Protective factors for psychological wellbeing: A cross-sectional study of young people attending an urban Aboriginal and Torres Strait Islander primary healthcare service

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Submitted: 26 March 2024; Revision requested: 29 November 2024; Accepted: 18 December 2024

Abstract

Objective: This study aimed to measure associations between protective factors associated with positive psychological outcomes for Aboriginal and Torres Strait Islander youth living in an urban area.

Methods: Our primary outcome was the absence of psychological distress, reflecting a positive-outcome approach to analyse health assessment data, using modified Poisson regression, from a cohort of Aboriginal and Torres Strait Islander youth aged 15 to 24 years attending an urban Aboriginal and Torres Strait Islander health service (2016–2021).

Results: Health assessments from 710 participants were analysed, with 72.1% of young people found to not be experiencing depression. Exercise, sport, and absences of marijuana use, smoking cigarettes, difficulty getting a job, homelessness, trouble with the police and experience of violence were associated with an absence of depression.

Conclusions: Most young people were not experiencing depression. A positive-outcome approach provided evidence to support avenues to success which need to be developed with Aboriginal and Torres Strait Islander communities.

Implications for public health: Policy makers, clinicians and health services need to resource and maximise opportunities to access safe accommodation, participate in employment, exercise and play sport and to avoid marijuana, cigarettes, violence and trouble with the police.

Key words: Aboriginal and Torres Strait Islander health, youth health, social and emotional wellbeing

Introduction

Aboriginal and Torres Strait Islander youth, defined here as those aged between 15 and 24 years, are navigating a significant period of psychological and biological development. This is a period of identity formation, during which they are acquiring necessary physical, cognitive, social, and emotional resources.[1–3] Whilst this process is not unique to Aboriginal and Torres Strait Islander youth, the acquisition and embodiment of cultural identity is. Aboriginal and Torres Strait Islander youth can draw upon over 60,000 years of cultural knowledge, family ties and spiritual connections to the lands of which they are the traditional custodians.[4,5]

Most Aboriginal and Torres Strait Islander youth are happy. In 2014-15, 76% of Aboriginal and Torres Strait Islander youth reported being happy all or most of the time in the past four weeks.[6] This is despite the immense challenges faced by these youth, including ongoing intergenerational trauma, racism and socioeconomic disadvantage. These, and other challenges faced by Aboriginal and Torres Strait Islander youth, are reflected in the psychological distress, depression, anxiety, substance abuse, self-harm and suicide many experience.[7] Despite these challenges, many Aboriginal and Torres Strait Islander youth are able to protect and promote their wellbeing by harnessing cultural, community and personal strengths.

Whilst much has been written about factors associated with psychological distress in Aboriginal and Torres Strait Islander youth,

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Aust NZ J Public Health. 2025; Online; https://doi.org/10.1016/j.anzjph.2024.100218

there is a dearth of research exploring protective factors associated with positive psychological health and wellbeing. The need to change the deficit and risk-based approaches and better understand factors that contribute to Aboriginal and Torres Strait Islander youths' wellbeing has been recognised by others.[7] Here, we explore protective factors associated with positive psychological outcomes for Aboriginal and Torres Strait Islander youth living in an urban area, using routinely collected, primary healthcare clinical data.

Methods

Study design, setting and participants

A positive-outcome approach was used for this retrospective analysis of deidentified health assessment data from a cohort of Aboriginal and Torres Strait Islander youth aged 15 to 24 years who attended the Southern Queensland Centre of Excellence in Aboriginal and Torres Strait Islander Primary Health Care (Inala COE). In using a positive-outcome and protective-factor approach, we have focussed on the absence of adverse social determinants and psychological distress.[8] The protective factors approach can include standard risk factors, but these risk factors are reframed with the absence of risk being the reference value.[8] The positive outcome approach uses an outcome reflective of optimum health, in this case, absence of psychological distress.

Data were collected from 25 July 2016 to 24 July 2021, inclusive. The Inala COE is a Queensland Government-run health service, providing primary and secondary care to over 3,000 Aboriginal and Torres Strait Islander people from Inala, surrounding suburbs and the greater Brisbane area.[9] Located on the traditional lands of the Yuggera people, Inala has one of the largest Aboriginal and Torres Strait Islander populations in Brisbane, with 4.0% of the population identifying as Aboriginal and Torres Strait Islander in the 2021 census.[10]

Study participants had at least one health assessment at the Inala COE during the study period. For those who had had multiple health assessments, one assessment was selected at random to be included within the analysis.

Data collection

The health assessment procedure at the Inala COE has been described previously.[11] Briefly, eligible patients are interviewed by a general practice nurse and a general practitioner who enter the responses into a secure electronic database at the point of care. A PDF of the completed health assessment is uploaded into the patient's electronic medical record to inform subsequent clinical care. Whilst primarily intended for clinical purposes, the Inala COE health assessment process also enables a research function, evidenced by the digital platform, choice of measured items and automatic storage in a secure database for research purposes.[11] The Inala COE health assessment gathers information on patients' physical health, lifestyle, living arrangements, employment, social engagement and mental health.

Study variables and definitions

The adapted Patient Health Questionnaire-9 (aPHQ-9), used in the Inala COE health assessment since 2014, is a culturally appropriate and validated depression screening tool.[12] Responses to the aPHQ-9 items are scored and added together, with total possible scores ranging from 0 to 27. The previous validation study of this questionnaire in 10 primary healthcare services including the Inala COE used a score of 10 as a cut-off for depression, whereas people scoring under 10 were deemed not to have depression.[12] The primary outcome for this study was the absence of psychological distress which was defined as an aPHQ-9 score less than 10.

We believed that age and sex are fundamentally related to the absence of depression, so they were not treated as independent variables. All regressions, unadjusted and adjusted, were controlled by age (centred at its median value). We included independent variables likely to be protective for social and emotional wellbeing based on previous Inala COE research using health assessments and the literature: highest education level, employment status, participation in community activities in the past 12 months, engagement in physical exercise, participation in sport, non-hazardous consumption of alcohol, marijuana not used and no cigarette smoking.[8,13] Other independent variables are the absence of stressors derived from the Negative Life Event Scale, and include the following: no family member/close friend died in the past 12 months, no discrimination or racism experienced in the past 12 months, no serious accident in the past 12 months, no homelessness (current), no history of incarceration, no family member incarcerated in the past 12 months, no gambling problems in the past 12 months, not in trouble with the police in the past 12 months, no overcrowding at home in the past 12 months and not a witness to violence in the past 12 months.[14]

Statistical analysis

Reporting of analyses was informed by the REporting of studies Conducted using Observational Routinely collected health Data (RECORD) guidelines.[15] After a description of participant flow and characteristics, crude frequencies of aPHQ-9 were reported. Based on previous work with health assessment data at the Inala COE,[13] we decided to test for associations between sex and absence of psychological distress using Fisher's exact test which is appropriate for categorical variables with potentially small expected cell sizes. Three adjusted complete case models were undertaken: one using the entire sample and then one each investigating females and males, separately. We conducted an overall regression analysis to show results for the cohort as a whole. Given the exploratory nature of our investigation, together with our prior belief of differential sex relationship, analyses were stratified by sex, so important changes in estimated effect sizes could be identified.

Stratified by sex, absence of depression as indicated by the aPHQ-9 was tabulated across study variables and compared using regression models, with Wald's type III statistic used to determine variable significance. All independent variables (together with sex and age) were included in the adjusted regression model regardless of their unadjusted association with absence of psychological distress as previous literature had identified their association with social and emotional wellbeing.[8,13,14,16] As conventionally used logistic regression models produce biased and inflated estimates when the outcome of interest is not rare, a modified Poisson regression approach (with log-link function and robust variance estimator) was used to estimate prevalence ratios (PRs) directly.[17] All regressions were adjusted for age, centred on its median value of 19 years. Sensitivity analyses were conducted using chained equations multiple imputation (M=50) methods and included all study variables utilised in the adjusted regression models. This approach assumes that data were missing at random (MAR). Analyses were performed using SE

version 18.0 (StataCorp LLC, College Station, TX, USA), and two-sided α=0.05 defined statistical significance.

Results

The database contained 1,181 health assessments from 710 participants aged 15–24 years. In total, 429 (60.4%) participants had one health assessment, 159 (22.4%) had two, 73 (10.3%) had three, 34 (4.8%) had four, 11 (1.5%) had five and 4 (0.6%) participants had six recorded health assessments. After randomly selecting one health assessment for those who had multiple health assessments, the analytical sample was based on 710 assessments.

Sociodemographic characteristics

Overall, the eligible sample included 372 (52.4%) females and had a median age of 19 years (interquartile range: 17–22 years). Table 1 includes the numbers, percentages, and associated 95% confidence interval (CI) of sociodemographics of the Inala COE sample, together with those of Aboriginal and Torres Strait Islander people aged 15–24 years resident within Inala at the time of the 2021 Census (n=1474). Compared to the Census figures, the Inala COE sample included a smaller proportion of males, people going beyond Grade 10 at school and people in full-time work.

Adapted Patient Health Questionnaire-9 description

Complete aPHQ-9 information was available from 577 (81.3%) participants. Of the 133 with missing items, 40 (30.1%) had 1 item missing, 4 (3.0%) had two, 1 (0.8%) had 3, 1 (0.8%) had 5, 1 (0.8%) had 7, 1 (0.8%) had 8 and 85 (63.9% of the 133 with missing items) had all 9 items missing. Valid scores ranged from 0 to 25, with median=4 [IRQ: 1–10]. Using the threshold of 10, 416 (72.1%) were defined to not be experiencing depression and 161 (27.9%) as experiencing depression. However, a significant sex difference was noted with 226 of 277 (81.6%) males classified not experiencing depression, compared to 190 of 300 (63.3%) females (Fisher's exact test p<0.001). There was no difference in mean age between males and females (two sample t test, p=0.11).

Relationship between aPHQ-9 and study variables

For males and females, two protective factors and the absence of five stressors were associated with an absence of depression (Table 2). Exercise and participation in sport were protective factors associated with an absence of depression. Absence of marijuana use, no cigarette smoking, no difficulty getting a job, no homelessness, no trouble with the police and no experience of violence were also associated with an absence of depression. These factors, except the absence of cigarette smoking and no homelessness, were associated with an absence of depression for females. However, the effect size for no homelessness was large for females (PR=2.14) even though the 95%CI included the null (95%CI: 0.83, 5.55). Only absence of smoking tobacco and absence of marijuana use were associated with an absence of depression for males (Table 2).

As might be expected, relationships existed between many of these study variables, although the median estimated absolute correlation between all pairwise combinations was r=0.05, a value regarded as very weak. The study variables yielding the highest estimated absolute correlation were employment and no difficulty getting a job

Table 1: Numbers, percentages, and associated 95% confidence interval for sociodemographic characteristics of the Southern Queensland Centre of Excellence in Aboriginal and Torres Strait Islander Primary Health Care (Inala COE) sample (n=710), together with those of Aboriginal and Torres Strait Islander people aged 15–24 years resident within Inala at the time of the 2021 Census (n=581).

	Inala COE sample			Aboriginal and Torres Strait Islander population of Oxley-Forest Lake Statistical Area 3 which includes the Inala state electoral division[10]	
	n	(%)	(95%CI)	n	(%)
Sex				15–24 years	
Female	372	(52.4)	(48.6, 56.1)	231	(39.8)
Male	338	(47.6)	(43.9, 51.4)	350	(60.2)
Ethnic identification[a]				All age groups[b]	
Aboriginal	631	(90.3)	(87.8, 92.4)	2,784	(87.4)
Torres Strait Islander	18	(2.6)	(1.5, 4.0)	188	(5.9)
Both	50	(7.2)	(5.4, 9.3)	212	(6.7)
Highest education level[c]					
Year 10 or less	411	(66.1)	(62.2, 69.8)	1,257	(58.7)
Year 11 or more	211	(33.9)	(30.2, 37.8)	884	(41.3)
Employment[d]					
Student	208	(30.2)	(26.8, 33.8)	833	(26.2)
Full-time employed	34	(4.9)	(3.4, 6.8)	401	(12.6)
Part-time employed	207	(30.0)	(26.6, 33.6)	228	(7.2)
Casual/contract only	45	(6.5)	(4.8, 8.6)	27	(0.8)
Other	195	(28.3)	(25.0, 31.8)	1,696	(53.2)

CI = confidence interval.
[a]Eleven (1.5%) participants' ethnic identification was not stated within the research database; however, these participants were Aboriginal, Torres Strait Islander, or both;
[b]Figures for 15–24 year olds not available
[c]88 (12.4%) participants had values missing;
[d]Twenty-one (3.0%) participants had values missing.

Table 2: Distribution of adapted Patient Health Questionnaire-9 indications of wellness, together with prevalence ratios and associated 95% confidence intervals derived from modified Poisson regression models adjusted for age over selected sociodemographic and study variables overall (n=577) and stratified by females (n=300) and males (n=277).

	Total				Females				Males			
	N	n (%)	PR	(95%CI)	N	n (%)	PR	(95%CI)	N	n (%)	PR	(95%CI)
Highest education level												
Year 11 or more	335	248 (74.0)	1.03	(0.92, 1.16)	175	118 (67.4)	1.10	(0.90, 1.36)	160	130 (81.3)	1.00	(0.89, 1.12)
Year 10 or less	171	125 (73.1)	1	(reference)	81	49 (60.5)	1	(reference)	90	76 (84.4)	1	(reference)
Employment[a]												
Employed/student/carer	401	298 (74.3)	1.05	(0.93, 1.18)	217	145 (66.8)	1.15	(0.93, 1.43)	184	153 (83.2)	0.99	(0.86, 1.13)
Other	161	112 (69.6)	1	(reference)	74	43 (58.1)	1	(reference)	87	69 (79.3)	1	(reference)
Participation in community activity in the past 12 months												
Yes	203	159 (78.3)	1.09	(0.98, 1.21)	106	73 (68.9)	1.09	(0.90, 1.31)	97	86 (88.7)	1.10	(0.98, 1.23)
No	260	186 (71.5)	1	(reference)	123	78 (63.4)	1	(reference)	137	108 (78.8)	1	(reference)
Exercise												
Yes	412	312 (75.7)	1.20	(1.05, 1.37)	191	129 (67.5)	1.23	(1.00, 1.50)	221	183 (82.8)	1.04	(0.88, 1.22)
No	148	93 (62.8)	1	(reference)	98	54 (55.1)	1	(reference)	50	39 (78.0)	1	(reference)
Participation in sport												
Yes	180	147 (81.7)	1.20	(1.08, 1.33)	65	47 (72.3)	1.22	(1.01, 1.47)	115	100 (87.0)	1.08	(0.96, 1.21)
No	381	255 (66.9)	1	(reference)	226	136 (60.2)	1	(reference)	155	119 (76.8)	1	(reference)
Non-hazardous consumption of alcohol												
Yes	292	216 (74.0)	1.00	(0.90, 1.11)	145	96 (66.2)	1.05	(0.88, 1.25)	147	120 (81.6)	0.94	(0.84, 1.06)
No	265	191 (72.1)	1	(reference)	142	91 (64.1)	1	(reference)	123	100 (81.3)	1	(reference)
Marijuana not used												
Yes	413	312 (75.5)	1.19	(1.05, 1.35)	228	154 (67.5)	1.35	(1.05, 1.73)	185	158 (85.4)	1.14	(1.00, 1.30)
No	164	104 (63.4)	1	(reference)	72	36 (50.0)	1	(reference)	92	68 (73.9)	1	(reference)
Tobacco not used												
Yes	257	200 (77.8)	1.15	(1.03, 1.28)	134	91 (67.9)	1.13	(0.94, 1.35)	123	109 (88.6)	1.16	(1.03, 1.31)
No	268	178 (66.4)	1	(reference)	140	84 (60.0)	1	(reference)	128	94 (73.4)	1	(reference)
Family member/close friend died in the past 12 months												
No	315	242 (76.8)	1.10	(0.98, 1.23)	153	104 (68.0)	1.09	(0.90, 1.33)	162	138 (85.2)	1.08	(0.95, 1.23)
Yes	167	116 (69.5)	1	(reference)	87	54 (62.1)	1	(reference)	80	62 (77.5)	1	(reference)
Discrimination or racism experienced in the past 12 months												
No	399	302 (75.7)	1.12	(0.95, 1.32)	203	138 (68.0)	1.18	(0.87, 1.61)	196	164 (83.7)	1.10	(0.92, 1.33)
Yes	75	51 (68.0)	1	(reference)	33	19 (57.6)	1	(reference)	42	32 (76.2)	1	(reference)
Difficulty getting a job in the past 12 months												
No	306	242 (79.1)	1.20	(1.06, 1.36)	163	119 (73.0)	1.49	(1.17, 1.91)	143	123 (86.0)	1.07	(0.93, 1.22)
Yes	178	116 (65.2)	1	(reference)	77	38 (49.4)	1	(reference)	101	78 (77.2)	1	(reference)
Serious accident in the past 12 months												
No	457	338 (74.0)	1.09	(0.80, 1.49)	229	150 (65.5)	1.21	(0.70, 2.09)	228	188 (82.5)	0.95	(0.74, 1.22)
Yes	19	13 (68.4)	1	(reference)	11	6 (54.5)	1	(reference)	8	7 (87.5)	1	(reference)
Homelessness (current)												
No	474	347 (73.2)	2.06	(1.04, 4.11)	235	151 (64.3)	2.14	(0.83, 5.55)	239	196 (82.0)	1.64	(0.66, 4.10)
Yes	14	5 (35.7)	1	(reference)	10	3 (30.0)	1	(reference)	4	2 (50.0)	1	(reference)
History of incarceration												
No	494	354 (71.7)	0.90	(0.78, 1.05)	266	168 (63.2)	0.92	(0.65, 1.30)	228	186 (81.6)	0.95	(0.82, 1.12)
Yes	51	40 (78.4)	1	(reference)	16	11 (68.8)	1	(reference)	35	29 (82.9)	1	(reference)
Family member incarcerated in the past 12 months												
No	366	277 (75.7)	1.09	(0.95, 1.25)	181	121 (66.9)	1.08	(0.86, 1.35)	185	156 (84.3)	1.09	(0.93, 1.27)
Yes	114	79 (69.3)	1	(reference)	58	36 (62.1)	1	(reference)	56	43 (76.8)	1	(reference)
Gambling problems in the past 12 months												
No	463	347 (74.9)	1.32	(0.87, 2.01)	235	155 (66.0)	1.32	(0.59, 2.96)	228	192 (84.2)	1.37	(0.84, 2.24)
Yes	18	10 (55.6)	1	(reference)	6	3 (50.0)	1	(reference)	12	7 (58.3)	1	(reference)
In trouble with the police in the past 12 months												
No	367	280 (76.3)	1.26	(1.05, 1.51)	188	130 (69.1)	1.73	(1.14, 2.63)	179	150 (83.8)	1.11	(0.94, 1.32)
Yes	84	51 (60.7)	1	(reference)	35	14 (40.0)	1	(reference)	49	37 (75.5)	1	(reference)
Overcrowding at home in the past 12 months												

(continued)

TABLE 2. Continued

	Total				Females				Males			
	N	n (%)	PR	(95%CI)	N	n (%)	PR	(95%CI)	N	n (%)	PR	(95%CI)
No	434	330 (76.0)	1.24	(0.99, 1.56)	210	140 (66.7)	1.11	(0.82, 1.51)	224	190 (84.8)	1.33	(0.93, 1.89)
Yes	49	30 (61.2)	1	(reference)	30	18 (60.0)	1	(reference)	19	12 (63.2)	1	(reference)
Witness to violence in the past 12 months												
No	400	313 (78.3)	1.40	(1.14, 1.72)	196	140 (71.4)	1.69	(1.16, 2.40)	204	173 (84.8)	1.21	(0.97, 1.50)
Yes	79	44 (55.7)	1	(reference)	42	18 (42.9)	1	(reference)	37	26 (70.3)	1	(reference)

CI = confidence interval; PR = prevalence ratio.
[a]Employed is full-time or part-time.

in past 12 months (r=0.56), followed by no trouble with the police and no history of incarceration (r=0.50). Correlations <0.60 are regarded as being no more than moderate.

Sensitivity analyses

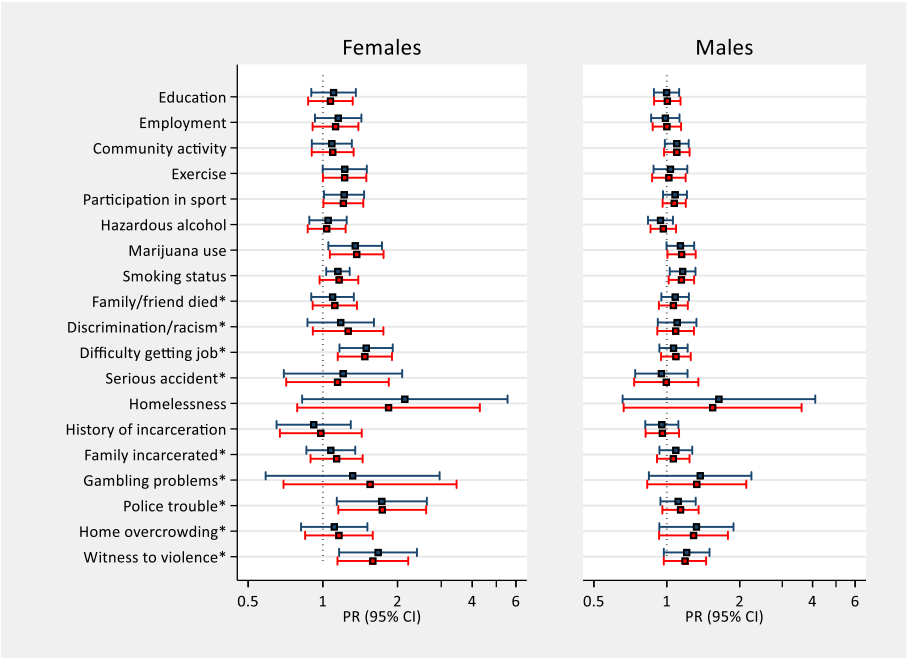
Imputing the missing data for the full sample of 710 eligible Aboriginal and Torres Strait Islander youth yielded estimated rates not experiencing depression of 71.8% (95%CI: 68.0%, 75.5%). When repeating the modified Poisson regression analyses investigating the relationship between aPHQ-9 and study variables, the resultant estimated PRs were similar to those derived from the corresponding complete case models, and the overlap of associated 95%CIs was high. Figure 1 presents these estimates, stratified by sex, for complete case (blue) and imputed (red) data. Providing that the multiple imputation assumptions were not importantly violated, this suggests that the patterns of missing data within the sample were MAR and that they had little impact on the estimated parameters derived from the regression models.

Discussion

For Aboriginal and Torres Strait Islander young people, the majority of males (81%) and females (63%) in this study were found to not be experiencing depression. This accords with the 2014-15 Australian Institute of Health and Welfare (AIHW) report which found 76% of Aboriginal and Torres Strait Islander youth aged 15–24 years were happy all or most of the time in the past four weeks.[6] For the young people in our study, the factors associated with not experiencing depression included participating in exercise and sport, avoiding marijuana and cigarettes, avoiding violence and trouble with the police, having few difficulties getting a job and not being homeless.

We have taken a positive-outcome approach to the investigation of prevalence and factors associated with youth social and emotional wellbeing which aims to counter the prevalent dominant narrative of risk and deficit in the public health literature especially regarding Aboriginal and Torres Strait Islander people.[18] This positive perspective offers an alternative narrative with an emphasis on social

Figure 1: Complete case (blue) and multiple imputed (red) prevalence ratios (PRs) estimates (box) and associated 95% confidence intervals (lines) of aPHQ-9 indications of wellness derived from the modified Poisson regression models adjusted for age, centred on 19 years, for the selected sociodemographic and study variables. Note that the PRs have been reported on a logarithmic scale and that * denotes self-reports in the past 12 months. aPHQ-9 = adapted Patient Health Questionnaire-9; CI = confidence interval; PR = prevalence ratio.



determinants and avenues for action to promote strengths.[8] The survey instrument used in this study is a bespoke Aboriginal and Torres Strait Islander health assessment constructed for both clinical and research purposes which has had community input and has been found to produce valid and reliable data for research purposes.[19]

This cohort comes from one Aboriginal and Torres Strait Islander health service, and results may not be generalisable to other communities, especially given findings that adolescents in rural and remote areas are more likely to report suicidal thoughts and self-harm.[20] However, there is no particular reason why findings from this study would not be relevant to Aboriginal and Torres Strait Islander young people living in other urban areas with similar sociodemographic conditions. The adult health assessment used here was not specifically constructed for young people, and results from this observational study do not distinguish the direction of associations. A larger cohort may have had sufficient power to detect more important associations leading to more confidence in associations between protective factors and absence of psychological distress. For example, for females, the CI for the association between not being homeless and absence of psychological distress included the null. Furthermore, when Thurber et al. compared analyses of the same data taking a risk factor, negative-outcome approach, and protective factor, positive-outcome approach, they found that the positive-outcome approach produces attenuated effect sizes and narrower CIs than the alternative risk factor and negative wellbeing outcome approach.[8] Thurber et al. note that readers may need to be informed of this difference, so the smaller effect sizes of the protective factor, positive-outcome approach, do not lead to an undervaluing of estimates using this approach.[8] The primary outcome, absence of depression, was measured using a tool constructed with Aboriginal people,[21] and was validated in the same study population in Inala as this study.[12] However, the validation study conducted by Hackett et al. was designed to evaluate the tool's accuracy for detecting depression rather than wellness, and the explanatory variables come from the health assessment and the Negative Life Events Scale[14] which are also not designed to measure strengths. Additionally, even though there is an inverse relationship between psychological distress and positive wellbeing,[22] the Aboriginal definition of health specifically notes that health is not just the absence of disease.[23] Hence, this study took a positive-outcome approach rather than a truly strength-based approach. Methodologically, the sensitivity analyses assumed missing data were MAR, an assumption which cannot be directly tested and may produce potentially biased estimates. However, the coverage of study variables and consistency in effect size estimates between complete case and imputed regression models suggested that this is likely to be negligible.

Two papers from the Footprints in Time study reported on positive social and emotional wellbeing outcomes in Aboriginal young people but used a different survey instrument, the Strengths and Difficulties Questionnaire and different age groups: 7–13 years in one[8] and 13–15 years in the other.[20] Similar to our findings, Thurber et al. found secure housing and employment were associated with wellness in children, along with other age-appropriate social determinants involving the children's carers.[8] Social determinants were also associated with absence of depression in our study, but they were a different set of age-appropriate factors including absence of interaction with the criminal justice system and absence of drug use. Exercise and sport were found to be associated with an absence of depression which is supported by a systematic review of interventions aiming to promote sport and physical activity to Aboriginal and Torres Strait Islander young people.[24] This review found positive effects of sport and physical activity programs on confidence, self-esteem and a connection to culture, and one study found these programs reduced suicidal ideation.[24]

Cultural determinants; including connection to land, culture, language, community and Elders; are crucial to the social and emotional wellbeing of Aboriginal and Torres Strait Islander young people.[22,25,26] The national Aboriginal and Torres Strait Islander social and emotional wellbeing framework identifies critical domains: connection to body and physical health, connection to mind and emotions, connection to family and kinship, connection to community, connection to culture, connection to Country and connection to spirituality and ancestors.[27] However, this study did not find an association between the cultural determinants measured by health assessments (absence of racism and participation in community events) and an absence of depression. Similarly, cultural determinants measured by Thurber et al. (speaking Indigenous language, living on country) and by Islam et al. (importance of Indigenous identity) were not associated with an absence of depression or suicidal thoughts and self-harm.[8,20] This contrasts with findings reported by Haregu et al. that for Aboriginal and Torres Strait Islander men, discrimination explained 28.7% of the association with depressive symptoms.[28] Our findings and those of Thurber et al.[8] and Smallwood et al.[25] regarding cultural determinants and their lack of association with positive social and emotional wellbeing outcomes suggest there are inadequacies in the way these determinants are asked in survey instruments. Aboriginal and Torres Strait Islander health assessments are no exception especially given their foundational Western biomedical frameworks, and they have not been developed with input from Aboriginal and Torres Strait Islander young people. Fraser et al. found that youth health assessments for Indigenous people need to be co-created with young people and that they need to measure strengths.[29]

Findings for absence of depression for sex were reversed in our study compared to the study by Thurber et al., where girls aged 7–13 years were more likely to be well when measured using the Strengths and Difficulties Questionnaire.[8] However, boys aged 13–15 years in the study by Islam et al. were less likely than girls to report self-harm and suicidal thoughts.[20] Furthermore, in this study, young men, aged 15–24 years, were more likely to report an absence of depression as measured by the aPHQ-9. Nationally, men aged 18 years and above are also less likely to report psychological distress than women.[30] The reasons for young men reporting higher rates of wellbeing than young women after early adolescence are likely to be complex and multifactorial. Colonisation, racism and Western patriarchy have had differing effects on Aboriginal and Torres Strait Islander men and women.[31] How Aboriginal and Torres Strait Islander young women experience child birth, child care and family life as they enter reproductive age is likely to have a significant impact on their social and emotional wellbeing.[32] In this study, there were greater associations for young women with the positive outcome of absence of depression than for young men if the young women reported exercise, playing sport, not having difficulty getting a job, not being in trouble with the police and not being witness to violence in the last 12 months.

We took a positive-outcome approach to our analysis of health assessment data for young people because we did not want to contribute to routine damaging deficit discourse whilst providing evidence to support avenues to success for policy makers, public health researchers, community organisations and health services. The Australian Government's central policy narrative for Aboriginal and Torres Strait Islander people has been the Closing the Gap strategy which has contributed to an unhelpful deficit narrative of continuous failure.[33] Policy makers and public health researchers need to reconsider reproducing deficit discourse, especially for young people, which operates as a tool for defamatory, patronising and race-based discourse.[18,25] Rather, policy makers and public health researchers need to imagine what is possible for Aboriginal and Torres Strait Islander young people. As per the Imagination Declaration,

> *"Don't define us through the lens of disadvantage… Expect the best of us"*[34]

Health services and public health researchers need to develop truly strength-based assessments of wellbeing and social determinants, such as the Westerman Aboriginal Symptom Checklist Youth (WASC-Y), rather than measures of distress which are flipped to a non-negative outcome.[35] Inadequacies in the way cultural determinants are measured need to be addressed by clinicians and public health researchers with Aboriginal and Torres Strait Islander leadership.

That most young people in this study were not depressed should be celebrated. Given the likely bidirectional correlation of the associations we found, policy makers, clinicians and health services need to continue directly supporting young people's social and emotional wellbeing and address the social determinants reported here. Avenues to success include an emphasis on resourcing and maximising opportunities to access safe accommodation, participate in employment, exercise and play sport and to avoid marijuana, cigarettes, violence and trouble with the police. It may not be surprising that avoiding trouble with the police would be associated with an absence of depression, but this is likely to be a stronger association for Aboriginal and Torres Strait Islander young people, given they are more likely to receive a court summons (more than twice as likely), be involved in incidents with multiple charges and be over-represented in criminal supervision orders compared to non-Indigenous youth.[36,37] Ways to reduce over-representation of Aboriginal and Torres Strait Islander youth in the criminal justice system have been clearly articulated but are still underfunded.[38] To promote success for Aboriginal and Torres Strait Islander youth, Aboriginal evaluations suggest social and emotional wellbeing interventions need to be culturally safe; include Aboriginal and Torres Strait Islander voices, people and ownership; include holistic interventions; provide practical support for participants; and avoid fear, shame and stigma.[39]

Conflicts of interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Geoffrey Spurling reports financial support was provided by National Health and Medical Research Council. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Ethics

Prior to commencement, we sought approval for the project from the Inala Aboriginal and Torres Strait Islander Community Jury for Health Research.[40] Youth social and emotional wellbeing is a community priority. The researchers were accountable to the Community Jury at all stages of the research including approval of the final submission of this manuscript. Participant consent was not required as routinely collected data were de-identified. Ethical clearance was obtained from Metro South Human Research Ethics Committee (HREC/2019/QMS/57435) and was ratified by The University of Queensland Human Research Ethics Committee (2019002978/HREC/2019/QMS/ 57435).

Funding

This research was funded through a National Health and Medical Research Council Emerging Leadership Fellowship awarded to GS (APP1173857).

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