

Abstract

Objective: The study aimed to examine the associations of experiences of racial discrimination within communities with suicide mortality rates for Aboriginal and Torres Strait Islander people.

Methods: Age-standardised suicide rates (ASRs) were calculated using suicides recorded by the Queensland Suicide Register (QSR) of Aboriginal and Torres Strait Islander people in Queensland from 2001–2015. Rate Ratios (RRs) were used to compare ASRs in areas with high and low levels of reported discrimination, and other comparative community-level risk and protective factors (remoteness, socio-economic resources, and Indigenous language use).

Results: The age-standardised suicide rate was 31.74 deaths per 100 000 persons/year for Aboriginal and Torres Strait Islander people. ASRs were significantly in areas where more of the First Nations residents experienced recent discrimination (RR=1.33; 95%CI=1.05–1.70, $p=0.02$), and the age-specific suicide rate was significantly higher for those aged 25-34 in areas with more discrimination (RR=1.67; 95%CI=1.04–2.74, $p=0.03$). By comparison, the ASRs were not significantly higher in areas with regional and remote communities (RR=1.10, CI 95%=0.75–1.61, $p=0.6$), or areas with lower socioeconomic resources (RR=0.86, 95%CI=0.66–1.13, $p=0.28$). Areas in which more First Nations residents spoke Indigenous languages had significantly lower ASRs (RR=1.51; CI95%=1.08–2.10, $p=0.02$).

Conclusion: Suicide mortality rates for Aboriginal and Torres Strait Islander people in Queensland were influenced by experiences of racial discrimination within communities, with greater associations reported than with socio-economic resources or remoteness. The findings reflect the public health risk of discrimination and provide evidence for enacting strategies to reduce institutional and personal discrimination to reduce suicide.

Full Text

The adverse effects of racism and discrimination on racialised peoples are well established [1]–[5]. Experiences of racism and discrimination are understood as continued harms of settler colonialism perpetrated against Aboriginal and Torres Strait Islander people (hereafter the term First Nations people is also used throughout the paper) [6]–[10]. For many First Nations people, experiences of racism and discrimination are widespread in lands now referred to as Australia, including within educational settings, [11], when seeking to access support or healthcare [12], through derogatory media presentations [13] and within the broader community [14]–[16]. These experiences of racism and discrimination are widely known to directly and indirectly harm Aboriginal and Torres Strait Islander health and wellbeing across multiple domains [17], including higher risk of children’s emotional, behavioural, and sleep difficulties [18]–[20], greater adolescent academic disengagement [21] and elevated stress biomarker levels [22]. A recent cross-sectional study found that experiences of everyday racial discrimination could explain almost half of the overall psychological distress gap between Aboriginal and Torres Strait Islander and non-Indigenous Australian adults [23]. In one study, experiences of racism explained more than a third (34%) of the physical health gap between First Nations and non-Indigenous adults, more than smoking (32%), and more than the difference explained by socioeconomic status (15%) or ‘lifestyle factors’ such as inactivity [24].

Aboriginal and Torres Strait Islander suicide

Suicide mortality is a domain in which acute disparities are observed between Aboriginal and Torres Strait Islander and non-Indigenous outcomes, with First Nations people dying by suicide at over twice the rate of other Australians [25], [26]. This gap widens as a function of age with younger people experiencing even higher rates; Aboriginal and Torres Strait Islander youth (under 15 years) were found to die by suicide at almost 8 times the rate of their non-Indigenous peers [27]. The persistence of these disparities reflect that current approaches have not met the needs of Aboriginal

and Torres Strait Islander communities [28], [29]. While the reasons behind these inequalities are complex and multifaceted, an important contributor identified is that universal or 'mainstream' approaches to suicide prevention are not aligned to the unique trajectories, and risk and protective factors for suicidality for First Nations populations [30], [31]. Of particular note, experiences of racism and discrimination are widely reported to be associated with higher rates of suicidal ideation and attempt for First People in Australia [32]–[34]. Some studies have even reported the associations between racism and discrimination and suicidality for First Nations young people to be stronger than with other commonly reported risk factors, including drug and alcohol use, income, or health issues [36]. Despite the existing evidence, experiences of racism and discrimination do not commensurately feature in models of understanding suicide and its contextual risk factors [37] – nor do protective factors which could ameliorate the effects of racism, such as cultural pride, connection with community, or engaging in cultural practices, such as language use [4], [38], [39]. The existing research on Indigenous-specific risk and protective factors for suicide is limited [29], there is a need to understand contributions of both Indigenous-specific as well as universal contextual factors for the broader population in order to develop effective First Nations suicide prevention solutions.

Additionally, the research to date has only examined the harms of racism and discrimination on earlier indicators of suicidality, such as suicidal ideation or attempts [36]. The findings cannot be automatically generalisable to actual deaths by suicide as those who die by suicide comprise a smaller and unrepresentative cohort of the total population of those who experience ideation or attempts [40]. For example, in Western countries women attempt suicide at twice the rate of men, yet men die by suicide at a rate three times higher than the rate for women [41], [42]. Therefore, examining community-level mortality rates is critical to understanding the effects of discrimination on suicide.

To be best of the authors' knowledge, the relationship between prevalence of experiences of racial discrimination within communities on area suicide mortality rates for Aboriginal and Torres Strait Islander people – or any racialised population - remains unknown. As such, this study will also examine the associations between discrimination and Indigenous suicide mortality in the context of other general and Indigenous-specific community-level risk and protective factors reported to influence suicide mortality rates in existing research. Rural and remote regions have reported higher suicide rates across nationalities, particularly where access to healthcare services are limited [43], [44]. Suicide rates have been found to be lower in communities in which residents have higher levels of income and education, and with lower levels of socio-economic stressors, such as household overcrowding [45], [46]. While the evidence of culturally specific protective factors at the community level are limited, First Nations communities with greater Indigenous language use in British Columbia, Canada were found to have lower suicide rates than communities with fewer language speakers [47].

This current study aims to 1) compare suicide rates for Aboriginal and Torres Strait Islander people by levels of reported discrimination within communities, for both the total (age-standardised) First Nations population and within age-groups (age-specific suicide rates); and 2) examine comparative associations of other community-level risk and protective factors: socio-economic advantage, remoteness and Indigenous language use.

Methods

Data sources

Queensland Suicide Register (QSR). The QSR is a public health surveillance suicide mortality database which includes all suspected and confirmed suicide fatalities which have occurred in Queensland since 1990 [26]. The QSR sources data from police reports from the Queensland Police Service and the Coroners Court of Queensland; and post-mortem examinations, toxicology reports, and coronial findings from the National Coronial Information System (NCIS). The Queensland Registry of Births, Deaths, and Marriages supplies information on Indigenous status missing from primary

data sources. The QSR includes information on a wide range of demographic, psychosocial, psychiatric, medical, contextual, and behavioural aspects of suicide cases. This information is used to classify the probability of suicide is classified as either 'unlikely', 'possible', 'probable' or 'confirmed' using a decision-tree [26]. This study included suicides classed as 'probable' or 'confirmed'. The current study used data from the QSR on all suicides of First Nations people during the period 2001–2015 in Queensland from the QSR. The last known or usual residential address is recorded in the QSR and was further coded as Statistical Area Level Two (SA2) for this study. Statistical Area Level Twos (SA2) are the second smallest unit of the Australian Statistical Geography Standard used in the census of which there were 526 Queensland SA2s in the 2011 Census, they cover the entire state and have an average population of 10,000 people. To calculate suicide rates by SA2, the 2011 Census was used as the closest census to the midpoint of the period of analysis. It is acknowledged that significant cultural, historic, and social differences exist between the many First Nations on these lands. However, due to the limitations of available population denominator data which does not further disaggregate, comparisons presented include all Aboriginal and Torres Strait Islander individuals as 'First Nations/Indigenous Peoples.'

SA2 Social Indicators for the Indigenous Population (Synthetic estimates). Estimates were accessed from the Australian Urban Research Infrastructure Network (AURIN) system. The National Centre for Social and Economic Modelling (NATSEM) produces these synthetic estimates using a spatial microsimulation model combining geographic information from the 2011 Census with the richer data from the 2008 National Aboriginal and Torres Strait Islander Social Survey (NATSISS) to gain reliable small-area estimates of Indigenous social indicators. The NATSISS collects information on demographic, social, cultural, environmental, and economic indicators, including geography, language and cultural activities, social networks and support, health and well-being, education, employment, income, personal safety and experiences of discrimination. It is completed by Aboriginal and Torres Strait Islander residents aged 15 years and older [48]. Due to the sensitivity and potential for identification, confidentialised unit record files (CURFs) from the survey dataset are not available. Instead, a synthetic unit record file built with observations summing to the population totals from the survey was extracted using the ABS Survey Tablebuilder system [49]. A spatial microsimulation approach was then applied to this synthetic unit record file using a generalised regression reweighting algorithm that reweights the synthetic unit record file to small-area Census benchmarks. These benchmarks include characteristics like income, age, sex and education (see [50] for full benchmarks list). The results are validated against the aggregated NATSISS survey data. The model automatically eliminates any SA2 that fails to achieve the threshold of acceptable error (the Total Absolute Error from the model is greater than the population of the SA2), in which case the model would not provide an estimate [49], [50]. The SA2s in Queensland that did not meet the threshold were predominantly industrial and commercial areas in Brisbane.

The indicators selected for this study from this model (and originally from the NATSISS 2008) were:

Discrimination score reflects the percentage of Aboriginal and Torres Strait Islander residents reporting racial discrimination in the last 12 months. The scope includes discrimination in the workplace, community, educational institutions, recreational settings, court setting, treatment by the police, health professionals or government agency staff when seeking any public services. In these SA2s, between 9.4% and 50.9% of the First Nations population reported discrimination in the previous year. Areas with high levels of discrimination were those in which 30% or more of the population reported discrimination in the previous year.

Indigenous language use score reflects the percentage of Aboriginal and Torres Strait Islander residents who report speaking an Indigenous language in the home. The proportion of the First Nations population speaking an Indigenous language ranged from 0–96.41%. Due to the positively skewed language use distribution, areas were delineated as high and low based on being either above or equal to and below 5% of First Nations persons speaking an Indigenous language.

Australian Standard Geographical Standard - Remoteness Areas (ASGS-RA). The Remoteness Areas measure remoteness or conversely accessibility of areas to goods and services using five categories - major cities, inner regional, outer regional, remote, and very remote [51]. Inner regional, outer regional, remote, and very remote were merged into a single variable 'Regional and Remote areas' for comparison with 'Metropolitan areas' (major cities).

Index of Relative Socioeconomic Advantage and Disadvantage (IRSAD). The IRSAD is a Socio-Economic Indexes for Areas (SEIFA) index ranking areas in Australia according to comparative socioeconomic advantage and disadvantage and includes variables related to education (year 11 or lower), occupation (professional, low skills, management) disabilities, overcrowded housing, and income [52]. SA2 Quintile ranks were used for this study with the three lowest quintiles classified as 'low.'

Analysis

Age-specific suicide rates and were calculated as the average yearly number of suicide deaths per 100,000 population among First Nations people in Queensland from 2001 to 2015. Age-standardised rates (ASRs) were directly age-standardised to the estimated resident Australian population at 30 June 2001. To compare suicide rates in different groups, rate ratios (RR) and their 95% confidence intervals and exact probability levels were calculated using IBM SPSS Statistics 28. The QSR and iQSR procedures have ethical approval from the Victoria Department of Justice and Community Safety Human Research Ethics Committee (HREC; CF/18/12771) and the Griffith University HREC (2010/537).

Results

First Nations suicide fatalities

Three hundred and fifty-five (355) suicide deaths were recorded for Aboriginal and Torres Strait Islander people between 2001–2015 in Queensland, equivalent to an ASR of 31.74 suicides per 100,000 persons (95% CI = 27.05–36.44).

Table 1

Age-specific and age-standardised suicide rates for Aboriginal and Torres Strait Islander people in areas with high and low reported discrimination in Queensland, 2001–2015

	High Discrimination				Low Discrimination				Rate Ratio	LL	UL	<i>p</i>
	<i>n</i>	Rate	LL	UL	<i>n</i>	Rate	LL	UL				
Age group												
1–14	5	2.02	0.66	4.71	6	2.83	1.04	6.16	0.71	0.17	2.80	0.59
15–24	81	56	44.46	69.58	47	40.27	29.59	53.55	1.39	0.96	2.04	0.07
25–34	58	58.07	44.1	75.07	27	34.85	22.97	50.7	1.67	1.04	2.74	0.026*
35–44	43	50.92	36.85	68.58	39	55.19	39.25	75.45	0.92	0.58	1.46	0.72
45–54	14	21.75	11.89	36.49	9	16.03	7.33	30.43	1.36	0.55	3.55	0.49
55–64	5	13.2	4.28	30.79	5	14.93	4.85	34.84	0.88	0.20	3.84	0.85
65+	7	30.78	12.38	63.43	< 5	10.11	1.22	36.51	3.05	0.58	30.05	0.16
Total - ASR	213	32.8	27.74	37.87	135	24.58	20.08	29.08	1.33	1.05	1.7	0.019*

Note: ASR, Age-standardised rates by Australian standard population 2001. * $<.05$. Synthetic estimates of discrimination percentages available for 481 SA2s. LL 95% Confidence interval lower limit, UL 95% Confidence interval upper limit.

Table 2

First Nations age-standardised suicide rate ratios by socioeconomic resources, remoteness, Indigenous language use and cultural activities

	<i>N</i>	Rate	LL	UL
Socioeconomic resources (SEIFA)				
Low	304	29.52	25.87	33.18
High	51	26.75	17.54	35.97
Remoteness/Accessibility (ARIA+)				
Regional/remote	245	32.12	24.85	39.39
Metropolitan	110	27.74	24	31.49
Indigenous language use				
> 5%	64	22.05	16.31	27.78
≤ 5%	171	33.24	26.81	39.66

Note: Synthetic estimates of discrimination percentages available for 481 SA2s; Synthetic estimates of Indigenous language use percentages available for 510 SA2s; SEIFA indices available for 512 SA2s. LL: 95% Confidence interval lower limit, UL: 95% Confidence interval upper limit.

Discrimination

The First Nations age-standardised suicide (ASR) rate for areas with high levels of discrimination was 33% higher than areas in which less than 30% of Aboriginal and Torres Strait Islander residents reported experiencing discrimination in the previous year, with 32.8 as compared to 24.6 suicides per 100,000 persons annually (RR = 1.33; 95% CI = 1.05–1.70, $p = 0.019$); equivalent to an additional 8.2 suicides per 100,000 people. The only age-group in which there was a significant difference between the age-specific suicide rates was the 25–35-year age-group, at 67% higher (RR = 1.67; 95% CI = 1.04–2.74, $p = 0.026$). However, the ratio of age-specific suicide rates approached significance and was 39% higher for the 15–24 age-group (RR = 1.39; 95% CI = 0.96–2.04, $p = 0.07$).

Community-level risk and protective factors

The ASR was lower for Aboriginal and Torres Strait Islander residents in communities in which more than 5% of the First Nations population spoke an Indigenous language at home (RR = 0.65; CI 95% = 0.49–0.87, $p = 0.02$), 22.05 as compared to 33.24 suicides per 100,000 persons annually. This is equivalent to 33% lower or 11.19 fewer suicides per 100,000 persons in communities with higher Indigenous language use. Neither community socioeconomic resources (RR = 1.10, CI 95% = 0.75–1.61, $p = 0.61$) or remoteness from goods and services were significantly associated with First Nations ASRs (RR = 0.86, 95% CI = 0.66–1.13, $p = 0.28$).

Discussion

In the total population ASR, Aboriginal and Torres Strait Islander people died by suicide at rates 33% higher in communities where 30% or more of First Nations residents reported experiencing discrimination in the previous year. Interestingly the 25 to 34-year-old age-group was the only age group for which this difference was statistically significant, although for the 15 to 24 age group the difference approached significance. It could also be that racism and discrimination have pronounced influences within the late adolescence and early adulthood years. During these stages, identity is proposed to move more toward peer influences and sense of self toward broader societal sense of belonging as those in these ages try to find their place in the world and who they are apart from family [53], [54]. As such, racism and discrimination in these years could potentially have a greater impact on ability to identify place in community and hope for the future [55], [56].

It is important to understand these findings on the relationship between experiences of discrimination and Indigenous suicide mortality in the racism and discrimination frequently experienced when seeking and accessing healthcare [12]. This highlights the challenge in which many First Nations people experiencing suicidality are often required to experience an know risk factor for suicide in order to try to access help. Unsurprising, First Nations people who die by suicide are less likely to have ever received support [57], [58]. This emphasises the need for community outreach models to build trust and connections, and preventative approaches to reduce the need for mental health service contacts [59], as well as strategies to reduce racist behaviours in healthcare and the general community.

The significant influence of both ‘culturally specific’ indicators, Indigenous language use and discrimination, with Aboriginal and Torres Strait Islander suicide mortality rates while neither socio-economic resources nor remoteness significantly influenced rates is notable. This may reflect, as others have identified, that many of the traditional or ‘mainstream’ risk indicators of suicide are less salient than the unique suicidal aetiologies, risk and protective factors for First Nations people. This provides support for what other Indigenous scholars have asserted that Indigeneity is not a risk factor; rather being colonised is a risk factor [6], [10], [60], [61] [6], [10], [60], [61]. First Nations suicide is therefore best understood through a ‘continued historical trauma’ lens for which strategies to promote community empowerment and cultural connection would be alleviative [62], [63].

Indigenous suicide rates were lower in communities where more residents spoke an Indigenous language, consistent with international studies [47], [55]. The similar results are somewhat surprising as the analyses in First Nations

populations in Canada compared communities in which more than 50% of residents had knowledge of an Indigenous language, whereas the current study compared areas in which more than 5% spoke an Indigenous language in the home. The results promisingly suggest that small levels or increases in Indigenous language use may reduce community suicide risk. Indigenous language use – and particularly Indigenous language revitalisation – has been identified as uniquely protective for First Nations people as a reflection of and means towards other critical factors such as community connection and cohesion, cultural knowledge transmission, sovereignty and cultural reclamation [64]. These findings provide initial evidence for trialing strategies to reduce suicide through promoting cultural connection through language learning and rejuvenation. These results may also reflect higher language persistence due to regional variation in the application of historical assimilation policies which sought to extinguish Indigenous cultures and language [65]. Individual-level analyses have also identified that First Nations people today whose parents and grandparents are survivors of the stolen generations or residential schools experience poorer outcomes than other First Nations people [66], [67]. There is a need for further research to explore the role of historical and intergenerational trauma on the variation of community-level outcomes for First Peoples today [62], [68].

Aboriginal and Torres Strait Islander suicide rates were not significantly influenced by levels of socio-economic resources or remoteness. Communities with higher socio-economic resources had slightly higher suicide rates, albeit not reaching significance. This is a somewhat surprising finding as there is a wealth of research, nationally and internationally, reporting the effect of both area-level accessibility and resources on suicide mortality rates [45], [46], [69]. This may reflect, as many others have noted that First Nations people living in highly resourced communities often have fewer resources themselves compared to the rest of the community [70]. Critically, due to the pervasive nature of racism and discrimination, First Nations people often do not benefit from the resources of their surrounding communities.

It should be noted that while the difference did not reach significance, the age-standardised suicide rate was slightly lower for remote and regional communities as compared to metropolitan areas. This contradicts other First Nations suicide prevention studies which reported significantly higher First Nations suicide rates in regional and remote communities [27], [58], [71]. The contribution of distance from health services on Indigenous suicide mortality rates requires further examination to be better understood – and the need for equitable mental health access should not be ignored [32], [43].

Limitations

In this study associations are reported between suicide mortality rates and community-level indicators, which do not infer causality between these variables. As such it cannot be confirmed that community cultural connectedness reduces suicide mortality. Also, as the reported relationships are compared within a single time period, it is not possible to ascertain if decreasing discrimination or increasing language use would reduce Indigenous suicide rates. There is a need for future research to apply more rigorous designs such as controlled trials of community-wide anti-racism campaigns or naturalistic controlled interrupted time series observations of suicide mortality trends with language rejuvenation efforts.

It is possible that there are underlying correlations and interactions between the variables examined in this study which could mediate the current results, which should be explored in larger samples. Due to the ecological study design, it is critical to acknowledge that the associations on an aggregate level are not applicable to the individuals in those areas, i.e., it cannot be presumed that within communities in which more people reported discrimination that those who experienced discrimination died by suicide. Nonetheless, examining the harms of discrimination at an area-level and framing it's influence within the broader socio-ecological environment provides important evidence for the community-wide harm of racism and discrimination.

Conclusion

The findings of the current study reflect the significant harms from racism and discrimination on the outcomes and wellbeing of Aboriginal and Torres Strait Islander people and highlights the need to consider strategies to reduce experiences of racism and discrimination as a public health strategy [3], [10], [72]. Challenging harmful discriminatory narratives and eliminating experiences of racism should be considered important components of suicide prevention initiatives in Australia. The findings emphasise the importance of cultural factors in population and community-level First Nations suicide prevention approaches, such as measures to enhance Indigenous language use and cultural connection throughout communities. The associations between suicide mortality with discrimination and language use - particularly in comparison to more 'traditional' population risk factors for suicide of socio-economic resources and accessibility highlight the need for First Nations-specific approaches to researching and prevention suicide.

Declarations

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Declaration of Conflicting Interests

The authors declare that there is no conflict of interest.

Author Contributions

Conceptualisation, M.G., S.L., K.K., A.R., and R.W.; methodology, M.G., S.L., K.K., A.R., and R.W.; validation, M.G., S.L., K.K., A.R., and R.W.; formal analysis, M.G., S.L., A.R., and K.K.; interpretation, writing—original draft preparation, M.G., and K.K.; writing—review and editing, M.G., S.L., K.K., A.R., and R.W. All authors have read and agreed to the published version of the manuscript.

References

1. E. M. Ozier, V. J. Taylor, and M. C. Murphy, "The Cognitive Effects of Experiencing and Observing Subtle Racial Discrimination," *J. Soc. Issues*, vol. 75, no. 4, pp. 1087–1115, Dec. 2019, doi: 10.1111/josi.12349.
2. L. Bécares, J. Nazroo, and Y. Kelly, "A longitudinal examination of maternal, family, and area-level experiences of racism on children's socioemotional development: Patterns and possible explanations," *Soc. Sci. Med.*, vol. 142, pp. 128–135, Oct. 2015, doi: 10.1016/j.socscimed.2015.08.025.
3. D. Devakumar *et al.*, "Racism, the public health crisis we can no longer ignore," *The Lancet*, vol. 395, no. 10242, 2020. doi: 10.1016/S0140-6736(20)31371-4.
4. L. Torres and A. D. Ong, "A daily diary investigation of latino ethnic identity, discrimination, and depression," *Cult. Divers. Ethn. Minor. Psychol.*, vol. 16, no. 4, 2010, doi: 10.1037/a0020652.
5. Y. Paradies *et al.*, "Racism as a determinant of health: A systematic review and meta-analysis," *PLoS One*, vol. 10, no. 9, p. e0138511, Sep. 2015, doi: 10.1371/journal.pone.0138511.

6. J. Sherwood, "Colonisation - It's bad for your health: The context of Aboriginal health," *Contemp. Nurse*, 2013, doi: 10.5172/conu.2013.46.1.28.
7. P. Dudgeon and R. Walker, "An urgent call to address interpersonal and structural racism and social inequities in Australia," *Lancet*, vol. 400, no. 10368, pp. 2014–2016, Dec. 2022, doi: 10.1016/S0140-6736(22)02491-6.
8. K. Griffiths, C. Coleman, V. Lee, and R. Madden, "How colonisation determines social justice and Indigenous health –a review of the literature," *J. Popul. Res.*, vol. 33, no. 1, pp. 9–30, Apr. 2016, doi: 10.1007/s12546-016-9164-1.
9. B. R. Henry, S. Houston, and G. H. Mooney, "Institutional racism in Australian healthcare: A plea for decency," *Med. J. Aust.*, vol. 180, no. 10, pp. 517–520, 2004.
10. Y. Paradies, "Colonisation, racism and indigenous health," *J. Popul. Res.*, vol. 33, no. 1, 2016, doi: 10.1007/s12546-016-9159-y.
11. N. Moodie, J. Maxwell, and S. Rudolph, "The impact of racism on the schooling experiences of Aboriginal and Torres Strait Islander students: A systematic review," *Aust. Educ. Res.*, vol. 46, no. 2, 2019, doi: 10.1007/s13384-019-00312-8.
12. M. A. Kelaher, A. S. Ferdinand, and Y. Paradies, "Experiencing racism in health care: The mental health impacts for Victorian Aboriginal communities," *Med. J. Aust.*, 2014, doi: 10.5694/mja13.10503.
13. F. Proudfoot and D. Habibis, "Separate worlds: A discourse analysis of mainstream and Aboriginal populist media accounts of the Northern Territory Emergency Response in 2007," *J. Sociol.*, vol. 51, no. 2, 2015, doi: 10.1177/1440783313482368.
14. Y. C. Paradies and J. Cunningham, "The DRUID study: Racism and self-assessed health status in an indigenous population," *BMC Public Health*, vol. 12, no. 1, 2012, doi: 10.1186/1471-2458-12-131.
15. J. B. Temple, M. Kelaher, and Y. Paradies, "Experiences of racism among older aboriginal and torres strait islander people: Prevalence, sources, and association with mental health," *Can. J. Aging*, vol. 39, no. 2, 2020, doi: 10.1017/S071498081900031X.
16. N. Priest, Y. Paradies, P. Stewart, and J. Luke, "Racism and health among urban Aboriginal young people," *BMC Public Health*, vol. 11, 2011, doi: 10.1186/1471-2458-11-568.
17. C. A. Kairuz, L. M. Casanelia, K. Bennett-Brook, J. Coombes, and U. N. Yadav, "Impact of racism and discrimination on physical and mental health among Aboriginal and Torres Strait islander peoples living in Australia: a systematic scoping review," *BMC Public Health*, vol. 21, no. 1, 2021, doi: 10.1186/s12889-021-11363-x.
18. D. M. Macedo, L. G. Smithers, R. M. Roberts, Y. Paradies, and L. M. Jamieson, "Effects of racism on the socio-emotional wellbeing of Aboriginal Australian children," *Int. J. Equity Health*, vol. 18, no. 1, pp. 1–10, Aug. 2019, doi: 10.1186/s12939-019-1036-9.
19. C. C. J. Shepherd, J. Li, M. N. Cooper, K. D. Hopkins, and B. M. Farrant, "The impact of racial discrimination on the health of Australian Indigenous children aged 5–10 years: Analysis of national longitudinal data," *Int. J. Equity Health*, vol. 16, no. 1, p. 116, Jul. 2017, doi: 10.1186/s12939-017-0612-0.
20. L. Cave, M. N. Cooper, S. R. Zubrick, and C. C. J. Shepherd, "Caregiver-perceived racial discrimination is associated with diverse mental health outcomes in Aboriginal and Torres Strait Islander children aged 7–12 years," *Int. J. Equity Health*, vol. 18, no. 1, 2019, doi: 10.1186/s12939-019-1045-8.
21. G. Bodkin-Andrews, V. O'Rourke, R. Grant, N. Denson, and R. G. Craven, "Validating racism and cultural respect: Testing the psychometric properties and educational impact of perceived discrimination and multiculturalisation for Indigenous and non-Indigenous students," *Educ. Res. Eval.*, vol. 16, no. 6, 2010, doi: 10.1080/13803611.2010.550497.
22. L. Cave, M. N. Cooper, S. R. Zubrick, and C. C. J. Shepherd, "Racial discrimination and allostatic load among First Nations Australians: a nationally representative cross-sectional study," *BMC Public Health*, vol. 20, no. 1, 2020, doi:

10.1186/s12889-020-09978-7.

23. K. A. Thurber *et al.*, "Population-level contribution of interpersonal discrimination to psychological distress among Australian Aboriginal and Torres Strait Islander adults, and to Indigenous–non-Indigenous inequities: cross-sectional analysis of a community-controlled First Nations cohort study," *Lancet*, vol. 400, no. 10368, pp. 2084–2094, Dec. 2022, doi: 10.1016/S0140-6736(22)01639-7.
24. A. Markwick, Z. Ansari, D. Clinch, and J. McNeil, "Perceived racism may partially explain the gap in health between Aboriginal and non-Aboriginal Victorians: A cross-sectional population based study," *SSM - Popul. Heal.*, vol. 7, Apr. 2019, doi: 10.1016/j.ssmph.2018.10.010.
25. Australian Bureau of Statistics, "Causes of Death, Australia, 2020. Cat no. 3303.0," Canberra, 2021. Accessed: Aug. 02, 2022. [Online]. Available: <https://www.abs.gov.au/statistics/health/causes-death/causes-death-australia/latest-release#intentional-self-harm-deaths-suicide-in-aboriginal-and-torres-strait-islander-people>
26. S. Leske, G. Adam, A. Catakovic, B. Weir, and K. Kõlves, "Suicide in Queensland: Annual Report 2022," Brisbane, Queensland, 2022. Accessed: Nov. 18, 2022. [Online]. Available: https://www.griffith.edu.au/__data/assets/pdf_file/0033/1639473/AISRAP-Annual-Report-2022.pdf
27. M. Gibson, J. Stuart, S. Leske, R. Ward, and R. Tanton, "Suicide rates for young Aboriginal and Torres Strait Islander people: the influence of community level cultural connectedness," *Med. J. Aust.*, vol. 214, no. 11, pp. 514–518, Jun. 2021, doi: 10.5694/mja2.51084.
28. P. Dudgeon, T. Calma, and C. Holland, "The context and causes of the suicide of Indigenous people in Australia," *J. Indig. Wellbeing*, vol. 2, no. 2, 2017.
29. J. M. Dickson, K. Cruise, C. A. McCall, and P. J. Taylor, "A systematic review of the antecedents and prevalence of suicide, self-harm and suicide ideation in Australian aboriginal and torres strait islander youth," *International Journal of Environmental Research and Public Health*. 2019. doi: 10.3390/ijerph16173154.
30. T. Elliott-Farrelly, "Australian Aboriginal suicide: The need for an Aboriginal suicidology?," *Aust. e-Journal Adv. Ment. Heal.*, vol. 3, no. 3, pp. 138–145, Jan. 2004, doi: 10.5172/jamh.3.3.138.
31. C. Tatz, *Aboriginal suicide is different: a portrait of life and self-destruction*, 2nd ed. Canberra, Australia: Aboriginal Studies Press, 2005. Accessed: Jun. 09, 2018. [Online]. Available: <https://search.informit.com.au/documentSummary;dn=330566950304891;res=IELHEA>
32. B. Davison, T. Nagel, and G. R. Singh, "Life, lifestyle and location: examining the complexities of psychological distress in young adult Indigenous and non-Indigenous Australians," *J. Dev. Orig. Health Dis.*, 2017, doi: 10.1017/s2040174417000162.
33. T. Haregu, A. F. Jorm, Y. Paradies, B. Leckning, J. T. Young, and G. Armstrong, "Discrimination experienced by Aboriginal and Torres Strait Islander males in Australia: Associations with suicidal thoughts and depressive symptoms," *Aust. N. Z. J. Psychiatry*, vol. 56, no. 6, 2022, doi: 10.1177/00048674211031168.
34. J. N. Luke *et al.*, "Suicide Ideation and Attempt in a Community Cohort of Urban Aboriginal Youth: A Cross-Sectional Study," *Crisis*, vol. 34, no. 4, pp. 251–261, Jul. 2013, doi: 10.1027/0227-5910/a000187.
35. N. C. Priest, Y. C. Paradies, W. Gunthorpe, S. J. Cairney, and S. M. Sayers, "Racism as a determinant of social and emotional wellbeing for Aboriginal Australian youth," *Med. J. Aust.*, vol. 194, no. 10, pp. 546–550, 2011, Accessed: May 07, 2018. [Online]. Available: <https://www.mja.com.au/journal/2011/194/10/racism-determinant-social-and-emotional-wellbeing-aboriginal-australian-youth>
36. L. M. Jamieson, Y. C. Paradies, W. Gunthorpe, S. J. Cairney, and S. M. Sayers, "Oral health and social and emotional well-being in a birth cohort of Aboriginal Australian young adults," *BMC Public Health*, vol. 11, no. 1, p. 656, Dec. 2011, doi: 10.1186/1471-2458-11-656.

37. I. Díaz-Oliván, A. Porras-Segovia, M. L. Barrigón, L. Jiménez-Muñoz, and E. Baca-García, "Theoretical models of suicidal behaviour: A systematic review and narrative synthesis," *European Journal of Psychiatry*, vol. 35, no. 3. 2021. doi: 10.1016/j.ejpsy.2021.02.002.
38. L. B. Whitbeck, X. Chen, D. R. Hoyt, and G. W. Adams, "Discrimination, historical loss and enculturation: Culturally specific risk and resiliency factors for alcohol abuse among American Indians," *J. Stud. Alcohol*, vol. 65, no. 4, 2004, doi: 10.15288/jsa.2004.65.409.
39. A. K. Marcelo and T. M. Yates, "Young Children's Ethnic-Racial Identity Moderates the Impact of Early Discrimination Experiences on Child Behavior Problems," *Cult. Divers. Ethn. Minor. Psychol.*, vol. 25, no. 2, 2019, doi: 10.1037/cdp0000220.
40. J. Hawgood and D. De Leo, "Suicide Prediction – A Shift in Paradigm Is Needed," *Crisis*, vol. 37, no. 4, pp. 251–255, Jul. 2016, doi: 10.1027/0227-5910/a000440.
41. World Health Organization, "Suicide worldwide in 2019: Global Health Estimates," Geneva, 2021. [Online]. Available: <https://www.who.int/publications/i/item/9789240026643>
42. D. L. Schrijvers, J. Bollen, and B. G. C. Sabbe, "The gender paradox in suicidal behavior and its impact on the suicidal process," *Journal of Affective Disorders*. 2012. doi: 10.1016/j.jad.2011.03.050.
43. F. Judd, A. M. Cooper, C. Fraser, and J. Davis, "Rural suicide - People or place effects?," *Australian and New Zealand Journal of Psychiatry*, vol. 40, no. 3. 2006. doi: 10.1111/j.1440-1614.2006.01776.x.
44. J. Casant and M. Helbich, "Inequalities of Suicide Mortality across Urban and Rural Areas: A Literature Review," *International Journal of Environmental Research and Public Health*, vol. 19, no. 5. 2022. doi: 10.3390/ijerph19052669.
45. J. M. Cairns, E. Graham, and C. Bamba, "Area-level socioeconomic disadvantage and suicidal behaviour in Europe: A systematic review," *Social Science and Medicine*, vol. 192. 2017. doi: 10.1016/j.socscimed.2017.09.034.
46. A. Page, S. Morrell, R. Taylor, G. Carter, and M. Dudley, "Divergent trends in suicide by socio-economic status in Australia," *Soc. Psychiatry Psychiatr. Epidemiol.*, vol. 41, no. 11, 2006, doi: 10.1007/s00127-006-0112-9.
47. D. Hallett, M. J. Chandler, and C. E. Lalonde, "Aboriginal language knowledge and youth suicide," *Cogn. Dev.*, 2007, doi: 10.1016/j.cogdev.2007.02.001.
48. Australian Bureau of Statistics, "National Aboriginal and Torres Strait Islander Social Survey," *Natl. Aborig. Torres Strait Islander Soc. Surv.*, 2008.
49. Y. Vidyattama, R. Tanton, and N. Biddle, "Estimating small-area Indigenous cultural participation from synthetic survey data," *Environ. Plan. A Econ. Sp.*, vol. 47, no. 5, pp. 1211–1228, May 2015, doi: 10.1177/0308518X15592314.
50. R. Tanton, Y. Vidyattama, B. Nepal, and J. McNamara, "Small area estimation using a reweighting algorithm," *J. R. Stat. Soc. Ser. A (Statistics Soc.)*, vol. 174, no. 4, pp. 931–951, Oct. 2011, doi: 10.1111/j.1467-985X.2011.00690.x.
51. Australian Bureau of Statistics, "1270.0.55.005 - Australian Statistical Geography Standard (ASGS): Volume 5 - Remoteness Structure, July 2011," Australian Bureau of Statistics, Canberra, ACT, Australia, Australia, 2013. Accessed: Jun. 26, 2020. [Online]. Available: <https://www.abs.gov.au/AUSSTATS/abs@.nsf/allprimarymainfeatures/17A7A350F48DE42ACA258251000C8CA0?opendocument>
52. Australian Bureau of Statistics, "Socio-Economic Indexes for Areas (SEIFA) 2011 - Technical Paper. Cat. No. 2033.0.55.001," 2013. doi: 2033.0.55.001.
53. C. Tanti, A. A. Stukas, M. J. Halloran, and M. Foddy, "Social identity change: Shifts in social identity during adolescence," *J. Adolesc.*, vol. 34, no. 3, 2011, doi: 10.1016/j.adolescence.2010.05.012.
54. E. Erikson, *Youth: Identity and crisis*, no. 96. 1968.

55. M. J. Chandler, C. E. Lalonde, B. W. Sokol, and D. Hallett, "Personal persistence, identity development, and suicide: a study of Native and Non-native North American adolescents.," *Monogr. Soc. Res. Child Dev.*, 2003.
56. M. J. Chandler and C. Lalonde, "Cultural Continuity as a Hedge against Suicide in Canada's First Nations," *Transcult. Psychiatry*, 1998, doi: 10.1177/136346159803500202.
57. J. Svetcic, A. Milner, and D. De Leo, "Contacts with mental health services before suicide: A comparison of Indigenous with non-Indigenous Australians," *Gen. Hosp. Psychiatry*, 2012, doi: 10.1016/j.genhosppsy.2011.10.009.
58. R. Soole, K. Kølves, and D. De Leo, "Suicides in Aboriginal and Torres Strait Islander children: Analysis of Queensland Suicide Register," *Aust. N. Z. J. Public Health*, vol. 38, no. 6, pp. 574–578, Dec. 2014, doi: 10.1111/1753-6405.12259.
59. M. Gooda, "The Elders' report into preventing Indigenous self-harm and youth suicide." *People Culture Environment*, Melbourne, Australia, 2014. doi: <https://doi.org/APO-40060>.
60. S. T. Fayed *et al.*, "In the eyes of indigenous people in Canada: Exposing the underlying colonial etiology of hepatitis C and the imperative for trauma-informed care," *Can. Liver J.*, vol. 1, no. 3, 2018, doi: 10.3138/canlivj.2018-0009.
61. M. King, A. Smith, and M. Gracey, "Indigenous health part 2: the underlying causes of the health gap," *The Lancet*, vol. 374, no. 9683. 2009. doi: 10.1016/S0140-6736(09)60827-8.
62. J. P. Gone, "Redressing First Nations historical trauma: Theorizing mechanisms for indigenous culture as mental health treatment," *Transcult. Psychiatry*, vol. 50, no. 5, 2013, doi: 10.1177/1363461513487669.
63. P. Dudgeon *et al.*, "Connection to community," Canberra, 2022. doi: 10.25816/tqxj-5629.
64. D. H. Whalen, M. E. Lewis, S. Gillson, B. McBeath, B. Alexander, and K. Nyhan, "Health effects of Indigenous language use and revitalization: a realist review," *International Journal for Equity in Health*, vol. 21, no. 1. 2022. doi: 10.1186/s12939-022-01782-6.
65. Aboriginal and Torres Strait Islander Social Justice Commissioner, "Social justice report 2005.," *Human Rights & Equal Opportunity Commission.*, Sydney., 2005.
66. J. De Maio *et al.*, "The Western Australian Aboriginal Child Health Survey: Measuring the Social and Emotional wellbeing of Aboriginal Children and the Intergenerational Effects of Forced Separation," *Curtin University of Technology and Telethon Institute for Child Health Research*, Perth, 2005.
67. A. P. Gray and W. Cote, "Cultural connectedness protects mental health against the effect of historical trauma among Anishinabe young adults," *Public Health*, vol. 176, 2019, doi: 10.1016/j.puhe.2018.12.003.
68. H. Anderson and E. Kowal, "Culture, History, and Health in an Australian Aboriginal Community: The Case of Utopia," *Med. Anthropol. Cross Cult. Stud. Heal. Illn.*, 2012, doi: 10.1080/01459740.2011.636411.
69. D. H. Rehkopf and S. L. Buka, "The association between suicide and the socio-economic characteristics of geographical areas: A systematic review," *Psychological Medicine*, vol. 36, no. 2. 2006. doi: 10.1017/S003329170500588X.
70. B. Kennedy and D. Firman, "Indigenous SEIFA: Revealing the ecological fallacy.," 2004.
71. M. Gibson, J. Stuart, S. Leske, R. Ward, and Y. Vidyattama, "Does community cultural connectedness reduce the influence of area disadvantage on Aboriginal & Torres Strait Islander young peoples' suicide?," *Aust. N. Z. J. Public Health*, vol. 45, no. 6, 2021, doi: 10.1111/1753-6405.13164.
72. P. Dudgeon and R. Walker, "Decolonising Australian Psychology: Discourses, Strategies, and Practice," *J. Soc. Polit. Psychol.*, vol. 3, no. 1, pp. 276–297, Aug. 2015, doi: 10.5964/jspp.v3i1.126.

Figures

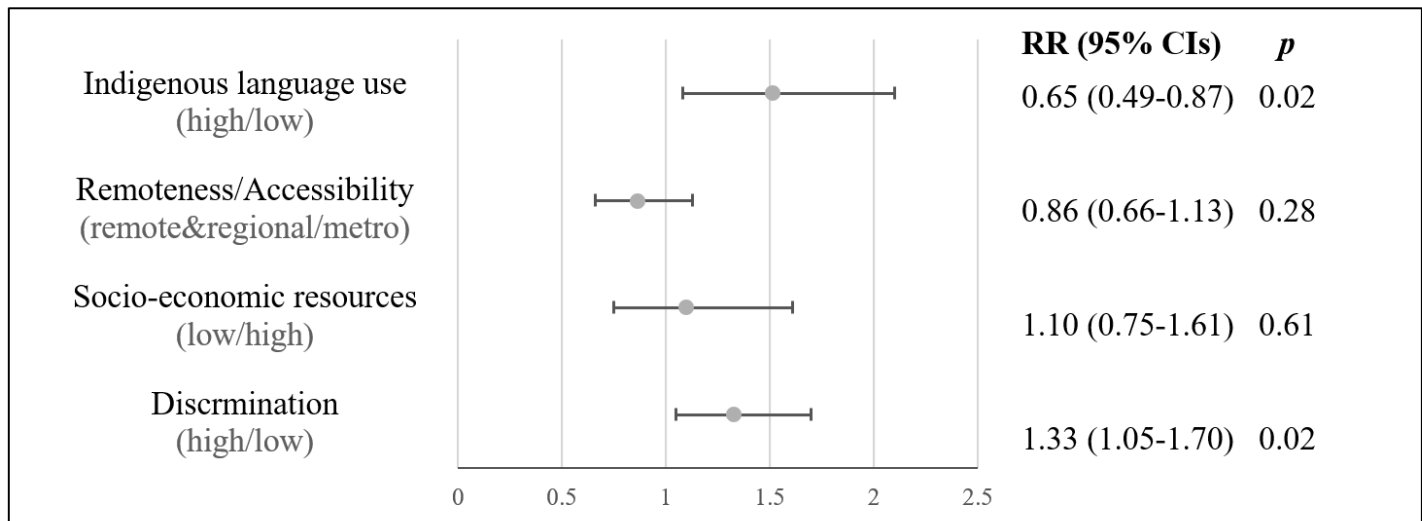


Figure 1

First Nations age-standardised suicide rate ratios by socioeconomic resources, remoteness, Indigenous language use and discrimination