

NSW Aboriginal Languages Trust

Mayi Kuwayu Study analysis



The National Study of Aboriginal
& Torres Strait Islander Wellbeing

Our cultures count.

ACKNOWLEDGEMENT

We acknowledge your cultures and connection to Country, and pay our respect to your Elders, past and present. We acknowledge the input of the Mayi Kuwayu Study team, investigators and partners for their ongoing contribution to the development and implementation of the Study, and thank the focus group participants and organisations involved in supporting the development of the Study.

INTRODUCTION

Mayi Kuwayu: the National Study of Aboriginal and Torres Strait Islander Wellbeing (the Mayi Kuwayu Study) is a longitudinal study designed with community to understand the relationship between culture and health and wellbeing outcomes. The Mayi Kuwayu Study provides a holistic understanding of forces driving Aboriginal and Torres Strait Islander health and wellbeing.



This artwork by Worimi artist Krystal Hurst shows the importance of culture as central to Aboriginal and Torres Strait Islander peoples' health and wellbeing. The colours red, yellow, black, green, blue and white are drawn from the Aboriginal and Torres Strait Islander flags, and their communities. The blue represents water and its healing powers to nourish the mind, body, spirit and our lands, symbolic of the interrelationship our people have with Country.

Red, white and yellow ochre are used to illustrate the importance of ceremony, dance, stories and spirituality within our diverse cultures, and the strong connection with the land. The centre represents the sun radiating warmth, positivity and connectedness. The pathways and meeting places speak of the long journey that the Mayi Kuwayu Study and our mob will embark on together to yarn, make decisions and create a meaningful and positive future.

Data Analysis Plan

DATA ANALYSIS PLAN	
Study name: Mayi Kuwayu Study analysis for the Aboriginal Languages Trust	
Chief investigator	Ray Lovett
Data analyst	Makayla-May Brinckley
Team members	Ray Lovett, Makayla-May Brinckley, Lachie Russell, Britt Jacobson
Ethics	ANU HREC (2016/767), approved 28 February 2017 AIATSIS (E030/22052015), approved 19 January 2017
Funding	Aboriginal Languages Trust

Background to the study and analysis	
Research question	How does Aboriginal and Torres Strait Islander language use impact on health and wellbeing outcomes for Mayi Kuwayu Study participants in four samples: <ol style="list-style-type: none"> 1. All participants from a mob in NSW 2. Participants from a mob in NSW who are currently living in NSW 3. Participants from a mob in NSW who are not currently living in NSW 4. All Aboriginal and Torres Strait Islander people living in NSW, regardless of who their mob is
Analysis objectives	Across these four samples, the study objectives are to: <ol style="list-style-type: none"> 1. describe key participant demographics 2. describe rates of Aboriginal and Torres Strait Islander language use 3. determine if there are any associations between Aboriginal and Torres Strait Islander language use and health, wellbeing, and cultural outcomes
Data details	
Study type	Cross-sectional
Data sets used	Mayi Kuwayu Study data release 4: cW1_R4.0
Analysis package	STATA 16
Study population	Aboriginal and Torres Strait Islander people in the Mayi Kuwayu Study
Proposed analytical strategy	
	<ol style="list-style-type: none"> 1. Describe all participants by age group, gender, remoteness, Indigeneity by presenting n(%) across 4 samples 2. Describe rates of Aboriginal and Torres Strait Islander language use by presenting n(%) across 4 samples 3. Examine the relationship between language use and health and wellbeing outcomes by running binomial regression analysis and presenting prevalence ratio (PR) and confidence intervals (CI) across 4 samples for: <ol style="list-style-type: none"> a. First language against health outcomes (general health, life satisfaction, life control, psychological distress) and wellbeing outcomes (contribution to community, connection to culture, employment, family wellbeing) b. Speaking any Aboriginal/Torres Strait Islander language against health outcomes and wellbeing outcomes c. Family members speaking any Aboriginal/Torres Strait Islander language against health outcomes and wellbeing outcomes d. Level of language knowledge against health outcomes and wellbeing outcomes e. Participation in language program against health outcomes and wellbeing outcomes
Inclusion/exclusion criteria	Exclude if Aboriginal and Torres Strait Islander status is not specified (i.e. coded as -9 for variable aaide1)
Approach to dealing with missing data	We impute in the Family Wellbeing Measure if missing/unsure on one item only (further detailed below) No imputation of missing data for other variables



Variables	
Study populations	
<p>There are four sample populations used in this analysis. We consider a participant to be from a NSW Aboriginal mob as determined using the following steps:</p> <ol style="list-style-type: none"> Using the AIATSIS Map of Indigenous Australia (available here) we consider a mob to be in NSW if it is partially or fully within the NSW state boundary. We run a regular expression to code all Mayi Kuwayu Study participants into their NSW mob if they have any of the recognised spellings for Aboriginal and Torres Strait Islander mob/tribe names (as determined by the AIATSIS AustLang dictionary) in their free-text response to “Who are your tribe(s)/mob(s)?” (aaide4_t). <p><i>Note:</i> Participants can be coded in multiple NSW mobs. Participants can belong to a NSW mob and another mob outside of NSW.</p>	
All NSW mobs	The first sample includes all Mayi Kuwayu Study participants who are from a mob in NSW, regardless of where they currently live.
NSW mob living in NSW	The second sample includes all Mayi Kuwayu Study participants who are from a mob in NSW who currently live in NSW, based on the state in their postal address (aq5sta).
NSW mob living outside NSW	The third sample includes all Mayi Kuwayu Study participants who are from a mob in NSW who <u>do not</u> currently live in NSW, based on the state in their postal address (aq5sta).
All Aboriginal and Torres Strait Islander people in NSW	The fourth sample includes all Mayi Kuwayu Study participants who currently live in NSW based on the state in their postal address (aq5sta), regardless of whether they are from a mob in NSW.
Demographic	
Age group	<p>Age in years is calculated based on “date of entry” (i.e., date of completion of the survey) minus “date of birth”, rounded to one decimal place. Age group is a continuous variable is named age. Implausible values are recoded to “.” in the continuous variable.</p> <p>Age is recoded as a categorical variable (age_cat), in 10-year groups starting from age 16 (minimum age): 16-24, 25-34, 35-44, 45-54, 55-64, ≥65.</p>
Gender	<p>Variable name: gender. Coded as:</p> <ol style="list-style-type: none"> Men Women Other genders
Remoteness	<p>Variable aremot has 5 categories, major city, inner regional, outer regional, remote, very remote. Recoded to the variable remote with 3 categories:</p> <ol style="list-style-type: none"> Major city Regional Remote
Aboriginal versus Torres Strait Islander status	<p>Variable aaide1 is coded as (1) Aboriginal (2) Torres Strait Islander (3) Both Aboriginal and Torres Strait Islander (-9) not specified.</p> <p>Variable cloned to create ATSI variable, no other changes are made. We drop any participant who is ‘not specified’ on this variable.</p>
Exposures	
Q19: first language	<p>aaian19 “What is your first language?” with response options (1) Aboriginal/Torres Strait Islander language (2) English (3) Other</p> <p>We keep the coding as is for descriptive table.</p>



	<p>We recode to a binary variable firstlang_bin for analyses looking at Aboriginal and Torres Strait Islander language use:</p> <ol style="list-style-type: none"> 0. “Other language”: English, Other 1. “Aboriginal/Torres Strait Islander language”: Aboriginal/Torres Strait Islander language
Q20: level of language use	<p>aalan20 “Do you speak any Aboriginal/Torres Strait Islander words or language?” with response options (1) No (2) Yes, a little bit (3) Yes, a fair bit (4) Yes, a lot. We clone the variable to create level_lang_bin with the categories:</p> <ol style="list-style-type: none"> 0. No language use: No 1. A little to a lot language use: Yes, a little bit, Yes fair bit, Yes a lot
Q22: family language use	<p>aalan22_1 partner/spouse aalan22_2 child/ren aalan22_3 grandchild/ren aalan22_4 parent/s aalan22_5 grandparent/s aalan22_6 sibling/s aalan22_7 cousin/s aalan22_8 aunty/uncle aalan22_9 other aalang22 no one in my family, unsure</p> <p>“Who else in your family speaks (spoke) Aboriginal/Torres Strait Islander words or languages?” For descriptive we will keep the coding as is. We create variables (looking at who in the family speaks or spoke language) used for regression analysis:</p> <p>lang_grand:</p> <ol style="list-style-type: none"> 0. participants who selected “no one in my family” in aalang22; 1. participants who selected aalan22_5 <p>lang_parent:</p> <ol style="list-style-type: none"> 0. participants who selected “no one in my family” in aalang22; 1. participants who selected aalan22_4 or aalan22_8 <p>lang_sib:</p> <ol style="list-style-type: none"> 0. participants who selected “no one in my family” in aalang22; 1. participants who selected aalan22_1 or aalan22_6 or aalan22_7 <p>lang_child:</p> <ol style="list-style-type: none"> 0. participants who selected “no one in my family” in aalang22; 1. participants who selected aalan22_2 or aalan22_3 <p>For all 4 variables, if a participant selected both “no one in my family” and also selected a family member, we code them as having selected the family member.</p>
Q23: language confidence	<p>We use aalan23_1 to create variable lang_know_confident with categories:</p> <ol style="list-style-type: none"> 0. Want to but can’t/Not at all 1. Yes (A little to a lot) <p>Unsure is recoded to missing.</p>
Q23: learning language	<p>We use aalan23_4 to create variables lang_know_learn with categories:</p> <ol style="list-style-type: none"> 0. Want to but can’t/Not at all 1. Yes (A little to a lot) <p>Unsure is recoded to missing.</p>
Q23: language knowledge	<p>aalan23_1 aalan23_2 aalan23_3 aalan23_4 aalan23_5 aalan23_6</p> <p>“Tell us about your Aboriginal/Torres Strait Islander words or language” with response options (1) Want to but can’t (2) Not at all (3) A little bit (4) A fair bit (5) A lot (6) Unsure.</p>



	<p>Responses are recoded as (0) want to but can't (0) Not at all (1) A little bit (2) A fair bit (3) A lot (. = missing) Unsure. If participants are missing or unsure (recoded to missing) on one item only, we impute the missing value with the mean of their other 5 item responses.</p> <p>Scores are then summed in lang_know_sum, where a higher the score indicates a higher level of language knowledge (range = 1-18). Categories in lang_know_cat are created based on total scores:</p> <ol style="list-style-type: none"> 0. "Low" = scores 0-6 1. "Moderate" = scores 7-12 2. "High" = scores 13-18
Q92: language program	<p>aepro92_9 "Have you ever participated in a language program". Responses are</p> <ol style="list-style-type: none"> 0. Not selected 1. Selected <p>We do not recode the responses.</p>
Outcomes	
<p><i>Note:</i> All outcomes are categorised into binary variables with positive outcomes coded as 1 in order to take a strengths-based approach.</p>	
Q47: general health	<p>acgen47 "How would you rate your general health?" with response options (1) Poor (2) Fair (3) Good (4) Very Good.</p> <p>Create binary variable genhealth_bin where we are looking at increases in general health:</p> <ol style="list-style-type: none"> 0. "Poor to fair health" – poor, fair 1. "Good to excellent health" – good, very good, excellent
Q48: life satisfaction	<p>acgen48 "How satisfied are you with your life?", with response options: (1) a lot (2) a fair bit (3) a little bit (4) not at all.</p> <p>Create binary variable lifesat_bin where we are looking at increases in life satisfaction:</p> <ol style="list-style-type: none"> 0. "Low life satisfaction" – not at all, a little bit 1. "Good life satisfaction" – a fair bit, a lot
Q49: life control	<p>acgen49 "How much are you in control of your life?", with response options: (1) a lot (2) a fair bit (3) a little bit (4) not at all.</p> <p>Create binary variable lifecont_bin where we are looking at increases in life control:</p> <ol style="list-style-type: none"> 0. "Low life control" – not at all, a little bit 1. "Good life control" – a fair bit, a lot
Q50: psychological distress	<p>acgen50_3 acgen50_4 acgen50_5 acgen50_6 acgen50_7 "In the last 4 weeks about how often did you..." with response options All of the time (5), Most of the time (4), Some of the time (3), A little of the time (2), None of the time (1).</p> <p>Participants scored are summed (k5_totoal), with possible scores between 5-25. Create a binary variable (k5_bin) where total scores are categorised into either low-moderate psychological distress, or high to very high psychological distress, based on cut-offs determined by Brinckley et al, 2021.</p> <p>We are looking at decreases in psychological distress:</p> <ol style="list-style-type: none"> 0. "High distress" – total scores of 11-25 1. "Low/mod distress" – total scores of 5-10
Q53: Depression	<p>acmed53_11 "Has a doctor ever told you that you have depression?"</p> <p>We create the variable anxiety with outcomes coded as:</p> <ol style="list-style-type: none"> 0. Has ever been diagnosed with depression 1. Has never been diagnosed with depression



Q53: Anxiety	<p>acmed53_12 “Has a doctor ever told you that you have anxiety?” we create the variable anxiety with outcomes coded as:</p> <ol style="list-style-type: none"> 0. Has ever been diagnosed with anxiety 1. Has never been diagnosed with anxiety
Q40: employment status	<p>ababo40_1 ababo40_2 ababo40_3 ababo40_4 ababo40_5 ababo40_6 ababo40_7 ababo40_8 ababo40_9 ababo40_10 ababo40_11 ababo40_12 ababo40_13 ababo40_14 “Are you currently employed and/or studying?”</p> <p>Create binary variable employ_bin where we are looking at people who are employed/studying:</p> <ol style="list-style-type: none"> 0. “Not employed/studying”: ababo40_10 ababo40_11 ababo40_12 ababo40_13 1. “Employed/studying”: ababo40_1 ababo40_2 ababo40_3 ababo40_4 ababo40_5 ababo40_6 ababo40_14
Q40: Carer status	<p>Create binary variable carer_bin where we are looking at people who are carers:</p> <ol style="list-style-type: none"> 0. “Not a carer”: ababo40_1 ababo40_2 ababo40_3 ababo40_4 ababo40_5 ababo40_6 ababo40_10 ababo40_11 ababo40_12 ababo40_13 ababo40_14 1. “Carer”: ababo40_7 ababo40_8 ababo40_9
Q41: education level	<p>ababo41 “What is the highest level of education you have completed?” with response options (1) No school (2) Primary school (3) Some high school (4) Year 10 (5) Year 12 (6) Certificate/Diploma (7) University</p> <p>Create binary variable education_bin looking at people who have a year 10 education or above:</p> <ol style="list-style-type: none"> 0. “Less than year 10” 1. “Year 10 or above”
Q25: contribution to community	<p>aacul25_10 “How much time do you spend contributing to your community?”, with response options (coded=1) Want to but can't (2) Not at all (3) A little bit (4) A fair bit (5) A lot.</p> <p>Create binary variable contribut_bin where we are looking at increases in contributions to community:</p> <ol style="list-style-type: none"> 0. “No contribution” – want to but can't, not at all 1. “Some contribution” – a little bit, a fair bit, a lot
Q26: disconnection from culture	<p>aacul26 “Have you ever felt disconnected from Aboriginal/Torres Strait Islander culture?” with response options (4) A lot (3) A fair bit (2) A little bit (4) Not at all (5) Unsure.</p> <p>Create binary variable disconnect_bin where we are looking at no disconnection from culture:</p> <ol style="list-style-type: none"> 0. “Disconnection from culture” – a little bit, a fair bit, a lot 1. “No disconnection from culture” – not at all <p>Unsure is recoded to missing.</p>
Q103: family wellbeing	<p>afcar103_1 afcar103_2 afcar103_3 afcar103_4 afcar103_5 afcar103_6 afcar103_7 afcar103_8 afcar103_9 Participants are asked a series of 9 questions under a stem of: ‘In my family...’ with response options (1) not at all, (2) a little bit, (3) a fair bit, (4) a lot, or unsure (5). Unsure is recoded to missing.</p> <p>Family wellbeing quartiles created and labelled as</p> <ul style="list-style-type: none"> “Low family wellbeing” (scores: 9 to ≤24) “Moderate family wellbeing” (>24 to ≤29) “High family wellbeing” (>29 to ≤33) “Very high family wellbeing” (>33 to 36)



	<p>Participants with a missing response on any individual item are coded to missing for their total FWB score. Binary variable (fw_bin) is created:</p> <ul style="list-style-type: none">0. Low family wellbeing1. Moderate – High Wellbeing
Q25: cultural knowledge and practice	<p>aacul25_1 through to aacul25_10 Participants are asked a series of questions about the amount of time they spend on cultural practices, with response options: (1) want to but can't, (2) not at all, (3) a little bit, (4) a fair bit, (5) a lot</p> <p>We recode response options to be scored as: want to but can't=0, not at all=0, a little bit=1, a fair bit=2, a lot=3. Participants total scores are summed (range=0-30). Participants that are missing on any one item have their total score coded as missing, A binary variable is created culture_bin coded as:</p> <ul style="list-style-type: none">(0) Low cultural knowledge and practice (scores 0-10)(1) Moderate to high cultural knowledge and practice (scores 11-30)

Results

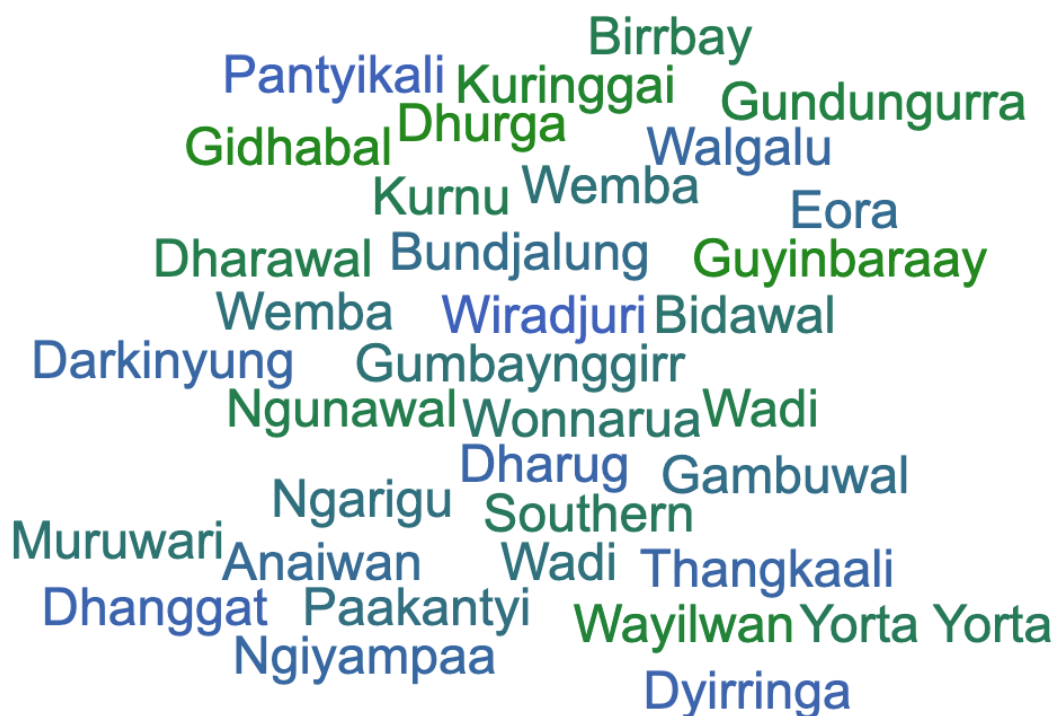
We report on the sample “NSW mob living in NSW” in the text, and comment broadly on the state of the other samples. For all tables, we suppress cells of 10 people or less to protect confidentiality. We leave the percentages in where possible to give an overview of the results, however cells with small numbers should be treated with caution (see: [Blumberg, 2011](#)).


Descriptive Results

The majority of participants who are from a NSW mob and live in NSW are Aboriginal (98.5%), women (59.5%), and are currently employed or studying (59.7%). People are aged between 16 years and 93 years old (median age=51). Few people are carers (4.7%). The majority of people live in regional NSW (52.5%) or major cities in NSW (45.6%). These characteristics are similar across the other three samples (**Table 1**).

Participants in this sample may belong to multiple mobs. This may include belonging to one or more mobs in NSW and also belonging to one or more mobs outside of NSW. **Figure 1** presents the most commonly reported NSW mobs for Mayi Kuwayu Study participants residing in NSW. We only present mobs with more than five Mayi Kuwayu Study NSW participants to protect confidentiality. The most commonly reported mobs are Wiradjuri, Guyinbaraay, Birrbay and there is representation of many mobs across NSW in this sample (**Table 2**).

Figure 1: common mobs represented in this sample





Individual language use

Most people speak English as their first language (96.6%), and more than 30% of people reported that they speak any an Aboriginal/Torres Strait Islander language.

Almost 24% of people are confident in speaking language, and **almost 40% of people are learning language**. Across all four samples, there is a higher per cent of people who are learning an Aboriginal/Torres Strait Islander language than there are people who are confident in speaking language. As people continue to learn language, we would expect to see an increase in confidence in speaking language over time.

Across the four samples, between **3-5% of Aboriginal and Torres Strait Islander people ever participated in a formal Aboriginal/Torres Strait Islander language program (Table 3)**.

Generational language use

Almost 40% of people said that no one in their family speaks or spoke Aboriginal or Torres Strait Islander language. However, language is still being spoken in families across generations:

- 25% of people said that their spouse, sibling or cousin speaks/spoke language
- 25% of people said that their parent, aunty or uncle speaks/spoke language
- 14% of people said that their grandparent/s speaks/spoke language

Language confidence

In general, around a third of participants from any NSW mob reported that they were confident in speaking Aboriginal/Torres Strait Islander language (28%-33%). Generally, there are high rates of participants wanting to feel confident in speaking language but not being able to.

For participants from a NSW mob who live in NSW, Gumbaynggirr people, Bidawal people, and Pantyikali people had the highest levels of confidence in speaking language, though these mobs had small numbers so these results should be treated with caution (**Table 4**).

Learning words or language

In general, almost **half of all participants from any NSW mob reported that they are learning an Aboriginal/Torres Strait Islander language (47%-51%)**. Overall, many people are reporting that they want to learn Aboriginal and/or Torres Strait Islander language but aren't able to.

When looking at mobs with more than 5 people represented in the sample, around half of the participants who belong to Wiradjuri, Guyinbaraay, Birrbay, Dhurga and Dyirringa mobs are learning language. Over 60% of Bidawal people, Pantyikali people, Paakantyi people and Gumbaynggirr people are learning a language, though these mobs had small numbers so these results should be treated with caution (**Table 5**).



Statistical Results

Interpreting statistical results

We use regressions to see if there is a relationship between an exposure and an outcome. In this report, the exposures are the language variables and the outcomes are the health, wellbeing and cultural variables.

For example, we want to know whether people who participate in a language program (exposure) have an associated increase in good to excellent general health (outcome) compared to people who have never participated in a language program.

We can tell from these results whether a relationship exists between the exposure and the outcome, but we cannot say which one comes first. This means that we are *not* able to say that participating in a language program *causes* an increase in good to excellent general health, as we do not know if the language program came before or after the experience of good to excellent general health. We can, however, say that there is a positive association between language program (exposure) and reporting good to excellent general health (outcome).

Health outcomes

We generally did not find an association between participants speaking language, feeling confident in speaking language or learning to speak language, and reporting good to excellent general health. We did not find an association between people's family members speaking language and general health outcomes

There was, however, a positive association between **participation in language program** and **reporting of good to excellent general health**. Aboriginal and Torres Strait Islander people living in NSW who participated in a language program have:


- a 20% increase in reporting of good to excellent general health (**Table 6**)
- a 17% increase in reporting good life satisfaction (**Table 7**), and
- an 8% increase in reporting good life control (**Table 8**).

Mental health outcomes

We generally did not find a relationship between exposure to Aboriginal and Torres Strait Islander language and reporting of good to excellent general health.

We found an association between people who reported that their family members speak/spoke Aboriginal/Torres Strait Islander language and reporting high levels of psychological distress. We also found an association between people learning Aboriginal/Torres Strait Islander language and reporting high levels of psychological distress (**Table 10**).

These findings that people may experience high psychological distress if their family speaks Aboriginal/Torres Strait Islander language, or if they are learning language



themselves, may be due to other external factors like exposure to racism when speaking Aboriginal/Torres Strait Islander language.

Socio-economic outcomes

We found positive associations between exposure to Aboriginal/Torres Strait Islander language use and socioeconomic outcomes. People who speak any Aboriginal/Torres Strait Islander language are between **10-16%** more likely to report that they are employed or studying.

Having any level of language knowledge is associated with being employed or studying. There is also a **dose-response relationship** between language knowledge and being employed or studying. This means that as language knowledge increases, there is also an associated increase in being employed or studying.


For those from a NSW mob who live in NSW, people with moderate levels of language knowledge have an associated **23% increase** in reporting they are employed/studying. This rises to a **31% increase** in reporting that they are employed/studying for people with high levels of language knowledge.

People who have participated in a language program are between **20-31%** more likely to report that they are employed or studying. This is highest for people who are from a NSW mob who still live in NSW, but the effects are evident across all four samples.

We do not know the direction of association for these relationships – this means we do not know whether language use impacts on socio-economic status or whether socio-economic status impacts on language use. For example, this finding that speaking language is associated with being employed or studying may be due to this group of people having the resource to access programs to learn language (**Table 13**).

We generally did not find any relationship between being a carer and language use. There are only a small number of people who identified as being a carer (between 65-167 people across the four samples) which may affect this result.

We generally did not find any relationship between having a year 10 or above education level and language use.



Cultural outcomes

Contributes to community

There was a strong, positive association between language exposures and people reporting that they contribute to their community.

For people from a NSW mob who still live in NSW, we found:

- People who speak an Aboriginal/Torres Strait Islander language as their first language have a **52% increase in reporting** that they contribute to their community
- People who speak any level of Aboriginal/Torres Strait Islander language have a **60% increase in reporting** that they contribute to their community
- People who are confident in speaking Aboriginal/Torres Strait Islander language have a **69% increase in reporting** that they contribute to their community
- People who are learning an Aboriginal/Torres Strait Islander language have a **68% increase in reporting** that they contribute to their community
- People who have participated in a language program have a **58% increase in reporting** that they contribute to their community

We also found strong, positive associations with people who have family members who speak/spoke language and contributing to their community, and a dose response relationship between language knowledge and contributing to community, where as language knowledge increases, there is an associated increase in contributing to their community. These results are consistent even when controlling for age and gender.

Feels connected to culture


There was a strong, positive association between language exposures and reporting feeling connected to culture.

For people from a NSW mob who still live in NSW, we found:

- People who speak an Aboriginal/Torres Strait Islander language as their first language have a **96% increase in reporting** that they feel connected to their culture
- People who speak any level of Aboriginal/Torres Strait Islander language have a **22% increase in reporting** that they feel connected to their culture
- People who are confident in speaking Aboriginal/Torres Strait Islander language have a **90% increase in reporting** that they feel connected to their culture

We also found a positive association between having family members who speak/spoke language and the person feeling connected to their culture.

When we take age into consideration, we see an increase in reporting feeling connected to culture across the four samples. The results are consistent when controlling for gender.



Good family wellbeing

There was a strong, positive association between language exposures and reporting moderate to high levels of family wellbeing.

For people from a NSW mob who still live in NSW, we found:

- People who speak any level of Aboriginal/Torres Strait Islander language have a **19% increase in reporting** moderate to high levels of family wellbeing
- People who are confident in speaking Aboriginal/Torres Strait Islander language have a **35% increase in reporting** moderate to high levels of family wellbeing
- People who are learning an Aboriginal/Torres Strait Islander language have an **18% increase in reporting** moderate to high levels of family wellbeing
- People who have high levels of language knowledge have a **59% increase in reporting** moderate to high levels of family wellbeing
- People who have participated in a language program have a **38% increase in reporting** moderate to high levels of family wellbeing

These results were consistent when controlling for age and gender. Results were consistent between the All NSW mob sample, NSW mob living in NSW sample, and All Aboriginal and Torres Strait Islander in NSW sample, with reporting lower for those in the NSW mob living outside of NSW sample.

Good cultural knowledge and practice

There was a strong, positive relationship between language exposures and good cultural knowledge and practice. Overall, across all four samples and all language exposures, participants who reported being exposed to Aboriginal/Torres Strait Islander languages had an associated higher level of cultural knowledge and practice.

For people from a NSW mob who still live in NSW, we found:

- People who have an Aboriginal and Torres Strait Islander language as their first language are **twice as likely** to report good cultural knowledge and practice
- People who speak any level of Aboriginal and Torres Strait Islander language are **almost three times as likely** to report good cultural knowledge and practice
- People who are confident in speaking language are **almost three times as likely** to report good cultural knowledge and practice
- People who are learning Aboriginal and Torres Strait Islander language are **three times as likely** to report having good cultural knowledge and practice
- There is a **dose response relationship** between level of language knowledge and having good cultural knowledge and practice
- People who have participated in a language program are **twice as likely** to report good cultural knowledge and practice

These results remain consistent when controlling for gender, and reduce slightly when controlling for age.



Overall take-away messages

- There are **strong positive links between Aboriginal and Torres Strait Islander language exposure and positive health and wellbeing outcomes**, regardless of whether Aboriginal and Torres Strait Islander people are from a NSW mob or not.
- There are very strong, positive impacts of learning language, speaking language, and having family members who speak language across a range of community, family and cultural wellbeing outcomes.
- People whose first language is an Aboriginal/Torres Strait Islander language have a 52% increase in reporting contributing to their community, a 96% increase in reporting feeling connected to culture, and are twice as likely to report good levels of cultural knowledge and practice.
- There are strong relationships between participating in a language program and good health, socio-economic, wellbeing and cultural outcomes.
- While only **5% of participants have engaged in a formal language program**, almost **50% of participants are learning an Aboriginal/Torres Strait Islander language**. This means that people are still learning language through other means, which may be learning from family members or community members.
- However, positive affects for community, family and cultural wellbeing are also seen for participants who learn an Aboriginal and Torres Strait Islander language later in life: people who are learning language have a 16% increase in reporting being employed/studying, a 68% increase in reporting contributing to their community, an 18% increase in moderate to high family wellbeing levels, and are three times as likely to have good cultural knowledge and practice.
- It is clear that **exposure to Aboriginal/Torres Strait Islander language has strong, positive associations to health and wellbeing** for Aboriginal and Torres Strait Islander people regardless of whether they have learnt language through a formal language program or through other means.

Tables

Table 1: Descriptive characteristics

	All NSW mobs N=2,682	NSW mob living in NSW N=1,591	NSW mob living outside NSW N=1,091	All Aboriginal and Torres Strait Islander people in NSW N=3,271
Demographics	% (n)			
Age group				
16-24	10.6 (285)	11.9 (190)	8.7 (95)	10.6 (348)
25-34	13.3 (357)	12.3 (195)	14.8 (162)	11.5 (377)
35-44	15.3 (411)	14.6 (232)	16.4 (179)	12.3 (401)
45-54	18.4 (493)	17.3 (275)	20.0 (218)	17.0 (555)
55-64	22.7 (610)	23.5 (374)	21.6 (236)	25.1 (822)
≥65	17.7 (476)	19.0 (303)	15.9 (173)	21.6 (708)
Missing	1.9 (50)	1.4 (22)	2.6 (28)	1.8 (60)
Gender				
Man	37.9 (1017)	39.7 (632)	35.3 (385)	40.9 (1337)
Woman	60.9 (1632)	59.5 (947)	62.8 (685)	57.9 (1895)
Other genders	--	--	--	--
Missing	--	--	--	--
Remoteness				
Major city	47.1 (1263)	45.6 (725)	49.3 (538)	45.9 (1501)
Regional	48.2 (1293)	52.5 (835)	42.0 (458)	52.0 (1701)
Remote	2.3 (62)	1.4 (23)	3.6 (39)	1.6 (52)
Missing	2.4 (64)	0.5 (8)	5.1 (56)	0.5 (17)
Aboriginal/Torres Strait Islander status				
Aboriginal	98.1 (2630)	98.5 (1567)	97.4 (1063)	95.4 (3122)
Torres Strait Islander	--	--	--	1.6 (53)
Both Aboriginal and Torres Strait Islander	--	--	--	2.9 (96)
Employment				
Not employed or studying	30.7 (823)	30.5 (486)	30.9 (337)	35.0 (1144)
Employed or studying	60.1 (1612)	59.7 (950)	60.7 (662)	53.5 (1750)
Missing	9.2 (247)	9.7 (155)	8.4 (92)	11.5 (377)
Carer status				
Not a carer	88.4 (2372)	88.3 (1405)	88.6 (967)	86.6 (2833)
Carer	5.2 (140)	4.7 (75)	6.0 (65)	5.1 (167)
Missing	6.3 (170)	7.0 (111)	5.4 (59)	8.3 (271)

-- suppressed due to small cells

Table 2: Most common mobs

Mob name*^	All NSW mobs N=2,682	NSW mob living in NSW N=1,591	NSW mob living outside NSW N=1,091
	n		
Wiradjuri	847	614	233
Guyinbaraay	472	270	202
Birrbay	147	112	35
Wonnarua	112	91	21
Dharug	129	85	44
Dhurga	109	74	35
Bundjalung	204	72	132
Dyirringa	103	68	35
Ngiyampaa	93	68	25
Dhanggat	94	61	33
Ngunawal and Walgalu	78	44	34
Paakantyi	67	35	32
Kuringgai	46	34	12
Dharawal (Northern and Southern)	46	33	13
Pantjikali	54	30	24
Yorta Yorta	123	28	95
Southern Anaiwan	40	27	13
Gumbaynggirr	37	25	12
Wayilwan	28	23	<10
Darkinyung	23	19	<10
Bidawal	124	16	108

*Participants can belong to multiple mobs

^ sorted from largest to smallest

Table 3: Language outcomes

Language outcome	All NSW mobs N=2,682	NSW mob living in NSW N=1,591	NSW mob living outside NSW N=1,091	All Aboriginal and Torres Strait Islander people in NSW N=3,271
	% (n)			
First language				
Aboriginal/Torres Strait Islander language	1.4 (37)	0.9 (15)	2.0 (22)	1.3 (43)
English	95.9 (2571)	96.6 (1537)	94.8 (1034)	95.8 (3134)
Other	0.7 (20)	0.7 (11)	<3% (--)	0.7 (22)
Missing	2.0 (54)	1.8 (28)	<3% (--)	2.2 (72)
Participant speaks any language				
No	62.2 (1667)	64.6 (1027)	58.7 (640)	69.9 (2288)
Yes, a little bit	32.0 (859)	30.4 (484)	34.4 (375)	25.0 (817)
Yes, a fair bit	2.7 (72)	2.1 (34)	3.5 (38)	1.7 (56)
Yes, a lot	0.7 (18)	0.7 (11)	<3% (--)	0.4 (12)
Missing	2.5 (66)	2.2 (35)	<3% (--)	3.0 (98)
Family members who speak/spoke language*				
Grandparents	16.1 (431)	14.3 (228)	18.6 (203)	13.1 (428)
Parents/Aunt/uncle	27.8 (745)	24.9 (396)	32.0 (349)	21.1 (691)
Spouse/siblings/cousin	27.0 (724)	25.1 (400)	29.7 (324)	20.7 (676)
Children/grandchildren	13.9 (372)	13.6 (217)	14.2 (155)	10.8 (354)
No one in the family	36.8 (986)	38.7 (615)	34.0 (371)	42.4 (1388)
Unsure	13.9 (374)	13.8 (220)	14.1 (154)	15.9 (519)
Missing	2.5 (66)	2.1 (34)	2.9 (32)	3.3 (107)
Participant is confident in speaking language				
Want to but can't/Not at all	58.6 (1571)	59.4 (945)	57.4 (626)	59.5 (1947)
Yes, a little bit to a lot	25.2 (677)	23.2 (369)	28.2 (308)	18.7 (611)
Missing/Unsure	16.2 (434)	17.4 (277)	14.4 (157)	21.8 (713)
Participant is learning language				
Want to but can't/Not at all	43.0 (1152)	43.9 (699)	41.5 (453)	46.6 (1524)
Yes, a little bit to a lot	40.2 (1079)	38.2 (608)	43.2 (471)	31.3 (1025)
Missing/Unsure	16.8 (451)	17.9 (284)	15.3 (167)	22.1 (722)
Language knowledge				
Low language knowledge	28.0 (750)	29.4 (467)	25.9 (283)	31.5 (1031)
Moderate language knowledge	15.8 (425)	15.1 (240)	17.0 (185)	11.6 (381)
High language knowledge	10.6 (284)	10.9 (173)	10.2 (111)	8.0 (263)
Missing	45.6 (1223)	44.7 (711)	46.9 (512)	48.8 (1596)
Participation in language program				
Has not participated	95.2 (2554)	95.0 (1511)	95.6 (1043)	96.4 (3154)
Has ever participated	4.8 (128)	5.0 (80)	4.4 (48)	3.6 (117)

*Participants can select multiple responses so % may sum above 100%

-- suppressed due to small cells

Table 4: Participant is confident speaking language

	All NSW mobs		NSW mob living in NSW		NSW mob living outside NSW	
	Want to but can't/not at all	Yes, a little bit to a lot	Want to but can't/not at all	Yes, a little bit to a lot	Want to but can't/not at all	Yes, a little bit to a lot
	% (n)					
Total	69.9 (1571)	30.1 (677)	71.9 (945)	28.1 (369)	67.0 (626)	33.0 (308)
Mob name*^						
Wiradjuri	70.8 (509)	29.2 (210)	68.6 (356)	31.4 (163)	76.5 (153)	23.5 (47)
Guyinbaraay	71.9 (279)	28.1 (109)	75.5 (166)	24.5 (54)	67.3 (113)	32.7 (55)
Birrbay	72.8 (91)	27.2 (34)	72.9 (70)	27.1 (26)	72.4 (21)	27.6 (<10)
Wonnarua	81.4 (70)	18.6 (16)	83.8 (57)	16.2 (11)	72.2 (13)	27.8 (<10)
Dharug	80.6 (83)	19.4 (20)	74.6 (47)	25.4 (16)	90.0 (36)	10.0 (<10)
Dhurga	62.2 (61)	37.8 (37)	65.1 (41)	34.9 (22)	57.1 (20)	42.9 (15)
Bundjalung	56.0 (98)	44.0 (77)	65.0 (39)	35.0 (21)	51.3 (59)	48.7 (56)
Dyirringa	59.1 (55)	40.9 (38)	62.1 (36)	37.9 (22)	54.3 (19)	45.7 (16)
Ngiyampaa	68.4 (54)	31.6 (25)	65.5 (36)	34.5 (19)	75.0 (18)	25.0 (<10)
Dhanggat	75.3 (58)	24.7 (19)	86.3 (44)	13.7 (<10)	53.8 (14)	46.2 (12)
Ngunawal and Walgalu	64.6 (42)	35.4 (23)	68.6 (24)	31.4 (11)	60.0 (18)	40.0 (12)
Paakantyi	67.2 (39)	32.8 (19)	61.3 (19)	38.7 (12)	74.1 (20)	25.9 (<10)
Kuringgai	86.1 (31)	13.9 (<10)	84.6 (22)	15.4 (<10)	90.0 (<10)	10.0 (<10)
Dharawal (Northern and Southern)	85.7 (36)	14.3 (<10)	86.2 (25)	13.8 (<10)	84.6 (11)	15.4 (<10)
Pantjikali	67.3 (33)	32.7 (16)	57.1 (16)	42.9 (12)	81.0 (17)	19.0 (<10)
Yorta Yorta	70.3 (71)	29.7 (30)	66.7 (16)	33.3 (<10)	71.4 (55)	28.6 (22)
Southern Anaiwan	75.8 (25)	24.2 (<10)	81.8 (18)	18.2 (<10)	63.6 (<10)	36.4 (<10)
Gumbaynggirr	56.2 (18)	43.8 (14)	55.0 (11)	45.0 (<10)	58.3 (<10)	41.7 (<10)
Wayilwan	77.8 (14)	22.2 (<10)	73.3 (11)	26.7 (<10)	100.0 (<10)	0.0 (<10)
Bidawal	54.1 (59)	45.9 (50)	60.0 (<10)	40.0 (<10)	53.2 (50)	46.8 (44)

*Participants can belong to multiple mobs

^ordered from most participants to least participants

Table 5 Participant is learning words or language

	All NSW mobs		NSW mob living in NSW		NSW mob living outside NSW	
	Want to but can't/not at all	Yes, a little bit to a lot	Want to but can't/not at all	Yes, a little bit to a lot	Want to but can't/not at all	Yes, a little bit to a lot
	% (n)					
Total	51.6 (1152)	48.4 (1079)	53.5 (699)	46.5 (608)	49.0 (453)	51.0 (471)
Mob name*^						
Wiradjuri	52.4 (375)	47.6 (341)	50.9 (265)	49.1 (256)	56.4 (110)	43.6 (85)
Guyinbaraay	50.8 (202)	49.2 (196)	52.4 (119)	47.6 (108)	48.5 (83)	51.5 (88)
Birrbay	50.0 (62)	50.0 (62)	47.4 (46)	52.6 (51)	59.3 (16)	40.7 (11)
Wonnarua	63.9 (53)	36.1 (30)	64.6 (42)	35.4 (23)	61.1 (11)	38.9 (<10)
Dharug	54.0 (54)	46.0 (46)	53.2 (33)	46.8 (29)	55.3 (21)	44.7 (17)
Dhurga	46.5 (46)	53.5 (53)	45.3 (29)	54.7 (35)	48.6 (17)	51.4 (18)
Bundjalung	44.9 (80)	55.1 (98)	61.7 (37)	38.3 (23)	36.4 (43)	63.6 (75)
Dyirringa	44.7 (42)	55.3 (52)	42.4 (25)	57.6 (34)	48.6 (17)	51.4 (18)
Ngiyampaa	51.9 (41)	48.1 (38)	54.5 (30)	45.5 (25)	45.8 (11)	54.2 (13)
Dhanggat	53.7 (44)	46.3 (38)	59.3 (32)	40.7 (22)	42.9 (12)	57.1 (16)
Ngunawal and Walgalu	55.6 (35)	44.4 (28)	61.8 (21)	38.2 (13)	48.3 (14)	51.7 (15)
Paakantyi	43.6 (24)	56.4 (31)	31.0 (9)	69.0 (20)	57.7 (15)	42.3 (11)
Kuringgai	79.4 (27)	20.6 (<10)	79.2 (19)	20.8 (<10)	80.0 (<10)	20.0 (<10)
Dharawal (Northern and Southern)	60.0 (24)	40.0 (16)	67.9 (19)	32.1 (<10)	41.7 (<10)	58.3 (<10)
Pantjikali	43.5 (20)	56.5 (26)	30.8 (<10)	69.2 (18)	60.0 (12)	40.0 (<10)
Yorta Yorta	52.4 (54)	47.6 (49)	54.2 (13)	45.8 (11)	51.9 (41)	48.1 (38)
Southern Anaiwan	59.4 (19)	40.6 (13)	57.1 (12)	42.9 (<10)	63.6 (<10)	36.4 (<10)
Gumbaynggirr	43.8 (14)	56.2 (18)	40.0 (<10)	60.0 (12)	50.0 (<10)	50.0 (<10)
Wayilwan	68.4 (13)	31.6 (<10)	62.5 (<10)	37.5 (<10)	--	--
Bidawal	42.6 (46)	57.4 (62)	28.6 (<10)	71.4 (<10)	44.7 (42)	55.3 (52)

*Participants can belong to multiple mobs

^ordered from most participants to least participants

-- suppressed due to small cells

Table 6:

	All NSW mobs N=2,682	NSW mob living in NSW N=1,591	NSW mob living outside NSW N=1,091	All Aboriginal and Torres Strait Islander people in NSW N=3,271
Outcome: good to excellent general health				
Language exposures	PR (95%CI)			
First language				
Other	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Aboriginal/Torres Strait Islander language	0.80 (0.60-1.07)	0.61 (0.33-1.12)	0.94 (0.68-1.29)	0.97 (0.76-1.23)
Participant speaks any language				
No	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	0.98 (0.93-1.04)	1.01 (0.94-1.08)	0.96 (0.88-1.05)	1.02 (0.97-1.08)
Family members who speak/spoke language				
No one	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Grandparents	0.97 (0.90-1.04)	0.94 (0.85-1.04)	1.01 (0.90-1.13)	1.03 (0.96-1.11)
Parents/Aunt/Uncle	0.96 (0.90-1.02)	0.97 (0.89-1.05)	0.96 (0.87-1.05)	1.00 (0.94-1.07)
Spouse/siblings/cousin	0.95 (0.90-1.01)	0.97 (0.89-1.04)	0.95 (0.85-1.05)	1.02 (0.95-1.08)
Children/grandchildren	0.92 (0.85-1.00)	0.91 (0.82-1.01)	0.94 (0.83-1.08)	0.96 (0.88-1.05)
Participant is confident speaking language				
Want to but can't/Not at all	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	1.01 (0.95-1.08)	1.02 (0.94-1.10)	1.01 (0.92-1.11)	1.02 (0.96-1.09)
Participant is learning words or language				
Want to but can't/Not at all	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	0.99 (0.93-1.04)	0.95 (0.89-1.02)	1.05 (0.96-1.15)	1.02 (0.96-1.08)
Language knowledge				
Low language knowledge	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Moderate language knowledge	0.99 (0.92-1.08)	0.97 (0.88-1.08)	1.03 (0.91-1.16)	1.04 (0.97-1.12)
High language knowledge	1.02 (0.94-1.11)	1.02 (0.92-1.12)	1.03 (0.89-1.19)	1.12 (1.03-1.21)
Participation in language program				
Has not participated	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Has ever participated	1.11 (1.00-1.23)	1.15 (1.03-1.29)	1.03 (0.85-1.25)	1.20 (1.09-1.32)

Table 7:

	All NSW mobs N=2,682	NSW mob living in NSW N=1,591	NSW mob living outside NSW N=1,091	All Aboriginal and Torres Strait Islander people in NSW N=3,271
Outcome: good life satisfaction				
Language exposures	PR (95%CI)			
First language				
Other	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Aboriginal/Torres Strait Islander language	0.92 (0.73-1.16)	0.78 (0.50-1.23)	1.01 (0.78-1.30)	0.98 (0.79-1.21)
Participant speaks any language				
No	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	0.95 (0.91-1.00)	0.98 (0.92-1.05)	0.92 (0.85-0.99)	0.98 (0.93-1.03)
Family members who speak/spoke language				
No one	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Grandparents	0.92 (0.85-0.98)	0.94 (0.86-1.04)	0.88 (0.79-0.99)	1.00 (0.93-1.07)
Parents/Aunt/Uncle	0.95 (0.89-1.00)	0.98 (0.91-1.05)	0.91 (0.83-0.99)	0.98 (0.93-1.04)
Spouse/siblings/cousin	0.96 (0.91-1.02)	0.99 (0.92-1.06)	0.93 (0.85-1.01)	1.01 (0.95-1.06)
Children/grandchildren	0.97 (0.90-1.04)	0.99 (0.90-1.08)	0.94 (0.83-1.05)	1.01 (0.94-1.08)
Participant is confident speaking language				
Want to but can't/Not at all	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	1.01 (0.95-1.07)	1.01 (0.93-1.08)	1.01 (0.93-1.11)	1.00 (0.94-1.06)
Participant is learning words or language				
Want to but can't/Not at all	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	0.99 (0.94-1.05)	0.99 (0.93-1.06)	1.00 (0.92-1.09)	1.00 (0.95-1.05)
Language knowledge				
Low language knowledge	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Moderate language knowledge	0.97 (0.90-1.04)	1.00 (0.91-1.10)	0.92 (0.81-1.04)	1.00 (0.93-1.07)
High language knowledge	0.99 (0.91-1.08)	0.99 (0.89-1.10)	0.98 (0.85-1.13)	1.02 (0.94-1.11)
Participation in language program				
Has not participated	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Has ever participated	1.11 (1.02-1.22)	1.18 (1.07-1.30)	1.00 (0.84-1.20)	1.17 (1.08-1.28)

Table 8:

	All NSW mobs N=2,682	NSW mob living in NSW N=1,591	NSW mob living outside NSW N=1,091	All Aboriginal and Torres Strait Islander people in NSW N=3,271
Outcome: good life control				
Language exposures	PR (95%CI)			
First language				
Other	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Aboriginal/Torres Strait Islander language	0.98 (0.83-1.16)	0.88 (0.63-1.22)	1.05 (0.88-1.25)	0.90 (0.74-1.11)
Participant speaks any language				
No	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	0.96 (0.92-1.00)	0.96 (0.91-1.01)	0.96 (0.90-1.02)	0.97 (0.96-1.01)
Family members who speak/spoke language				
No one	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Grandparents	0.94 (0.89-0.99)	0.95 (0.88-1.03)	0.92 (0.85-1.01)	0.98 (0.93-1.03)
Parents/Aunt/Uncle	0.99 (0.94-1.03)	1.02 (0.96-1.07)	0.95 (0.89-1.02)	1.00 (0.95-1.04)
Spouse/siblings/cousin	0.98 (0.94-1.03)	1.01 (0.95-1.06)	0.95(0.90-1.02)	1.00 (0.95-1.04)
Children/grandchildren	0.96 (0.91-1.02)	0.97 (0.90-1.04)	0.96 (0.88-1.05)	0.98 (0.93-1.04)
Participant is confident speaking language				
Want to but can't/Not at all	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	1.00 (0.96-1.05)	1.00 (0.94-1.06)	1.00 (0.94-1.07)	1.00 (0.96-1.05)
Participant is learning words or language				
Want to but can't/Not at all	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	0.99 (0.95-1.03)	0.98 (0.93-1.03)	0.99 (0.93-1.05)	0.99 (0.95-1.03)
Language knowledge				
Low language knowledge	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Moderate language knowledge	0.99 (0.93-1.05)	1.01 (0.94-1.09)	0.95 (0.87-1.04)	1.00 (0.94-1.06)
High language knowledge	1.02 (0.95-1.09)	1.01 (0.93-1.10)	1.03 (0.93-1.12)	1.04 (0.98-1.11)
Participation in language program				
Has not participated	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Has ever participated	1.04 (0.97-1.13)	1.08 (0.99-1.18)	0.98 (0.85-1.14)	1.08 (1.00-1.17)

Table 9:

	All NSW mobs N=2,682	NSW mob living in NSW N=1,591	NSW mob living outside NSW N=1,091	All Aboriginal and Torres Strait Islander people in NSW N=3,271
Outcome: Low psychological distress				
Language exposures	PR (95%CI)			
First language				
Other	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Aboriginal/Torres Strait Islander language	0.94 (0.68-1.31)	0.71 (0.36-1.41)	1.08 (0.76-1.53)	0.70 (0.44-1.10)
Participant speaks any language				
No	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	0.88 (0.81-0.95)	0.88 (0.80-0.98)	0.87 (0.78-0.98)	0.92 (0.85-0.99)
Family members who speak/spoke language				
No one	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Grandparents	0.86 (0.77-0.96)	0.85 (0.73-0.98)	0.87 (0.74-1.02)	0.89 (0.80-1.00)
Parents/Aunt/Uncle	0.87 (0.80-0.95)	0.84 (0.74-0.95)	0.91 (0.80-1.03)	0.86 (0.78-0.94)
Spouse/siblings/cousin	0.87 (0.80-0.95)	0.85-0.75-0.95)	0.90 (0.79-1.03)	0.89 (0.82-0.98)
Children/grandchildren	0.97 (0.87-1.07)	1.02 (0.90-1.16)	0.90 (0.76-1.07)	1.06 (0.96-1.18)
Participant is confident speaking language				
Want to but can't/Not at all	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	0.97 (0.89-1.06)	0.96 (0.85-1.08)	0.99 (0.87-1.13)	0.99 (0.91-1.09)
Participant is learning words or language				
Want to but can't/Not at all	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	0.91 (0.85-0.99)	0.88 (0.79-0.97)	0.97 (0.86-1.09)	0.92 (0.85-1.00)
Language knowledge				
Low language knowledge	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Moderate language knowledge	0.85-0.75-0.95)	0.82 (0.71-0.96)	0.88 (0.74-1.06)	0.91 (0.81-1.02)
High language knowledge	0.96 (0.85-1.09)	0.90 (0.77-1.06)	1.06 (0.88-1.29)	0.99 (0.87-1.13)
Participation in language program				
Has not participated	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Has ever participated	1.08 (0.92-1.25)	1.12 (0.93-1.35)	1.00 (0.77-1.31)	1.09 (0.92-1.29)

Table 10:

	All NSW mobs N=2,682	NSW mob living in NSW N=1,591	NSW mob living outside NSW N=1,091	All Aboriginal and Torres Strait Islander people in NSW N=3,271
Outcome: Never diagnosed with depression				
Language exposures	PR (95%CI)			
First language				
Other	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Aboriginal/Torres Strait Islander language	1.14 (0.92-1.40)	0.85 (0.53-1.36)	1.36 (1.11-1.66)	1.06 (0.86-1.31)
Participant speaks any language				
No	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	0.94 (0.89-1.01)	0.92 (0.84-1.00)	0.99 (0.90-1.09)	0.91 (0.86-0.97)
Family members who speak/spoke language				
No one	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Grandparents	0.95 (0.87-1.04)	0.94 (0.84-1.06)	0.98 (0.85-1.13)	0.98 (0.90-1.06)
Parents/Aunt/Uncle	0.97 (0.90-1.04)	0.95 (0.86-1.04)	1.00 (0.89-1.13)	0.95 (0.89-1.02)
Spouse/siblings/cousin	0.98 (0.91-1.05)	0.93 (0.84-1.03)	1.05 (0.94-1.18)	0.96 (0.90-1.03)
Children/grandchildren	0.97 (0.89-1.07)	0.95 (0.85-1.07)	1.00 (0.86-1.17)	0.96 (0.88-1.05)
Participant is confident speaking language				
Want to but can't/Not at all	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	1.04 (0.97-1.12)	1.01 (0.92-1.11)	1.08 (0.97-1.20)	0.97 (0.90-1.04)
Participant is learning words or language				
Want to but can't/Not at all	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	0.95 (0.89-1.01)	0.92 (0.84-1.00)	0.99 (0.89-1.10)	0.91 (0.86-0.97)
Language knowledge				
Low language knowledge	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Moderate language knowledge	0.97 (0.89-1.06)	0.96 (0.85-1.07)	1.00 (0.89-1.15)	0.94 (0.86-1.03)
High language knowledge	0.92 (0.82-1.02)	0.85 (0.73-0.98)	1.04 (0.89-1.22)	0.90 (0.80-1.00)
Participation in language program				
Has not participated	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Has ever participated	1.07 (0.94-1.21)	1.03 (0.87-1.21)	1.13 (0.93-1.38)	0.96 (0.83-1.12)

Table 11:

	All NSW mobs N=2,682	NSW mob living in NSW N=1,591	NSW mob living outside NSW N=1,091	All Aboriginal and Torres Strait Islander people in NSW N=3,271
Outcome: Never diagnosed with anxiety				
Language exposures	PR (95%CI)			
First language				
Other	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Aboriginal/Torres Strait Islander language	1.15 (0.96-1.39)	1.01 (0.70-1.45)	1.26 (1.03-1.54)	1.13 (0.95-1.33)
Participant speaks any language				
No	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	0.96 (0.90-1.01)	0.94 (0.87-1.02)	0.98 (0.90-1.07)	0.94 (0.89-0.99)
Family members who speak/spoke language				
No one	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Grandparents	0.91 (0.83-0.99)	0.92 (0.82-1.03)	0.90 (0.79-1.03)	0.96 (0.89-1.03)
Parents/Aunt/Uncle	0.95 (0.89-1.02)	0.96 (0.88-1.05)	0.96 (0.86-1.06)	0.94 (0.88-1.00)
Spouse/siblings/cousin	0.96 (0.89-1.02)	0.93 (0.85-1.02)	0.99 (0.89-1.10)	0.94 (0.88-1.00)
Children/grandchildren	0.97 (0.89-1.06)	0.95 (0.85-1.06)	1.00 (0.88-1.14)	0.94 (0.87-1.02)
Participant is confident speaking language				
Want to but can't/Not at all	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	1.05 (0.98-1.12)	1.06 (0.97-1.15)	1.04 (0.95-1.15)	1.00 (0.94-1.07)
Participant is learning words or language				
Want to but can't/Not at all	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	0.93 (0.88-0.99)	0.94 (0.87-1.02)	0.93 (0.84-1.02)	0.93 (0.88-0.99)
Language knowledge				
Low language knowledge	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Moderate language knowledge	0.99 (0.91-1.07)	0.97 (0.88-1.08)	1.01 (0.89-1.15)	0.97 (0.90-1.05)
High language knowledge	0.86 (0.77-0.95)	0.80 (0.70-0.93)	0.94 (0.80-1.11)	0.90 (0.81-0.99)
Participation in language program				
Has not participated	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Has ever participated	1.05 (0.94-1.19)	1.02 (0.87-1.19)	1.12 (0.93-1.33)	1.00 (0.88-1.13)

Table 12:

	All NSW mobs N=2,682	NSW mob living in NSW N=1,591	NSW mob living outside NSW N=1,091	All Aboriginal and Torres Strait Islander people in NSW N=3,271
Outcome: Employed or studying				
Language exposures	PR (95%CI)			
First language				
Other	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Aboriginal/Torres Strait Islander language	0.84 (0.59-1.19)	0.90 (0.54-1.50)	0.80 (0.50-1.29)	1.17 (0.93-1.47)
Participant speaks any language				
No	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	1.20 (1.13-1.26)	1.19 (1.11-1.28)	1.20 (1.10-1.31)	1.23 (1.16-1.31)
Family members who speak/spoke language				
No one	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Grandparents	1.07 (0.98-1.16)	1.06 (0.95-1.18)	1.09 (0.95-1.24)	1.11 (1.02-1.21)
Parents/Aunt/Uncle	1.17 (1.10-1.25)	1.18 (1.09-1.28)	1.17 (1.05-1.30)	1.22 (1.14-1.30)
Spouse/siblings/cousin	1.08 (1.00-1.16)	1.06 (0.97-1.16)	1.11 (0.99-1.24)	1.17 (1.09-1.26)
Children/grandchildren	1.08 (0.99-1.18)	1.09 (0.98-1.22)	1.07 (0.93-1.24)	1.11 (1.01-1.22)
Participant is confident speaking language				
Want to but can't/Not at all	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	1.07 (1.01-1.14)	1.08 (0.99-1.17)	1.06 (0.97-1.17)	1.09 (1.02-1.17)
Participant is learning words or language				
Want to but can't/Not at all	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	1.18 (1.12-1.25)	1.16 (1.08-1.25)	1.21 (1.10-1.32)	1.19 (1.12-1.26)
Language knowledge				
Low language knowledge	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Moderate language knowledge	1.20 (1.11-1.30)	1.23 (1.11-1.37)	1.15 (1.02-1.30)	1.21 (1.12-1.32)
High language knowledge	1.30 (1.19-1.41)	1.31 (1.17-1.45)	1.28 (1.13-1.45)	1.33 (1.22-1.44)
Participation in language program				
Has not participated	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Has ever participated	1.27 (1.17-1.39)	1.31 (1.19-1.45)	1.20 (1.01-1.41)	1.30 (1.18-1.45)

Table 13:

	All NSW mobs N=2,682	NSW mob living in NSW N=1,591	NSW mob living outside NSW N=1,091	All Aboriginal and Torres Strait Islander people in NSW N=3,271
Outcome: Carer				
Language exposures	PR (95%CI)			
First language				
Other	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Aboriginal/Torres Strait Islander language	1.97 (0.67-5.81)	1.83 (0.28-12.02)	1.92 (0.51-7.21)	1.61 (0.54-4.78)
Participant speaks any language				
No	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	0.95 (0.67-1.33)	1.03 (0.65-1.64)	0.83 (0.50-1.38)	1.10 (0.79-1.52)
Family members who speak/spoke language				
No one	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Grandparents	1.08 (0.64-1.85)	1.22 (0.61-2.45)	0.93 (0.40-2.12)	0.78 (0.46-1.30)
Parents/Aunt/Uncle	1.39 (0.91-2.12)	1.30 (0.73-2.32)	1.46 (0.78-2.73)	0.91 (0.60-1.36)
Spouse/siblings/cousin	1.30 (0.84-2.02)	1.22 (0.67-2.23)	1.36 (0.71-2.60)	0.87 (0.57-1.32)
Children/grandchildren	1.77 (1.10-2.85)	1.81 (0.97-3.37)	1.71 (0.81-3.60)	1.54 (1.01-2.36)
Participant is confident speaking language				
Want to but can't/Not at all	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	1.04 (0.71-1.52)	1.03 (0.60-1.78)	1.01 (0.60-1.72)	1.27 (0.87-1.85)
Participant is learning words or language				
Want to but can't/Not at all	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	1.32 (0.93-1.87)	1.41 (0.86-2.29)	1.21 (0.73-1.99)	1.17 (0.83-1.65)
Language knowledge				
Low language knowledge	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Moderate language knowledge	1.05 (0.62-1.77)	1.04 (0.49-2.20)	1.02 (0.49-2.12)	1.21 (0.74-2.00)
High language knowledge	1.36 (0.79-2.35)	1.74 (0.87-3.51)	0.94 (0.38-2.31)	1.82 (1.11-2.99)
Participation in language program				
Has not participated	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Has ever participated	1.35 (0.70-2.58)	0.76 (0.24-2.35)	2.23 (1.02-4.89)	1.14 (0.55-2.37)

Table 14:

	All NSW mobs N=2,682	NSW mob living in NSW N=1,591	NSW mob living outside NSW N=1,091	All Aboriginal and Torres Strait Islander people in NSW N=3,271
Outcome: Year 10 or above education				
Language exposures	PR (95%CI)			
First language				
Other	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Aboriginal/Torres Strait Islander language	0.97 (0.82-1.14)	1.04 (0.84-1.29)	0.92 (0.73-1.15)	1.04 (0.89-1.21)
Participant speaks any language				
No	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	1.06 (1.02-1.10)	1.09 (1.04-1.14)	1.02 (0.97-1.08)	1.11 (1.07-1.15)
Family members who speak/spoke language				
No one	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Grandparents	1.00 (0.95-1.05)	1.04 (0.98-1.11)	0.94 (0.87-1.01)	1.05 (0.99-1.10)
Parents/Aunt/Uncle	1.02 (0.98-1.07)	1.05 (1.00-1.11)	0.98 (0.92-1.04)	1.08 (1.03-1.12)
Spouse/siblings/cousin	1.01 (0.97-1.05)	1.04 (0.98-1.10)	0.96 (0.90-1.03)	1.06 (1.01-1.11)
Children/grandchildren	0.99 (0.94-1.04)	1.01 (0.94-1.09)	0.95 (0.87-1.03)	1.02 (0.96-1.08)
Participant is confident speaking language				
Want to but can't/Not at all	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	0.98 (0.95-1.02)	1.01 (0.95-1.06)	0.95 (0.90-1.01)	1.03 (0.98-1.07)
Participant is learning words or language				
Want to but can't/Not at all	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	1.01 (0.98-1.05)	1.03 (0.98-1.08)	0.99 (0.94-1.04)	1.06 (1.03-1.11)
Language knowledge				
Low language knowledge	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Moderate language knowledge	1.01 (0.96-1.06)	1.03 (0.96-1.10)	0.98 (0.91-1.06)	1.03 (0.98-1.09)
High language knowledge	1.05 (0.99-1.11)	1.06 (0.99-1.14)	1.03 (0.95-1.11)	1.08 (1.02-1.14)
Participation in language program				
Has not participated	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Has ever participated	1.06 (0.99-1.13)	1.07 (0.98-1.17)	1.04 (0.93-1.16)	1.11 (1.03-1.20)

Table 15:

	All NSW mobs N=2,682	NSW mob living in NSW N=1,591	NSW mob living outside NSW N=1,091	All Aboriginal and Torres Strait Islander people in NSW N=3,271
Outcome: Contributes to community				
Language exposures	PR (95%CI)			
First language				
Other	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Aboriginal/Torres Strait Islander language	1.52 (1.29-1.80)	1.52 (1.20-1.93)	1.57 (1.25-1.98)	1.45 (1.17-1.79)
Participant speaks any language				
No	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	1.66 (1.55-1.78)	1.60 (1.47-1.74)	1.79 (1.60-2.01)	1.81 (1.69-1.94)
Family members who speak/spoke language				
No one	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Grandparents	1.45 (1.31-1.60)	1.43 (1.26-1.63)	1.48 (1.27-1.74)	1.61 (1.45-1.79)
Parents/Aunt/Uncle	1.47 (1.35-1.61)	1.47 (1.32-1.65)	1.50 (1.30-1.73)	1.68 (1.54-1.84)
Spouse/siblings/cousin	1.51 (1.39-1.65)	1.50 (1.35-1.68)	1.54 (1.33-1.78)	1.75 (1.60-1.91)
Children/grandchildren	1.65 (1.50-1.81)	1.66 (1.48-1.86)	1.64 (1.40-1.92)	1.87 (1.70-2.06)
Participant is confident speaking language				
Want to but can't/Not at all	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	1.70 (1.59-1.82)	1.69 (1.56-1.84)	1.74 (1.55-1.94)	1.89 (1.76-1.02)
Participant is learning words or language				
Want to but can't/Not at all	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	1.78 (1.64-1.92)	1.68 (1.53-1.86)	1.95 (1.71-2.23)	1.94 (1.80-2.10)
Language knowledge				
Low language knowledge	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Moderate language knowledge	1.70 (1.54-1.87)	1.64 (1.45-1.85)	1.82 (1.54-2.16)	1.79 (1.65-1.95)
High language knowledge	1.98 (1.54-1.87)	1.86 (1.66-2.08)	2.22 (1.89-2.60)	2.03 (1.88-2.19)
Participation in language program				
Has not participated	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Has ever participated	1.62 (1.50-1.76)	1.58 (1.43-1.74)	1.69 (1.48-1.94)	1.83 (1.69-1.99)

Table 16:

	All NSW mobs N=2,682	NSW mob living in NSW N=1,591	NSW mob living outside NSW N=1,091	All Aboriginal and Torres Strait Islander people in NSW N=3,271
Outcome: Feels connected to culture				
Language exposures	PR (95%CI)			
First language				
Other	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Aboriginal/Torres Strait Islander language	2.68 (2.04-3.52)	1.96 (1.11-3.48)	3.32 (2.49-4.42)	1.48 (0.95-2.30)
Participant speaks any language				
No	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	1.35 (1.18-1.55)	1.22 (1.03-1.45)	1.60 (1.28-2.00)	1.08 (0.95-1.23)
Family members who speak/spoke language				
No one	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Grandparents	1.33 (1.10-1.60)	1.25 (0.97-1.60)	1.48 (1.10-1.99)	1.09 (0.91-1.30)
Parents/Aunt/Uncle	1.30 (1.10-1.53)	1.27 (1.03-1.56)	1.38 (1.06-1.79)	1.11 (0.96-1.29)
Spouse/siblings/cousin	1.35 (1.15-1.59)	1.25 (1.01-1.54)	1.54 (1.18-2.00)	1.12 (0.96-1.30)
Children/grandchildren	1.49 (1.24-1.79)	1.33 (1.04-1.69)	1.78 (1.33-2.38)	1.18 (0.98-1.41)
Participant is confident speaking language				
Want to but can't/Not at all	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	2.07 (1.79-2.39)	1.90 (1.57 (2.29))	2.38 (1.88-3.01)	1.70 (1.48-1.95)
Participant is learning words or language				
Want to but can't/Not at all	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	1.37 (1.17-1.59)	1.20 (0.99-1.45)	1.69 (1.32-2.17)	1.07 (0.93-1.23)
Language knowledge				
Low language knowledge	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Moderate language knowledge	1.30 (1.05-1.60)	1.16 (0.88-1.52)	1.57 (1.12-2.21)	0.98 (0.80-1.20)
High language knowledge	1.70 (1.38-2.10)	1.32 (0.96-1.83)	1.96 (1.38-2.80)	1.49 (1.25-1.79)
Participation in language program				
Has not participated	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Has ever participated	1.33 (1.02-1.73)	1.32 (0.96-1.83)	1.33 (0.85-2.08)	1.41 (1.10-1.80)

Table 17:

	All NSW mobs N=2,682	NSW mob living in NSW N=1,591	NSW mob living outside NSW N=1,091	All Aboriginal and Torres Strait Islander people in NSW N=3,271
Outcome: Moderate to high family wellbeing				
Language exposures	PR (95%CI)			
First language				
Other	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Aboriginal/Torres Strait Islander language	1.26 (0.95-1.69)	1.18 (0.73-1.90)	1.39 (0.97-2.01)	0.87 (0.56-1.35)
Participant speaks any language				
No	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	1.10 (1.01-1.20)	1.19 (1.08-1.32)	0.98 (0.85-1.14)	1.16 (1.06-1.27)
Family members who speak/spoke language				
No one	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Grandparents	1.05 (0.93-1.18)	1.09 (0.94-1.26)	1.04 (0.84-1.27)	1.11 (0.98-1.27)
Parents/Aunt/Uncle	1.04 (0.94-1.15)	1.06 (0.93-1.20)	1.06 (0.89-1.26)	1.09 (0.97-1.21)
Spouse/siblings/cousin	1.12 (1.01-1.24)	1.13 (1.00-1.27)	1.15 (0.96-1.37)	1.16 (1.04-1.29)
Children/grandchildren	1.30 (1.17-1.45)	1.32 (1.17-1.51)	1.29 (1.06-1.57)	1.30 (1.16-1.47)
Participant is confident speaking language				
Want to but can't/Not at all	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	1.27 (1.16-1.39)	1.35 (1.20-1.51)	1.18 (1.01-1.38)	1.29 (1.16-1.42)
Participant is learning words or language				
Want to but can't/Not at all	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	1.13 (1.03-1.24)	1.18 (1.05-1.32)	1.08 (0.92-1.26)	1.18 (1.07-1.30)
Language knowledge				
Low language knowledge	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Moderate language knowledge	1.13 (0.99-1.29)	1.14 (0.97-1.34)	1.15 (0.92-1.42)	1.08 (0.94-1.24)
High language knowledge	1.49 (1.32-1.69)	1.59 (1.38-1.84)	1.31 (1.03-1.65)	1.58 (1.41-1.77)
Participation in language program				
Has not participated	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Has ever participated	1.29 (1.11-1.50)	1.38 (1.17-1.63)	1.08 (0.78-1.49)	1.41 (1.22-1.66)

Table 18:

	All NSW mobs N=2,682	NSW mob living in NSW N=1,591	NSW mob living outside NSW N=1,091	All Aboriginal and Torres Strait Islander people in NSW N=3,271
Outcome: Good cultural knowledge and practice				
Language exposures	PR (95%CI)			
First language				
Other	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Aboriginal/Torres Strait Islander language	2.27 (1.85-2.77)	2.19 (1.61-2.98)	2.42 (1.85-3.17)	1.88 (1.38-2.55)
Participant speaks any language				
No	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	2.91 (2.59-3.27)	2.82 (2.44-3.25)	3.15 (2.58-3.84)	3.15 (2.81-3.54)
Family members who speak/spoke language				
No one	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Grandparents	2.37 (2.02-2.78)	2.15 (1.75-2.65)	2.80 (2.15-3.65)	2.38 (2.00-2.84)
Parents/Aunt/Uncle	2.39 (2.07-2.77)	2.29 (1.92-2.75)	2.67 (2.07-3.44)	2.68 (2.30-3.11)
Spouse/siblings/cousin	2.48 (2.15-2.87)	2.34 (1.96-2.80)	2.81 (2.19-3.62)	2.95 (2.55-3.42)
Children/grandchildren	3.11 (2.68-3.61)	2.83 (2.35-3.39)	3.70 (2.87-4.76)	3.48 (2.98-4.06)
Participant is confident speaking language				
Want to but can't/Not at all	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	2.87 (2.58-3.20)	2.71 (2.37-3.10)	3.21 (2.67-3.86)	3.29 (2.94-3.68)
Participant is learning words or language				
Want to but can't/Not at all	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Yes, a little bit to a lot	3.29 (2.86-3.78)	3.06 (2.59-3.62)	3.80 (2.97-4.87)	3.60 (3.13-4.12)
Language knowledge				
Low language knowledge	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Moderate language knowledge	2.84 (2.41-3.36)	2.59 (2.11-3.18)	3.39 (2.53-4.55)	2.59 (2.28-2.98)
High language knowledge	3.87 (3.30-4.53)	3.66 (3.04-4.41)	4.33 (3.25-5.77)	3.84 (3.40-4.34)
Participation in language program				
Has not participated	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Has ever participated	2.28 (2.01-2.57)	2.11 (1.80-2.49)	2.55 (2.11-3.07)	2.58 (2.24-2.96)

