

# Racism as a determinant of social and emotional wellbeing for Aboriginal Australian youth

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Racism is acknowledged as a determinant of health for indigenous populations and other minority groups throughout the world.<sup>1</sup> In Australia, racism undermines the health and wellbeing of Aboriginal and Torres Strait Islander peoples, and redressing racism has been identified as a national priority.<sup>2</sup> Racism is conceptualised as comprising avoidable and unfair phenomena that lead to inequalities in power, resources and opportunities across racial or ethnic groups. It can be expressed through beliefs and stereotypes, prejudices and discrimination, and occurs at many social levels, including interpersonally and systemically, and as internalised racism.<sup>3</sup>

Internationally, an increasing body of epidemiological evidence shows strong associations between self-reported racism and poor adult health outcomes across diverse minority groups in developed countries.<sup>1,4,5</sup> These associations remained after findings were adjusted for confounders, and have been reported in longitudinal and cross-sectional studies, suggesting that racism precedes poor health outcomes.<sup>1,4,5</sup> Systematic reviews report links between self-reported racism and poor mental health (including depression, anxiety and psychological distress); poor physical health (including hypertension, cardiovascular reactivity and chronic health conditions); and increased substance use.<sup>1,4,5</sup>

However, across the world there is little research specifically investigating the impact of racism on the health and wellbeing of children and young people.<sup>1,4</sup> The little research that exists in this area focuses predominantly on African American adolescents in the United States.<sup>6</sup> Similar to studies of adult populations, studies with children and young people have reported strong associations between self-reported racism and poor health outcomes (including poor mental health and behavioural difficulties), indicators of metabolic and cardiovascular disease, and health-harming behaviour such as substance use.<sup>6,7</sup> Racism can affect health through many pathways, including reduced access to positive health determinants such as education and employment; reduced self-efficacy and self-esteem; increased stress, substance use and self-harm; reduced social support; and detrimental effects on cultural identity.<sup>7,8</sup>

## ABSTRACT

**Objective:** To explore the associations between self-reported racism and health and wellbeing outcomes for young Aboriginal Australian people.

**Design, setting and participants:** A cross-sectional study of 345 Aboriginal Australians aged 16–20 years who, as participants in the prospective Aboriginal Birth Cohort Study, were recruited at birth between 1987 and 1990 and followed up between 2006 and 2008.

**Main outcome measures:** Self-reported social and emotional wellbeing using a questionnaire validated as culturally appropriate for the study's participants; recorded body mass index and waist-to-hip ratio.

**Results:** Self-reported racism was reported by 32% of study participants. Racism was significantly associated with anxiety (odds ratio [OR], 2.18 [95% CI, 1.37–3.46]); depression (OR, 2.16 [95% CI, 1.33–3.53]); suicide risk (OR, 2.32 [95% CI, 1.25–4.00]); and poor overall mental health (OR, 3.35 [95% CI, 2.04–5.51]). No significant associations were found between self-reported racism and resilience or any anthropometric measures.

**Conclusions:** Self-reported racism was associated with poor social and emotional wellbeing outcomes, including anxiety, depression, suicide risk and poor overall mental health.

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Aboriginal Australians experience substantial disadvantage compared with the rest of the Australian population.<sup>9</sup> This disadvantage is associated with both historical and contemporary racism, colonisation and oppression.<sup>10</sup> Recent national data indicated 27% of Aboriginal and Torres Strait Islander people aged 15 years and over reported experiencing racism in the previous 12 months.<sup>11</sup> The few studies exploring the effects of racism on the health of adult Aboriginal Australians identified associations between self-reported racism and poor health, including self-assessed poor health status,<sup>12</sup> and physical<sup>13</sup> and mental health outcomes,<sup>10,12–14</sup> as well as substance use.<sup>10</sup> These findings were consistent across a range of geographical settings and persisted after being controlled for various confounders. Similarly, self-reported racism has been associated with substance use, emotional and behavioural difficulties, and suicide risk for young Aboriginal people aged 12–17 years.<sup>15</sup>

The term “social and emotional wellbeing” has emerged recently in Australian Aboriginal and Torres Strait Islander health literature as a more culturally appropriate description of what is often referred to as “mental health” in other contexts.<sup>16</sup> Despite widespread recognition of the poor social and emotional wellbeing outcomes experienced by Aboriginal and Torres Strait Islander Australians compared with the rest of the population, research in

this area remains limited,<sup>16</sup> particularly for children and young people.<sup>17</sup>

In this study, we aimed to explore associations between self-reported racism and social and emotional wellbeing outcomes for young Aboriginal people living in the Top End of the Northern Territory. We also explored associations between self-reported racism and anthropometric measures.

## METHODS

### Study setting and design

The Aboriginal Birth Cohort (ABC) Study is a prospective longitudinal study of newborn infants recruited at the Royal Darwin Hospital between 1987 and 1990 in the Top End of the Northern Territory, Australia. Methods have been described in detail elsewhere.<sup>18</sup> We used cross-sectional data from the ABC Wave-3 follow-up conducted from December 2006 to January 2008. Of the original 686 participants, 469 were followed up. No significant differences in birth data were identified between participants seen at this follow-up and those in the original cohort.<sup>19</sup> Data required for the analyses detailed in this article were available for 345 participants. Ethics approval was obtained from the Menzies School of Health Human Research Ethics Committee and Aboriginal Ethics Sub-Committee.

## Outcomes: social and emotional wellbeing

Participants completed the Strong Souls tool, which has been developed and validated as culturally appropriate for assessing the social and emotional wellbeing of adolescents participating in the ABC Study, and described in detail elsewhere.<sup>20</sup> This 25-item tool includes four factors: anxiety (six items), depression (seven items), suicide risk (three items) and resilience (nine items). Questions about resilience relate to social and family support, positive affect, and knowledge of “whitefella” ways. An overall mental health score is calculated by adding the anxiety, depression and suicide-risk factor scores. Because they showed non-normality (see Results), each Strong Souls factor was dichotomised at its median and coded as a binary variable (1 = factor present, 0 = not present). An alternative coding of each factor into tertiles was also undertaken.

## Anthropometrics

Standardised measures of weight (kg), height (cm), hip circumference (cm) and waist circumference (cm) were taken and recorded, and body mass index (BMI [weight/height<sup>2</sup>]) and waist-to-hip ratio (WHR) calculated.

## Primary explanatory variable: reported racism

Participants were asked “Have you been treated unfairly or discriminated against because you are Aboriginal?” and were asked to select one of three responses: little bit, fair bit or lots. Data were recoded into two groups for analysis (“little bit” and “fair bit/lots”).

## Secondary explanatory variables

Participants’ sociodemographic characteristics reported were sex, age, happy to speak English (yes/no), still in high school (yes/no), attended boarding school (yes/no), number of people staying at respondent’s residence on previous night ( $\leq 4$ ,  $\geq 5$ ), personal car ownership (yes/no) and household car ownership (yes/no). Income source was recoded as “job” and “welfare”. Welfare included social security payments, Commonwealth Development Employment Project wages, and assistance from family members. Place of residence was recoded as “urban/other” and “remote”, consistent with reporting of ABC Study data elsewhere.<sup>21</sup>

Participants reported grog (alcohol), petrol sniffing, gunja (marijuana) and tobacco or cigarette usage (each coded as “never or only tried once/used to use it but not anymore” and

“sometimes”). Frequency of grog, petrol and gunja use was reported by respondents answering “How often do you drink/sniff/smoke?” (coded as “ $\leq 1$  time per week” and “2 to 3 times per week/everyday”) and reported number of cigarettes smoked was coded as “12 or less per day” and “more than 12 per day”.

## Statistical analyses

Study data were analysed using Stata software, version 10 Intercooled for Windows (Stata-Corp, College Station, Tex, USA).

The following bivariate associations were examined using the  $\chi^2$  test and simple logistic regression: self-reported racism and each of the five binary-coded Strong Souls factors (anxiety, depression, suicide risk, mental health score and resilience); self-reported racism and individual Strong Souls factors; self-reported racism and secondary explanatory variables (sociodemographics, substance use); secondary explanatory variables and each of the five binary-coded Strong Souls factors. As there is evidence that substance use is a common cause of both self-reported racism and poor social and emotional wellbeing,<sup>22</sup> substance-use items were considered as potential confounders between racism and Strong Souls factors. Bivariate associations were also examined between self-reported racism and each Strong Soul factor coded in tertiles using ordinal and multinomial logistic regression. A sensitivity analysis was then conducted to explore any differences in strength of associations between self-reported racism and binary-coded Strong Soul factors compared with tertile-coded Strong Soul factors. As *P* values of associations with self-reported racism were similar using binary- and tertile-coded factors, the remaining analysis was conducted using binary-coded Strong Soul factors.

All variables with a marginal statistical significance ( $P < 0.10$ ) were considered for inclusion in hierarchical logistic regression models, with self-reported racism as the independent variable and each of the five Strong Souls factors as the dependent variables in separate models. Variables were entered in blocks at separate steps. Age, sex, still in high school, attended boarding school, income source, number of people who stayed at residence last night, personal car ownership, household car ownership and area of residence were added in the first step. All substance-use items were added in the second step. The Wald test was used to assess model fit at each step of the analysis. Variance inflation factors of less than

three for variables across all models indicated that multicollinearity was not present.

Interaction (ie, effect modification) between racism and other explanatory variables remaining in the final model was also explored (with removal set at  $P \geq 0.10$ ). As it is plausible that substance use may be on the causal pathway between self-reported racism and social and emotional wellbeing, substance-use variables remaining in the final model were also explored as potential mediators. Probit-based binary mediation with bootstrapping (5000 replications) was used to produce point estimates along with bias-corrected non-parametric percentile confidence intervals.<sup>23</sup>

Bivariate associations were examined using the  $\chi^2$  test and simple linear regression between self-reported racism and two anthropometric measures (BMI and WHR). Marginally significant associations ( $P < 0.10$ ) were considered for inclusion in multivariable linear regression models.

## RESULTS

The mean age of our study’s 345 participants was 18.27 years (SD, 1.06; range, 16–20.5 years). There were no significant differences between the birth data of our study’s participants and the birth data of the original cohort. Compared with the total national Aboriginal and Torres Strait Islander population, more ABC Study Wave-3 participants lived in remote areas (74% v 25%) and more lived in households without a car (50% v 23%).<sup>11</sup> Racism was reported by 32% of participants in our study (Box 1). Strong Souls factors showed non-normality and thus were dichotomised for analysis (anxiety: mean, 2.06 [SD, 2.70]; depression: mean, 4.08 [SD, 3.25]; suicide risk: mean, 0.53 [SD, 1.20]; resilience: mean, 21.61 [SD, 4.25]).

Bivariate analysis revealed a strong association between self-reported racism and anxiety ( $P = 0.001$ ), depression ( $P = 0.001$ ), suicide risk ( $P = 0.001$ ), and overall mental health ( $P < 0.001$ ), but not resilience ( $P = 0.32$ ) (Box 1). Boarding school attendance was the only sociodemographic variable strongly associated with self-reported racism, with participants who had attended boarding school less likely to report racism ( $P = 0.03$ ). Those reporting some grog use were less likely to report racism at the bivariate level ( $P = 0.05$ ). Other sociodemographic and substance-use items were only weakly associated ( $P < 0.10$ ) with self-reported racism (Box 1).

In the multivariable model, strong associations remained between racism and increased anxiety (odds ratio [OR], 2.18 [95% CI, 1.37–

**1 Characteristics and self-reported racism among 345 Aboriginal Australian study participants living in the Top End of the Northern Territory aged 16–20 years**

Characteristic	Proportion of participants (n)	Proportion reporting racism (n)	Unadjusted OR (95% CI)
<b>Sociodemographics</b>			
<b>Sex</b>			
Men	47% (162)	28% (46)	1.0
Women	53% (183)	36% (65)	1.39 (0.88–2.19)
<b>Still in high school</b>			
No	69% (236)	31% (73)	1.0
Yes	31% (108)	34% (37)	1.16 (0.72–1.89)
<b>Attended boarding school</b>			
No	69% (234)	36% (83)	1.0
Yes	31% (107)	23% (25)	0.55 (0.33–0.93)
<b>Income source</b>			
Job	14% (48)	38% (18)	1.0
Welfare	86% (294)	31% (91)	0.75 (0.40–1.41)
<b>Number of people staying in house last night</b>			
≤4	20% (70)	24% (17)	1.0
≥5	80% (275)	34% (94)	1.62 (0.89–2.95)
<b>Participant owns a car</b>			
No	90% (307)	31% (95)	1.0
Yes	10% (34)	41% (14)	1.56 (0.76–3.22)
<b>Someone in house owns a car</b>			
No	52% (158)	30% (47)	1.0
Yes	48% (148)	32% (47)	1.10 (0.68–1.79)
<b>Region</b>			
Remote	74% (254)	34% (86)	1.0
Urban/other	26% (91)	28% (25)	0.74 (0.44–1.26)
<b>Substance use</b>			
<b>Grog use</b>			
Never or only once/used to but not any more	58% (199)	37% (73)	1.0
Sometimes	42% (144)	26% (38)	0.62 (0.37–0.99)
<b>Petrol</b>			
Never or only once/used to but not any more	99% (340)	32% (109)	1.0
Sometimes	1% (3)	33% (1)	1.06 (0.10–11.81)
<b>Gunja</b>			
Never or only once/used to but not any more	68% (231)	33% (76)	1.0
Sometimes	33% (111)	31% (34)	0.90 (0.55–1.47)
<b>Tobacco or cigarettes</b>			
No/used to but not any more	30% (94)	38% (36)	1.0
Sometimes	70% (223)	32% (72)	0.77 (0.47–1.27)
<b>Strong Souls* factors</b>			
<b>Anxiety</b>			
No	54% (186)	24% (45)	1.0
Yes	46% (159)	42% (66)	2.22 (1.40–3.52)
<b>Depression</b>			
No	50% (174)	24% (42)	1.0
Yes	50% (171)	40% (69)	2.13 (1.34–3.38)
<b>Suicide risk</b>			
No	75% (258)	27% (70)	1.0
Yes	25% (87)	47% (41)	2.39 (1.45–3.96)
<b>Overall mental health</b>			
No	50% (174)	20% (34)	1.0
Yes	50% (171)	45% (77)	3.37 (2.09–5.46)
<b>Resilience</b>			
No	50% (172)	30% (51)	1.0
Yes	50% (173)	35% (60)	1.26 (0.80–1.98)

OR = odds ratio. \* The Strong Souls tool is a culturally appropriate questionnaire for assessing the social and emotional wellbeing of participants of the Aboriginal Birth Cohort Study. ◆

3.46];  $P=0.001$ ), depression (OR, 2.16 [95% CI, 1.33–3.53];  $P=0.002$ ), suicide risk (OR, 2.32 [95% CI, 1.25–4.00];  $P=0.01$ ) and poor overall mental health (OR, 3.35 [95% CI, 2.04–5.51]);  $P<0.001$ ); findings were adjusted for relevant sociodemographic and substance-use confounders, which were different for each of the Strong Souls factors (Box 2). All interaction terms and mediators examined for any of the Strong Souls factors were not significant at the  $P<0.05$  level.

No significant associations between racism and WHR ( $\beta_1=-0.009$  [95% CI, -0.03 to 0.01];  $P=0.31$ ) or between racism and BMI z score ( $\beta_1=-0.22$  [95% CI, 0.61 to 0.17];  $P=0.26$ ) were found and, as such, these variables were not examined in multivariable models.

**DISCUSSION**

We found that, among young Aboriginal people aged 16–20 years living in the Top End of the Northern Territory, the experience of racism was associated with anxiety, depression, suicide risk and overall poor mental health after adjusting for confounders. To our knowledge, this is the first published Australian study to consider racism and health outcomes specifically for young Aboriginal people living in remote localities using an outcome measure developed and validated specifically for the young Aboriginal people within the study.<sup>20</sup> Findings are consistent with those from cross-sectional and longitudinal studies with other population groups internationally<sup>1,4</sup> and with cross-sectional studies in Australia with other Aboriginal and Torres Strait Islander populations.<sup>10,12–15</sup>

Late adolescence and early adulthood has been identified as a time of heightened vulnerability to psychological distress resulting from experiences of racism.<sup>7</sup> By adolescence, young people have abstract thinking abilities that enable them to consider and fear racism as an impediment to achieving life goals.<sup>7</sup> For Aboriginal Australians, it is also the time when parenthood is likely to occur, heightening the detrimental effects of racism through increased awareness of the need to protect children from negative life experiences.<sup>7</sup>

Evidence also indicates that the mental health difficulties that develop at this stage of life are likely to persist and adversely effect educational, social and health outcomes in subsequent years.<sup>25</sup> In addition, there is substantial evidence that poor parental mental health (particularly maternal mental health) is associated with poor developmental, health and wellbeing outcomes for children.<sup>26</sup> Our study provides empirical support for the need to overcome racism as a contributor to existing

disparities in social and emotional wellbeing outcomes experienced by young Aboriginal people.<sup>9</sup> In this study, socioeconomic status measures were not related to self-reported racism. In a recent nationally representative sample, self-reported racism among Aboriginal people aged 15 years and over was significantly associated with employment status but not with income or education level.<sup>11</sup> Investigation of these associations is warranted.

We found no significant associations between self-reported racism and anthropometric measurements. The one other study that has considered this association in children and young people found positive correlations between internalised racism and both BMI and waist circumference for African-Caribbean adolescent girls (but not boys).<sup>27</sup> Two studies with adults, one with Asian Americans<sup>28</sup> and the other with black African women,<sup>29</sup> found positive associations between self-reported racism and anthropometric measurements, including BMI and waist circumference, after controlling for confounders, while a third found no effect on BMI for Hispanic and black Americans living in low-income housing.<sup>29</sup> Further exploration of potential associations between racism and physical health among young Aboriginal Australian people is required.

Our findings should be considered in the context of several study limitations. The study sample is not representative of Australian Aboriginal youth in remote areas or nationally. The population-specific nature of the outcome tool may also limit generalisability of findings. The cross-sectional design also limits definitive conclusions about causal directions. Although 32 longitudinal studies suggest that the primary direction of causation is from the experience of racism to ill health, the converse scenario cannot be ruled out in this study.<sup>1,4,5</sup> In addition, we measured only a subset of potential confounders of the relationship between racism and ill health.

A single item rather than a multi-item measure is unlikely to comprehensively assess racism as a phenomenon.<sup>3</sup> Thus, the health effects of racism may be underestimated in this study.<sup>4,30</sup> Associations between self-reported racism and anthropometric measures have been found in international studies.<sup>28,29</sup> As such, further research is required before the lack of association found in this study can be confirmed. To our knowledge, no other studies have investigated the association between racism and resilience; further investigation of this topic is warranted. Also, the use of racism as a single item includes no time-frame. Studies using multi-item measures that assess frequency, duration, setting, form, per-

**2 Association between Strong Souls\* factors and experience of racism of 345 Aboriginal Australian study participants living in the Top End of the Northern Territory aged 16–20 years, in three hierarchical logistic regression models**

Strong Souls* factor	OR (95% CI): model 1	Adjusted OR (95% CI): model 2	Adjusted OR (95% CI): model 3
<b>Anxiety†</b>	n=345	n=345	
Reported racism			
Not really	1.0	1.0	
Little bit/fair bit/lots	2.22 (1.40–3.52)	2.18 (1.37–3.46)	
Region			
Remote		1.0	
Urban/other		0.56 (0.34–0.93)	
R <sup>2‡</sup>	0.04	0.06	
<b>Depression</b>	n=345	n=345	n=342
Reported racism			
Not really	1.0	1.0	1.0
Little bit/fair bit/lots	2.13 (1.34–3.38)	2.14 (1.33–3.46)	2.16 (1.33–3.53)
Sex			
Men	—	1.0	1.0
Women	—	2.44 (1.56–3.82)	2.93 (1.83–4.70)
Region			
Remote	—	1.0	1.0
Urban/other	—	1.80 (1.08–3.00)	1.74 (1.03–2.93)
Gunja use			
Not much	—	—	1.0
Sometimes	—	—	2.05 (1.27–3.31)
R <sup>2‡</sup>	0.03	0.10	0.14
<b>Suicide risk§</b>	n=345	n=306	n=279
Reported racism			
Not really	1.0	1.0	1.0
Little bit/fair bit/lots	2.39 (1.45–3.96)	2.06 (1.19–3.57)	2.32 (1.25–4.00)
Sex			
Men	—	1.0	1.0
Women	—	2.61 (1.48–4.59)	3.03 (1.61–5.72)
Someone in house owns a car			
No	—	1.0	1.0
Yes	—	1.83 (1.07–3.13)	1.86 (1.04–3.31)
Gunja use			
Never or only once/not any more			1.0
Sometimes			2.28 (1.12–4.66)
Tobacco or cigarettes			
Never or only once/not any more			1.0
Sometimes			0.49 (0.25–0.97)
R <sup>2‡</sup>	0.05	0.13	0.17
<b>Mental health</b>	n=345	n=345	n=342
Reported racism			
Not really	1.0	1.0	1.0
Little bit/fair bit/lots	3.37 (2.09–5.46)	3.32 (2.03–5.43)	3.35 (2.04–5.51)
Sex			
Men	—	1.0	1.0
Women	—	2.45 (1.56–3.84)	2.81 (1.60–4.51)
Gunja use			
Never or only once/not any more	—	—	1.0
Sometimes	—	—	1.68 (1.02–2.76)
R <sup>2‡</sup>	0.09	0.14	0.16

OR = odds ratio. \*The Strong Souls tool is a culturally appropriate questionnaire for assessing the social and emotional wellbeing of participants of the Aboriginal Birth Cohort Study. †Model 3 not provided for anxiety as no substance use variables were significant in the final model. ‡McKelvey-Zavoina pseudo R<sup>2</sup>. §All models for suicide risk were also run using the smaller sample from the final model and results were equivalent with models using full sample.

petrators, reactions and coping strategies, and perceived severity and impact of racism are required. Ideally, studies would also be longitudinal and include broader measures of socioeconomic status, life circumstances and other stressors, as well as a range of potential confounders.

Redressing inequalities in social and emotional wellbeing outcomes for young Australian Aboriginal people is an important national priority. Combating racism as a determinant of health is a critical aspect of such an endeavour. Further research is needed to explore causal pathways between experiences of racism and a range of health and wellbeing outcomes for young Aboriginal people, including identification of both risk and protective factors. Such knowledge is required to develop appropriate and effective interventions to combat racism as a means of improving Aboriginal health outcomes.

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