education of the Primary Carer, mental health of the Primary Carer and employment of the Primary Carer or their partner. Those factors negatively associated include financial stress, housing problems and exposure to stressful life events. Financial stress, whether in the form of being seriously worried about money or running short of money for basic necessities, is found to have a strong direct effect on social and emotional wellbeing. Similarly, the impact of housing is multidimensional. Overcrowding, poor housing quality and a lack of housing stability contribute to poor social and emotional wellbeing. These findings show that, although LSIC families might experience as many as 13 different major life events in a year, only events such as serious worries about money and family fighting/arguments are found to strong negative association with social and emotional wellbeing independently of factors such as child health and demography, Primary Carer socioeconomic status, and geographic remoteness. Generally, while LSIC families appear to have absorbed the adverse effects of many of the individual life events, the social and emotional wellbeing of children tends to diminish as the number of major life events experienced increases. Overall, the findings underscore the pivotal role of a high-quality home environment in nurturing children's social and emotional development. Providing stable, safe, and spacious housing is essential for supporting the healthy growth of Aboriginal and Torres Strait Islander children. Equally important is, creating a home environment devoid of financial stress, violence, and alcohol and drug abuse.

Social and emotional wellbeing in LSIC children appears also to be influenced by local area and school contexts. Living in areas with greater socioeconomic advantage is positively and significantly associated with higher social and emotional wellbeing. Learning in a positive school environment (e.g., where children

feel safe and supported) is also found to have a strong and independent positive effect on social and emotional wellbeing in children. On the contrary, being bullied and being racially discriminated against at school pose adverse effects on social and emotional wellbeing.

Overall, this study highlights the development of social and emotional wellbeing in LSIC children is determined by a combination of both risk and protective factors. The ongoing and widespread socioeconomic disadvantage and racism that Aboriginal and Torres Strait Islander people face (Hunter et al., 2022) underscores the critical role of financial stress, poor housing conditions, and school-based racial discrimination as risk factors for social and emotional wellbeing in LSIC children. Though the present study has not explicitly explored the transmission mechanisms through which these risk factors impact children's social and emotional wellbeing, previous studies in Australia suggest that 'poor parenting quality', social disruption, and stress are the most likely transmission links (Bailie et al., 2014; Buergelt et al., 2017; Butterworth et al., 2010; Cave et al., 2019; Dockery, 2022; Shepherd et al., 2019). On the other hand, Connection to Culture, interpersonal skills, positive school climate, and family and socioeconomic status are prominent protective factors. These may even perhaps overturn the adverse effects of risk factors. While better socioeconomic status promotes healthy family functioning and creates access to services – including mental health services (Khaman, 2016; Vu et al., 2018) – positive school environments celebrate diversity and inclusion. This thereby discourages bullying and racism and fosters a sense of safety and belonging for children to achieve positive social and emotional wellbeing (Richmond, 2012; Riekie et al. 2017). Active participation in cultural practices and knowing about one's own history and culture are also said to solidify a sense of identity, belonging and pride that support positive wellbeing development (Butler et al., 2019; Murrup-Stewart et al., 2021).

The findings emphasise that enhancing the social and emotional wellbeing of Aboriginal and Torres Strait Islander people, as outlined in the National Agreement on Closing the Gap Life Outcome 14 (Commonwealth of Australia & Coalition of the Peaks, 2020), requires improvements in the other outcome areas of the agreement. Specifically, in the areas of employment (Life Outcome 8), housing (Life Outcome 9), contact with the criminal justice system (Life Outcome 10 and 11), family safety (Life Outcome 13) and language and culture (Life Outcome 16). For these reasons, policies and interventions should continue to focus on improving the socioeconomic conditions of Aboriginal and Torres Strait Islander families, creating supportive and safe school environments and tackling bullying and racism. They should also focus on supporting Aboriginal and Torres Strait Islander children to develop strong cultural and social connections.

Tables

Table 17: Summary of SDQ total difficulties scores

Wave	Mean	Standard deviation	Min	Max
3	12.3	5.7	0	32
6	11.5	6.3	0	32
8	11.0	6.1	0	34
10	10.7	6.2	0	35
12	10.0	6.3	0	35
Overall	11.1	6.1	0	35

Table 18: Regression results with main predictor variables

	Bivariate analysis			Multivariate analysis		
Variable	OR		SE	OR		SE
Age	1.10	***	0.01	1.12	***	0.04
Gender	1.53	***	0.17	1.58	***	0.18
Study Child health	1.67	***	0.16	1.47	***	0.15
Primary Carer/partner employment	1.48	***	0.13	1.19	*	0.11
Primary Carer education	1.51	***	0.14	1.27	**	0.13
Primary Carer mental health	1.96	***	0.09	1.86	***	0.10
Primary Carer physical health	1.36	***	0.13	1.14		0.13
Financial stress	0.55	***	0.04	0.75	***	0.07
Housing problems	0.72	***	0.06	0.76	***	0.07
Number of life events	0.85	***	0.01	0.86	***	0.02
Practicing culture	1.15	*	0.10	1.20	*	0.11
Cultural knowledge	1.26	**	0.14	1.42	***	0.17
Closeness of relationships	1.05	**	0.03	1.06	**	0.03
Interpersonal skill	1.55	***	0.13	1.34	***	0.13
Bullying and racism						
Bullying	0.30	***	0.04	0.24	***	0.04
Racism	0.35	***	0.07	0.30	***	0.08
School climate	1.55	***	0.13	1.42	***	0.14
IRSAD	1.08	***	0.02	1.06	**	0.02
Area remoteness						
Inner regional areas	1.06		0.15	1.04		0.15
Outer regional areas	1.19		0.19	1.32	*	0.22
Remote areas	0.76		0.14	0.92		0.18
Very remote areas	0.76	*	0.12	1.07		0.19

Note: *** Statistically significant at the 1% level; ** significant at the 5% level; * significant at the 10% level. For the multivariate analysis, full regression results are presented in the Appendix. IRSAD = Index of Relative Socioeconomic Advantage and Disadvantage, OR = odds ratio, SE = standard errors.

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Section Five:

Self-harm and Suicidal Behaviours Among LSIC Study Youth: Examining the Role of the School Environment

Section Five: Self-Harm and Suicidal Behaviours Among LSIC Study Youth – Examining the Role of School Environment

This section of the Report discusses and analyses data relating to self-harm and suicide. The authors acknowledge that each statistic presented here represents the experiences of a person. We acknowledge that some readers may find the topics discussed disturbing or distressing. If you or someone you know is feeling distressed or suicidal, please contact one of the following services:

During an emergency, call: 000

13YARN: 13 92 76

Kids Helpline: 1800 55 1800

Lifeline: 13 11 14 or 0477 13 11 14 (SMS)

Suicide Call Back Service: 1300 65 94 67

Beyond Blue: 1300 22 46 36

Key findings

- At Wave 14 (2021), 11% of LSIC Study Youth intentionally self-harmed in the 12 months prior to the interview, 7% considered taking their own life, 6% planed how to commit suicide and 4% attempted suicide.
- Females are more likely than males to experience self-harm and suicidal behaviours.
- Friends are the most common source of help for LSIC Study Youth who experience self-harm and thoughts of suicide. For LSIC Study Youth who do not experience self-harm and suicidal thoughts, parents are the most important source of help.
- About 11% of Study Youth and 13% of their Primary Carers reported that suicide is a big/very big problem in their community, with higher proportions in remote areas than in non-remote areas.
- Negative school experiences (e.g., bullying and racism at school) are risk factors for self-harm and suicidal behaviours, whereas positive school experiences (e.g., a sense of safety and support within school) are protective factors.

Introduction

Suicide is a serious public health concern for Aboriginal and Torres Strait Islander peoples. In 2021–22, death by suicide accounted for 4.6% of all deaths among Aboriginal and Torres Strait Islander peoples, and the rate of suicide was 2.5 times that of the non-Indigenous people (Australian Institute of Health and Welfare (AIHW), 2023a). The National Agreement on the Closing of the Gap has set out to achieve a significant and sustained reduction (towards zero) in the suicide of Aboriginal and Torres Strait Islander peoples as one of its key Life Outcome targets (Commonwealth of Australia & Coalition of the Peaks, 2020). Though suicide affects everyone and addressing the issue of suicide among the broader Aboriginal and Torres Strait Islander population is critical, young people are at particularly high risk of suicide. Over

2018–2022, almost one-quarter of all deaths (22.0%) for Aboriginal and Torres Strait Islander persons aged 0–24 years were by suicide. This is compared with 19.2% for those aged 25–44 years, 2.3% for those aged 45–64 years, and only 0.2% for those aged 65 years and over (AIHW, 2023a). Suicide rates for Aboriginal and Torres Strait Islander youth are also much higher than the non-Indigenous population (16.0 per 100,000 population versus 5.2 per 100,000 population) (Australian Bureau of Statistics (ABS), 2023).

Aboriginal and Torres Strait Islander youth are also at an elevated risk of self-harm. In 2021–22, young Aboriginal and Torres Strait Islander peoples aged 15–19 had a much higher rate of hospitalisation for self-harm than the broader Aboriginal and Torres Strait Islander population at 710 and 326 hospitalisations per 100,000 population, respectively (AIHW, 2023a).[25] Whilst there is paucity of evidence for the young peoples, for the broader Aboriginal and Torres Strait Islander population, self-harm is generally found to be associated with subsequent suicide (ABS, 2019; Leckning et al., 2023; Rouen et al., 2019; Shepherd et al., 2018). In 2018, intentional self-harm was the fifth highest cause of injury-related deaths in the Aboriginal and Torres Strait Islander population (ABS, 2019).

Significant gender differences exist in self-harm and suicide rates within the general Aboriginal and Torres Strait Islander population. In 2022, the suicide rate for males was 3.3 times higher than for females, with 46.3 and 14.0 deaths per 100,000 people, respectively. Conversely, females experienced 1.6 times the rate of hospitalisations for intentional self-harm compared to males (359.8 versus 227.8 hospitalisations per 100,000, respectively). This gender disparity in self-harm risks is even more pronounced among young people, with females aged 15–19 years being 3.6 times more likely than their male peers to be hospitalised for intentional self-harm (AIHW, 2023a).[26]

Although the immediate motivation for suicide varies, both theory and evidence suggest that suicidal behaviour emerges in a complex interaction between an individual's characteristics, life experiences, and broader sociocultural contexts that embed their life (AIHW, 2022; Christensen et al., 2014; Chu et al., 2010; Klonsky et al., 2018; Milner et al., 2012; Van Orden et al., 2010). For Aboriginal and Torres Strait Islander peoples, suicidal behaviour is closely associated with factors including historical trauma, unresolved grief, socioeconomic disadvantage, racial discrimination, loss of culture, geographical isolation, poor mental health, and substance use (AIHW, 2022; Shepherd et al., 2018). Among Aboriginal and Torres Strait islander youth, suicidal behaviour is associated with history of incarceration, racism, poor oral health, loss and grief, substance use and emotional distress (Dickson et al., 2019; Islam et al., 2022; Jamieson et al., 2011; Priest et al., 2011; Zubrick et al., 2005).

Theories of suicide suggest that suicidal behaviour tends to be more prevalent in environments where individuals feel unsafe, socially disconnected and experience anomie and violence (Chu et al., 2010; Klonsky et al., 2018; Van Orden et al., 2010). In this context, schools can play a unique role in shaping suicidal behaviour among youth and young people. Schools are one of the places where children and young people spend a significant amount of their time (Poland & Ferguson, 2022). Schools are also important places for forming relationships and using services that may not be easily accessible elsewhere (Aldridge et al., 2016; Kutsyuruba et al., 2015). Thus, the quality of the school atmosphere that youth and young people experience can be a major influence on their day-to-day life, wellbeing and risk of suicide.

[25] https://www.aihw.gov.au/suicide-self-harm-monitoring/data/populations-age-groups/intentional-self-harm-hospitalisations-indigenous

[26] Gender disaggregated suicide rates were not available specifically for young people.

In Section Four, we have shown that a positive school climate is a protective factor for social and emotional wellbeing. Conversely, bullying and racism at school are risk factors. A growing body of international evidence further shows that learning in a positive school environment protects children and young people against self-harm and suicidal behaviours (e.g., Le Salle et al., 2017; Li et al., 2016; Klemera et al., 2017; Pfledderer et al., 2019). Little is known however as to whether suicide risks among Aboriginal and Torres Strait Islander youth are linked with school factors. Using data from The Longitudinal Study of Indigenous Children (LSIC), this study Section Five provides a first glimpse into the association between various school contextual factors and self-harm and thoughts of suicide. The section also provides a brief overview of the prevalence of self-harm, suicidality and help-seeking behaviours in LSIC Study Youth.

Prevalence of self-harm and suicidal behaviours

The prevalence of self-harm and suicidal behaviours among LSIC Study Youth is presented in Table 19.

Panel A summarises data for 433 LSIC Study Youth in the K cohort interviewed at Wave 11. About 9% (37 Study Youth) reported deliberately hurting themselves without intending to end their life. Of LSIC Study Youth in the K cohort, 5% (21 Study Youth) reported that they had thought about taking their own life; and of this group, 11 Study Youth made plans about taking their life and five attempted to take their own life. Approximately 16% of LSIC Study Youth in the K cohort had friends who deliberately hurt themselves and 8% had friends who attempted suicide.

Panel B summarises data for 709 LSIC Study Youth from both cohorts (B cohort=412; K cohort =297) interviewed at Wave 14. Almost 11% (76) reported deliberately hurting themselves without intending to end their life. Of the combined B and K cohorts, 7% (51) had thought about taking their own life. Of those with suicidal thoughts, 33 made plans about taking their life and 23 attempted to take their own life. Combining both B and K cohorts of LSIC Study Youth, approximately 20% of LSIC Study Youth had friends who deliberately hurt themselves and 9% had friends who attempted suicide.

There are discernible gender disparities in the prevalence of self-harm and suicidal behaviours, see Figure 23.

At Wave 11, females were 3.6 times and 3.2 times more likely than males to self-harm and to consider taking their own life, respectively. They were also 4.7 times and 1.6 times more likely to make plans about taking their own life and to attempt suicide, respectively. At Wave 14, females were 1.5 times and 1.9 times more likely than males to intentionally self-harm and to consider taking their own life, respectively. They were also twice as likely to plan about taking their own life and to attempt suicide. Overall, the results suggest that self-harm and suicidal behaviours are more prevalent among females than males. By way of comparison, data for the general Aboriginal and Torres Strait Islander population indicates that, while the rate of hospitalisation due to self-harm is 1.8 times higher for females than males, males are much more likely (3.3 times) than females to die by suicide (AIHW, 2023b).[27]

[27] https://www.aihw.gov.au/suicide-self-harm-monitoring/data/deaths-by-suicide-in-australia/prevalence-estimates-of-suicidal-behaviours

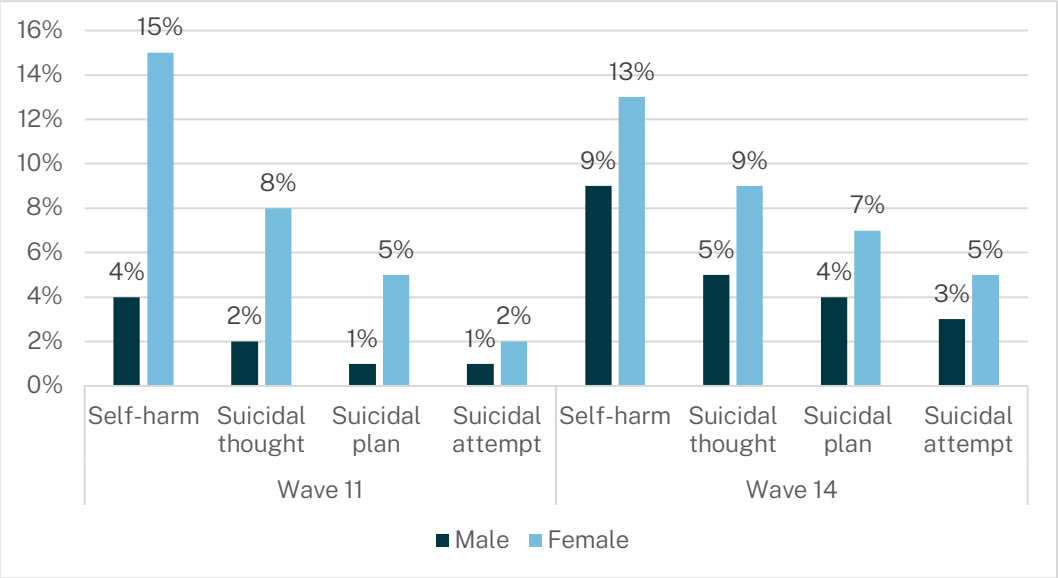

Figure 23: Prevalence of self-harm and suicidal behaviours, by gender

Note: The data at Wave 11 only includes K cohort Study Youth.

The LSIC data also provides information about community-level prevalence of self-harm or suicide problems. At Wave 14, both Study Youth and their Primary Carers were asked whether self-harm or suicide is a problem in their community. Table 20 summarises their responses. The Study Youth responses are presented in Panel A and Primary Carer responses are presented in Panel B. For the overall sample, approximately 11% of Study Youth reported that self-harm or suicide is a big/very big problem in their community and 30% said it is not a problem. A higher proportion of Study Youth reported that self-harm or suicide is big/very problem in remote areas (17%) than in regional areas (11%) and major cities (7%). Among Primary Carers, 13% reported that self-harm or suicide is a big/very big problem in their community and 35% reported that it does not happen in the community. The proportion of Primary Carers who reported self-harm or suicide being a big/very big problem is slightly higher in remote areas (about 16%) than in regional areas (14%) and in major cities (11%). By way of comparison, a higher proportion of Primary Carers than Study Youth reported self-harm or suicide as a big/very being problem in their community irrespective of remoteness.

Persistence of Self-harm and Suicidal Thoughts/Behaviours

Of the 433 LSIC Study Youth in the K cohort interviewed at Wave 11, 312 were reinterviewed at Wave 14. Table 21 presents the persistence of self-harm behaviour among LSIC Study Youth between Waves 11 and 14. While most Study Youth who self-harmed at Wave 11 did not do so at Wave 14, they were still more likely to engage in self-harm behaviour than their peers who did not self-harm at Wave 11 (40% versus 9%, respectively).

Study Youth who self-harmed in Wave 11 were also more likely than the Study Youth to consider taking their own life at Wave 14 (36% versus 7%). Among young people who did not consider taking their own life at Wave 11, 7% reported having had suicidal thought at Wave 14.[28]

Help-seeking Behaviour

The LSIC Study Youth were asked at Wave 11 and Wave 14 whether they had sought help for emotional or personal problems from other people in the 12 months before the survey. Over 90% of them had sought help.

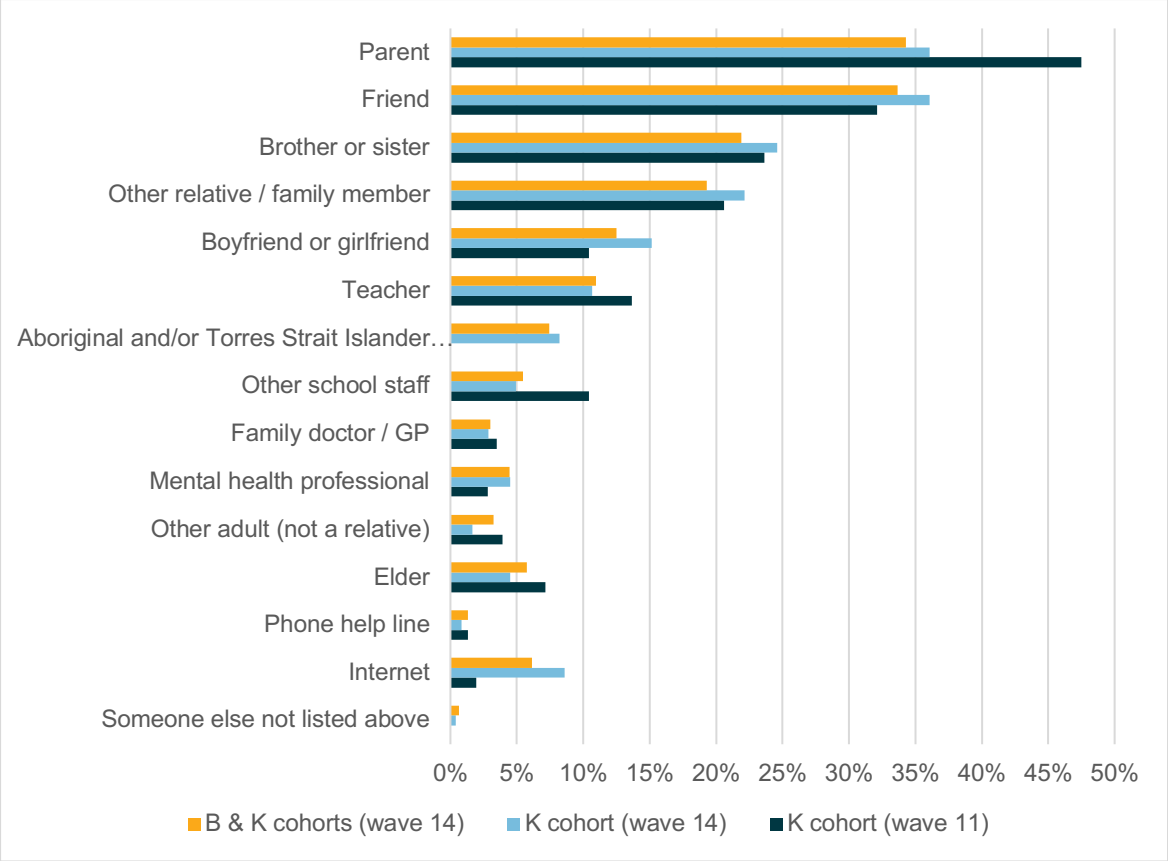

Figure 24 shows that parents were the most common source of help, followed by friends and brothers or sisters. A considerable proportion of LSIC Study Youth (over 10%) had also sought help from teachers, other school staff (including Aboriginal and Torres Strait Islander support workers) and boyfriends or girlfriends. The data for the K cohort reveals a shift in the sources of help as Study Youth aged. For instance, 36% of Study Youth sought help from their parents in Wave 14 (when aged 16–18 years), a decrease from 48% in Wave 11 (when aged 13–15 years). On the other hand, the percentage of Study Youth who sought help from friends increased slightly, from 32% in Wave 11 to 36% in Wave 14.

[28] The data were insufficient to analyse changes over time in the behaviour of young people who experienced suicidal thoughts during Wave 11.

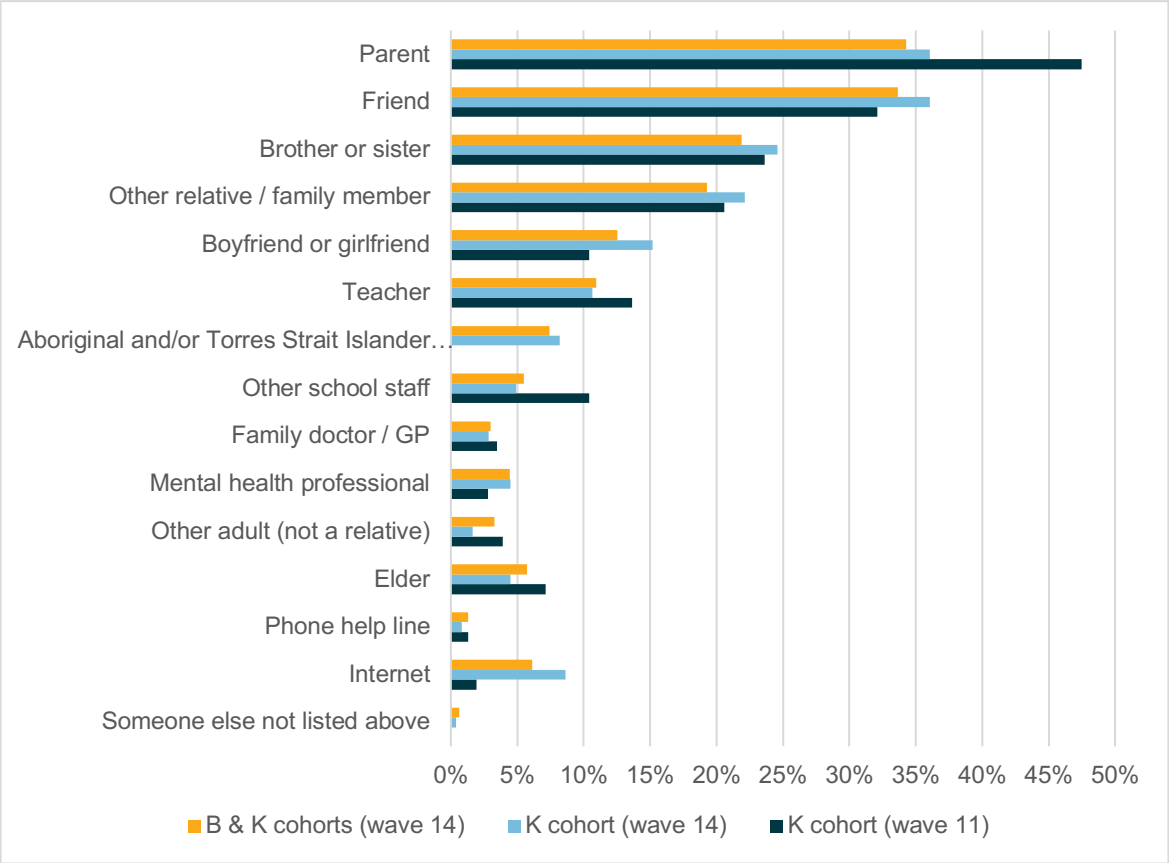

Figure 24: Sources of help for LSIC Study Youth with emotional or personal problem

Disaggregating the help-seeking data by experience of self-harm and suicidality shows that a considerable proportion of LSIC Study Youth who experienced self-harm (12%) and suicidality (14%) did not seek help. Among those who sought help, friends were the most common source of support as opposed to parents, as shown for the overall sample. The most common sources of help varied between individuals who had self-harmed and those who had not, as well as between those who experienced suicidal thoughts and those who did not (see Figure 25). For example, in Wave 14 (13–16 years of age), the three most common sources of help for Study Youth who self-harmed were friends (51%), parents (39%) and boyfriends or girlfriends (32%) and for those who did not did not self-harm were parents (35%), friends (32%) and brothers or sisters (21%). For Study Youth with suicidal thoughts the most common sources of help were friends (51%), parents (35%) and boyfriends or girlfriends (29%) whereas for those without suicidal thoughts were parents (37%), friends (34%) and brothers or sisters (23%).

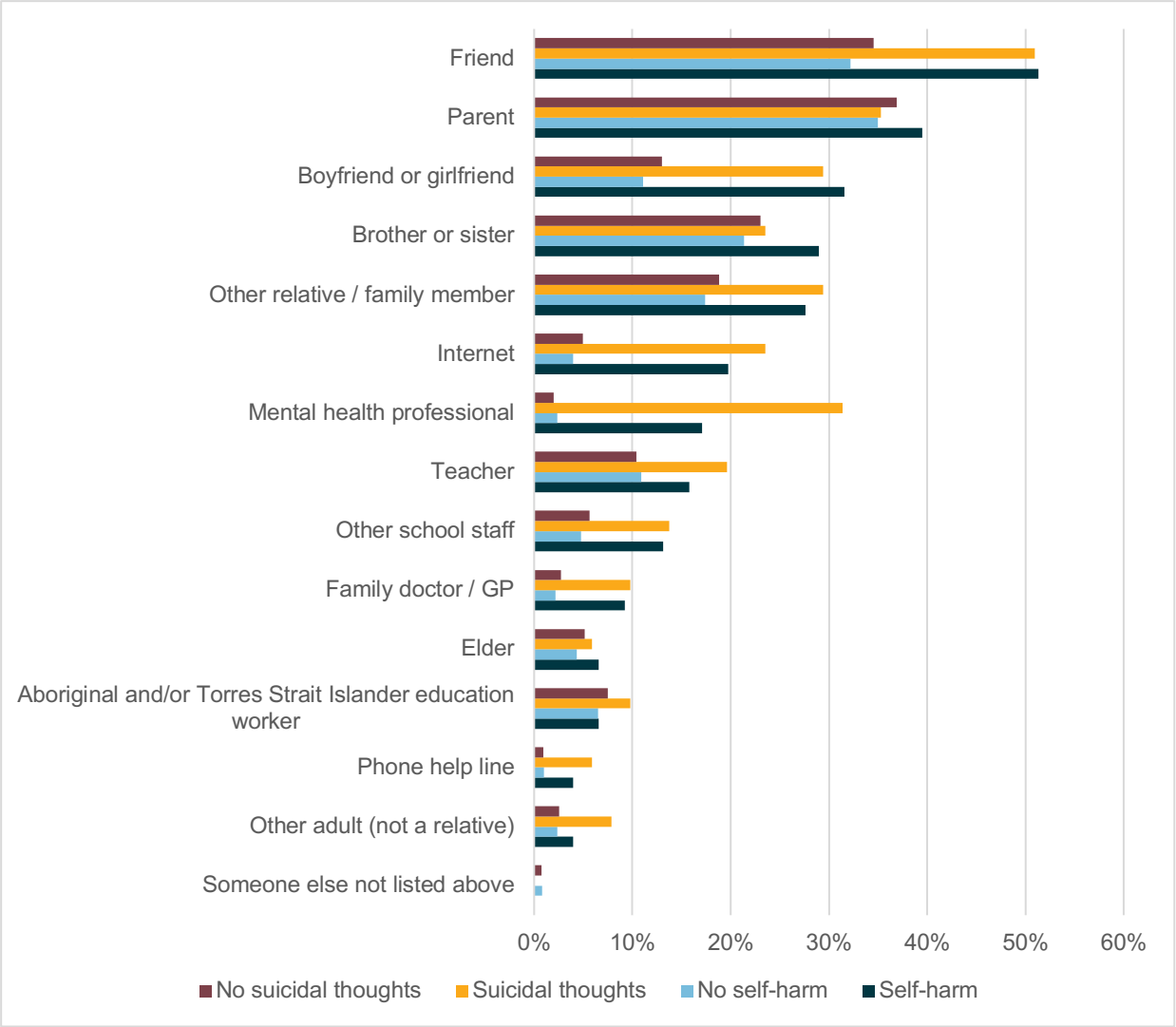

Figure 25: Sources of help by experience of self-harm and suicidal thoughts

Availability of Suicide Support Programs

The LSIC Study Primary Carers were asked if there are local programs that help young people who feel suicidal. Table 22 summarises their responses. Responses for the overall sample show that the three most common avenues for accessing suicide support programs are in schools (23%), over the phone (29%) and online (23%). Only 5% of Primary Carers mentioned that suicide support programs are available through Aboriginal Community Controlled Health Organisations (ACCHOs), and 13% reported that local programs are not available to support youth feeling suicidal. Disaggregating the data by area remoteness shows that the primary sources of support are similar in major cities and regional areas but different in remote areas, where clinics appear to be the most common sources of support, followed by hospitals and over-the-phone services. The absence of suicide support programs appears to worsen with remoteness; 20% of Primary Carers reported the absence of suicide programs in remote areas compared with 12% in regional areas and 8% in major cities.

The Role of School Environment

School environments can be pivotal in shaping self-harm and suicidality behaviours (e.g., Hatzenbuehler et al., 2014; La Salle et al., 2017; Moore et al., 2018; Poland & Ferguson, 2022). A positive school environment (a) promotes inclusivity, diversity, and positive relationships amongst students and between students and teachers (Aldridge et al., 2016 ; Kutsyuruba, et al., 2015; Thapa et al., 2013); (b) effectively prevents 'problem behaviours', including bullying, racism, violence and victimisation (Espelage & Hong, 2019; Greene, 2005; Modin et al., 2018; Rausch & Skiba, 2004); and (c) fosters a sense of identity, belonging, safety, cooperation, empathy and respect (Aldridge et al., 2016; Bonell et al., 2013; Jimerson et al., 2012; Markham & Aveyard, 2003; Prati et al., 2018). A nurturing school environment helps youth to develop vital life skills for managing emotion, building resilience, and coping with stress (Benard, 2004; Brown & Shay, 2021; Fallin et al., 2001; Henderson & Milstein, 2003; McNamara, 2012). It also provides a stimulating learning environment that enhances academic success and positive emotions including happiness and self-esteem (Devine & Cohen, 2007; Walsh & Eggert, 2007; Watson, 2001; Zheng et al., 2020).

On the other hand, negative school environments can exacerbate detrimental social relationships or social disconnections, fuelling problem behaviours like bullying, racism, violence and substance use. This may foster feelings of loneliness, fear, stress, anxiety and even hopelessness. Negative school environments may also fail to offer sufficient resources and support for students grappling with mental and emotional challenges.

The protective role of a positive school climate can be particularly important for children and young people from socioeconomically disadvantaged and minority backgrounds (Ancheta et al., 2021; McVittie & Ansloos, 2023; Moore et al., 2018). These groups often experience negative educational settings, such as bullying and low teacher expectation, but also poor mental health (Baxter & Hayes, 2012; Johnson, et al., 2019; Klein et al., 2012; Montoya-Ávila et al., 2018; Priest et al., 2012; Xu et al., 2020; Rausch & Skiba, 2004). They also tend to have limited opportunities to access essential services, such as meals and counselling services outside the school environment.

The experience of Aboriginal and Torres Strait Islander youth within the Australian school system are often marked by unique challenges and disparities rooted in a complex interplay of historical, cultural, and socioeconomic factors. Policies of assimilation and the trauma of the Stolen Generations have left a legacy of mistrust towards educational institutions (Beresford & Partington, 2003). Mainstream schools often do not reflect Aboriginal and Torres Strait Islander knowledge systems and values. Aboriginal and Torres Strait Islander students are often undervalued or misrepresented within school curricula, which frequently lack comprehensive coverage of Aboriginal and Torres Strait Islander histories and cultures, further perpetuating feelings of marginalization (Anderson et al., 2023). These students also encounter unique forms of bullying and racism perpetuated by societal attitudes and the legacy of colonisation as they manifest in negative stereotypes, exclusion from peer groups, and unfair or unequal treatment by both peers and, at times, teachers (Bodkin-Andrews et al., 2012; Bodkin-Andrews et al., 2017; Coffin et al., 2010; Moodie et al., 2019). In remote communities, the necessary culturally appropriate school resources to support a youth's academic, social, and emotional development are often too scarce (Schwab, 2018; Sullivan & Johnson, 2012; see also Table 22).

While recognising the systemic problems Aboriginal and Torres Strait Islander peoples collectively endure within the Australian school system, it is also essential to acknowledge that individualised experiences of and attitudes to the Australian school system can be different for different youth. While some youth may feel welcomed, supported and safe within their school, others may feel excluded, unsupported and unsafe.

For example, at Wave 14 of the LSIC survey, Study Youth were asked if they felt safe at school/where they study, and 52% responded always, 30% most of the time, 15% a little bit/fair bit and 3% not much/never. Results from the same wave show that 7% of youth were bullied/unfairly treated for being Aboriginal or Torres Strait Islander, 21% were bullied/unfairly treated regardless of their cultural identity, and 72% experienced neither bullying/unfair treatment nor racism.

The present study aims to examine whether differences in school experiences and perceptions are associated with differences in self-harm and suicidal behaviours among LSIC Study Youth.

Methods

Our analysis draws on Wave 14 data.

Outcome variables

Self-harm: In the past 12 months, whether the Study Youth deliberately did something to themselves to cause harm or injury without intending to end their own life in [Yes=1; No=0].

Suicidal thoughts: In the last 12 months, whether the Study Youth ever seriously considered attempting suicide [Yes=1; No=0].

Suicidal attempts: In the last 12 months, whether the Study Youth ever attempted suicide [Yes=1; No=0].

Main predictor variables

Supportive adults: Standardised factor scores were computed from responses to the following three questions: 'At school do you have an adult…: who really cares about you? who believes in you? who listens to you when you have something to say?' Possible responses were Always; Most of the time; Fair bit; Little bit; Not much; Never; Don't know; Refused.[29] The responses were reverse coded so that higher scores represent greater adult support.

Supportive friends: Standardised factor score computed from responses to the following three questions: 'At school do you have a friend…: who really cares about you? who believes in you? who listens to you when you have something to say?' Possible responses were Always; Most of the time; Fair bit; Little bit; Not much; Never; Don't know; Refused. The responses were reverse coded so that higher scores represent greater friend support.

Sense of safety: As indicated above, Study Youth were asked the question, 'Do/When you were going to school, did> you feel safe?' Possible responses were Always; Most of the time; Fair bit; Little bit; Not much; Never; Don't know; Refused. For the regression analysis, the variable is coded as, 1 if most of the time/always; 0 otherwise.[30]

Positive school climate: Standardised factor scores computed using five variables. Study Youth who were going to school or doing online or other education were asked, if the following were true: 'I feel proud of belonging to my school' ; 'I am treated with as much respect as other students'; 'The teachers respect me';

[29] For all the school context variables, the responses, 'Don't know' and 'Refused' are excluded from analysis.

[30] The number of responses in the 'Not much/Never' categories were very small (only 3%) thus had to be combined with the 'Little bit/Fair bit' categories to gain sufficient statistical power.

'There's at least one teacher or other adult in the school I can talk to if I have a problem'; 'My teachers understand how I talk'. Possible responses were Completely true; Somewhat true; Neither; Not very true; Not at all true; Don't know; Refused.

School racism: Study Youth were asked the question, 'In the last 12 months how often did you see other people being treated unfairly simply because they are Aboriginal and or Torres Strait Islander?'. Possible responses were Always; Most of the time; Fair bit; Little bit; Not much; Never; Don't know; Refused. Youth who responded always, or most of the time, or a fair bit, or a little bit, were asked a follow up question, 'Where does/did that happened?' For this analysis, we considered a youth as being exposed to school racism if they saw unfair treatment happening at school [Yes=1; No=0].

Teacher racism: A standardised score computed from responses to the following questions. In the last 12 months at school/TAFE, do you think: Teachers only noticed some students doing stuff wrong because they were Aboriginal or Torres Strait Islander Students; Teachers treated some students as if they were dumb because they were Aboriginal or Torres Strait Islander; Teachers did not care about the cultural needs of Aboriginal or Torres Strait Islander students; Teachers thought they knew everything about Aboriginal or Torres Strait Islander people even though they don't. Possible responses were Always; Most of the time; Fair bit; Little bit; Not much; Never; Don't know; Refused. Higher scores indicate higher levels of racism.

Experience of bullying and racism: The variable equals 1 if Study Youth had not been bullied or unfairly treated; 2 if Study Youth had been bullied or unfairly treated but not for being Aboriginal or Torres Strait Islander; 3 if Study Youth had been bullied or unfairly treated for being Aboriginal or Torres Strait Islander. This variable was derived from two bullying/racism variables. The first variable (ace50) shows whether the Study Youth had been bullied or treated unfairly at school. For Study Youth who was bullied or treated unfairly, the second variable (ace50a) shows whether the Study Youth had been bullied or unfairly treated because they are Aboriginal or Torres Strait Islander.

Control variables

Age of Study Youth in years.

Sex of Study Youth [1=male; 2=female].

Area remoteness [1 = non-remote areas; 2 = remote areas].

Number of major life events experienced by the family in the 12 months before the interview.

Analysis

Though the percentage of students who responded, 'Don't know' and 'Refused' to the self-harm and suicide questions are reported in Table 19 for the sake of completeness, the regression analysis only includes youth who responded either 'Yes' or 'No'. Logistic regressions were used to analyse the data. We adjusted the regression models for youth age, gender, remoteness and exposure to major life events. In particular, we expected that remoteness might confound the relationship between the variables of interest, given that access to services and cultural contexts vary across geographic remoteness. Similarly, major life events, such as the loss of a loved one, domestic violence, and family breakdown, can trigger self-harm or suicidal thoughts by inducing intense emotional pain and feelings of hopelessness or helplessness. However, for brevity and ease of analysis, we only adjusted the model for the total number of major life events experienced by the family instead of the types of individual life events experienced.

There was a significant drop in sample size in Wave 14. We ran a logit model where the outcome variable was whether a Study Child dropped out in Wave 14 after participating in Wave 12, to assess whether sample attrition in Wave 14 could bias our analysis. The model included school environment variables measured in Waves 10 and 12, and self-harm and suicide variables from Wave 11, along with controls for gender, age, exposure to major life events, and area remoteness. We found no statistically significant differences in the school environment variables; however, Study Children who dropped out in Wave 14 were more likely to live in remote or very remote areas (see Table A40, Columns 4 and 5). Therefore, since we account for geographic remoteness in our model, we do not expect sample attrition in Wave 14 to bias our point estimates.

Results

The mean age of Study Youth in the sample was 15 years (ranging from 13–18 years); females accounted for 51% of the sample; 75% of Study Youth lived in non-remote areas and 25% in remote areas; LSIC families experienced an average of three major life events in the past 12 months. Most Study Youth reported mostly/always having supportive adults (77%), supportive friends (~84%) and feeling safe at school (83%), see Figure 26. A relatively small proportion of Study Youth reported their teachers as being racist towards Aboriginal and Torres Strait Islander students (10%) and reported having seen other Aboriginal and Torres Strait Islander people being unfairly treated at school (13%), see I

Figure 27. We note that 28% of Study Youth were bullied or unfairly treated at school and a further 7% were bullied or unfairly treated for being Aboriginal and/or Torres Strait Islander.

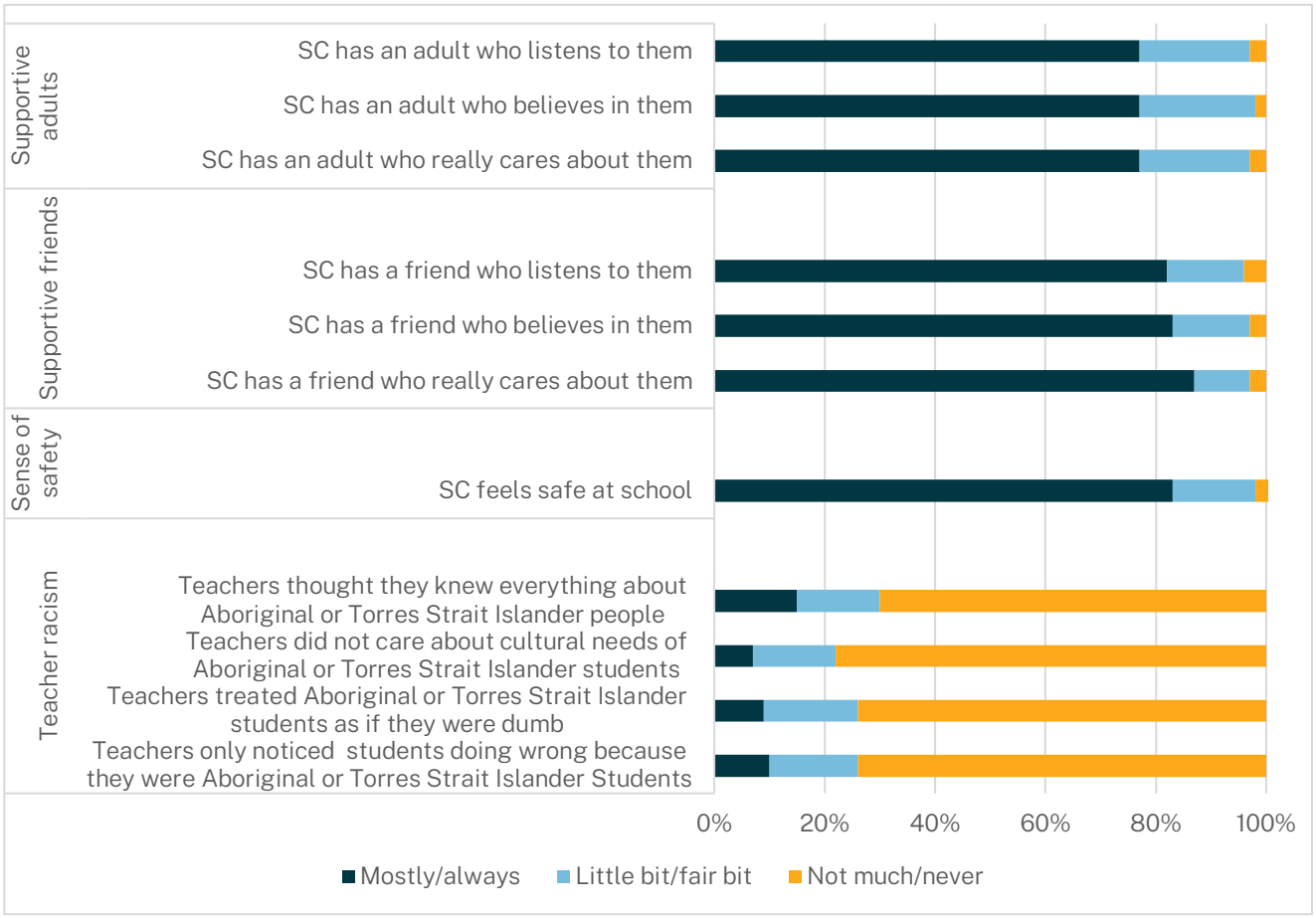

Figure 26: Proportion of LSIC Study Youth experiencing different school environments

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Figure 27 also shows that most Study Youth have had positive school experiences. For example, Study Youth have reported it is completely/somewhat true that they feel proud of belonging to school (78%), they are treated with as much respect as other students (84%), teachers understand how they talk (84%), they think teachers respect them (85%), and there's at least one teacher or other adult they can talk to about their problems (87%).

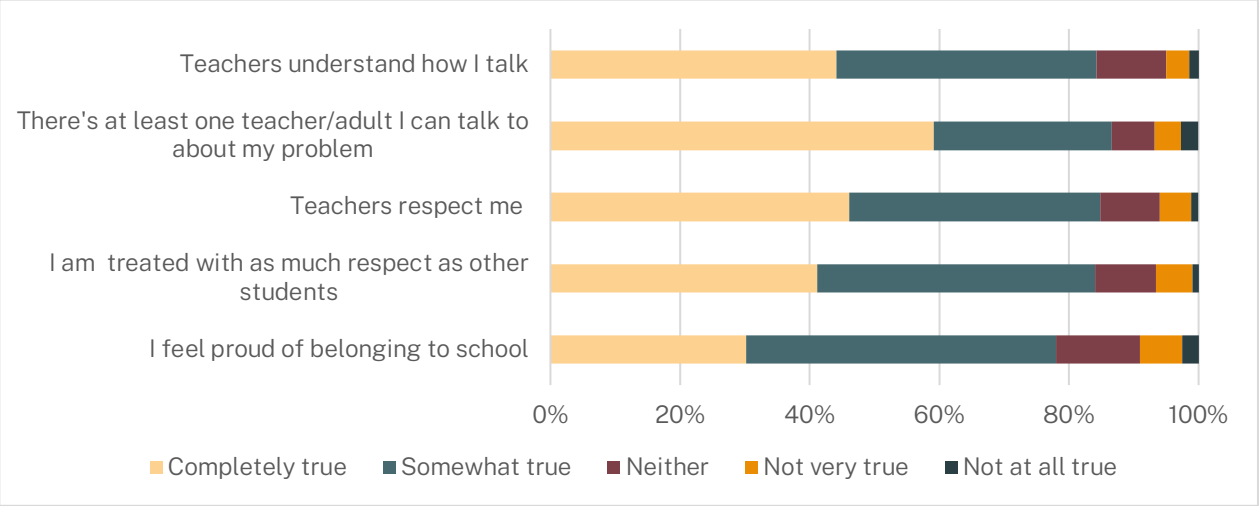

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Figure 27: Proportion of LSIC Study Youth with perceived school climate

In terms of a Study Youth's school climate, Table 23 presents the main regression results. The estimated odds ratios (OR) and their standard errors (SE) (in parentheses) are also reported. The interpretation of ORs is consistent with the interpretations of the previous section.

The first three columns show results from bivariate regressions where school context variables are included as the only predictors of self-harm and suicidal thought. The last three columns show results from multivariate regressions that include both the school context and the control variables. Separate multivariate logistic regressions were fitted for each school context variable.

The full regression results from the multivariate models are presented in the Appendix to Section Five. Table A37 shows results associated with self-harm. Model 1 presents partial correlations between the control variables and self-harm without the inclusion of school context variables. We note that being female and exposure to major life events appear to be risk factors for intentional self-harm. The odds of self-harm are 80% higher for females than for males. The occurrence of an additional major life event at the family level is associated with a 13% increase in the odds of self-harm. On the other hand, living in remote/very remote areas is found to have a significant protective factor for self-harm behaviours, as the results show that the odds of intentional self-harm are 85% lower for Study Youth who live in remote and very remote areas than their peers in major cities and regional areas. Table A38 shows results obtained with multivariate models of suicidal thought. Model 1 presents partial correlations between the control variables and suicidal thought without the inclusion of the school context variables. As in the case of self-harm, being female and exposure to major life events are risk factors for suicidal thoughts, whereas living in remote /very remote areas is a protective factor. Table A39 presents multivariate models of suicidal attempt. Model 1 presents partial correlations between the control variables and suicidal attempt without

the inclusion of the school context variables. Being female is associated with 142% increase in the odds of suicidal attempt, though only marginally significant. We did not find exposure to multiple life events to have statistically significant association with suicidal attempt. Living in remote/very remote areas is associated with a 71% reduction in the odds of attempting suicide. However, the association is not statistically significant, which is likely to be due to a loss of statistical power.[31]

The results are consistent with previous studies. Using data from Aboriginal youth who live at the top end of the Northern Territory, Priest et al. (2011) show that females aged 16–20.5 years are more likely than their male counterparts to experience higher suicide risks, such as wishing they were dead, feeling like hurting themselves and feeling like taking their own life. Zubrick et al. (2005), using a large sample of Aboriginal youth in Western Australia, find that females are more likely than males to self-harm and feel suicidal. Zubrick et al. also show that Aboriginal children in geographically remote/isolated areas experience lower levels of suicidal thought than those in the Perth Metropolitan area. It should be noted, however, that, among the general Aboriginal and Torres Strait Islander population, the rate of death by suicide is higher for males than females and higher in remote areas than in non-remote areas (AIHW, 2022, 2023a; Leckning et al., 2022).

In the Appendix to Section Five, we have listed other non-school factors that are found to have a statistically significant bivariate association with self-harm and suicidal thoughts.

Returning to the main results reported in Table 23, we note a statistically significant bivariate association between the school context variables and self-harm and suicidal behaviours. Only the association between having supportive friends and suicidal thoughts and the association between being racially discriminated against and suicidal attempts are statistically insignificant. However, the associations have the expected sign and are considerably large in magnitude. In particular, being racially discriminated against is expected to double the odds of attempting suicide. The association between school context variables and self-harm and suicidal behaviours remained largely unchanged in the multivariate analyses. Overall, the findings suggest that strong support within the school is a protective factor against self-harm and suicidal behaviours, as is a positive school climate. Having a sense of safety within school is also associated with a significant reduction in risks of self-harm and suicide. On the other hand, being exposed to school racism (i.e., seeing other Aboriginal and Torres Strait Islander people being unfairly treated at school), teachers being racist towards Aboriginal and Torres Strait Islander students and being bullied/unfairly treated, and being racial discriminated against are major risk factors for self-harm and suicidal behaviours.

To the best of our knowledge, this is the first study to examine the direct association between school environments and self-harm and suicidality in Australia and, more specifically, within Aboriginal and Torres Strait Islander contexts. The results are consistent with the growing body of research regarding the protective role of positive school environments in relation to student mental health in Australia (Aldridge et al., 2016; Chen et al., 2022; Lester & Cross, 2015; McNamara, 2012; Riekie et al., 2018) and the international literature on self-harm and suicide. For example, Pfledderer et al. (2019) find that in the United States suicidal ideation is significantly predicted by school contextual factors, such as missing school for perceived safety concerns at school, being bullied at school and being offered illegal drugs at school. Another United States study by Le Salle et al. (2017) shows that students who reported a more positive perception of school climate (which includes a measure of school connectedness, adult and peer support, and cultural acceptance) were less likely to report suicidal thoughts and behaviours. The authors

[31] Only a very small number of Study Youth (less than five) living in remote/very remote reported that they attempted suicide.

note that the protective role of school climate differs for different ethnic groups, with a relatively weak effect for African American students. Klemera et al. (2017), using a composite measure of sense of belonging at school (which includes the items, 'the students in my classes enjoy being together'; 'I feel like I belong in this school'; and 'I feel safe in this school') for a sample of adolescents in England, show that the likelihood of self-harming is significantly higher for adolescents having a lower sense of school belonging. Finally, Li et al. (2016), using a measure of school climate that includes the quality of teacher and peer support at school and school safety, found a negative association between perceived positive school climate and suicidal ideation among a sample of Chinese adolescents.

Conclusion

This section provides a brief overview of the prevalence of self-harm and suicidal behaviours, help-seeking behaviour and availability of suicide support programs. This section also examines the role of the school context and environment in predicting self-harm and suicidality using bivariate and multivariate regression analyses. Overall, in the 12 months before interview, about 9–11% of Aboriginal and Torres Strait Islander Study Youth surveyed had self-harmed, and 5–7% thought about taking their own life. More than one-quarter of those with suicidal thoughts attempted suicide. Females are more likely than males to self-harm and feel suicidal but less likely to attempt suicide.

We found that more than 90% of LSIC Study Youth had sought help from other people when faced with emotional or personal problems. Parents typically appeared as the most important source of help. Unfortunately, a considerable proportion of Study Youth who experienced self-harm (12%) and suicidality (14%) did not seek help. Of those that did, friends were the most important source of help. While most Primary Carers reported that support programs are available to young people feeling suicidal, the proportion is relatively low in remote areas.

Regression results show that being female and exposure to multiple major life events are associated with increased risks of self-harm and suicidality. Living in remote areas is, on the other hand, associated with reduced risks.

School contextual factors feature strongly in this analysis. We found that positive school experiences, such as a strong sense of support, belonging, respect and safety within school, are associated with reduced self-harm and suicidality risks. On the other hand, greater degrees of racism by teachers directed towards Aboriginal and Torres Strait Islander students, being bullied/unfairly treated and being racially discriminated against, and seeing other Aboriginal and Torres Strait Islander people being unfairly treated, are significantly associated with elevated self-harm and suicidal risks.

The identified protective and risk factors within school contexts provide important insights into the unique roles in building resilience and positively reshaping self-harm and suicide-related behaviours in Aboriginal and Torres Strait Islander youth. The importance of positive school environments has long been recognised as a key underlying factor for fostering engagement, retention and completion among Aboriginal and Torres Strait Islander students and there have been growing calls for the education system to adopt culturally-responsive curriculums and pedagogies, to eliminate racism, and to foster a sense of safety and belonging (Bodkin-Andrews et al., 2010; Daniels-Mayes, 2016; Lukey et al., 2024; Moodie et al., 2019; New South Wales Government Department of Education, 2022; Productivity Commission, 2022; Standing Committee on Aboriginal and Torres Strait Islander Affairs, 2010; Turner & Children's Ground, 2023). The findings in this study highlight that the benefits of creating a positive school environment for Aboriginal and Torres Strait Islander students can be far-reaching, extending beyond improvements in educational

outcomes. While the identification of specific best practices that help deter self-harm and suicidality in Aboriginal and Torres Strait Islander youth is beyond the scope of the present study, broader school-based initiatives could include eradicating bullying and racism, building teachers' cultural competence, fostering positive relationships, and supporting at-risk students.

Tables

Table 19: Prevalence of self-harm and suicide (%), Wave 11 (K cohort)

	Yes	No	Refused	Don't know
Panel A: Wave 11 (K cohort)				
SY ever deliberately hurt themselves	8.6	81.3	4.9	5.3
SY considered attempting suicide	4.9	85.5	3.7	6.0
SY's friends deliberately hurt themselves	15.5	57.6	8.3	18.5
SY's friends attempted suicide	8.3	74.8	3.2	13.6
Panel B: Wave 14 (B & K cohorts)				
SY ever deliberately hurt themselves	10.7	71.4	12.0	5.9
SY considered attempting suicide	7.2	77.4	10.8	4.7
SY's friends deliberately hurt themselves	19.9	48.2	10.9	21.0
SY's friends attempted suicide	9.3	61.0	10.3	19.4

Note: SY=Study Youth.

Table 20: Prevalence of self-harm or suicide as community problems (%)

Panel A: Study Youth responses (%)	Total	Major cities	Regional areas	Remote areas
Big/very big problem (happens a lot of the time/always)	10.5	6.7	10.6	17.2
Small problem (happens a bit of the time)	22.7	22.1	27.7	10.9
Not a problem (doesn't happen here)	30.1	36.7	29.7	22.7
Refused	8.1	2.1	3.3	28.1
Don't know	28.7	32.5	28.7	21.1
Panel B: Primary Carer responses (%)				
Big/very big problem (happens a lot of the time)	13.2	10.5	14.2	15.6
Small problem (happens a bit of the time)	19.6	22.7	27.0	16.9

Not a problem (doesn't happen here)	35.3	30.1	32.6	53.7
Refused	2.0	8.1	2.2	2.2
Don't know	30.0	28.7	24.0	11.7

Table 21: Persistence of self-harm behaviour

		Whether Study Youth self-harmed at Wave 14	
		Yes	No
Whether Study Youth self-harmed at Wave 11	Yes	40%	60%
	No	9%	91%

Table 22: Availability of suicide support programs

	Total	Major cities	Regional areas	Remote areas
At school (e.g., counsellor, mental health program)	23%	27%	23%	17%
Over the phone (e.g., kids helpline, lifeline)	29%	30%	33%	19%
Online (mental health online, eheadscape)	31%	30%	39%	17%
At ACCHO (includes Aboriginal Medical Service)	5%	4%	5%	5%
At Drs or clinic	14%	11%	11%	23%
At hospital	16%	11%	18%	20%
Local program or place	5%	5%	6%	6%
Local service available	1%	1%	1%	1%
Other	2%	1%	2%	2%
No	13%	8%	12%	20%

Note: The data are generated from multi-item responses and the percentages do not add up to 100%. ACCHO = Aboriginal Community Controlled Health Organisation. The organisations reported above, including 'eheadscape', are listed as they appear in the LSIC questionnaire.

Table 23: Regression results from logistic models of self-harm and suicidal behaviours

School context variable	Bivariate analysis			Multivariate analysis		
	Self-harm	Suicidal thoughts	Suicidal attempt	Self-harm	Suicidal thoughts	Suicidal attempt
Supportive adults	0.62***	0.72**	0.69*	0.68***	0.73**	0.65**
	(0.08)	(0.11)	(0.14)	(0.09)	(0.11)	(0.13)
Supportive friends	0.75***	0.86	0.75*	0.77**	0.82	0.72*
	(0.08)	(0.12)	(0.04)	(0.09)	(0.12)	(0.12)
Positive school climate	0.65***	0.60***	0.61**	0.56***	0.56***	0.59**

	(0.08)	(0.09)	(0.12)	(0.09)	(0.09)	(0.12)
Sense of safety	0.37***	0.42**	0.20***	0.35***	0.32***	0.14***
	(0.11)	(0.15)	(0.10)	(0.11)	(0.13)	(0.07)
School racism	1.91**	2.07**	2.33*	2.08**	2.34**	2.22
	(0.53)	(0.67)	(1.05)	(0.63)	(0.82)	(1.08)
Teacher racism	1.36**	1.40**	1.82***	1.37**	1.48**	1.91**
	(0.20)	(0.23)	(0.38)	(0.23)	(0.28)	(0.48)
Bullying and racism						
Bullying/unfair treatment	3.44***	3.7***	3.60**	3.26***	2.82**	3.36**
	(1.00)	(1.15)	(1.90)	(1.09)	(1.16)	(1.92)
Racial discrimination	2.31*	3.62**	2.54	2.05	2.85*	2.09
	(1.06)	(1.84)	(2.08)	(1.00)	(1.56)	(1.79)

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

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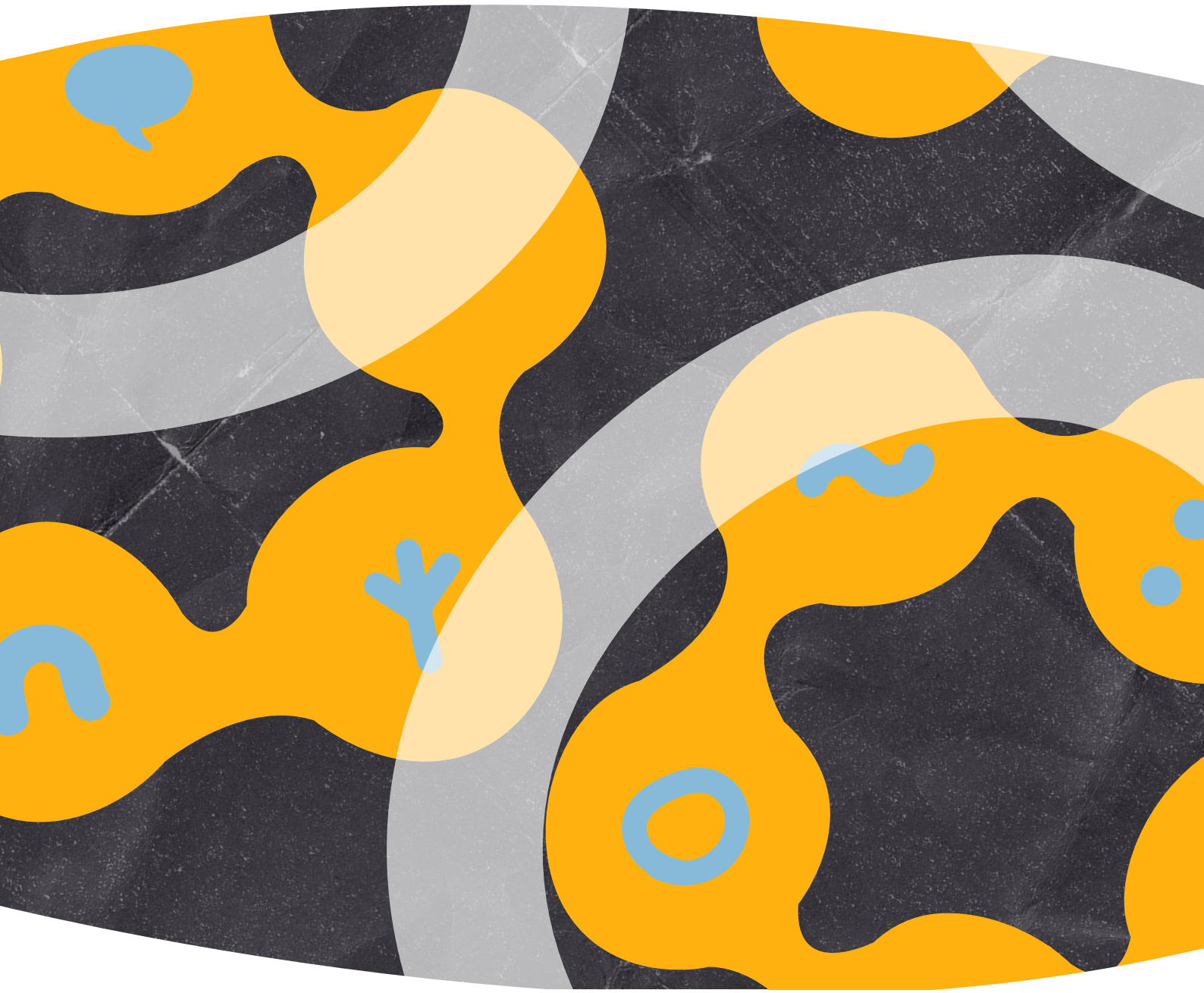
Section Six:

Trajectories of Social and Emotional Wellbeing and Related Outcomes



Section Six: Trajectories of Social and Emotional Wellbeing and Related Outcomes

Key findings

- The social and emotional wellbeing of LSIC Study Children, measured in Strengths and Difficulties Questionnaire (SDQ) normative scores, has improved over time.
- The proportion of LSIC Study Children actively engaging with Aboriginal and Torres Strait Islander cultures has increased over time.
- The most prevalent health issues among LSIC Study Children are in oral health, followed by ear and skin health.
- There has been an overall increase in the prevalence of racism at school over time. The rates of prevalence are higher in non-remote areas than in remote areas.
- Primary Carers of LSIC Study Children had experienced substantial improvements in wellbeing outcomes, financial circumstances, and housing conditions amid the COVID-19 crisis in 2020 compared with pre- and post-pandemic periods.

Introduction

This section provides a brief overview of the evolution of social and emotional wellbeing and its associated factors through the first 14 waves of The Longitudinal Study of Indigenous Children (LSIC). On average, LSIC Study Children were aged 2.5 years in Wave 1, 6.3 years in Wave 5, 11.3 years in Wave 10 and 15 years in Wave 14. This section of the Report examines only outcomes that are measured in at least three LSIC waves, as at least three data points are required to identify a trajectory.

Although ideally this section would analyse trajectories over all 14 waves, due to constraints and competing priorities within the LSIC study, not all relevant outcomes have been consistently measured. 'Inconsistent measurement' could mean one of the following:

- some outcome variables are measured only in select waves, while others were consistently measured across all 14 waves
- though some outcome variables are measured in multiple waves, the time gap between subsequent measurements is inconsistent or uneven
- the person surveyed (P1, SC, etc.) on a given question changes as the Study Child matures, which makes direct longitudinal comparisons challenging.

A notable example is the Strengths and Difficulties Questionnaire Score (SDQ). This score is measured through LSIC Study Primary Carer responses in most of the waves considered. In Waves 10 (K cohort only), 12 and 14, however, the LSIC Study Child also responded to SDQ items. These perspectives are not comparable. For instance, a mean-difference test for SDQ scores measured at Wave 12 through Study Child responses and Primary Carer responses shows that, on average, Primary Carer responses resulted in lower SDQ total difficulty scores (by 3.1 points) and higher prosocial scores (by 1 point). These are statistically significant differences.

A further challenge to longitudinal comparison is sample attrition. This is particularly prevalent in recent waves. Of the 1,671 LSIC families interviewed in Wave 1 (2008), only 45% and 56% were re-interviewed at Waves 13 (2020) and 14 (2021), respectively. Though such substantial attrition may mean that data from Waves 13 and 14 are less comparable to data from earlier individual waves, it is unlikely that the overall trend over time for the outcomes of interest would change because of this attrition. See, for example, Appendix Figure A56 shows that the prevalence of financial stress for families re-interviewed in Wave 13 has trended similarly to that of all LSIC families.

We also fitted a logit model of attrition using individual-level data for the outcomes presented in the following figures (Figure 29 - Figure 49; measured in Waves 11 or 12) to determine whether these outcomes differed significantly between LSIC Study Children who remained in the study through Wave 14 and those who dropped out after Wave 12. While we found no statistically significant differences in these outcomes, Study Children who dropped out by Wave 14 were more likely to live in remote or very remote areas (see Table A40, Columns 6 and 7). To account for changes in the spatial distribution of the sample over time, we disaggregated our analysis by geographic remoteness.

As highlighted in the preceding sections, there is broad expectation that socioeconomic circumstances and cultural contexts may differ across geographic remoteness for Aboriginal and Torres Strait Islander peoples. Therefore, trajectories are presented for the overall sample and by geographic remoteness. However, it important to note from the beginning that this section primary focuses on identifying patterns or trends over time within the LSIC data and does not delve into the underlying factors driving these patterns.

Since each LSIC wave corresponds to a specific calendar year (e.g., 2008 for Wave 1; 2015 for Wave 8; 2021 for Wave 14), the relevant categories are labelled in years.

The Strengths and Difficulties Questionnaire as a Measure of Social and Emotional Wellbeing

The SDQ scores analysed in this section are sourced from Primary Carer responses (from 2010 to 2019) and from the Study Child responses (in 2021). Consistent with findings in Section Four, in this section, SDQ total difficulty scores are categorised in three ranges. These are: normal (0–13), borderline (14–16) and abnormal (17–40). Also consistent is our application of and justification for using the SDQ score as a measurement of social and emotional wellbeing in LSIC.

When SDQ scores are in the normal range it is assumed this represents a positive state of social and emotional wellbeing. In this range, Study Children are considered to be at a low risk of clinically significant emotional or behavioural difficulties. As expected, the average age of LSIC Study Children increased over time. It was 4.4 years in Wave 3, 7.3 years in Wave 6, 9.2 years in Wave 8, 11.3 years in Wave 10, 13.2 years in Wave 12 and 15 years in Wave 14. Figure 28 shows that the proportion of Study Children with SDQ score in the normative range increased over the course of a decade, as Study Children grew older (from 61% in 2010 to 73% in 2019). In 2021, 72% of Study Children had normative SDQ scores. Further, as indicated above, Study Child responses tend to reflect higher SDQ total difficulties scores than Primary Carer responses on average. This suggests that the proportion of normative SDQ scores may be understated.

Comparing SDQ scores measured through Study Child responses in 2019 and 2020 for those Study Children who were in both years shows that the proportion of Study Children with normative SDQ scores increased by 15 percentage points over the two years. It is highly likely therefore that the slight percentage

reduction in normative scores shown for these years in Figure 28 is a measurement error, rather than an indicator of a worsening wellbeing outcome.

Abnormal SDQ scores indicate that Study Children and Study Youth have a high risk of clinically significant emotional or behavioural difficulties. Figure 28 also shows that the proportion of Study Children and Study Youth with abnormal SDQ scores remained stable in 2015–2021, after falling from 23% to 17% between 2013 and 2015. This suggests that much of the increase in the proportion of Study Youth with normative SDQ scores came from a corresponding reduction in the proportion of Study Children with borderline scores[32], rather than a perhaps more important reduction in abnormal SDQ scores.

Considering the consistency in experiences of social and emotional wellbeing for the period 2010–2019, we note that most Study Children within the normative range in 2010 remained in the same category in the years that followed (e.g. 67% in 2015 and 74% in 2019). Of the remaining proportion of Study Children from the normal range in 2010, 16% transitioned to the borderline range and 17% to the abnormal range by 2015. The respective transition rates dropped to 8% and 13% by 2019. Conversely, most Study Children who were in the borderline or abnormal ranges in 2010 transitioned to the normal range over the following years. For instance, from 2010 to 2015, 59% of those in the borderline range and 45% of those in the abnormal range moved to the normal range. By 2019, the transition rates had risen to 69% and 59%, respectively.

The improvement in social and emotional wellbeing, as illustrated in Figure 28, may have resulted from a complex interplay of factors, including increased cultural connection (Figure 36 and Figure 37) and reduction in financial stress (Figure 43 and Figure 44) and housing issues over time (Figure 48 and Figure 49). Additionally, it could be that, as Study Children grew, they became more adept at understanding their emotions and using coping strategies, such as seeking social support or exercising, which could contribute to a reduction in emotional and behavioural difficulties (Compas et al., 2017; Reyna & Farley, 2006).

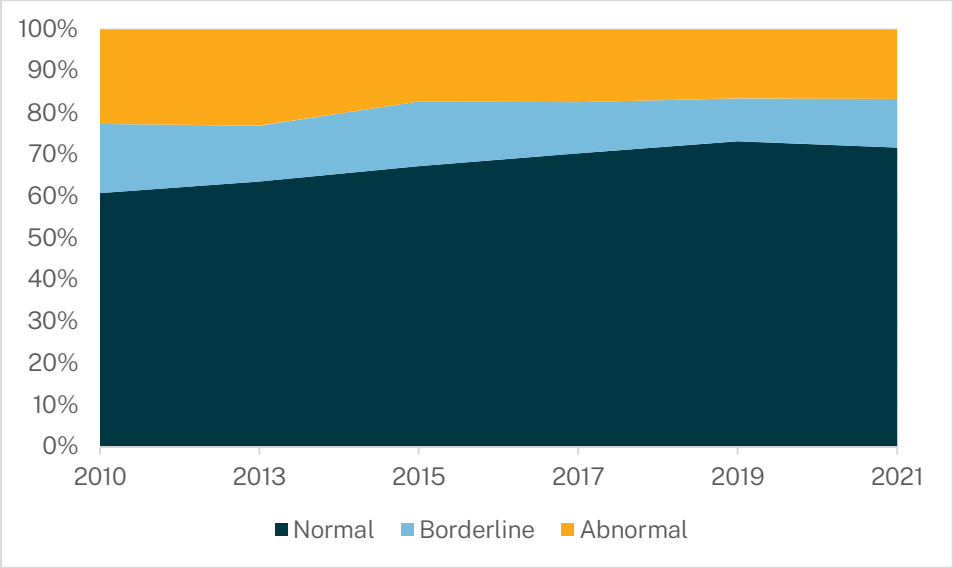


Figure 28: Proportion of LSIC Study Children in different SDQ total difficulties score categories

Figure 29 presents the proportion of Study Children with normative SDQ scores by remoteness. Across all the sample groups, there has been an overall increase in the proportion of Study Children with normative

[32] Children and youth considered to be at a moderate risk of clinically significant emotional and behavioural difficulties.

SDQ scores between 2013 and 2019. Remote areas have the lowest proportions of LSIC Study Children with normative SDQ scores at younger ages and the highest proportions at older ages. This may be attributed to an increasing connection to Aboriginal and Torres Strait Islander culture among Study Children as they grew older, with a faster rate of cultural engagement observed in remote areas compared to non-remote areas. Figure 36 and Figure 37 illustrate that between 2010 and 2019, the proportion of Study Children learning Aboriginal and Torres Strait Islander activities (such as collecting food or hunting) and arts grew significantly faster in remote areas than in major cities and regional areas.

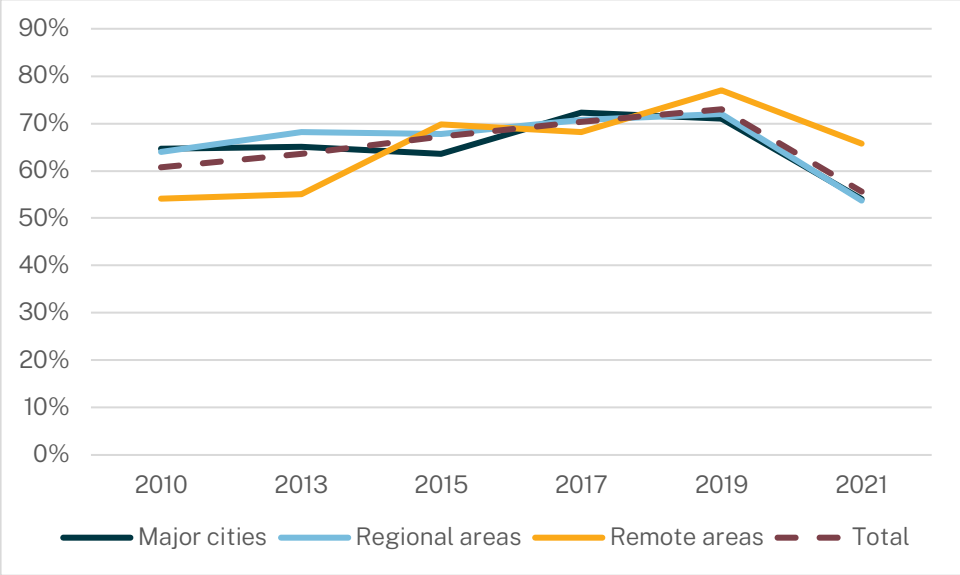


Figure 29: Proportion of LSIC Children with normative SDQ total difficulties scores over time, by remoteness

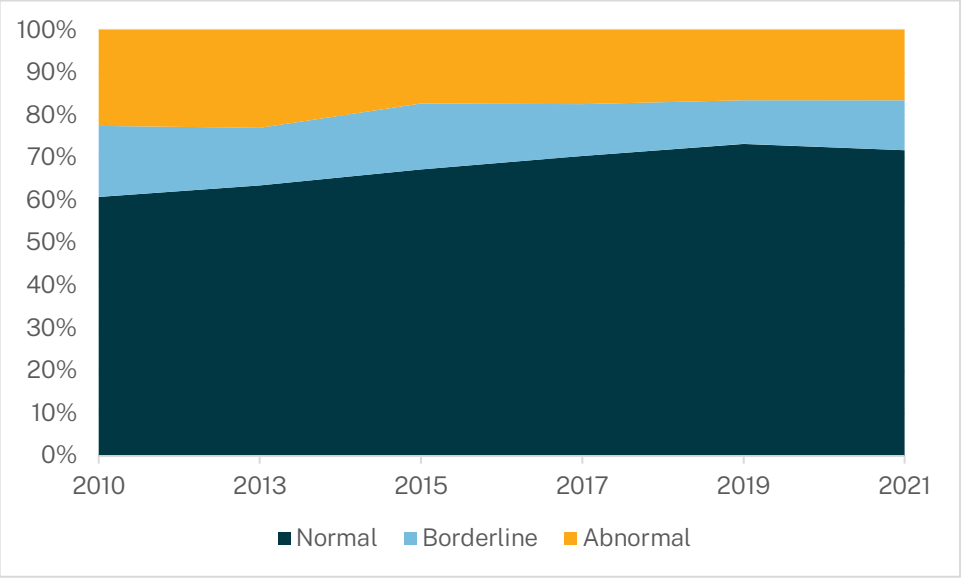


Figure 30 depicts the trajectories of prosocial behaviour among LSIC Study Children. Instead of presenting total SDQ prosocial scores, we followed the methodology of Zubrick et al. (2005) who grouped these scores into low-risk (6–10), moderate-risk (5) or high-risk (0–4) categories. Here, scores in the low-risk categories are assumed to represent a positive state of social and emotional wellbeing. The proportion of LSIC Study Children at low risk of clinically significant problems with prosocial behaviour increased from 89% in 2010 to 94% in 2013. It then dropped to 92% in 2015 and continued to decline afterwards. There was a parallel change in the proportion of Study Children in the moderate-risk category for most of the period

under consideration. The proportion of Study Children in the high-risk category remained the same between 2010 and 2013 at 4% and dropped in 2015 to 2%. It rebounded to 5% in 2017 and 2019. SDQ prosocial scores measured through Study Child responses in 2021 show that 82% of LSIC Study Children were in the lower-risk category.

We note the high persistence in positive prosocial behaviours. For example, of the LSIC Study Children who were in the low-risk category in 2010, most were still in the low-risk category in 2015 (94%) and in 2019 (89%). Of the remaining proportion, 6% transitioned to the moderate-risk category, and 5% to the high-risk category by 2019. Encouragingly, only a small proportion of LSIC Study Children remained in the moderate-risk and high-risk categories between 2010 and 2019. The majority transitioned to the low-risk category. For example, of the LSIC Study Children who were in the high-risk category in 2010, 12% remained in that category by 2019, 14% were in the moderate-risk category, and 74% were in the low-risk category. Similarly, of Study Children who were in the moderate-risk category in 2010, 6% remained in the same category by 2019, 9% were in the high-risk category, and 85% in the low-risk category.

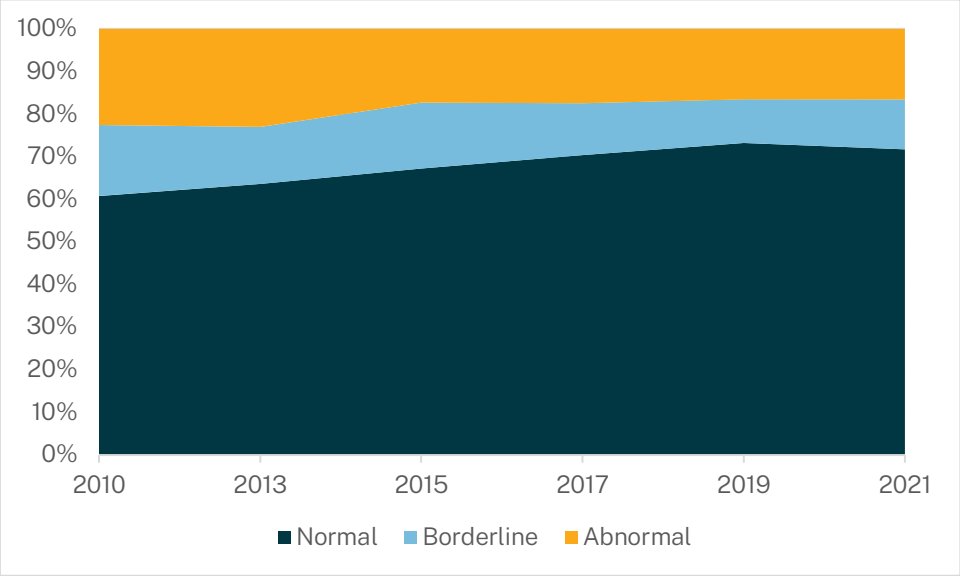


Figure 30: Proportion of LSIC Study Children in different SDQ prosocial score categories

Figure 31 presents the proportion of LSIC Study Children at low-risk of clinically significant problems with prosocial behaviour for different remoteness areas. Across all the remoteness locations, the proportion of Study Children at low-risk increased between 2010 and 2013 before trending downwards in the following years. In most years, there was no discernible difference in the proportion of Study Children at risk of problems with prosocial behaviour across geographic remoteness. In 2021, remote areas have had the lowest proportion of LSIC Study Children with clinically low-risk problems with prosocial behaviour.

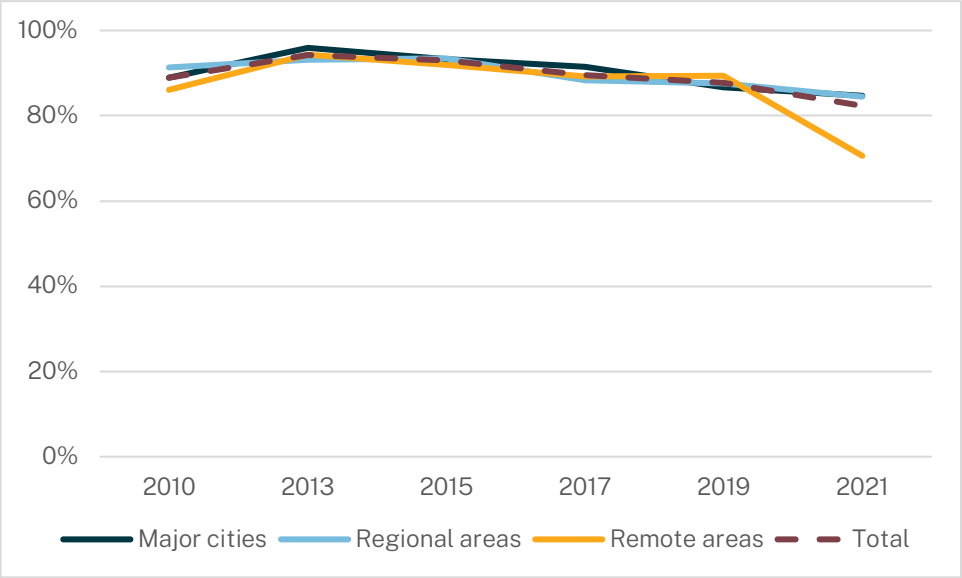


Figure 31: Proportion of LSIC Study Children at low-risk of problems with prosocial behaviour over time, by remoteness

Sleep

Figure 32 shows the proportion of LSIC Study Children who had not had trouble sleeping the month before LSIC interviews were conducted. Trends are presented for both the total sample and by remoteness area. In the total sample, despite year-to-year fluctuations, an overall downward trend is evident. The proportion of Study Children who have not had trouble getting to sleep or staying asleep was 62% in 2021, down from 76% in 2008. The proportion has trended similarly in regional areas. In major cities, the proportion of Study Children without difficulty sleeping has had an overall downward trend though trended upward until 2018. In remote areas too, the proportion of Study Children without difficulty sleeping has trended downward, though has remained much higher than the proportions in other areas.

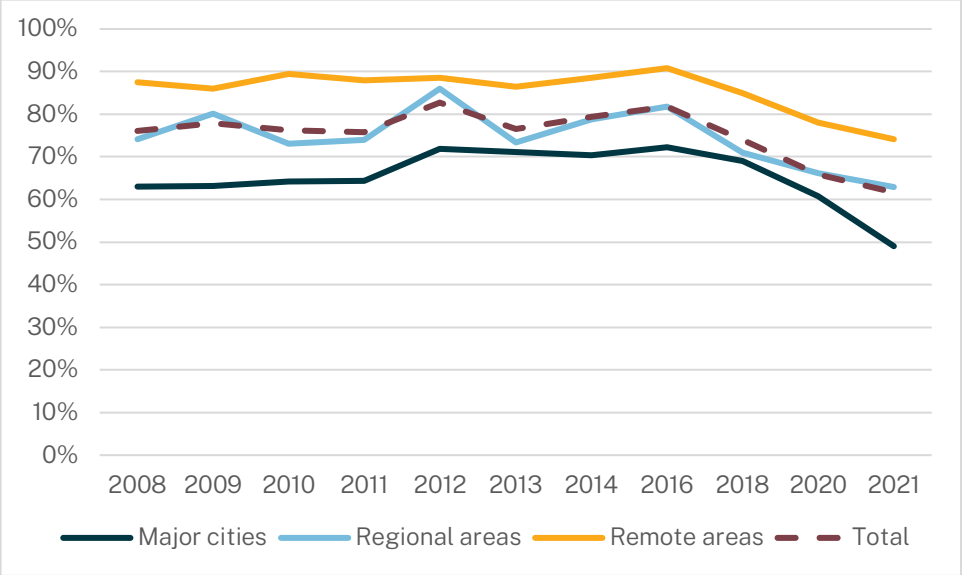


Figure 32: The proportion of LSIC Study Children with absence of difficulty sleeping, by remoteness

Physical Health

Figure 33 depicts the proportion of LSIC Study Children with very good/excellent overall health status by remoteness. Although there were some fluctuations, the proportion of the total sample with very good/excellent overall health status remained relatively stable over the period 2010–2019. For example, 79% of LSIC Study Children had very good/excellent health status both in 2010 and 2019. For the same period, the proportions in major cities and regional areas were also stable.

In remote areas the proportion of Study Children with very good/excellent health status declined from 77% in 2010 to 67% in 2019. The proportion particularly declined in 2012 to reach 54% before rebounding to 61% in 2013. It peaked at 78% in 2015 before again declining, this time to 64% in 2016. The proportion stabilised at 72% for the next two years.

Across the sample groups, the proportion of Study Children with very good/excellent health decreased between 2019 and 2021. This was fastest in remote areas. Overall, the proportion of Study Children with very good/excellent status is highest in major cities and lowest in remote areas.

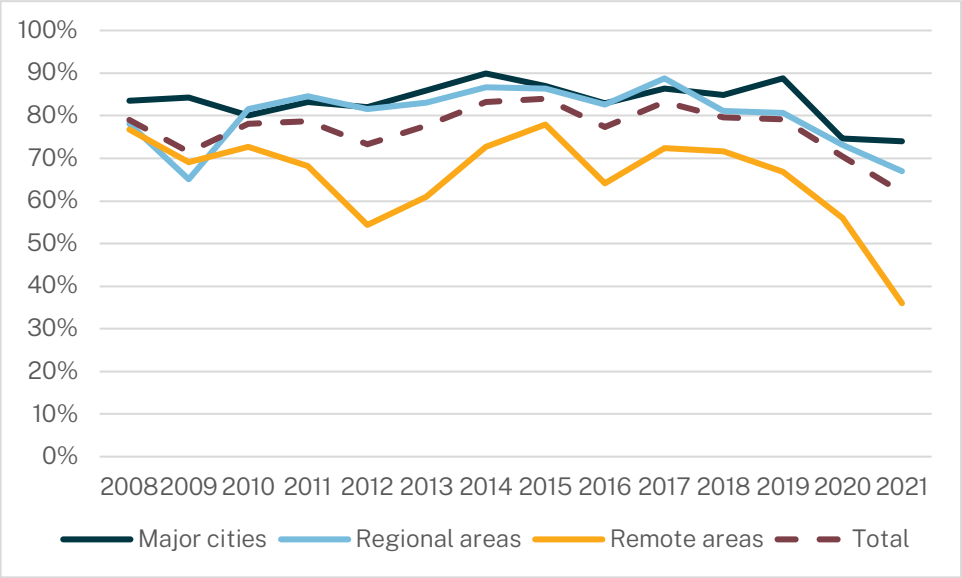


Figure 33: Proportion of LSIC Study Children having very good/excellent health, by remoteness

Figure 34 presents the prevalence of health problems among LSIC Study Children. Different trajectories have emerged for different health problems over the period 2008–2018. While the prevalence has trended downward for ear problems and skin problems, it has trended upward for eye problems and oral health problems. The prevalence of disability, after falling to just 1% in 2011, rebounded in 2012 and continued rising until 2018. The prevalence of developmental delay and injury remained relatively stable until 2018. In the 2020 and 2021 data, the prevalence rates for most types of health problems[33] slightly declined.

Different health problems have different prevalence rates. In 2008 for example, ear problems were the most prevalent health issues, and eye problems were the least prevalent. By 2018, eye problems became the second and ear problems the third most prevalent health problem. Oral health problems persist as the most common type of health problem for Study Children since 2009, with 42% of Study Children having had oral health problems in 2014. Disability, developmental delay and injury remained the least common types of health problems.

Major Cities

[33] Except eye problems.

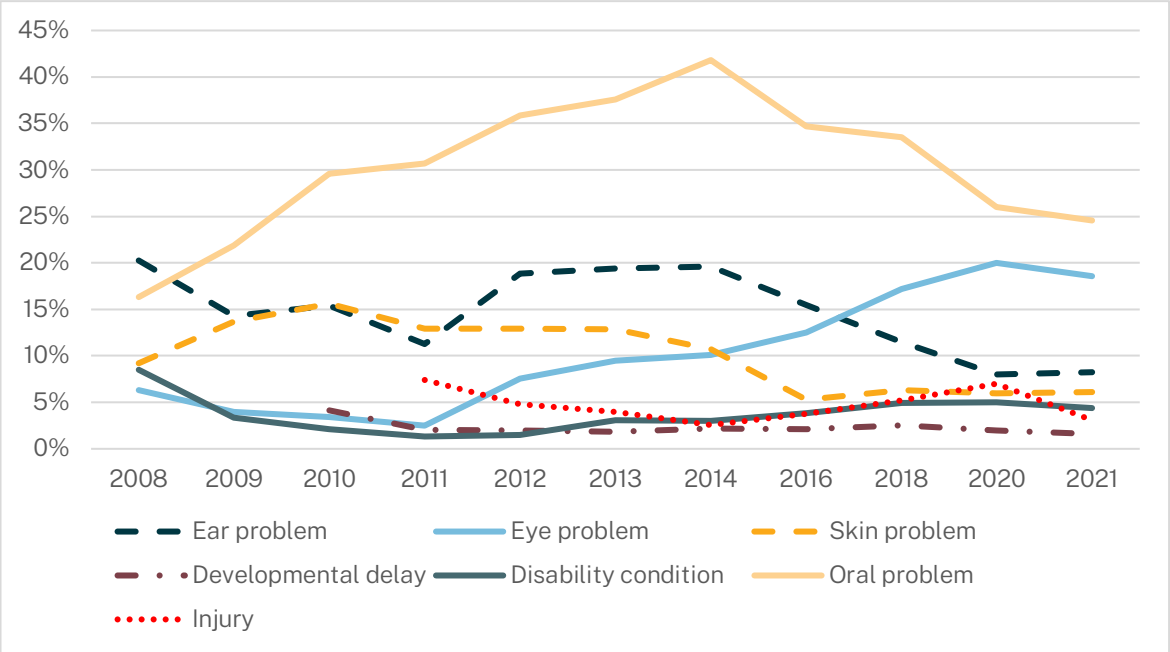


Figure 34: Proportion of LSIC Study Children having health problems

Culture

Figure 35 shows the proportions of LSIC Study Children often/very often attending Aboriginal and Torres Strait Islander cultural events, ceremonies, or sorry business. Among the total sample, the proportion of Study Children attending cultural events and ceremonies decreased from 35% in 2011 to 32% in 2019 (after it increased to 40% in 2017). Looking at the disaggregated samples, remote areas and regional areas saw declining trends in the proportion of Study Children attending cultural events, ceremonies, and sorry business between 2011 and 2019, while major cities saw an increasing trend during the same period. In 2021, the proportion of Study Children attending cultural events, ceremonies, or sorry business was 24% in regional areas, 28% in major cities and 51% in remote areas. Remote areas have had by far the highest proportion of LSIC Study Children attending cultural events, ceremonies or sorry business in the years under consideration.

Figure 36 presents the proportions of LSIC Study Children who often/very often learn about Aboriginal and Torres Strait Islander activities such as collecting food and hunting. For both the total sample and disaggregated-by-remoteness samples, the proportion of LSIC Study Children learning about Aboriginal and Torres Strait Islander activities – such as collecting food and hunting – increased between 2011 and 2019. The proportion decreased between 2019 and 2021 in major cities and regional areas while increasing in remote areas. Between 2011 and 2021, major cities and remote areas experienced overall steeper positive trends than regional areas. Learning Aboriginal and Torres Strait Islander activities remained most prevalent in remote areas and least prevalent in major cities.

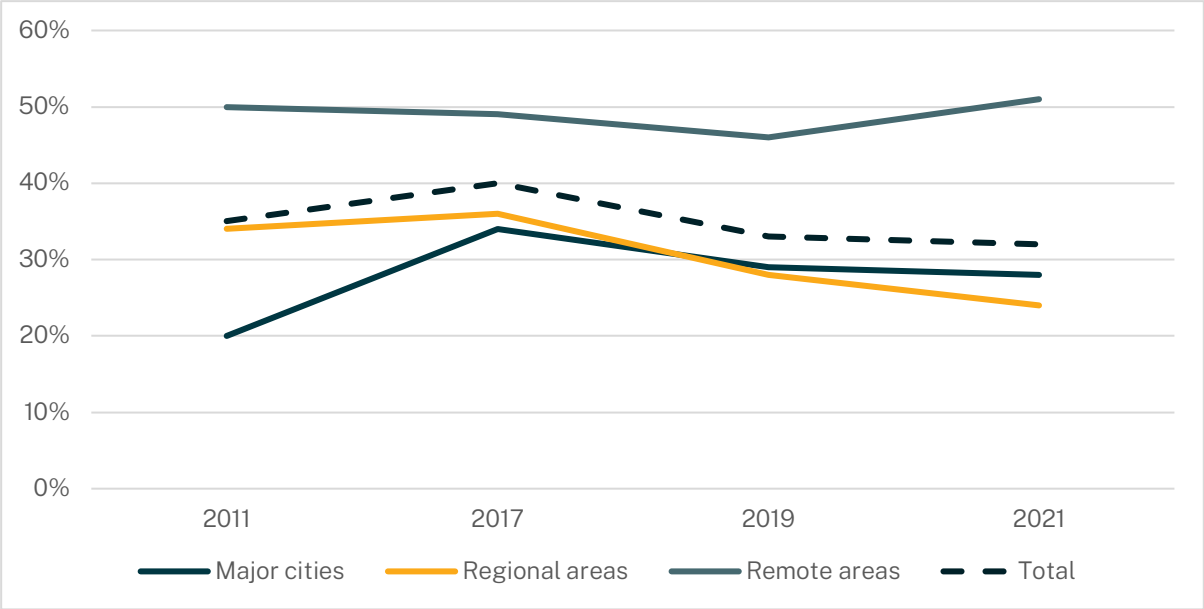


Figure 35: Proportion of LSIC Study Children attending (often/very often) Aboriginal and Torres Strait Islander cultural events, ceremonies, or sorry business, by remoteness

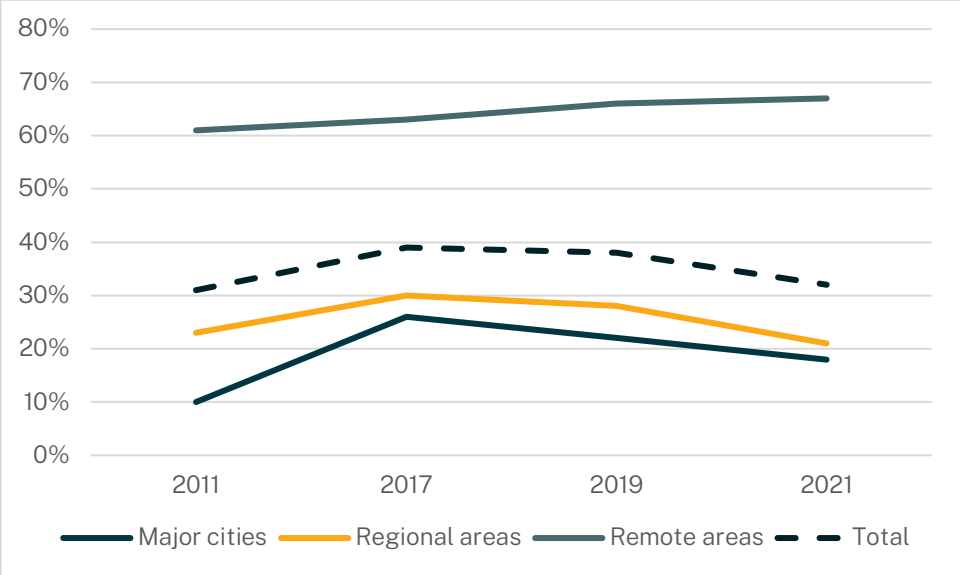


Figure 36: Proportion of LSIC Study Children learning (often/very often) about Aboriginal and Torres Strait Islander activities (such as collecting food and hunting), by remoteness

Figure 37 depicts the proportions of LSIC Study Children who often/very often learn about Aboriginal and Torres Strait Islander arts like painting, dance, singing or making ceremonial dress. For the total sample, the proportion engaged in these activities increased from 25% in 2011 to 40% in 2017. They decreased to 35% in 2019. Just under 30% of LSIC Study Children interviewed in 2021 often/very often learned about Aboriginal and Torres Strait Islander arts. The proportion trended similarly among Study Children living in major cities. In regional and remote areas, however, the proportion of Study Children learning about Aboriginal and Torres Strait Islander arts increased continuously from 2011 to 2017, marginally again to

2019, and decreased in 2021. Overall, an upward trend is evident across all the sample groups, though the trends are more evident for major cities and remote areas.

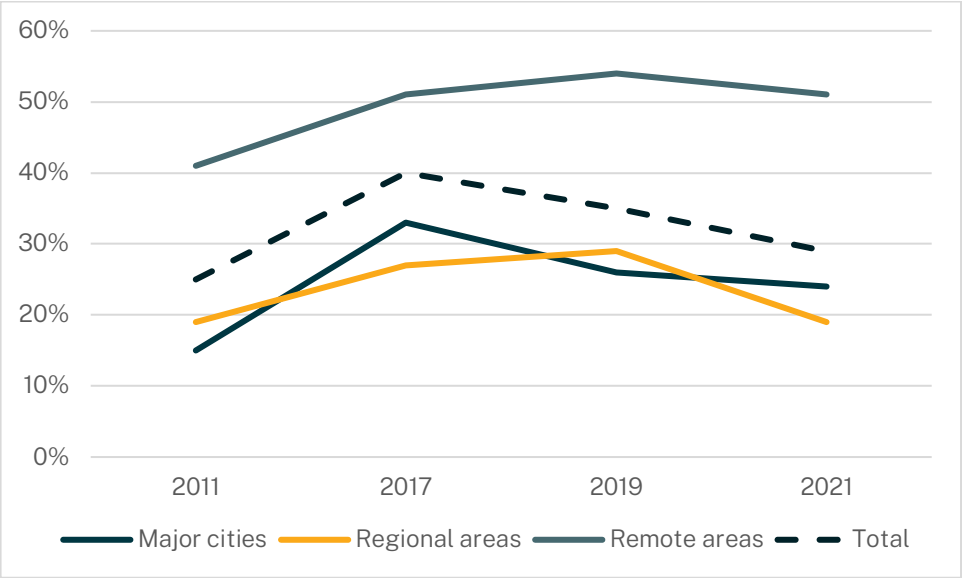


Figure 37: Proportion of LSIC Study Children learning (often/very often) about Aboriginal or Torres Strait Islander arts, by remoteness

School Safety

Figure 38 depicts the proportion of LSIC Study Children who always/most of the time experience a sense of safety at school. In 2013, over 90% of Study Children among the total sample and in all the remoteness categories reported that they mostly/always felt safe at school. By 2021, the proportion dropped to below 85%, except in remote areas, where it rose to 91%. Despite year-to-year fluctuations, overall downward trends are evident. In broad terms, the prevalence of feeling safe at school remained higher in remote areas. It is approximately equivalent in major cities and regional areas.

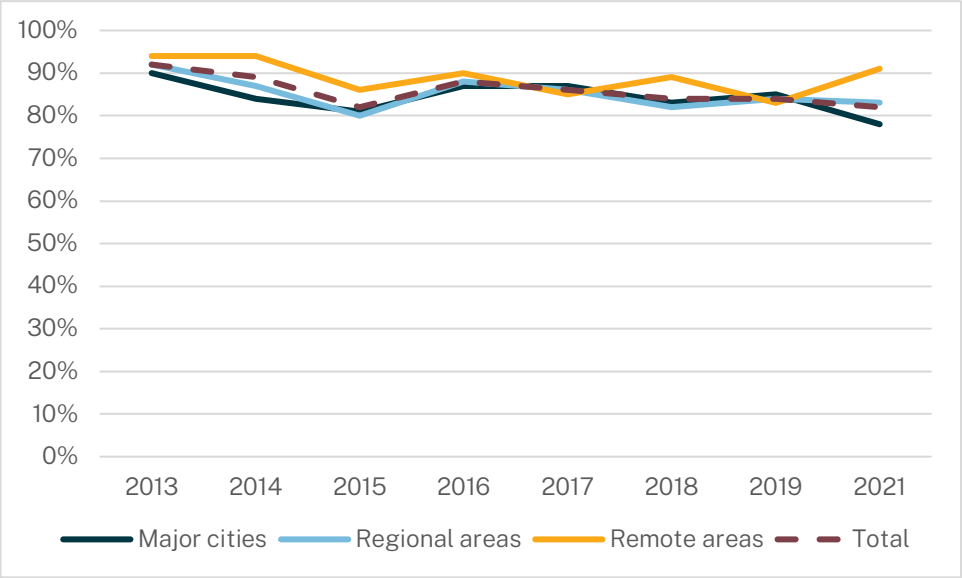


Figure 38: Proportion of LSIC Study Children who feel safe at school (always/most of the time), by remoteness

Figure 39 presents the proportion of LSIC Study Children who have been bullied/unfairly treated at school. Working with bi-annual data, the proportion of total respondents reporting unfair treatment increased from 28% in 2015 to 36% in 2017. It declined again 33% in 2019 and 28% in 2021. The trend evolved similarly in major cities. In regional areas, the proportion increased between 2015 and 2017 from 31% to 38% before dropping to 29% in 2019 and rebounding to 31% in 2021. However, the proportion evolved differently in remote areas, as it continued increasing every second year between 2015 and 2019 and then dropped in 2021. Overall, the prevalence of bullying/unfair treatment remained stable throughout the study period. This is true for all remoteness locations.

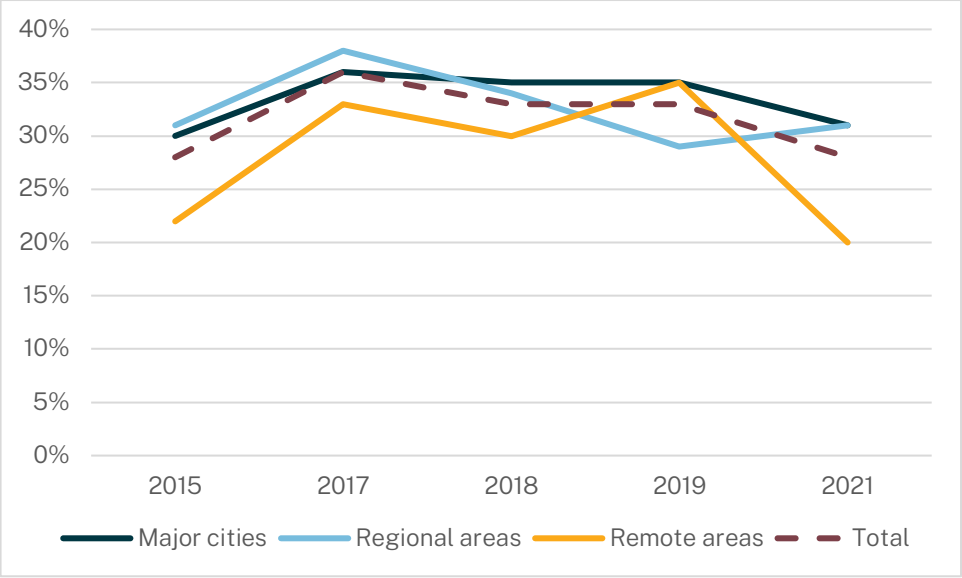


Figure 39: The proportion of LSIC Study Children bullied/unfairly treated at school, by remoteness

Figure 40 shows the proportion of LSIC Study Children who have experienced racial discrimination at school. As in the longitudinal analysis section, here, Study Children are considered to be racially discriminated against if they have been bullied or unfairly treated for being Aboriginal and/or Torres Strait

Islander. In looking at data presented every second year between 2015 and 2019, the proportion increased from 5% in 2015 to 7% in 2017 and then to 8% in 2019 before dropping back to 7% in 2021, for the total sample. Though at much lower rates, the proportion trended similarly in remote areas. In regional areas, on the other hand, the prevalence of being racially discriminated against increased from 6% in 2015 to 9% in 2017 and then dropped to 7% in 2019 before rising to 9% in 2021. In major cities, the prevalence of racial discrimination changed at faster rates, rising from 5% in 2015 to 9% in 2017 and then to 12% in 2019 before dropping back to 7% in 2021. Overall, the prevalence of racial discrimination has trended upward across all areas while remaining least prevalent in remote areas.

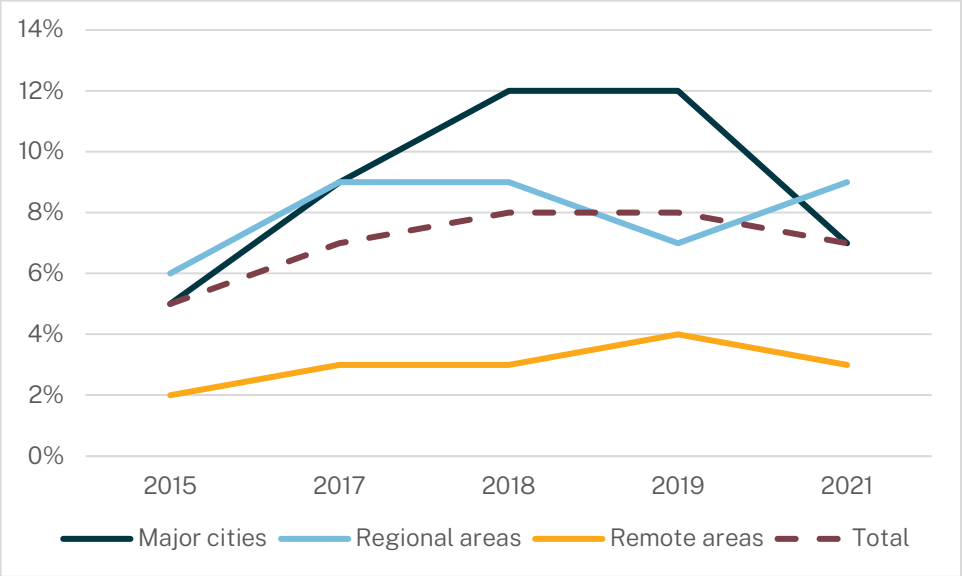


Figure 40: Proportion of LSIC Study Children who have experienced racial discrimination at school, by remoteness

Overall, the results presented in Figure 38–Figure 40 indicate that a significant proportion of LSIC Study Children have reported feeling less safe at school over time. Determining the underlying factors contributing to this decline in perceived safety is complex. Theoretically, this decline could be attributed to a deterioration in school environments, a heightened expectation of school safety standards among children, or a combination of both. However, it seems unlikely that unfavourable changes within the education system are the primary cause of the observed decrease in school safety perceptions. Despite ongoing challenges in achieving equity and opportunity for all Aboriginal and Torres Strait Islander students, over time there has been an increasing emphasis on creating a more inclusive and safe environment for Aboriginal and Torres Strait Islander students in the Australian schools, including employing Aboriginal and Torres Strait Islander staff, introducing bilingual education, embedding Aboriginal and Torres Strait Islander histories and perspectives in school curriculums, and encouraging community engagement, have been on the rise (Coates et al., 2021; New South Wales Government Department of Education, 2024; Productivity Commission, 2022; Thomas, 2024). A recent report by the Australian Government Department of Social Services (DSS) indicates that most Primary Carers of LSIC Study Children believe schools are now more culturally sensitive and safer than when they were children (DSS, 2020). On the other hand, the results could be a reflection of an evolving sense of school safety as children transition into adolescence (O'Brennan et al., 2009). As LSIC Study Children grow older, they may develop a stronger desire for autonomy and self-expression, expanding their understanding of safety beyond immediate physical threats and becoming more attuned to concerns such as judgment or discrimination based on appearance, gender identity, or culture. This evolving sense of school safety

underscores the need to develop age-appropriate strategies within schools that address both the physical and emotional safety concerns of Aboriginal and Torres Strait Islander children as they grow.

Primary Carer's Wellbeing

We used two measures of wellbeing for the Primary Carers of LSIC Study Children. The first was sourced from the question that Primary Carers were asked, 'How difficult do you feel your life is at present?'. The possible responses were: No problems or stress; Few problems; Many problems; Very many problems; Don't know; Refused. In this analysis, the Report examined the proportion of 'No problems or stress' responses after removing 'Don't know and Refused' responses. The second measure was sourced from the question that Primary Carers were asked, 'How well do you think you are coping?'. Possible responses were: Not at all; A little; Fairly well; Very well; Extremely well; Don't know; Refused. In this analysis, the Report combined the 'Fairly well, Very well, and Extremely well' responses and examined their proportion after removing the 'Don't know and Refused' responses.

Figure 41 presents the proportion of Primary Carers with no life problems or stress. In 2008, 34% of all Primary Carers, 25% of those who lived in major cities and regional areas and 41% of those who lived in remote areas reported that they did not feel any problems or stress. The proportion trended downward across all sample groups for the study periods under consideration, albeit with some fluctuations. The proportions in major cities and regional areas saw a marked increase between 2019 and 2020 before falling back in 2021. On the other hand, the proportion in remote areas dropped between 2019 and 2020 and rebounded in 2021. In broad terms, the proportion of Primary Carers without reported life problems or stress remained most prevalent in remote areas and least prevalent in major cities, except in 2008 when major cities and regional areas had the same proportion and in 2020 when regional areas had the highest proportion of Primary Carers with no life problems or stress.

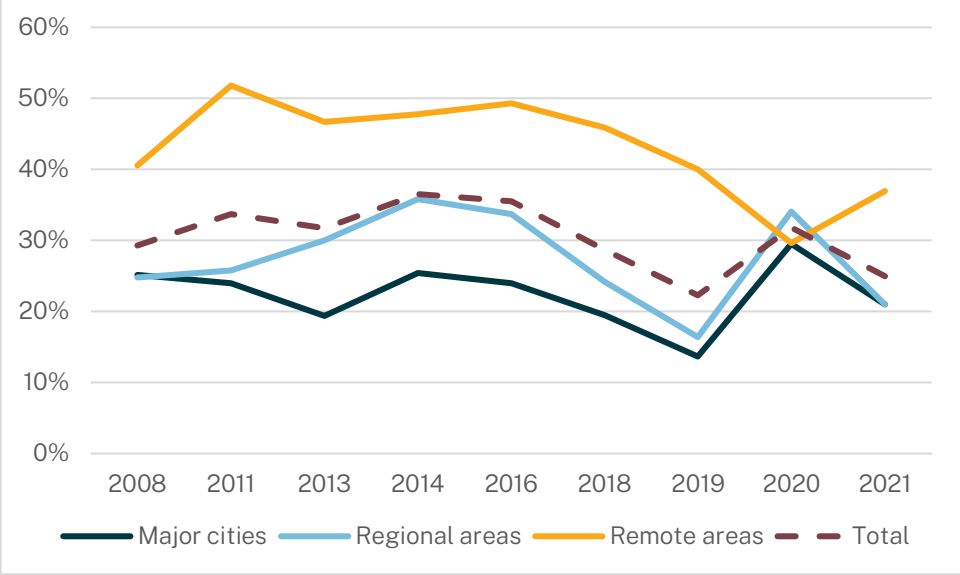


Figure 41: Proportion of Primary Carers with no life problems/stress at present, by remoteness

Figure 42 provides the proportion of Primary Carers coping well with life. In 2008, 92% of all Primary Carers, 95% of Primary Carers in major cities, 91% of Primary Carers in regional areas and 90% of Primary Carers in remote areas reported that they coped well with life. For the study periods under consideration, the prevalence of coping well with life trended downward across all sample groups, albeit with some

fluctuations. The proportion increased between 2019 and 2020 in all the remoteness areas. Of this, remote areas experienced the most significant increase before falling again in 2021. In broad terms, while the overwhelming majority of Primary Carers continued to cope well with life, carers living in remote areas continued to have the relatively lowest proportion of Primary Carers coping well with life.

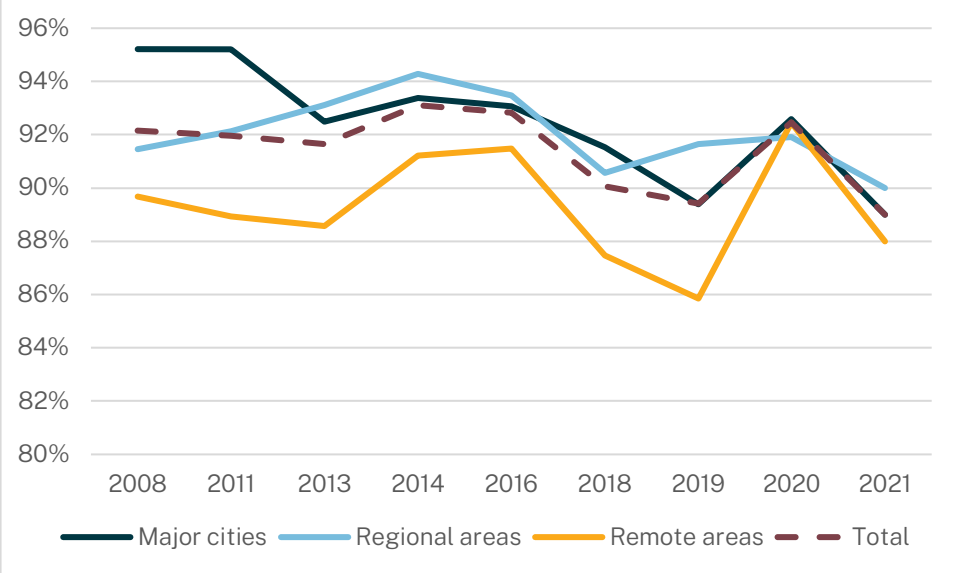


Figure 42: Proportion of Primary Carers who coped well with life, by remoteness

It is worth highlighting that Figure 41 and Figure 42 suggest that the wellbeing of Primary Carers improved significantly in 2020 amid the COVID-19 pandemic. This appears at odds with prior expectations, as the pandemic placed unprecedented uncertainties and stress on families in Australia, including Aboriginal and Torres Islander families (Bower et al., 2022; Evans et al., 2020; Markham et al., 2020; Newby et al., 2020; Sheen et al., 2021). However, a closer look at the Wave 13 (2020) data shows that the pandemic restrictions brought unintended benefits for some families, which might have resulted in improved wellbeing outcomes. In the 2020 survey, Primary Carers were asked an open-ended question, 'Have any good things happened because of the COVID-19 pandemic?'. A summative analysis of the short open-text responses shows that 'more family time', 'improvement in financial conditions', 'gaining employment or working more hours' and 'working from home' are the most recurring themes. More particularly, many Primary Carers reported that the pandemic crisis brought their family closer. They also said their finances improved due to more shift hours, reduced travel/holiday expenses and increased government payments through the various Coronavirus stimulus packages (such as the early release of superannuation and the JobSeeker and JobKeeper payments). Primary Carers also indicated that working from home provided them more flexibility in juggling competing commitments and helped them save money and time from reduced commuting. In response to another question, 'How have the Coronavirus and restrictions affected the community?', Primary Carers also highlighted that the restrictions were 'good' for Country as there was less environmental pollution.

Financial Stress

In this section, financial stress is measured in two ways: (1) the worries of families that feel their money may fall short of their expenses; and (2) the inability of families to meet their basic financial expenses due to a shortage of money. The former indicates the emotional stresses experienced by families. The latter provides a direct measure of the adequacy of financial resources to meet a family's basic needs.

In each LSIC wave, the Primary Carers of LSIC Study Children were asked whether they had serious worries about money in the 12 months before the interview. Starting from Wave 3, they were also 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, and
- the LSIC Study Child could not do school activities like excursion, camps.[34]

Figure 43 presents the proportion of LSIC Families who experienced serious money worries. In 2008, 31% of families in the overall sample, 41% of families in major cities, 32% of families in regional areas, and 21% of families in remote areas experienced serious worries about money. Despite year-to-year fluctuations, the prevalence evidently trended downward over the first 14 waves of the LSIC study. This is across all remoteness areas. Overall, money worries remained most prevalent in major cities and least prevalent in remote areas.

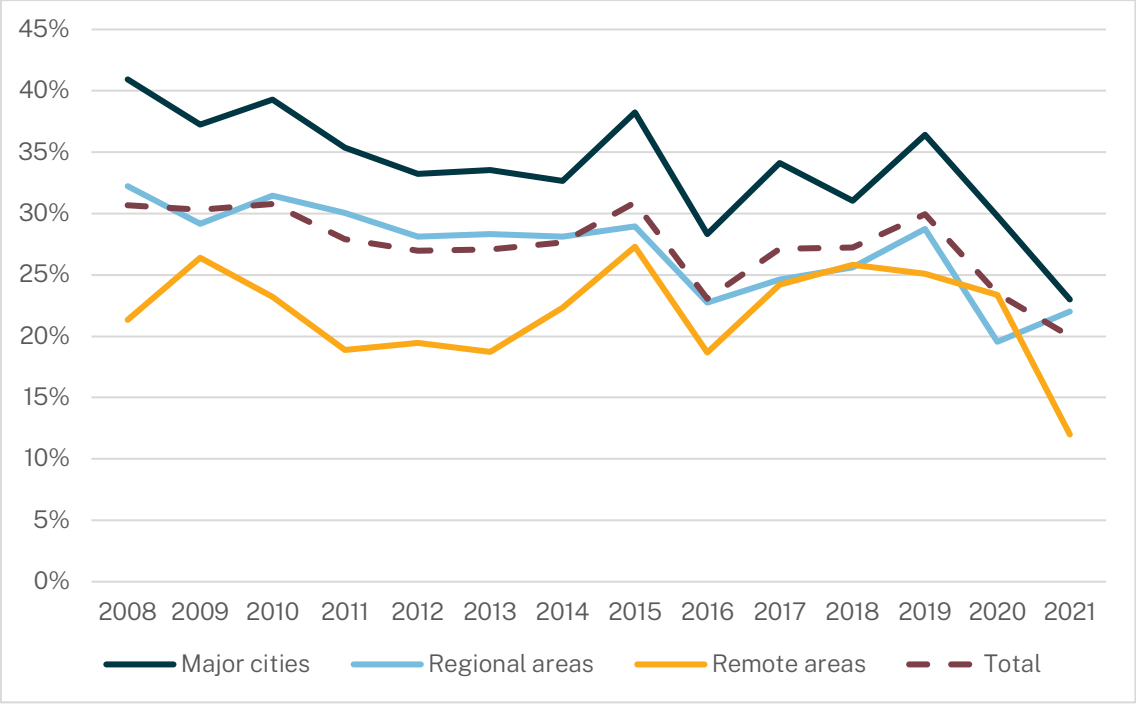


Figure 43: Proportion of LSIC Families experiencing serious worries about money, by remoteness

Figure 44 presents the proportion of LSIC Families with at least one event of money shortage. In 2010, 46% of families in the total sample, 56% in major cities, 44% in regional areas, and 39% in remote areas reported experiencing a shortage of money for at least one expenditure category. Over the following years,

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

the prevalence trended downward for all sample groups, albeit with some fluctuations. Of note, is that the proportion of families with a shortage of money decreased in 2020 across all remoteness locations. Despite rising in 2017 and 2019 and 2021, the sharpest decline was in major cities. As highlighted previously, this could be due to the improved financial circumstances delivered during the COVID-19 pandemic.

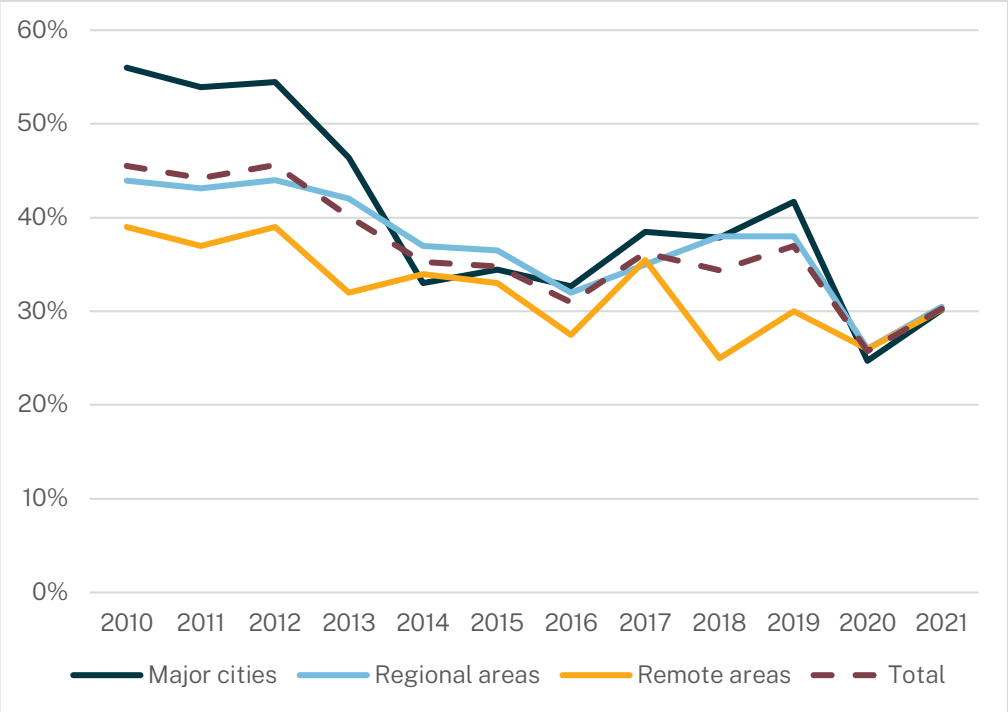


Figure 44: Proportion of LSIC Families experiencing a shortage of money, by remoteness

Figure 45 depicts the prevalence rates for each of the seven events of money shortage that LSIC Families have experienced. Prevalence tended to decline for all events until 2016 and then trended upward until 2019, with the exception of some year-to-year fluctuations. For all events, the prevalence dropped in 2020 before rebounding in 2021. Again, the 2020 decline could partly be attributed to the reported improvements in financial circumstances during the pandemic crisis.

Broadly, the inability to pay electricity, gas or telephone bills on time and the need to ask for financial help from welfare organisations were the most prevalent events. This was followed by the inability to make housing payments (such as rent and mortgages) and the need to pawn/sell housed items. In most years, the inability to heat the home and the inability to pay for school activities were the least common events.

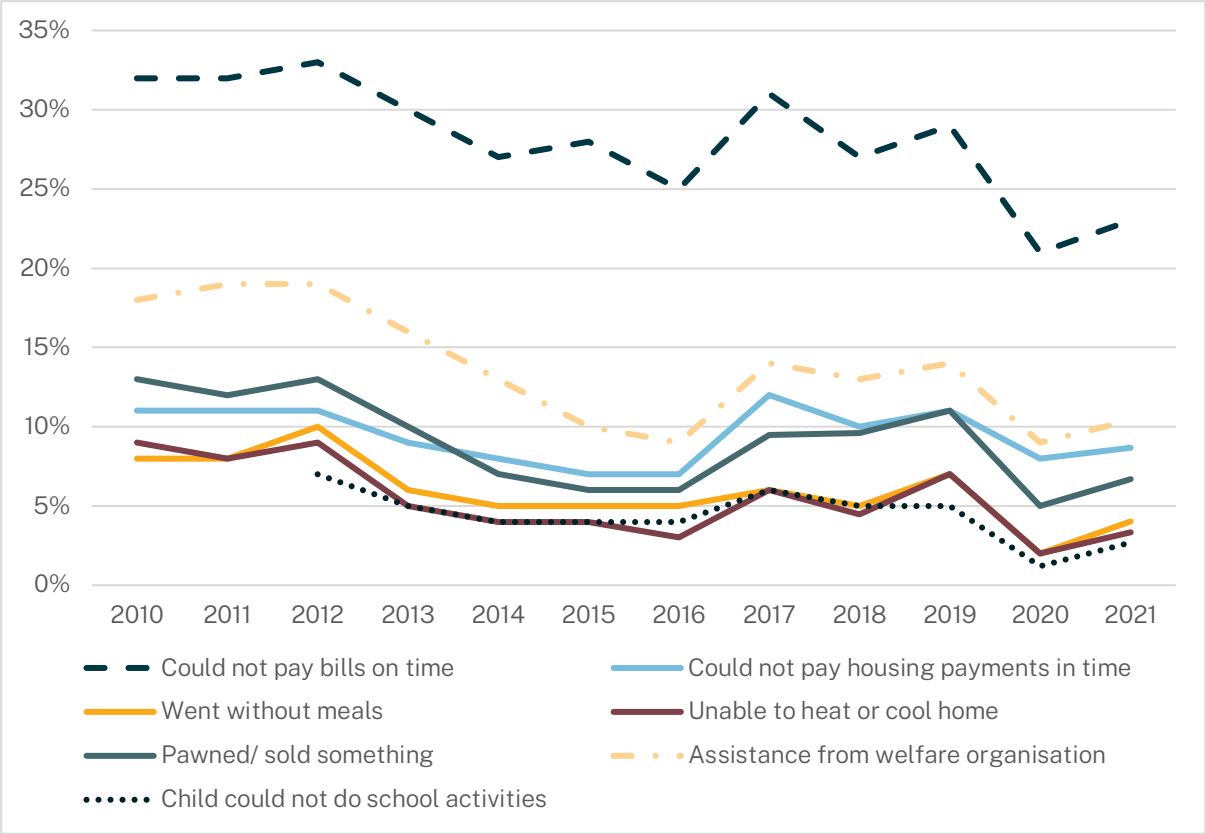


Figure 45: Prevalence of money shortage events

Major Life Events

Figure 46 presents the prevalence of major events among LSIC Families. The analysis includes 15 major life events. For the full list, see Appendix Figure A57. In 2008, 4% of families had not experienced major life events, 13% experienced only one major life event and 83% experienced at least two major life events. By 2021%, 10% experienced no major life event, 15% experienced only one major life event and 75% experienced at least two major life events. The proportion of families with multiple life events steadily increased between 2008 and 2011, from 83% to 87%, before dropping back to 83% in 2012. The proportions continued declining to their lowest in 2016, at 75%. Despite these fluctuations, over the first 14 waves, proportions for the prevalence of experiencing multiple life events trend downward overall. The prevalence of not experiencing a major life event has trended upwards. The prevalence of experiencing only one major life event remained relatively stable.

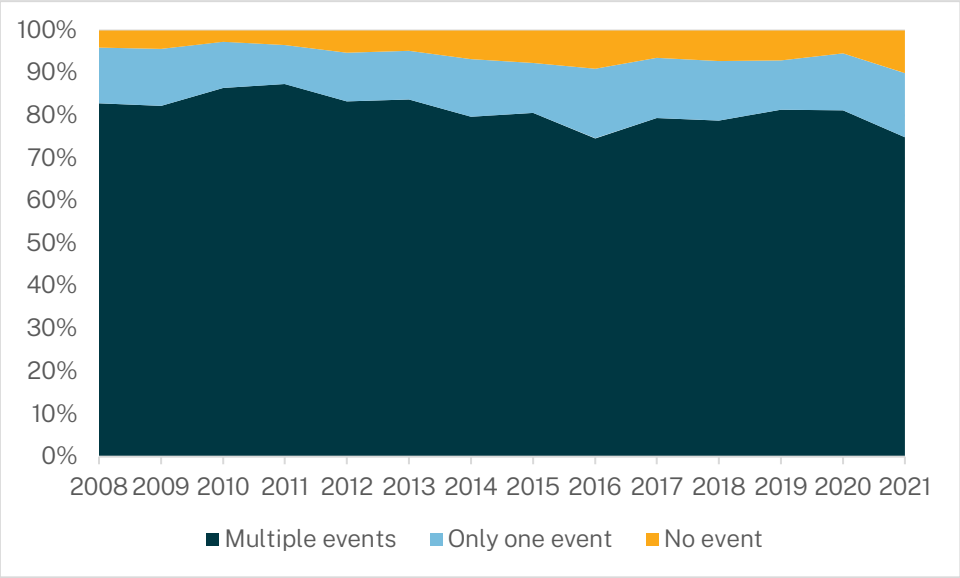


Figure 46: Prevalence of major life events

Figure 47 shows the average number of events experienced for the overall sample and remoteness. Across all the sample groups, the average number of major life events experienced showed an overall decline between 2008 and 2016 and an overall rise between 2016 and 2021. However, an overall downward trend is evident for both the total sample and the remoteness areas between 2008 and 2021. In most years, on average, LSIC Families in remote areas experienced the highest number of major life events. Those in regional areas experienced the lowest number of major life events.

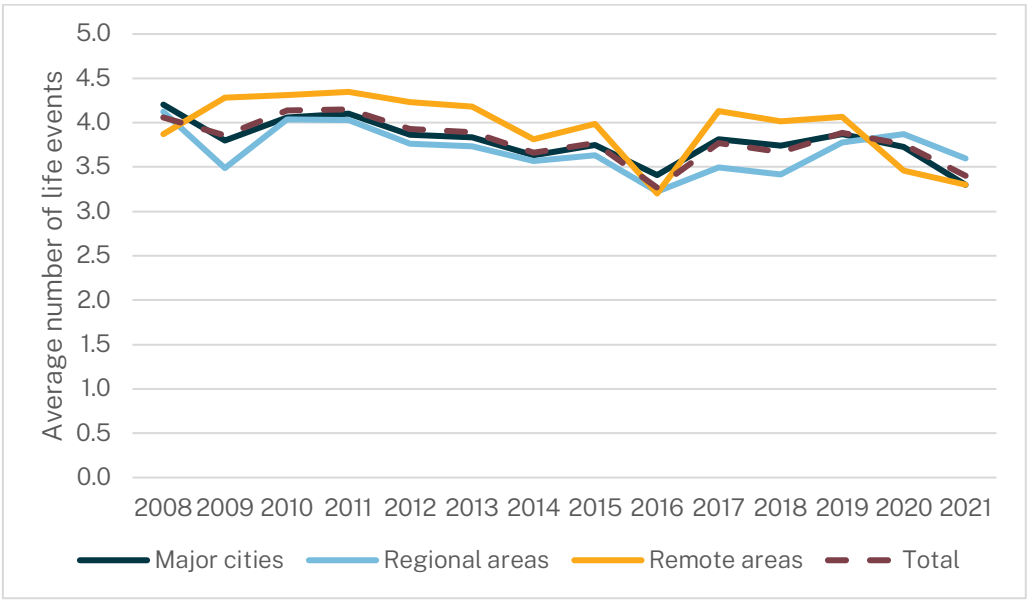


Figure 47: Average number of major life events experienced by a LSIC Family, by remoteness

Housing Problems

Figure 48 presents the proportion of the Primary Carers of LSIC Study Children who felt crowded in their home. The analysis was conducted for the total sample and remoteness areas. In 2008, about 17% of Primary Carers reported that they felt crowded where they lived. The prevalence almost halved by 2021.

The changes were very similar across all the remoteness categories. However, noticeable differences are evident when year-to-year fluctuations are considered. The proportion of Primary Carers who felt crowded showed an overall decline between 2008 and 2014 and an overall rise between 2014 and 2017. Between 2017 and 2018, the proportion declined for the total sample, regional areas, and remote areas. It continued rising in major cities. Between 2018 and 2019, however, the proportion remained the same for the total sample, declined in major cities and rose in regional and remote areas. The proportion dropped between 2019 and 2020 and rose between 2020 and 2021 across all the remoteness areas. This decline between 2019 and 2020 was also evident among the same Primary Carers who were interviewed in both surveys, with the percentage reporting feelings of overcrowding dropping from 12% to 7%

Notably, prevalence in 2020 is the lowest across the entire 2011–2021 period. On the one hand, one may expect the pandemic to exacerbate feelings of crowding, as people had to spend much more time at home and use home spaces for multiple purposes simultaneously (including work, schooling, and isolation). On the other hand, for LSIC Families who used to host multiple visitors before the pandemic, COVID-19 restrictions might mean fewer people sharing common spaces like bathrooms and kitchens. This could have provided temporary relief from day-to-day crowding. This reason may explain the reported increase in feeling crowding in 2021, though only to below pre-pandemic levels.

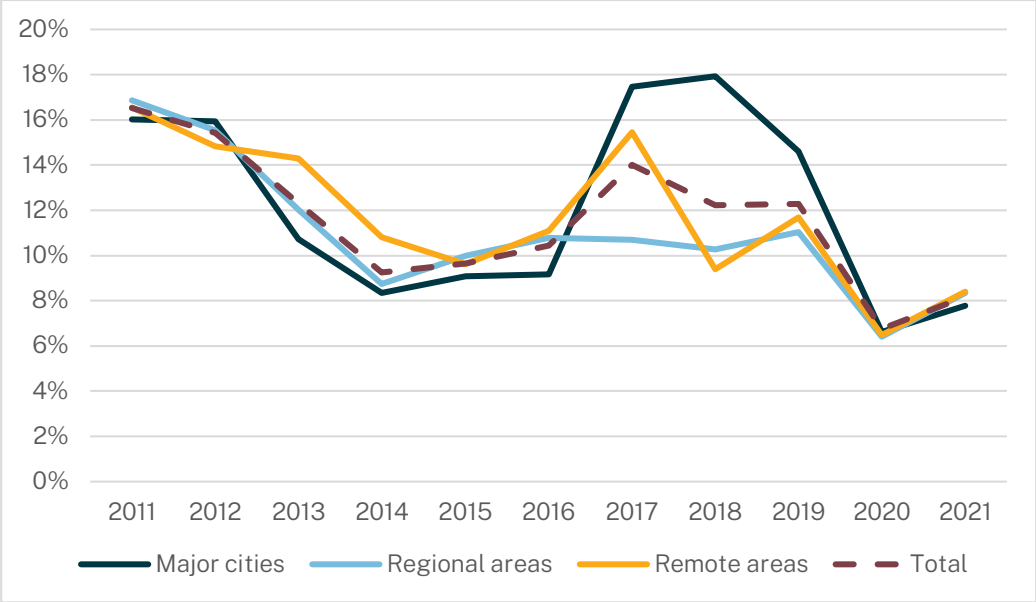


Figure 48: Proportion of Primary Carers who felt crowded where they live, by remoteness

Figure 49 shows the proportion of LSIC Families whose homes have major things that need fixing. In 2008, 40% of all LSIC Families, 33% of those who lived in major cities, 32% of those who lived in regional areas and 54% of those who lived in remote areas reported that their homes needed major repairs. By 2021, the proportion dropped to 22% for the LSIC families in the overall sample and to 17%, 20% and 31% for LSIC Families in major cities, regional areas and remote areas, respectively. Except for a slight uptick between 2012 and 2013 in major cities, between 2012 and 2015 in regional areas, and between 2013 and 2015 and again between 2018 and 2021 in remote areas, the proportion of LSIC families whose homes needed major fixing exhibited a downward trend over the study period. This is true for all remoteness categories. The need for major housing repairs remained most prevalent in remote areas.

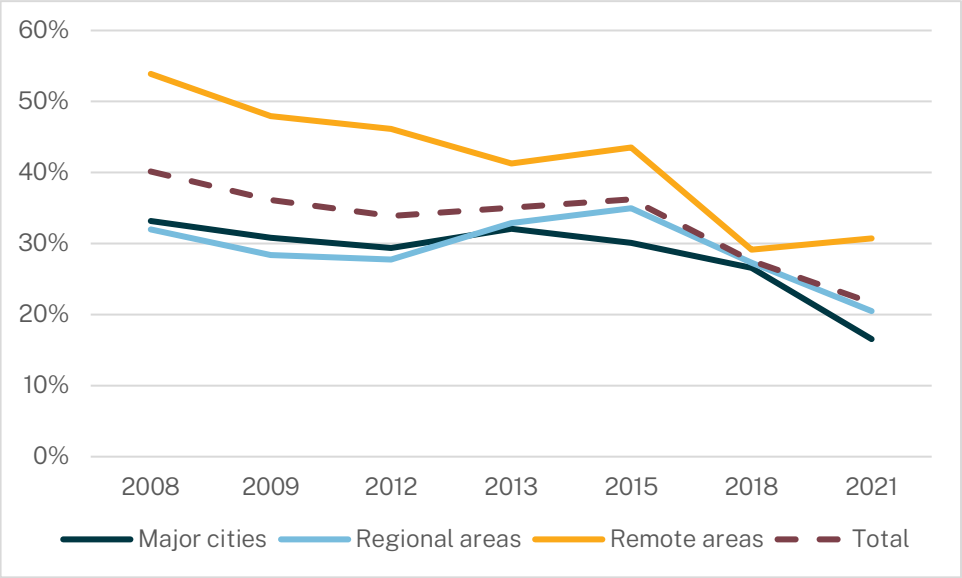


Figure 49: Proportion of LSIC Families whose home needs major fixing, by remoteness

Conclusion

We present a brief longitudinal analysis of the evolution of social and emotional wellbeing and its close correlates.[35] It uses Primary Carer and Study Child data from the first 14 waves of LSIC. Results are disaggregated by remoteness.

Findings suggest time trends in Study Child outcomes vary. On the one hand, the proportion of LSIC Study Children who are at low risk of clinically significant emotional or behavioural difficulties has increased over time, as has the proportion of Study Children who are frequently engaging with Aboriginal and Torres Strait Islander cultures. On the other hand, the proportions of Study Children with clinically low-risk prosocial problem behaviours decreased. There was decrease also in the proportion of Study Children experiencing an absence of difficulty sleeping, and those with very good and excellent general health status. Oral health problems and ear problems have remained the two most prevalent types of health problems for Study Children.

The proportion of Study Children who have experienced racism at school has increased over time, though the proportion of those experiencing bullying and unfair treatment has remained stable.

The proportion of Primary Carers with positive wellbeing outcomes has also dropped over time. The overwhelming majority however continued to report that they are coping well with life. Financial stress has eased over time among LSIC Families. Both the percentages of families who have experienced a shortage of money and serious worries about money have declined over time. The ability for family to pay bills on time, however, has remained the most common source of financial stress for LSIC Study Families.

Most LSIC Study Families have experienced more than one major life event each year. The average number of major life events is marginally higher for remote areas. However, the prevalence of experiencing

[35] As identified in previous sections of this Report.

multiple major life events has decreased over time. So too has the prevalence of overcrowded housing and living in homes that required repair.

Notably, wellbeing, financial circumstances and housing conditions improved substantially among Primary Carers and LSIC Study Families during the first year of the COVID-19 pandemic in 2020.

The findings in this section strengthen the view that the social and emotional wellbeing of Aboriginal and Torres Strait Islander peoples is a holistic concept. The holistic concept of social and emotional wellbeing posits that it is possible for a person to face challenges in certain areas of their life and still maintain positive social and emotional well-being if their positive experiences in other areas outweigh the difficulties (Gee et al., 2014). The previous two sections (Sections Four and Five) indicated that factors like physical health, Primary Carer's well-being, and school environment significantly affect social and emotional wellbeing. However, this section showed that despite facing increased exposure to racism, unsafe school environments, and physical health risks, Study Children have demonstrated improved social and emotional wellbeing over time. This suggests that improvements in other areas of life, such as finances, housing and connection to culture, may have contributed to protecting social and emotional wellbeing from the negative effects of harmful school environments. In simpler terms, while reaching the Closing the Gap Life Outcome targets (Commonwealth of Australia & Coalition of the Peaks, 2020) for employment (Target 8), housing (Target 9), and culture (Target 16) is an accomplishment in its own right, it can help in achieving the target related to social and emotional wellbeing (Target 14).

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Appendix

This Appendix provides supporting details for the research analysis presented in this report. It is divided under four subheadings for each of Sections Two, Four, Five and Six.

Appendix to Section Two

Examples of recoding used in data cleaning

Example of negative-to-positive recoding

The variable kahc3_1 (SC needs extra help with looking after self, due to health condition) was recoded and base reference adjusted as demonstrated below.

Table A24: Example of recoding a variable to be positively coded

Variable	Question Wording	Domain	Original Coding	New Coding
kaoc5	Does (Study Child) get involved in your sport or exercise (e.g., watching you play, training with you)?	Connection to Body	[1] Yes [2] No	[0] No [1] Yes

Example of categorical reduction

The variable kapl12a (SC Connection to Country) was recategorised and base reference adjusted as demonstrated below. To be useful in the later factor analysis, variables require either a binary or ordinal structure. Many recategorisations or reductions were for variables that had no apparent binary or ordinal structure.

Table A25: Example of reducing the number of categories in a variable

Variable	Question Wording	Domain	Original Coding	New Coding
kapl12a	Does (Study Child) have a Connection to Country or place?	Connection to Country/Culture/ Spirituality/Ancestors	[1] Yes, here [2] No [3] Yes, not around here	[0] No [1] Yes here AND Yes, not around here

Derived variables

Table A26: Details of derived variables, including component LSIC questions and calculation method

Derived Variable	Components	Question Details	Domain	Derivation Method	Derived Scale
lcse12_derived	lcse12_1, lcse12_2, lcse12_3, lcse12_4, lcse12_5, lcse12_6, lcse12_7, lcse12_8, lcse12_9, lcse12_10, lcse12_11, lcse12_12,	Have you sought help for personal or emotional problems from any of these people in the last 12 months?	Connection to Mind and Emotions	Sum of components, representing the number of people who SC sought help from in the past 12 months	0 to 16

Derived Variable	Components	Question Details	Domain	Derivation Method	Derived Scale
	lcse12_13, lcse12_14, lcse12_15, lcse12_16				
kcff7_derived	kcff7_1, kcff7_2, kcff7_3, kcff7_4, kcff7_5, kcff7_6, kcff7_7, kcff7_8, kcff7_9, kcff7_10, kcff7_11, kcff7_12, kcff7_13, kcff7_14, kcff7_15	Who helps you learn about being (Aboriginal and/or Torres Strait Islander)?	Connection to Culture/ Country/ Spirituality and Ancestors	Sum of components, representing the number of people who SC learns about being Aboriginal and/or Torres Strait Islander from	0 to 15
kanu4_total	kanu4_1, kanu4_2, kanu4_3, kanu4_4, kanu4_5, kanu4_6, kanu4_7, kanu4_8, kanu4_9	Does (Study Child) eat bush tucker when (he/she) is at home? What kinds?	Connection to Culture/ Country/ Spirituality and Ancestors	Sum of components, representing the number/diversity of bush tucker SC eats at home	0 to 16
kcffring_score	kcffring1, kcffring2, kcffring3, kcffring4, kcffring5	SC closeness of relationships – Number of persons in a given ring	Connection to Family and Kinship	Using only kcffring* variables that were for family members, the proportion of selected family members in ring 1 out of all family members identified in all rings	A proportion, between 0 and 1
kcff3_derived	kcff3_1, kcff3_2, kcff3_3, kcff3_4, kcff3_5, kcff3_6, kcff3_7, kcff3_8, kcff3_9, kcff3_10, kcff3_11	Who would you go to (talk with) if you were sad or upset?	Connection to Family and Kinship	Sum of components, representing the number of people SC would talk to if they were sad or upset	0 to 11
kcff4_derived	kcff4_1, kcff4_2, kcff4_3, kcff4_4, kcff4_5, kcff4_6, kcff4_7, kcff4_8, kcff4_9, kcff4_10, kcff4_11	Who would you go to talk about something good that has happened?	Connection to Family and Kinship	Sum of components, representing the number of people SC would talk to about something good happening	0 to 11
kcs2	kacs2, kccs2	kccs2: In the last month have you had trouble getting to sleep or staying asleep? kacs2: In the last month has (Study Child) usually had trouble getting to sleep or staying asleep?	Connection to Body	kacs2 is a binary indicator asked to P1 about SC's sleep for Cohort B only. kccs2 is an ordinal scale from 1 to 6, asked to SC for Cohort K only. Derived variable transforms kccs2 into a binary response where 5 and 6 were recoded to 1, 1 to 4 were recoded to 0.	Binary, 0 or 1, where 0 indicates poor sleep, 1 indicates good sleep

Note: SC = Study Child, P1 = Primary Carer.

Exploratory Factor Analysis

Connection to Body

Table A27: Kaiser-Meyer-Olkin test scores for Connection to Body variables

Variable	KMO	Theme	Variable	KMO	Theme
aac76	0.60	Physical activity	ahc2skn	0.49	Health (medical) conditions
aac78	0.62	Physical activity	ahc3_1	0.69	Health (medical) conditions
adh4_7	0.58	Problems with teeth and gums	ahc3_2	0.67	Health (medical) conditions
ahc1	0.66	General health	ahc3_3	0.75	Health (medical) conditions
ahc2dev	0.66	Health (medical) conditions	aho1a10	0.57	Hospitalisation
ahc2dis	0.69	Health (medical) conditions	aho4hos	0.56	Visits to health professionals
ahc2ear	0.49	Health (medical) conditions	ame2a	0.63	Major life events
ahc2eye	0.65	Health (medical) conditions	cnu45_3	0.66	Nutrition
ahc2inj	0.69	Health (medical) conditions	cs2	0.73	Difficulty sleeping

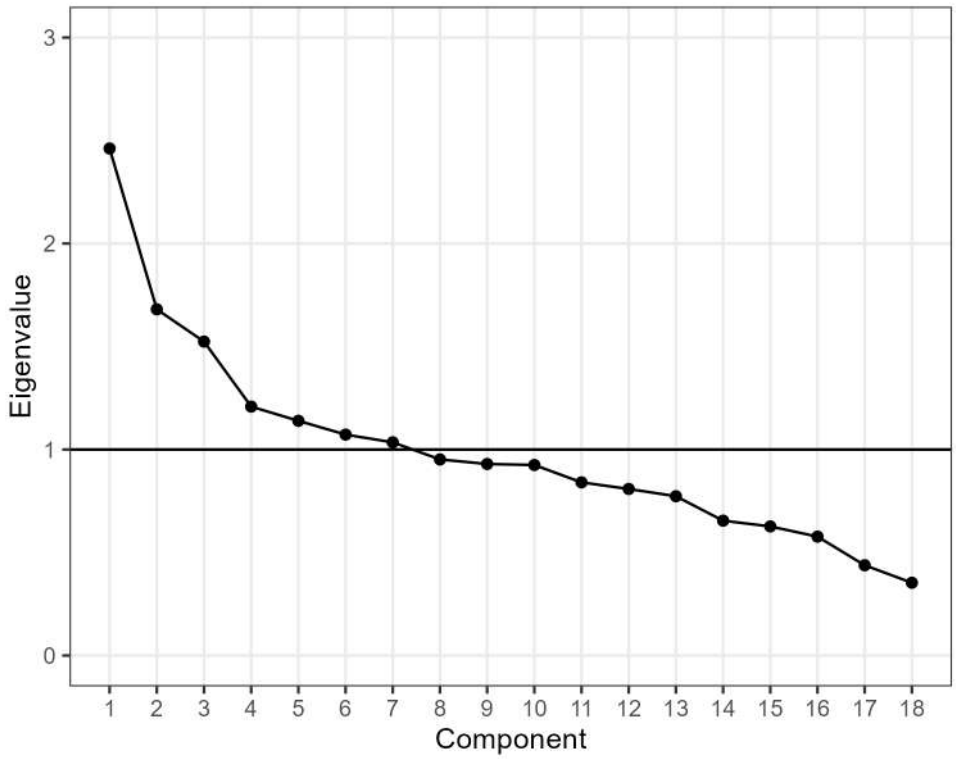

Figure A50: Scree plot for the Connection to Body domain

Connection to Mind and Emotions

Table A28: Kaiser-Meyer-Olkin test scores for Connection to Mind and Emotions variables

Variable	KMO	Theme	Variable	KMO	Theme
cff8_1	0.90	Friends and peers	css1_f	0.89	Strong Souls – resilience subscale
cse11_1	0.90	Self-efficacy	css1_g	0.89	Strong Souls – resilience subscale
cse11_2	0.85	Self-efficacy	css1_h	0.89	Strong Souls – resilience subscale
cse11_3	0.87	Self-efficacy	css1_i	0.89	Strong Souls – resilience subscale
cse11_4	0.93	Self-efficacy	css1_j	0.93	Strong Souls – resilience subscale
csqpros	0.92	Strengths and difficulties (SDQ)	css1_k	0.92	Strong Souls – resilience subscale
css1_a	0.93	Strong Souls – resilience subscale	css1_l	0.86	Strong Souls – resilience subscale
css1_b	0.90	Strong Souls – resilience subscale	css1_m	0.89	Strong Souls – resilience subscale
css1_e	0.92	Strong Souls – resilience subscale			

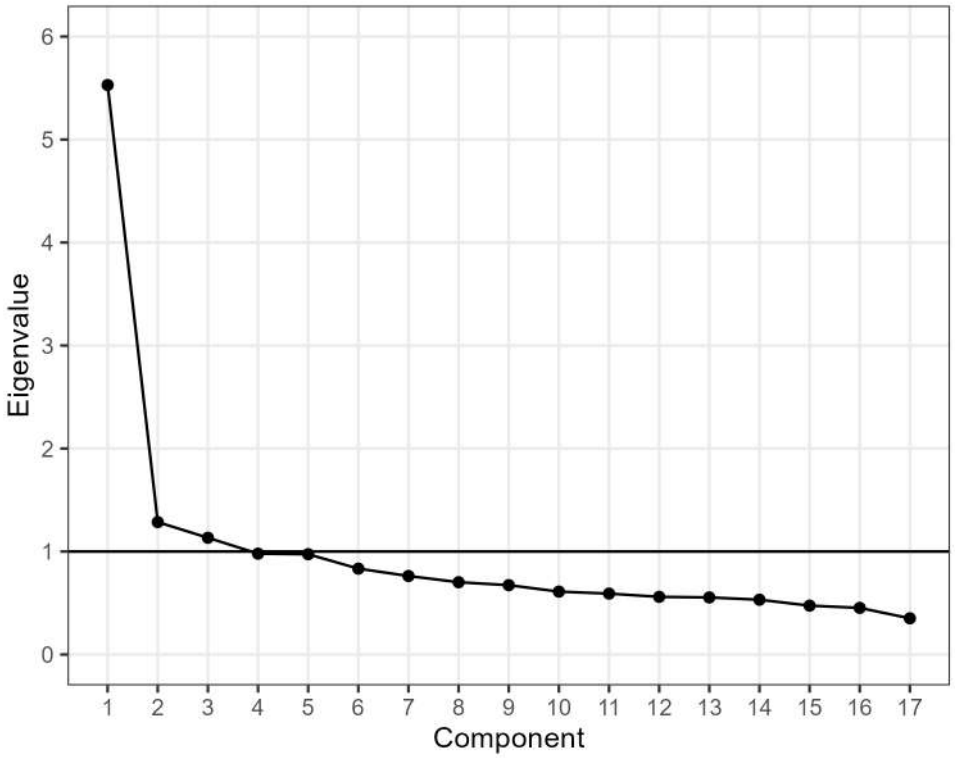

Figure A51: Scree plot for the Connection to Mind and Emotions domain

Connection to Family and Kinship

Table A29: Kaiser-Meyer-Olkin test scores for Connection to Family and Kinship variables

Variable	KMO	Theme	Variable	KMO	Theme
are8	0.67	Family cohesion	cff32_4	0.87	SC's relationship with Primary Carer
cff15_1	0.82	SC's relationship with Primary Carer	cff32_7	0.89	SC's relationship with Primary Carer
cff16	0.77	Family cohesion	cff3_derived	0.51	Who SC goes to if sad/upset
cff17	0.83	Family cohesion	cff4_derived	0.52	Who SC talks to when something good happens
cff32_1	0.88	SC's relationship with Primary Carer	cffring_score	0.82	Closeness of relationships
cff32_2	0.85	SC's relationship with Primary Carer	cia1_6	0.59	Aspirations and inspirations
cff32_3	0.87	SC's relationship with Primary Carer			

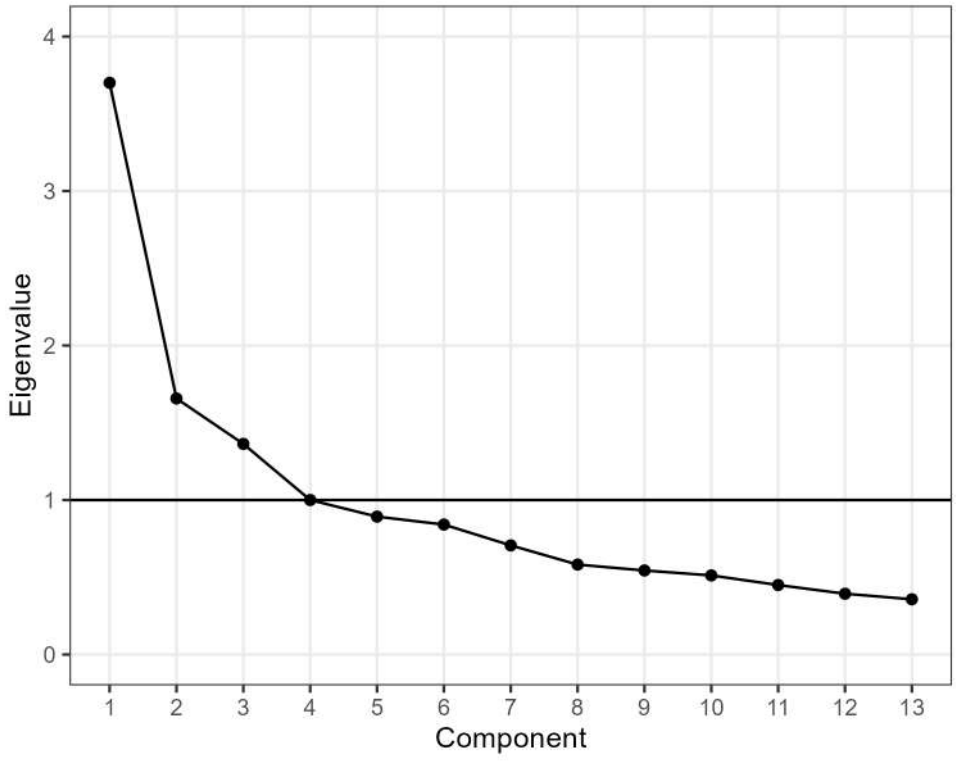

Figure A52: Scree plot for the Connection to Family and Kinship domain

Connection to Community

Table A30: Kaiser-Meyer-Olkin test scores for Connection to Community variables

Variable	KMO	Theme	Variable	KMO	Theme
ahm10	0.55	Community descriptors	csa26_2	0.66	Community descriptors
ahm11	0.55	Community descriptors	csa26_3	0.61	Community safety
cia1_11	0.44	Aspirations and inspirations	csa26_4	0.60	Community safety
csa26_1	0.57	Community descriptors			

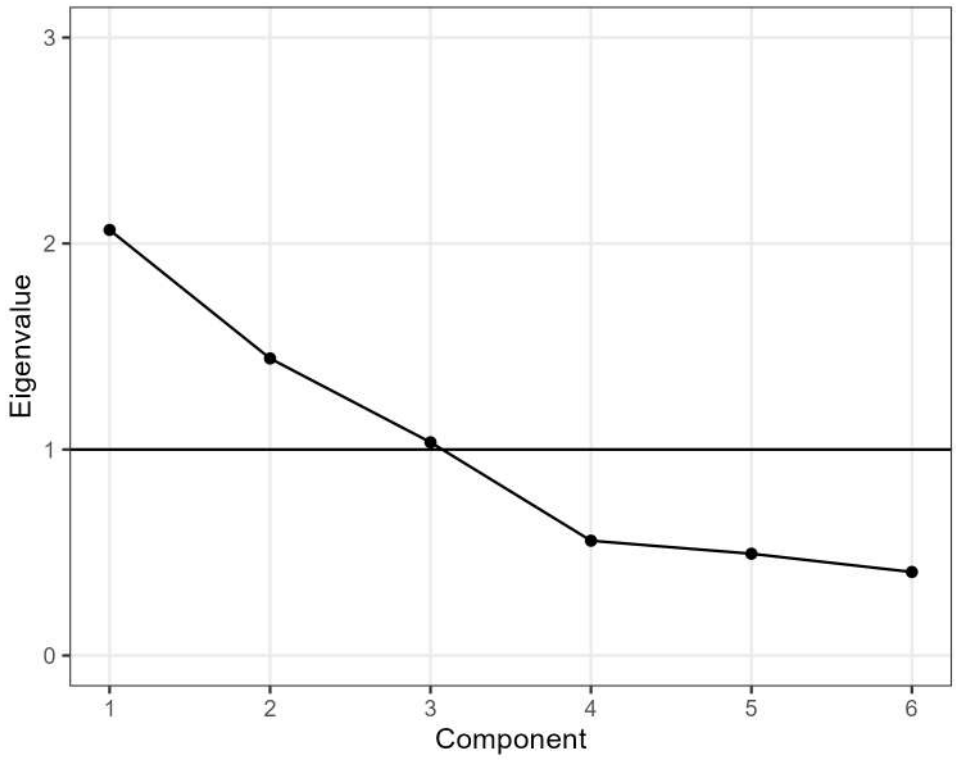

Figure A53: Scree plot for the Connection to Community domain

Connection to Culture, Country, Ancestors and Spirituality

Table A31: Kaiser-Meyer-Olkin test scores for Connection to Culture, Country, Ancestors and Spirituality variables

Variable	KMO	Theme	Variable	KMO	Theme
afh6_1	0.66	Cultural identity	cff7_derived	0.69	Cultural knowledge and practices
afh6_2	0.73	Cultural identity	cia1_7	0.49	Aspirations and inspirations
afh6_3	0.61	Cultural identity	cpl41	0.51	Language
anu4_total	0.64	Traditional foods	csc41_1	0.75	Cultural safety in class
apl12a	0.76	Living on Country	csc41_2	0.76	Cultural safety in class
cff4_14	0.54	Help seeking	csc41_3	0.73	Cultural safety in class
cff5_14	0.54	Help seeking	csc41_4	0.74	Cultural safety in class

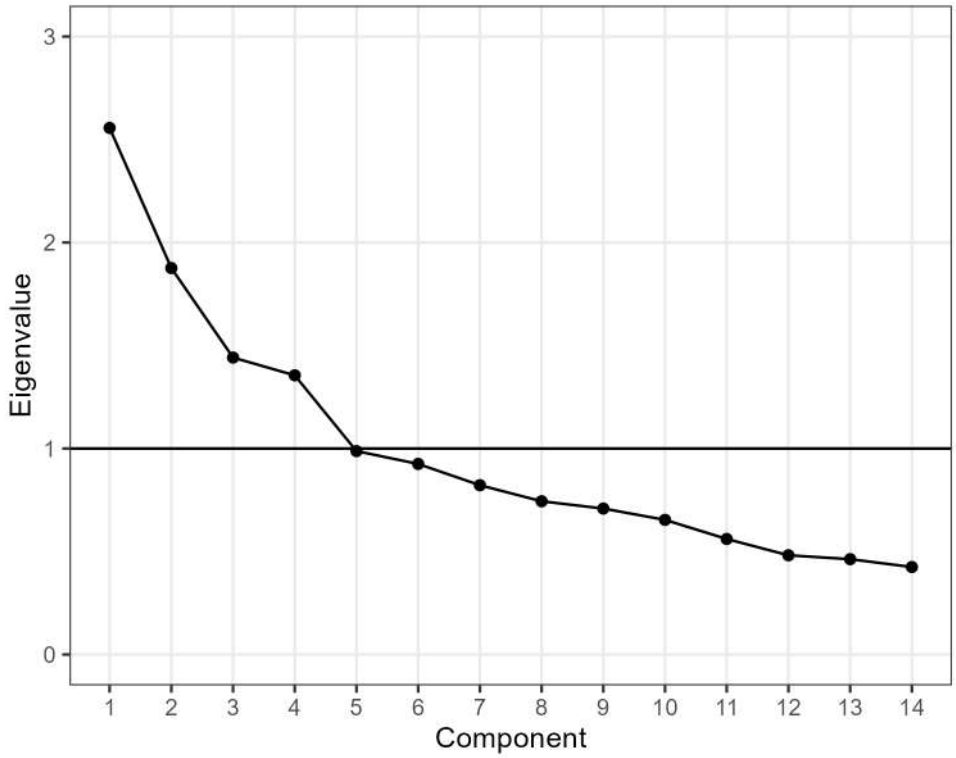

Figure A54: Scree plot for the Connection to Culture, Country, Ancestors and Spirituality domain

Final list of variables used for each domain

Table A32: Final list of variables arising from the exploratory factor analysis and used in the structural equation modelling

Domain	Variable	Wording	Responses
Connection to Body	kaac76	How many hours on a typical weekday is (Study Child) active play or sport?	[0] – 49 (4.1%) [1] – 73 (6.1%) [2] – 190 (16.0%) [3] – 313 (26.3%) [4] – 199 (16.7%) [5] – 99 (8.3%) [6] – 210 (17.7%)
Connection to Body	kaac78	How often does (Study Child) do an hour or more physical activity?	[0] – 89 (7.5%) [1] – 229 (19.3%) [2] – 226 (19.0%) [3] – 71 (6.0%) [4] – 520 (43.7%)
Connection to Body	kadh4_7	In the last 12 months, has had any of the following problems with teeth or gums? Any problems with teeth or mouth? None of the above.	[0] – 398 (33.5%) [1] – 767 (64.5%)
Connection to Body	kahc1	Now I'd like to ask some questions about (Study Child)'s health. In general,	[0] – 4 (0.3%) [1] – 28 (2.4%) [2] – 237 (19.9%)

Domain	Variable	Wording	Responses
		would you say (Study Child)'s health is excellent, very good, good, fair or poor?	[3] – 505 (42.5%) [4] – 407 (34.2%)
Connection to Body	kahc2dev	WHETHER had any developmental delay.	[0] – 30 (2.5%) [1] – 1141 (96.0%)
Connection to Body	kahc2dis	WHETHER SY had a disability.	[0] – 58 (4.9%) [1] – 1113 (93.6%)
Connection to Body	kahc2eye	WHETHER Study Child has an eye problem.	[0] – 207 (17.4%) [1] – 968 (81.4%)
Connection to Body	kahc2inj	WHETHER had an injury.	[0] – 64 (5.4%) [1] – 1107 (93.1%)
Connection to Body	kahc2skn	WHETHER had skin problem.	[0] – 77 (6.5%) [1] – 1094 (92.0%)
Connection to Body	kahc3_1	Because of (Study Child)'s health conditions you just mentioned, does (he/she) need extra help with:	[0] – 70 (5.9%) [1] – 1112 (93.5%)
Connection to Body	kahc3_2	Because of (Study Child)'s health conditions you just mentioned, does (he/she) need extra help with:	[0] – 45 (3.8%) [1] – 1137 (95.6%)
Connection to Body	kahc3_3	Because of (Study Child)'s health conditions you just mentioned, does (he/she) need extra help with:	[0] – 71 (6.0%) [1] – 1110 (93.4%)
Connection to Body	kaho1a10	WHETHER SC saw medical professionals at the hospital	[0] – 119 (10.0%) [1] – 1059 (89.1%)
Connection to Body	kaho4hos	WHETHER SC saw medical professionals at the hospital	[0] – 135 (11.4%) [1] – 1040 (87.5%)
Connection to Body	kame2a	Have you or a close family member been badly hurt or sick? Study Child>.	[0] – 392 (33.0%) [1] – 776 (65.3%)
Connection to Body	kcnu45_3	Do you usually eat breakfast?	[0] – 120 (10.1%) [1] – 1005 (84.5%)
Connection to Body	kcs2	Derived variable: SC does not often have difficulty sleeping	[0] – 260 (23.4%) [1] – 852 (76.6%)
Connection to Mind and Emotions	lcff8_1	I make friends easily.	[0] – 11 (1.0%) [1] – 44 (3.9%) [2] – 80 (7.0%) [3] – 138 (12.1%) [4] – 404 (35.4%) [5] – 379 (33.2%)
Connection to Mind and Emotions	lcse11_1	Are these true for you? I can work out my problems.	[0] – 20 (1.8%) [1] – 32 (2.8%) [2] – 69 (6.0%) [3] – 162 (14.2%) [4] – 449 (39.4%) [5] – 322 (28.2%)

Domain	Variable	Wording	Responses
Connection to Mind and Emotions	lcse11_2	Are these true for you? If I try, I can do most things.	[0] – 7 (0.6%) [1] – 22 (1.9%) [2] – 49 (4.3%) [3] – 107 (9.4%) [4] – 419 (36.7%) [5] – 446 (39.1%)
Connection to Mind and Emotions	lcse11_3	Are these true for you? There are many things that I do well.	[0] – 6 (0.5%) [1] – 27 (2.4%) [2] – 50 (4.4%) [3] – 179 (15.7%) [4] – 360 (31.6%) [5] – 429 (37.6%)
Connection to Mind and Emotions	lcse11_4	Are these true for you? I feel good about my future.	[0] – 17 (1.5%) [1] – 30 (2.6%) [2] – 65 (5.7%) [3] – 130 (11.4%) [4] – 295 (25.9%) [5] – 506 (44.3%)
Connection to Mind and Emotions	lcsqpros	SDQ Prosocial Score	[0] – 15 (1.3%) [1] – 6 (0.5%) [2] – 12 (1.1%) [3] – 33 (2.9%) [4] – 65 (5.7%) [5] – 127 (11.1%) [6] – 156 (13.7%) [7] – 131 (11.5%) [8] – 163 (14.3%) [9] – 160 (14.0%) [10] – 154 (13.5%)
Connection to Mind and Emotions	lcss1_a	How much is this like you?...When you get sad you can find something that makes you happy.	[0] – 73 (6.4%) [1] – 165 (14.5%) [2] – 348 (30.5%) [3] – 434 (38.0%)
Connection to Mind and Emotions	lcss1_b	SC has a strong family	[0] – 42 (3.7%) [1] – 111 (9.7%) [2] – 238 (20.9%) [3] – 627 (55.0%)
Connection to Mind and Emotions	lcss1_e	How much is this like you?...You know someone who is a really good person.	[0] – 12 (1.1%) [1] – 63 (5.5%) [2] – 321 (28.1%) [3] – 621 (54.4%)
Connection to Mind and Emotions	lcss1_f	SC laughs and jokes a lot	[0] – 62 (5.4%) [1] – 135 (11.8%) [2] – 291 (25.5%) [3] – 541 (47.4%)
Connection to Mind and Emotions	lcss1_g	How much is this like you?...You are really into something (like music, football, clothes).	[0] – 22 (1.9%) [1] – 76 (6.7%) [2] – 175 (15.3%) [3] – 758 (66.4%)

Domain	Variable	Wording	Responses
Connection to Mind and Emotions	lcss1_h	SC is a good son or daughter to their family	[0] – 19 (1.7%) [1] – 99 (8.7%) [2] – 331 (29.0%) [3] – 564 (49.4%)
Connection to Mind and Emotions	lcss1_i	How much is this like you?... You know a lot about your <Aboriginal/Torres Strait Islander> family history and culture (e.g., family stories and relationships).	[0] – 186 (16.3%) [1] – 220 (19.3%) [2] – 287 (25.2%) [3] – 304 (26.6%)
Connection to Mind and Emotions	lcss1_j	How much is this like you?...People say that you are really good at something. Like sports or fishing or looking after kids.	[0] – 40 (3.5%) [1] – 104 (9.1%) [2] – 287 (25.2%) [3] – 594 (52.1%)
Connection to Mind and Emotions	lcss1_k	How much is this like you?...You have an older person looking out for you.	[0] – 27 (2.4%) [1] – 51 (4.5%) [2] – 152 (13.3%) [3] – 787 (69.0%)
Connection to Mind and Emotions	lcss1_l	How much is this like you?...You have lots of friends.	[0] – 8 (0.7%) [1] – 92 (8.1%) [2] – 346 (30.3%) [3] – 590 (51.7%)
Connection to Mind and Emotions	lcss1_m	How much is this like you?...When you're sad you have a person you can talk to.	[0] – 40 (3.5%) [1] – 124 (10.9%) [2] – 209 (18.3%) [3] – 635 (55.7%)
Connection to Family and Kinship	kare8	Does (Study Child) get along well with (his/her) brother(s) / sister(s) / cousin(s)?	[0] – 8 (0.7%) [1] – 139 (11.7%) [2] – 551 (46.3%) [3] – 454 (38.2%)
Connection to Family and Kinship	kcff15_1	Do you think the amount of time your Mum spends with you is... Not enough, about right, too much?	[0] – 248 (20.9%) [1] – 670 (56.3%)
Connection to Family and Kinship	kcff16	SC gets along with their brothers/sisters/cousins	[0] – 21 (1.8%) [1] – 31 (2.6%) [2] – 73 (6.1%) [3] – 127 (10.7%) [4] – 454 (38.2%) [5] – 373 (31.4%)
Connection to Family and Kinship	kcff17	Does your family get along with each other?	[0] – 12 (1.0%) [1] – 23 (1.9%) [2] – 61 (5.1%) [3] – 108 (9.1%) [4] – 450 (37.8%) [5] – 428 (36.0%)
Connection to Family and Kinship	kcff32_1	SC's mum – understands SC	[0] – 14 (1.2%) [1] – 13 (1.1%) [2] – 26 (2.2%) [3] – 49 (4.1%) [4] – 241 (20.3%) [5] – 711 (59.8%)

Domain	Variable	Wording	Responses
Connection to Family and Kinship	kcff32_2	Who would you go to (talk with) if you were sad or upset?	[0] – 15 (1.3%) [1] – 5 (0.4%) [2] – 23 (1.9%) [3] – 31 (2.6%) [4] – 123 (10.3%) [5] – 861 (72.4%)
Connection to Family and Kinship	kcff32_3	Who would you go to (talk with) if you were sad or upset?	[0] – 21 (1.8%) [1] – 14 (1.2%) [2] – 25 (2.1%) [3] – 53 (4.5%) [4] – 150 (12.6%) [5] – 789 (66.4%)
Connection to Family and Kinship	kcff32_4	Who would you go to (talk with) if you were sad or upset?	[0] – 25 (2.1%) [1] – 33 (2.8%) [2] – 67 (5.6%) [3] – 106 (8.9%) [4] – 278 (23.4%) [5] – 549 (46.2%)
Connection to Family and Kinship	kcff32_7	Who would you go to (talk with) if you were sad or upset?	[0] – 68 (5.7%) [1] – 60 (5.0%) [2] – 73 (6.1%) [3] – 108 (9.1%) [4] – 202 (17.0%) [5] – 540 (45.4%)
Connection to Family and Kinship	kcff3_derived	Derived variable: How many people SC would go to (talk with) if SC was sad or upset	[0] – 256 (21.5%) [1] – 400 (33.6%) [2] – 236 (19.8%) [3] – 103 (8.7%) [4] – 53 (4.5%) [5] – 33 (2.8%) [6] – 16 (1.3%) [7] – 10 (0.8%) [8] – 8 (0.7%) [9] – 1 (0.1%)
Connection to Family and Kinship	kcff4_derived	Derived variable: How many people SC would go to (talk with) if SC wanted to talk about something good	[0] – 78 (6.6%) [1] – 264 (22.2%) [2] – 284 (23.9%) [3] – 123 (10.3%) [4] – 95 (8.0%) [5] – 58 (4.9%) [6] – 59 (5.0%) [7] – 47 (4.0%) [8] – 51 (4.3%) [9] – 47 (4.0%) [10] – 7 (0.6%) [11] – 9 (0.8%)
Connection to Family and Kinship	Kcffring_score	Proportion of family members in closest ring	[0] – 54 (4.6%) [8] – 1 (0.1%) [10] – 4 (0.3%) [11] – 5 (0.4%) [12] – 4 (0.3%)

Domain	Variable	Wording	Responses
Continued from previous page.	Continued from previous page.	Continued from previous page.	[13] – 1 (0.1%) [14] – 9 (0.8%) [17] – 4 (0.3%) [18] – 2 (0.2%) [19] – 1 (0.1%) [20] – 18 (1.5%) [21] – 1 (0.1%) [22] – 14 (1.2%) [23] – 1 (0.1%) [24] – 1 (0.1%) [25] – 33 (2.8%) [27] – 5 (0.4%) [29] – 15 (1.3%) [30] – 11 (0.9%) [31] – 3 (0.3%) [33] – 33 (2.8%) [36] – 7 (0.6%) [38] – 23 (1.9%) [40] – 16 (1.4%) [41] – 2 (0.2%) [42] – 3 (0.3%) [43] – 15 (1.3%) [44] – 27 (2.3%) [45] – 5 (0.4%) [50] – 74 (6.3%) [53] – 1 (0.1%) [54] – 2 (0.2%) [55] – 8 (0.7%) [56] – 32 (2.7%) [57] – 14 (1.2%) [58] – 3 (0.3%) [59] – 1 (0.1%) [60] – 31 (2.6%) [61] – 1 (0.1%) [62] – 24 (2.0%) [64] – 11 (0.9%) [67] – 47 (4.0%) [69] – 1 (0.1%) [70] – 24 (2.0%) [71] – 17 (1.4%) [72] – 1 (0.1%) [73] – 6 (0.5%) [75] – 46 (3.9%) [78] – 13 (1.1%) [79] – 2 (0.2%) [80] – 30 (2.5%) [81] – 1 (0.1%) [82] – 3 (0.3%) [83] – 21 (1.8%) [86] – 15 (1.3%) [88] – 21 (1.8%)

Domain	Variable	Wording	Responses
			[89] – 25 (2.1%) [90] – 23 (1.9%) [91] – 5 (0.4%) [92] – 3 (0.3%) [100] – 287 (24.3%)
Connection to Community	kahm10	Is this a good community or neighbourhood for little kids? Would you say it is:	[0] – 2 (0.2%) [1] – 86 (7.2%) [2] – 248 (20.9%) [3] – 458 (38.5%) [4] – 378 (31.8%)
Connection to Community	kahm11	Are there good places for kids to play in this community or neighbourhood? Would you say it is:	[0] – 58 (4.9%) [1] – 129 (10.8%) [2] – 240 (20.2%) [3] – 449 (37.8%) [4] – 290 (24.4%)
Connection to Community	kcsa26_2	Do you think where you live/ in your community that…There are lots of fun things to do.	[0] – 45 (3.8%) [1] – 101 (8.5%) [2] – 188 (15.8%) [3] – 401 (33.7%) [4] – 376 (31.6%)
Connection to Community	kcsa26_3	Do you think where you live/ in your community that…I feel safe during the day.	[0] – 7 (0.6%) [1] – 16 (1.3%) [2] – 76 (6.4%) [3] – 428 (36.0%) [4] – 584 (49.1%)
Connection to Community	kcsa26_4	Do you think where you live/ in your community that…I feel safe at night.	[0] – 35 (2.9%) [1] – 44 (3.7%) [2] – 138 (11.6%) [3] – 442 (37.2%) [4] – 446 (37.5%)
Connection to Culture, Country, Spirituality and Ancestors	kafh6_1	Does (Study Child) know (his/her) mob?	[0] – 505 (45.9%) [1] – 550 (50.0%)
Connection to Culture, Country, Spirituality and Ancestors	kafh6_2	Does (Study Child) know (his/her) mob?	[0] – 271 (24.6%) [1] – 784 (71.3%)
Connection to Culture, Country, Spirituality and Ancestors	kafh6_3	Does (Study Child) know (his/her) mob?	[0] – 570 (51.8%) [1] – 485 (44.1%)
Connection to Culture, Country, Spirituality and Ancestors	kanu4_total	Variety of bush tucker SC eats	[0] – 341 (28.7%) [1] – 137 (11.5%) [2] – 152 (12.8%) [3] – 163 (13.7%) [4] – 104 (8.7%) [5] – 103 (8.7%) [6] – 70 (5.9%)

Domain	Variable	Wording	Responses
			[7] – 59 (5.0%) [8] – 32 (2.7%) [9] – 9 (0.8%)
Connection to Culture, Country, Spirituality and Ancestors	kapl12a	Does (Study Child) have a Connection to Country or place?	[0] – 271 (22.8%) [1] – 853 (71.7%)
Connection to Culture, Country, Spirituality and Ancestors	kcff4_14	Who SC talks to when something good happens – Elders	[0] – 1091 (91.8%) [1] – 31 (2.6%)
Connection to Culture, Country, Spirituality and Ancestors	kcff5_14	Who SC goes to if SC or a friend is bullied – Elders	[0] – 1074 (90.3%) [1] – 36 (3.0%)
Connection to Culture, Country, Spirituality and Ancestors	kcff7_derived	Derived variable: Number of people who help SC learn about being Aboriginal and/or Torres Strait Islander	[0] – 14 (1.3%) [1] – 572 (52.9%) [2] – 241 (22.3%) [3] – 107 (9.9%) [4] – 57 (5.3%) [5] – 36 (3.3%) [6] – 19 (1.8%) [7] – 15 (1.4%) [8] – 5 (0.5%) [9] – 8 (0.7%) [10] – 4 (0.4%) [11] – 2 (0.2%) [12] – 1 (0.1%)
Connection to Culture, Country, Spirituality and Ancestors	kcpl41	Do you speak an Aboriginal and/or Torres Strait Islander language at home?	[0] – 902 (75.9%) [1] – 228 (19.2%)
Connection to Culture, Country, Spirituality and Ancestors	kcsc41_1	How much do you agree with this? ... I feel good about being Aboriginal and/or Torres Strait Islander in class.	[0] – 13 (1.1%) [1] – 13 (1.1%) [2] – 38 (3.2%) [3] – 49 (4.1%) [4] – 124 (10.4%) [5] – 828 (69.6%)
Connection to Culture, Country, Spirituality and Ancestors	kcsc41_2	How much do you agree with this? ... I want to share things about being Aboriginal and/or Torres Strait Islander in class	[0] – 55 (4.6%) [1] – 104 (8.7%) [2] – 115 (9.7%) [3] – 135 (11.4%) [4] – 259 (21.8%) [5] – 384 (32.3%)
Connection to Culture, Country, Spirituality and Ancestors	kcsc41_3	How much do you agree with this? ... I feel safe about being Aboriginal and/or Torres Strait Islander in class	[0] – 12 (1.0%) [1] – 17 (1.4%) [2] – 36 (3.0%) [3] – 61 (5.1%)

Domain	Variable	Wording	Responses
			[4] – 136 (11.4%) [5] – 800 (67.3%)
Connection to Culture, Country, Spirituality and Ancestors	kcsc41_4	How much do you agree with this? … I like people to know I am Aboriginal and/or Torres Strait Islander in class	[0] – 37 (3.1%) [1] – 49 (4.1%) [2] – 68 (5.7%) [3] – 88 (7.4%) [4] – 190 (16.0%) [5] – 625 (52.6%)

Responses are shown as [response value] – number of responses (percent of all responses). Only valid responses are displayed, meaning percentages do not add up to 100% due to missing data or non-response.

Structural equation model including modification indices

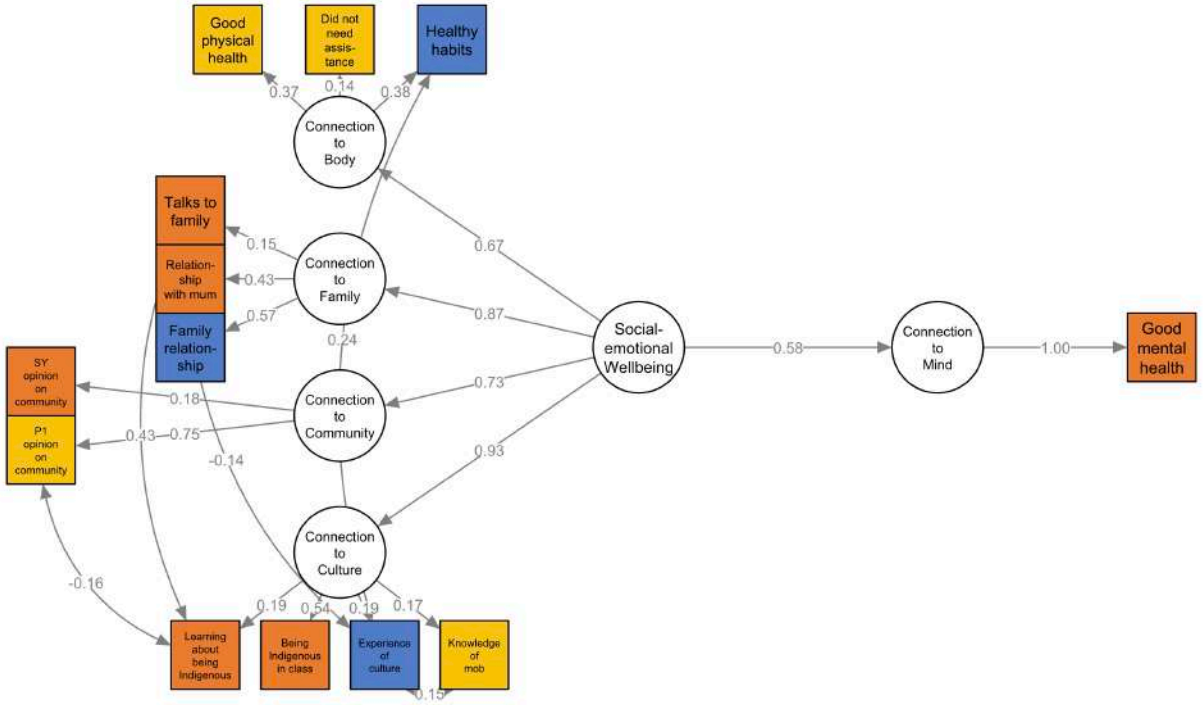

Figure A55: Structural equation modelling including modification indices. See the Improved framework section for more details

Note: Orange boxes indicate factors based on Study Youth (SY) responses, yellow indicate Primary Carer (P1) responses, blue indicates a mix of both. Connection to Family includes 'Connection to Kinship', Connection to Mind includes 'Connection to Mind and Emotions', Connection to Culture includes 'Connection to Country/Ancestors/Spirituality'.

Appendix to Section Four

The following Table A33, Table A34, Table A35, and Table A36 present full regression results.

Table A33 presents the baseline model (where predictor variables measured at all the five waves are included as predictors of social and emotional wellbeing) and models which include additional measures of Study Child physical health as predictor variables. Table A34 presents models with housing variables as main predictors. Table A35 presents models which include Primary Carer's health and individual types of major life events as main predictor variables. Table A36 provides models which include sociocultural variables as main predictor variables.

Table A33: Regression for the baseline model and models with child health variables as main predictors

Variable	Model 1			Model 2			Model 3		
	OR		SE	OR		SE	OR		SE
Age	1.12	***	0.04	1.08		0.05	1.09	*	0.05
Gender	1.58	***	0.18	1.55	***	0.23	1.51	***	0.22
Child physical health	1.47	***	0.15						
Any health problem				0.64	***	0.09			
Types of health problem									
Disability							0.21	***	0.09
Ear problem							0.67	**	0.12
Eye problem							0.70		0.18
Skin problem							0.62	***	0.11
Developmental delay							0.50	*	0.19
Asthma							0.75		0.16
Financial stress	0.75	***	0.07	0.66	***	0.09	0.68	***	0.10
Primary Carer/partner employment	1.19	***	0.11	1.43	**	0.21	1.52	***	0.22
Primary Carer's education	1.27	*	0.13	1.52	***	0.24	1.53	***	0.24
Major life events	0.86	***	0.02	0.83	***	0.03	0.84	***	0.03
SEIFA-IRSAD	1.06	**	0.02	1.07	*	0.04	1.07	**	0.04
Remoteness									
Inner regional areas	1.04		0.15	1.16		0.23	1.22		0.24
Outer regional areas	1.32	*	0.22	1.49	*	0.35	1.42		0.33
Remote areas	0.92		0.17	0.75		0.19	0.74		0.19
Very remote areas	1.07		0.19	0.61	**	0.15	0.58	**	0.14
_cons	0.73		0.22	1.82		0.71	1.55		0.58
var(_cons)	2.64		0.25	3.22		0.58	2.90		0.54
McFadden's R2	0.18			0.61			0.62		
Number of observations	5,516			2,368			2,368		

Note: *** Statistically significant at the 1% level; ** significant at the 5% level; * significant at the 10% level. Model 1 serves as the baseline model, incorporating variables for which data is available across all five waves (Waves 3, 6, 8, 10, and 12) as predictors. Model 2 includes Study Child's general health status as a main predictor variable, whereas Model 3 includes various physical health problems, including disability, as main predictors. SEIFA-IRSAD = Socio-Economic Index for Areas–Index of Relative Socioeconomic Advantage and Disadvantage, OR = odds ratio, SE = standard error.

Table A34: Regression models with housing variables as main predictor variables

Variable	Model 4			Model 5			Model 6			Model 7		
	OR		SE	OR		SE	OR		SE	OR		SE
Age	1.11	***	0.04	1.10	**	0.05	1.09	*	0.05	1.05		0.06
Gender	1.53	***	0.18	1.67	***	0.23	1.70	***	0.25	1.56	***	0.26
Child physical health	1.44	***	0.15	1.53		0.20	1.57	***	0.23	1.69	***	0.31
Financial stress	0.64	***	0.06	0.65	***	0.07	0.65	***	0.08	0.56	***	0.09
Primary Carer/partner employment	1.21	**	0.12	1.23	***	0.14	1.26	*	0.17	1.15		0.19
Primary Carer's education	1.20	*	0.12	1.19	*	0.14	1.24		0.16	1.32		0.23
Housing problems	0.76	***	0.07									
Overcrowding				0.61	***	0.09						
Moved house				0.92		0.12						
Moving house							0.76	**	0.10			
Major repairs needed										0.61	***	0.09
SEIFA-IRSAD	1.06	***	0.02	1.06	**	0.03	1.07	**	0.03	1.05		0.04
Remoteness												
Inner regional areas	1.08		0.16	1.04		0.18	1.01		0.19	1.10		0.24
Outer regional areas	1.29		0.22	1.60	**	0.32	1.52	*	0.33	2.35		0.62
Remote areas	0.84		0.16	0.84		0.19	0.75		0.19	0.79		0.23
Very remote areas	1.00		0.18	1.46	*	0.31	1.18		0.27	1.56		0.42
_cons	0.53	**	0.16	0.40		0.28	0.62		0.39			
var(_cons)	2.74		0.26	3.48		0.38	3.33		0.46	3.61		0.67
McFadden's R2	0.17			0.37			0.52			0.65		
Number of observations	5,505			4,312			3,177			2,165		

Note: *** Statistically significant at the 1% level; ** significant at the 5% level; * significant at the 10% level. Model 4 includes an overall measure of housing problem (i.e., whether the Primary Carer felt too crowded, or moved house, or had a housing problem in the past 12 months) as a main predictor variable; Model 5 includes overcrowding (i.e., whether the Primary Carer felt too crowded) as a main predictor variable; Model 6 includes whether the Primary Carer moved house as a main predictor variable; Model 6 includes whether the Primary Carer is thinking of moving house in the next 12 months and; Model 7 includes whether Primary Carer's home has any major things that need fixing. SEIFA-IRSAD = Socio-Economic Index for Areas–Index of Relative Socioeconomic Advantage and Disadvantage, OR = odds ratio, SE = standard error.

Table A35: Regression models with Primary Carer's health and types of major life events as main predictors

	Model 8			Model 9			Model 10		
	OR		SE	OR		SE	OR		SE
Age	1.12	***	0.05	1.17	***	0.05	1.13	***	0.04
Gender	1.63	***	0.20	1.56	***	0.19	1.61	***	0.19
Child physical health	1.54	***	0.18	1.44	***	0.19	1.50	***	0.16
Financial stress	0.85		0.09	0.69	***	0.08			
Primary Carer/partner employment	1.27	**	0.14	1.21		0.14	1.17		0.12
Primary Carer's education	1.32	**	0.15	1.25	*	0.15	1.28	**	0.13
Major life events	0.91	***	0.02	0.87	***	0.02			
Primary Carer's mental health	1.86	***	0.10						
Primary Carer's physical health				1.14		0.13			
Types of major life events									
Pregnancy							0.93		0.08
Hurt/sick							0.96		0.09
Passed away							1.02		0.09
Get a job/return to study							1.15		0.11
Lose a job							1.10		0.18
Worries about money							0.70	***	0.07
Humbugged							0.84	**	0.08
Housing problem							0.92		0.10
Alcohol or drug problem							0.81	*	0.09
Mugged, robbed or assaulted							1.10		0.16
Arrested, jail, police							0.82	*	0.09
Child upset by family arguments							0.67	***	0.08
Child scared by other people							0.59	***	0.06
Family split up							0.87		0.14
Child cared for by someone							0.96		0.12
SEIF-IRSAD	1.04	*	0.03	1.06	**	0.03	1.06	**	0.02
Remoteness									
Inner regional areas	1.01		0.16	1.05		0.17	1.05		0.16
Outer regional areas	1.27		0.23	0.95		0.17	1.37		0.24
Remote areas	0.77		0.16	0.95		0.20	0.85		0.17
Very remote areas	0.87		0.17	0.92		0.18	1.14		0.21
_cons	0.50	**	0.16	0.64		0.21	0.54	**	0.17
var(_cons)	2.53		0.29	2.14		0.32	2.70		0.27
McFadden's R2	0.36			0.49			0.23		
Number of observations	4,327			3,347			5,226		

Note: *** Statistically significant at the 1% level; ** significant at the 5% level; * significant at the 10% level. Model 8 includes Primary Carer's mental health as a main predictor variable; Model 9 includes Primary Carer's physical health

as main predictor variable and; Model 10 includes major life events as main predictor variables. SEIFA-IRSAD = Socio-Economic Index for Areas–Index of Relative Socioeconomic Advantage and Disadvantage, OR = odds ratio, SE = standard error.

Table A36: Regression models with sociocultural variables as main predictors

	Model 11			Model 12			Model 13			Model 14	
	OR		SE	OR		SE	OR		SE	OR	SE
Age	1.21	***	0.08	1.17	**	0.08	1.25	***	0.09	1.06	
Gender	2.13	***	0.43	2.05	***	0.41	2.08	***	0.43	1.46	
Child physical health	1.43	*	0.31	1.54	**	0.34	1.49	*	0.35	1.47	
Financial stress	0.74	*	0.13	0.76		0.14	0.68	**	0.13	0.74	
Primary Carer/partner employment	1.43	*	0.29	1.38		0.28	1.33		0.28	1.23	
Primary Carer's education	1.22		0.23	1.16		0.21	1.29		0.25	1.15	
Major life events	0.82	***	0.03	0.83	***	0.03	0.85	***	0.03	0.88	
Practicing culture	1.20	*	0.11								
Closeness of relationships				1.06	**	0.03					
Interpersonal skill							1.34	***	0.13		
School climate							1.42	***	0.14		
Cultural knowledge										1.43	
Bullying and racism											
Bullying										0.24	
Racism										0.30	
SEIFA-IRSAD	1.07		0.05	1.09	**	0.05	1.07		0.05	1.07	
Remoteness											
Inner regional areas	1.03		0.27	0.99		0.25	0.86		0.23	0.92	
Outer regional areas	0.96		0.28	1.12		0.32	0.93		0.28	1.38	
Remote areas	0.87		0.30	0.84		0.29	0.63		0.23	1.18	
Very remote areas	1.45		0.48	1.77	*	0.56	1.36		0.47	1.60	
_cons	0.19		0.19	0.18	*	0.18	0.14		0.15	1.76	
var(_cons)	2.64		0.25	2.74		0.26	2.53		0.29	2.14	
McFadden's R^2	0.70			0.73			0.74		0.64		
Number of observations	2,073			2,062			1,917		2,062		

Note: *** Statistically significant at the 1% level; ** significant at the 5% level; * significant at the 10% level. Model 11 includes practicing culture as a main predictor variable; Model 12 includes closeness of relationship as a main predictor; Model 12 includes interpersonal skill and school climate as main predictor variables and; Model 14 includes cultural knowledge, bullying and racism as main predictor variables. SEIFA-IRSAD = Socio-Economic Index for Areas–Index of Relative Socioeconomic Advantage and Disadvantage, OR = odds ratio, SE = standard error.

Appendix to Section Five

The following tables present full regression results for the logistics models of self-harm and suicidal behaviours.

In Tables 37–39, Model 1 was fitted without including any of the school environment variables. In Models 2–8, one school climate variable was included at a time as a main predictor variable. In Model 8, the bullying and racism variable was included as the main predictor variable, where the bullying/unfair treatment and racial discrimination categories were compared against the reference category of 'no experience of bullying, or unfair treatment or racism'.

Table A37: Full regression results from logistic models of self-harm

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
School adults		0.68***						
		(0.09)						
School friends			0.77**					
			(0.09)					
Positive school climate				0.56***				
				(0.09)				
Sense of safety					0.35***			
					(0.11)			
School racism						2.08**		
						(0.63)		
Teacher racism							1.37*	
							(0.23)	
Bullying and racism, Wave 14								
Bullying/unfair treatment								3.26***
								(1.09)
Racial discrimination								2.05
								(1.00)
Female	1.81**	1.85**	1.82**	2.22**	1.80	1.76**	1.94**	1.66*
	(0.49)	(0.54)	(0.51)	(0.86)	(0.54)	(0.48)	(0.63)	(0.50)
Age	1.01	1.03	0.97	1.16	1.09	1.04	1.01	1.11
	(0.09)	(0.10)	(0.09)	(0.15)	(0.11)	(0.10)	(0.11)	(0.12)
Major life events	1.13**	1.10*	1.14**	1.15	1.18***	1.14**	1.16**	0.18
	(0.06)	(0.06)	(0.06)	(0.08)	(0.07)	(0.06)	(0.07)	(0.13)
Remote/very remote areas	0.15**	0.20**	0.17**	0.24	0.24	0.151**	0.251*	1.11
	(0.11)	(0.15)	(0.12)	(0.25)	(0.18)	(0.11)	(0.19)	(0.06)
_Cons	0.07**	0.05*	0.13	0.003**	0.08	0.02**	0.03**	0.01
	(0.10)	(0.08)	(0.19)	(0.01)	(0.14)	(0.03)	(0.06)	(0.02)
McFadden's R2	0.06	0.07	0.07	0.08	0.08	0.07	0.06	0.09

Number of observations	519	490	502	422	469	519	379	476

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

Table A38: Full regression results from logistic models of suicidal thoughts

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
School adults		0.73**						
		(0.11)						
School friends			0.82					
			(0.12)					
Positive school climate				0.56***				
				(0.09)				
Sense of safety					0.32***			
					(0.13)			
Exposure to racism						2.34**		
						(0.82)		
Teacher racism							1.48**	
							(0.28)	
Bullying and racism, Wave 14								
Bullying/unfair treatment								2.82**
								(1.16)
Racial discrimination								2.85*
								(1.56)
Female	2.35**	2.12**	2.07**	2.22**	1.82	2.28**	2.12**	1.99
	(0.81)	(0.77)	(0.73)	(0.86)	(0.68)	(0.79)	(0.87)	(0.76)
Age	1.02	1.04	0.99	1.16	1.14	1.05	1.13	1.10
	(0.11)	(0.12)	(0.11)	(0.15)	(0.14)	(0.12)	(0.15)	(0.15)
Major life events	1.14**	1.11	1.14	1.15**	1.23***	1.14**	1.15*	0.15
	(0.07)	(0.07)	(0.07)	(0.08)	(0.08)	(0.07)	(0.08)	(0.16)
Remote/very remote areas	0.12**	0.16*	0.14*	0.24	0.19	0.12**	0.23	1.14
	(0.12)	(0.16)	(0.14)	(0.25)	(0.20)	(0.12)	(0.24)	(0.07)
_Cons	0.03**	0.02	0.05	0.00	0.07	0.01	0.00	0.01
	(0.05)	(0.04)	(0.08)	(0.01)	(0.14)	(0.01)	(0.01)	(0.01)
McFadden's R2	0.07	0.07	0.06	0.11	0.09	0.08	0.07	0.10
Number of observations	537	509	520	422	469	537	391	494

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

Table A39: Full regression results from logistic models of suicidal attempts

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
School adults		0.65**						
		(0.13)						
School friends			0.72*					
			(0.12)					
School climate				0.59**				
				(0.12)				
Sense of safety					0.14***			
					(0.07)			
Exposure to racism						2.22		
						(1.08)		
Teacher racism							1.91**	
							(0.48)	
Bullying and racism, Wave 14								
Bullying/unfair treatment								3.36**
								(1.92)
Racial discrimination								2.09
								(1.79)
Female	2.42*	2.60*	2.18	1.963	1.576	2.35*	3.04*	1.92
	(1.19)	(1.39)	(1.09)	(1.02)	(0.84)	(1.16)	(1.92)	(1.05)
Age	1.14	1.19	1.10	1.28	1.37*	1.17	1.40*	1.10
	(0.17)	(0.19)	(0.17)	(0.21)	(0.24)	(0.18)	(0.26)	(0.21)
Major life events	1.06	1.02	1.08	0.55	1.16	1.06	1.04	1.04
	(0.09)	(0.09)	(0.09)	(0.58)	(0.12)	(0.09)	(0.11)	(0.10)
Remote/very remote areas	0.29	0.39	0.33	1.06	0.54	0.29	0.63	0.37
	(0.30)	(0.40)	(0.34)	(0.10)	(0.57)	(0.30)	(0.68)	(0.39)
_Cons	0.003*	0.001**	0.01**	0.001***	0.003**	0.001***	0.001***	0.003
	(0.01)	(0.004)	(0.01)	(0.001)	(0.01)	(0.002)	(0.001)	(0.01)
McFadden's R2	0.04	0.07	0.05	0.07	0.12	0.05	0.1	0.07
Number of observations	537	509	520		469	537	391	494

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

Other factors associated with self-harm and suicidal behaviours

Results from bivariate logistic regressions show that the following factors are significantly associated with self-harm and suicidal behaviours.

Risk factors for self-harm:

- having increased emotional and behavioural difficulties (OR 1.19; ***p***<0.001),
- having increased levels of psychological distress (OR 8.78; ***p***<0.001),
- experiencing sleep difficulty at least once in a week (OR 4.83; ***p***<0.001),
- living in a community where suicide is a 'big/very big problem' (OR 11.11; ***p***<0.001),
- having friends who have deliberately harmed themselves in the past 12 months (OR 22.5; ***p***<0.001),
- having friends who have attempted suicide in the past 12 months (OR 9.00; ***p***<0.001).

Protective factors for self-harm:

- having high interpersonal skills, such as being able to make friends easily and being liked by other kids (OR 0.57; ***p***<0.001),
- always/most of the time feeling good about the future (OR 0.26; ***p***<0.001),
- having a strong positive self-concept, such as believing in own ability to work things out and do most things well (OR 0.49; ***p***<0.001),
- having close relationships with many people, i.e. increase in the number of people in ring 1 of a relationship circle (OR 0.85; ***p***=0.015),
- feeling safe in the community (OR 0.55; ***p***<0.001),
- being able to cope well with life (0.23; ***p***<0.001),
- having very good/excellent overall health status (OR 0.47; ***p***<0.001), and
- doing organised sport or dance (0.45; ***p***=0.002).

Risk factors suicidal thought:

- having increased emotional and behavioural difficulties (OR 1.22; ***p***<0.001),
- having increased levels of psychological distress (OR 9.37; ***p***<0.001),
- experiencing sleep difficulty at least once in a week (OR 4.52; ***p***<0.001),
- living in a community where one thinks suicide is a big/very big problem (OR 17.42; ***p***<0.001),
- having friends who have deliberately harmed themselves in the past 12 months (OR 12.94; ***p***<0.001), and
- having friends who have attempted suicide in the past 12 months (OR 16.26; ***p***<0.001).

Protective factors for suicidal thought:

- having high interpersonal skills, such as being able to make friends easily and being liked by other kids (OR 0.56; ***p***<0.001),
- feeling good about the future, always/most of the time (OR 0.26; ***p***<0.001),
- having a strong positive self-concept, such as believing in own ability to work things out and do most things well (OR 0.47; ***p***<0.001),
- having close relationships with many people, i.e. increase in the number of people in ring 1 of a relationship circle (OR 0.81; ***p***=0.010),
- having a higher regard and positioning the importance of people and mob a central component of their cultural being (being Aboriginal and Torres Strait Islander) is shown to have a negative effect on suicidal thought (OR 0.77; ***p***=0.04),
- a strong sense of safety in the community (OR 0.55; ***p***<0.001),
- absence of financial stress (OR 0.29; ***p***=0.048),
- having very good/excellent overall health status (OR 0.28; ***p***<0.001),
- being able to cope well with life (OR 0.13; ***p***<0.001), and
- doing organised sport or dance (0.44; ***p***=0.008).

Risk factors for suicidal attempt:

- having increased psychological distress (9.74; ***p***<0.001),
- having very good/excellent overall health status (OR 0.25; ***p***=0.004),
- experiencing sleep difficulty at least once in a week (OR 2.15; ***p***=0.001),
- living in a community where suicide is a 'big/very big' problem (OR 3.89; ***p***<0.001),
- living in a community where one thinks suicide is a big/very big problem (OR 17.42; ***p***<0.001),
- having friends who have deliberately harmed themselves in the past 12 months (OR 11.29; ***p***<0.001), and
- having friends who have attempted suicide in the past 12 months (OR 26.74; ***p***<0.001).

Protective factors for suicidal attempt:

- feeling good about the future, always/most of the time (OR 0.25; ***p***<0.001),
- a strong sense of safety in the community (OR 0.62; ***p***=0.019),
- having increased emotional and behavioural difficulties (OR 1.21; ***p***<0.001),
- being able to cope well with life (0.15; ***p***=0.001),
- having a strong positive self-concept, such as believing in own ability to work things out and do most things well (OR 0.51; ***p***=0.001),
- having high interpersonal skills, such as being able to make friends easily and being liked by other kids (OR 0.47; ***p***<0.001), and
- doing organised sport or dance (0.43; ***p***=0.070).

Appendix to Section Six

Figure A56 shows the prevalence rate of money shortages and money worries for LSIC Study Families who were re-interviewed in Wave 13 (2020) compared with all Study Families. Although the prevalence rates are slightly higher for Study Families who were re-interviewed in Wave 13, they have trended similarly for both family groups.

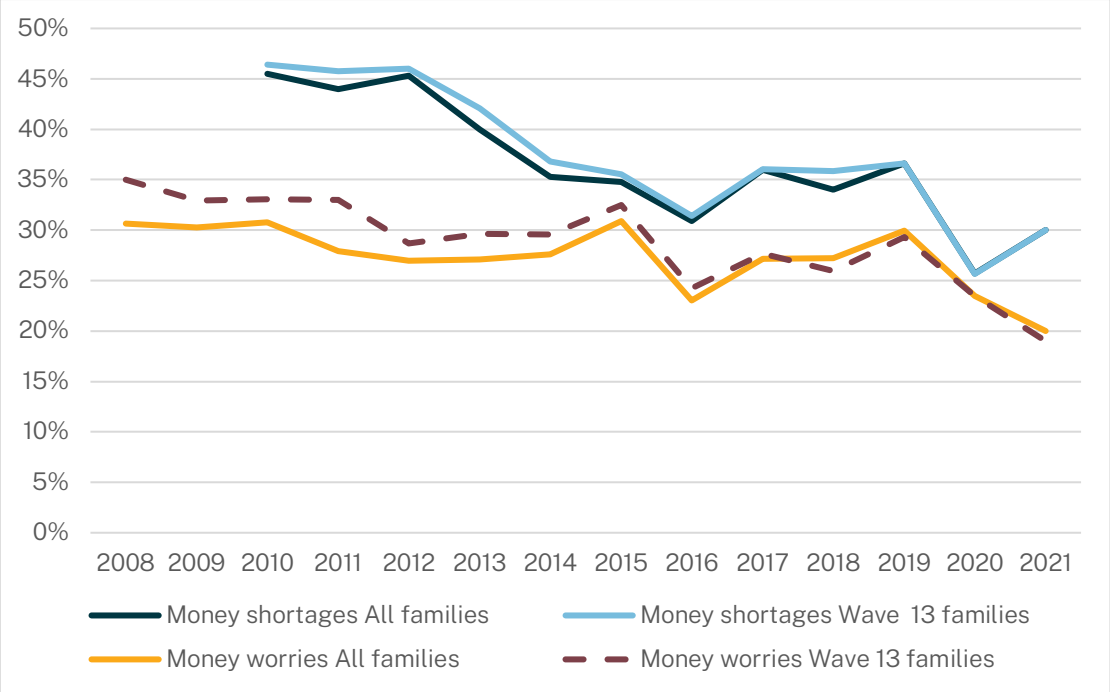

Figure A56: Proportion of LSIC families with money shortages and money worries

Figure A57 presents the prevalence of major life events for LSIC respondents between years 2018 and 2021. The data shows that not all major life events are equally prevalent. Pregnancy, death, and illness remained the three most common major life events occurring among Study Families. Losing a job, being mugged/robbed/assaulted and a family separation remained the least common life events.

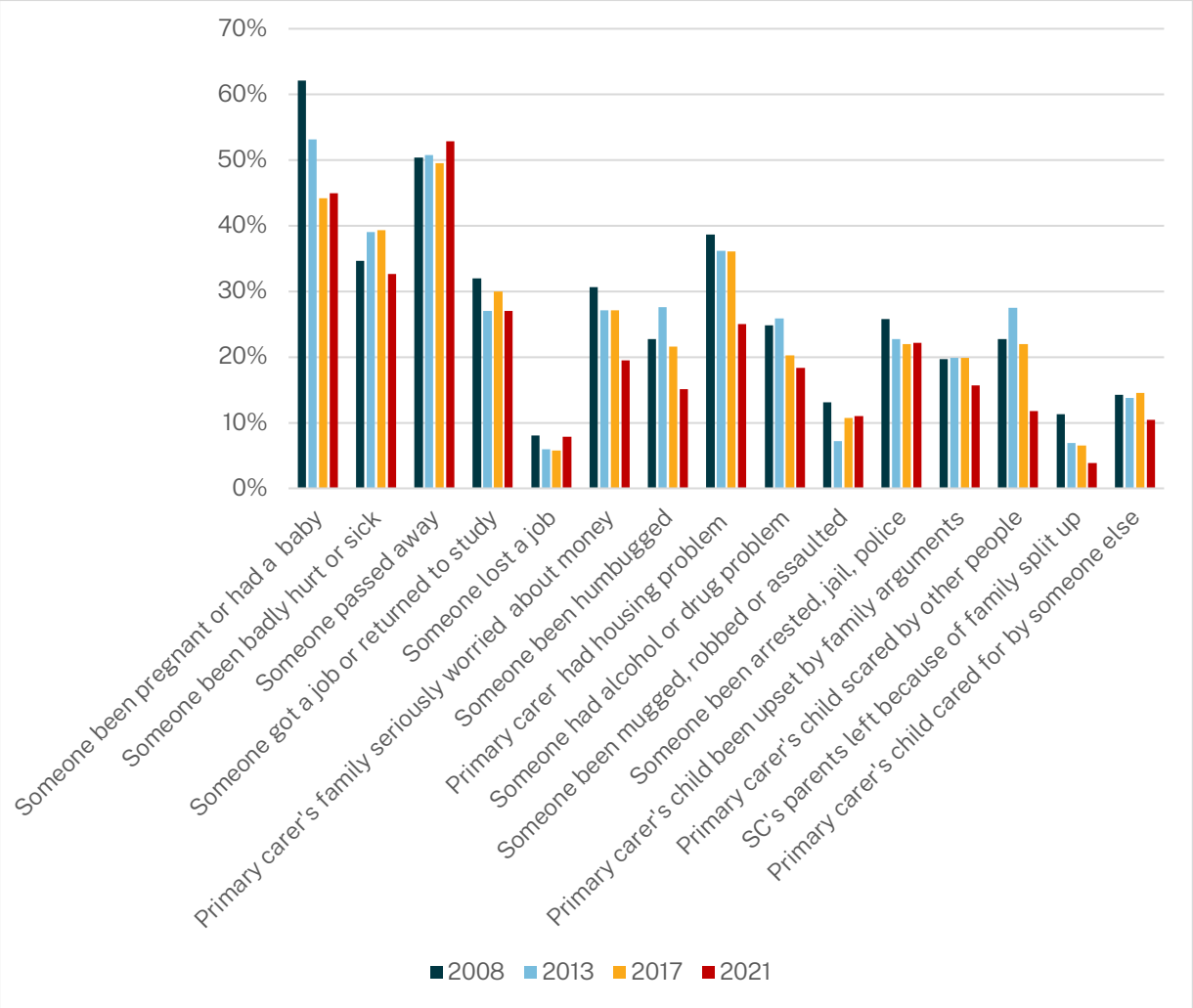

Figure A57: Prevalence of individual major life events, for selected waves, years 2008–2021

Table A40 presents results from logistic regressions examining whether sample attrition among LSIC Study Children is associated with key demographic, socioeconomic, and geographic attributes analysed in the report. In Section Four, the dependent variable is whether a Study Child dropped out by Wave 12 after participating in Wave 3. In Section Five, the dependent variable is whether a Study Child dropped out by Wave 14 after participating in Wave 10, 11 or 12. In Section Six, the dependent variable is whether a Study Child dropped out by Wave 14 after participating in Wave 11 or 12.

Table A40: Sample attrition regression models

Variable	Section Four			Section Five			Section Six		
	Coef.		SE	Coef.		SE	Coef.		SE
Normative SDQ score	-0.14		0.15				0.31		0.24
Low-risk prosocial behaviour							-0.05		0.45
Self-harm				0.23		0.48			
Suicidal thoughts				0.72		0.58			
Suicidal attempts				-0.01		1.10			
Age	0.19	***	0.05	0.02	***	0.00			
Female	-0.22		0.14	-0.18		0.14			
Study Child health	-0.39	**	0.16				0.10		0.26
Financial stress	0.01		0.15				-0.05		0.21
Primary Carer/partner employment	-0.04		0.15						
Primary Carer education	-0.08		0.18						
Number of life events	-0.06	*	0.03	0.02		0.02	0.04		0.04
Supportive adults				0.15		0.09			
Supportive friends				0.02		0.09			
Positive school climate				0.07		0.10			
Feeling safe at school				-0.04		0.31	0.29		0.22
School racism				-0.15		0.29			
Teacher racism				0.14		0.11			
Bullying and racism									
Bullying				0.04		0.24	-0.09		0.24
Racism				0.00		0.00	0.12		0.35
Coping well/very well-Primary Carer							-0.26		0.19
Absence of life stress-Primary Carer							0.10		0.15
Housing-feeling crowded							0.07		0.22
Practicing culture	-0.13		0.11						
Cultural knowledge	0.10		0.13						
Attending cultural events							0.17		0.19
Learning cultural activities							-0.16		0.17
Learning cultural arts							0.19		0.18
Sleep difficulty							0.12		0.14
Major repairs needed							0.07		0.15
IRSAD	-0.03		0.03						
Area remoteness									
Inner regional Australia	0.23		0.21	0.31		0.20	0.14		0.25
Outer regional Australia	0.55	**	0.24	0.92		0.23	0.25		0.28
Remote Australia	1.20	***	0.24	1.12		0.25	0.81	**	0.34
Very remote Australia	0.94	***	0.23			0.22	1.09	***	0.34
_cons	-1.38	***	0.40	-3.64	***	0.68	-4.55	***	1.14

Note: *** Statistically significant at the 1% level; ** significant at the 5% level; * significant at the 10% level. IRSAD = Index of Relative Socioeconomic Advantage and Disadvantage. Coef. = Coefficient, SE = Standard Error

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