

# Association between economic wellbeing and ethnicity, socioeconomic status, and remoteness during the COVID-19 pandemic

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## Abstract

**Objective:** The aim of this study is to explore the association between economic wellbeing and ethnicity, socioeconomic status, and remoteness during the COVID-19 pandemic.

**Design:** A cross-sectional study via SurveyMonkey was conducted in Australia between August 2020 and October 2020. Descriptive and inferential statistics were used to analyze the data.

**Results:** A total of 1211 individuals responded to the survey. Income loss was significantly associated with those from low socioeconomic status (OR = 1.65; 95% CI 1.01–2.68). Access of superannuation was significantly associated with those in outer regional (OR = 3.61; 95% CI 0.81–16.03) and low socioeconomic status (OR = 2.72; 95% CI 1.34–5.53). Financial inability to pay for services was significantly associated with living in remote areas (OR = 2.26; 95% CI 0.88–5.80).

**Conclusions:** The economic wellbeing of people who identify as Aboriginal and Torres Strait Islander, live in regional or remote areas, and reside in low socioeconomic areas have been substantially impacted during the pandemic. Findings call for policies to address the underlying social determinants of health.

## KEYWORDS

COVID-19, economic wellbeing, health disparities, pandemic, social determinants of health, sustainable development goals

## 1 | INTRODUCTION

As the public health burden of COVID-19 and its numerous variants, spreads globally, countries continue to implement public health measures to suppress transmission (Leung et al., 2021). In addition to health and medical actions such as symptomatic and comprehensive testing, contact tracing and treating infected individuals, measures to alleviate the spread of COVID-19 have included restrictions on human mobil-

ity, often referred to as “lockdown,” quarantining, social distancing, and cancellation of large-scale gatherings (Singh et al., 2021; Tran et al., 2020). The aim of this study is to explore the association between economic wellbeing and ethnicity, socioeconomic status, and remoteness in adults during the COVID-19 pandemic.

In Australia, the government, under the direction of the Australian Health Protection Principal Committee (AHPPC), designed various strategies and directives to manage the pandemic, including guidelines

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on the protective behaviors that should be adopted by the general population (Van Nguyen et al., 2021). Border controls, travel restrictions and a national lockdown were all public health measures that were imposed by March 25, 2020, within Australia, and necessitated the closure of many businesses, and encouragement of individuals to work from home where possible.

While public health measures such as lockdown have shown to be effective at slowing the spread of infectious diseases, they do have implications for many aspects of individuals' daily lives (Corpuz, 2021). Population groups that have lost employment, are unable to work from home and are living in poverty experience unequal impacts. As financial support provided by the government has been described as an economic abandonment, limiting an individual's ability to pay rent, purchase food and meet utility bills (O'Keeffe et al., 2021; O'Sullivan et al., 2020). Indeed, the literature shows that in the early stages of the COVID-19 pandemic there were disparities between different population groups, with those from certain minority ethnic groups, low-income earners and those living in the lowest socioeconomic status areas most affected (Green et al., 2021a). The resultant social, economic, and psychological impacts of the restrictions imposed during COVID-19 have magnified existing health and social inequalities. The economic consequences of lockdowns to contain infectious diseases are well known. As a consequence of lockdown measures due to COVID-19, job losses in the United States (US) reached record levels in April 2020 with the unemployment rate increasing to 14.7% and with some evidence suggesting it rose as high as 20% (Martin et al., 2020). During the Severe Acute Respiratory Syndrome (SARS) outbreak in 2003, the majority of the cases occurred within South East Asia and Canada (Felix Castillo, 2021). Evidence in the literature highlights the significant economic impact that SARS had in these countries with businesses closed and tourism non-existent. As a result, people employed in tourism, retail and hospitality sectors were most affected financially, through bankruptcy and job losses (Felix Castillo, 2021). Literature has also shown the detrimental effects of infectious disease outbreaks on household incomes (United Nations Development Programme, 2014). During the Ebola outbreak, the economic effects were vast with income losses in Sierra Leone reaching 30% and 35% in Liberia (United Nations Development Programme, 2014).

Throughout the US, minority ethnic population groups have particularly experienced the negative economic impacts of the COVID-19 pandemic. Those who identify as Asian, Hispanic and Black American have been demonstrated to be at higher risk of job and income loss and are often employed in roles that do not lend themselves to work from home arrangements (Clark et al., 2020). In contrast, there is a scarcity of evidence of the economic impacts on ethnic groups within Australia. However, a study conducted in western Sydney identified that unemployed culturally and linguistically diverse populations were perceived to experience a significantly higher impact of the COVID-19 pandemic (Mude et al., 2021). Australia is an ethnically diverse nation, with the 2016 Australian census data revealing that while England was the most common birthplace following Australia (Australian Bureau of Statistics, 2017), there has been a steady increase in the proportion of migrants from China, India and the Middle East (Australian Bureau of Statis-

tics, 2017). Aboriginal and Torres Strait Islander people accounted for 2.8% of the Australian population in 2016 and have a much younger age profile than non-indigenous Australians, with a mean age of 23 years compared to 38 years for non-Indigenous Australians (Australian Institute of Health and Welfare, 2021a).

The impact of the COVID-19 pandemic on individuals is affected by their experience of the social determinants of health. Health inequalities stem from the underlying social determinants of health, which are defined as "the circumstances in which people grow, live, work, and age, and the systems put in place to deal with illness. The conditions in which people live and die are, in turn, shaped by political, social, and economic forces" (Solar & Irwin, 2010). This leads to what is often referred to as the social gradient, whereby those who are most disadvantaged are inclined to have the worst health (Marmot & Commission on Social Determinants of Health, 2007). Those higher on the social gradient have greater access to food, housing, higher incomes, more employment opportunities, and access to health care. These social determinants of health can serve as a protective factor against illness and chronic disease. In contrast, those lower on the social gradient have limited resources and hence at greater risk of poorer health outcomes (Lathrop, 2013). When considered in the context of COVID-19, these individuals are most vulnerable to the social and economic effects of the pandemic. Social determinants of health can also impact on individuals' wellbeing (physical, emotional, spiritual and psychological wellbeing), including their economic or financial wellbeing (La Placa et al., 2013). With the rise in focus on the social determinants of health and being a key strategy in prevention and treatment of disease, public health professionals including nurses, are ideally situated to promote equity through health promotion initiatives, educational programs and targeted interventions (J. Phillips, Richard, et al., 2020).

In Australia, the government responded to the potential economic impact of the pandemic by introducing financial support packages to secure employment, support business and mitigate loss of income (Chen & Langwasser, 2021). One such measure under this support package was to allow individuals to access up to \$20,000 AUD from their superannuation (Australian Government Treasury, 2021a). In Australia, superannuation is a compulsory privately funded retirement income scheme, whereby employers are obliged to make a compulsory contribution to all employees' superannuation schemes (Worthington, 2005). Additionally, in response to the rapid closure of many businesses during the lockdown, the Australian government introduced a financial support package called "Job Keeper." Job Keeper was a payment to provide income support, paid to businesses and not for profit organizations of \$1500 AUD per fortnight to cover the cost of employee wages. Designed to support business and preserve employment, Job Keeper was initially implemented from March 30 to September 27, 2020, with a second phase initiated from September 28, 2020 to March 28, 2021 with payment tapering over this period (Australian Government Treasury, 2021b). However, it is important to note that Job Keeper was not available across all economic sectors and through all employers.

While coordinating this population-wide economic response may be effective for some, the influence nationally may not be equitable. This may especially be the case for individuals who live in regional

and remote areas, those who reside in lower socioeconomic areas and certain ethnic groups. Additionally, as Australia has not previously experienced an infectious disease outbreak of this magnitude in the 21<sup>st</sup> century, it is timely to investigate the impact.

## 2 | METHODS

### 2.1 | Study design

This study is part of a larger mixed-methods study consisting of both a cross-sectional survey and qualitative interviews, therefore the results of this study are reported in several papers. This study uses the World Health Organisation's (WHO) CSDH as the theoretical foundation (Solar & Irwin, 2010). The structural determinants of health used in this study are income, employment, ethnicity, socio-economic status and remoteness. The intermediary determinants, or the downstream factors that shape health, used in this study are psychosocial circumstances including stressors and material circumstances such as financial means to buy food and pay for housing (Solar & Irwin, 2010). This paper is reported according to the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines.

### 2.2 | Study setting and participants

A cross-sectional national study using an online method via SurveyMonkey was conducted between August 2020 and October 2020. Adults aged 18 years and over, with the ability to read English and residing in any State or Territory within Australia were recruited into the study using social media. Two methods within social media were used: (1) the no-cost option, which included the first author joining existing community noticeboard groups within Facebook; and (2) the paid option, which included placing an advertisement on Facebook and Instagram. In both options, a study image with a link to the survey was placed. With the paid option, the study image and link were sent to target specific groups within Facebook and Instagram. A comprehensive description of the recruitment process has been published elsewhere (Green et al., 2021b). Sample size calculation was derived by using the Australian estimated population of 25,499,844, using a 95% confidence level and a 3% margin of error, the sample size required for this study was 1067 participants (Charan & Biswas, 2013).

### 2.3 | Data collection

Data were collected using SurveyMonkey, the first page of the survey included a participant information sheet, and participants were instructed to click the "yes" box if they agreed to participate in the survey and to indicate they had read the study information. Data were collected on participants' demographics (age, gender, ethnicity, postcodes), employment status both before and during the COVID-19 pandemic, income before and during the COVID-19 pandemic, access to superannuation, and financial inability to pay for services during

the COVID-19 pandemic. Postcodes were used to indicate socioeconomic status based on the Australian Bureau of Statistics (ABS) and the Socio-Economic Indexes for Areas (SEIFA) and remoteness configuration using the ABS Accessibility and Remoteness Index of Australia (ARIA+). SEIFA was developed by the Australian Bureau of Statistics and is a summary measure of the various social and economic circumstances of suburbs and postcodes within Australia and are measured using a set of variables including income, education, occupation, and access to material and social resources (Australian Bureau of Statistics, 2018). The survey took 10–20 min to complete, and participants were invited to enter a draw to win one of ten \$50 shopping gift cards. Ethics approval to conduct the study was received from the Human Research and Ethics Committee at the University of Wollongong approval number 2020/306.

### 2.4 | Statistical analysis

Data were directly exported from SurveyMonkey into SPSS version 25 to perform statistical analysis. In the context of this analysis, the relevant social determinants of health were socioeconomic status using SEIFA, ethnicity, and remoteness. Economic wellbeing was measured by employment loss, income loss, access to superannuation and financial inability to pay for services. Descriptive statistics including frequencies and percentages were used to summarize the data. Cross-tabulations were used to compare economic wellbeing and social determinants of health. Binary logistic regression was conducted to examine the social determinants of health associated with economic wellbeing, that is employment loss, income loss, access to superannuation and financial ability to pay for services. Assumptions of logistic regression were verified including, the dependant variable being ordinal, independence of observations and lack of multicollinearity between the independent variables. Statistical significance was set at  $p < .05$ . Due to missing data accounting for only 5%, missing data were not imputed.

## 3 | RESULTS

In total, 1211 participants responded to the survey, with non-responders accounting for 5% of missing data. Most of the participants were female 938 (80.7%) and the age range of the participants was between 18 and 90 years. Ethnicity was reflective of the Australian population with 53% ( $n = 608$ ), identifying as Caucasian (Australian, Canadian, American, New Zealander) (Table 1).

### 3.1 | Employment loss

Overall, 13.7% ( $n = 150$ ) of all participants reported a loss of employment during the pandemic. Of these, the highest loss in major cities 55% ( $n = 82$ ). Participants in the low socioeconomic status reported the highest employment loss during the COVID-19 pandemic with 26.7% ( $n = 40$ ). Among ethnic groups, Caucasian and European participants

**TABLE 1** Demographic table

Demographics	Frequency (%)
<b>Age</b>	
18-24	118 (9.7)
25-39	413 (34.1)
40-59	464 (38.3)
60-74	135 (11.1)
75+	7 (0.6)
<b>Gender</b>	
Woman	938 (80.7)
Man	194 (16.7)
Transgender/non-binary	30 (2.6)
<b>Socioeconomic status</b>	
Lowest (most disadvantaged)	157 (13.8)
Low	252 (22.1)
Middle	210 (18.4)
High	193 (16.9)
Highest (most advantaged)	328 (28.8)
<b>Remoteness</b>	
Major cities	709 (62.1)
Inner regional	256 (22.4)
Outer regional	112 (9.8)
Remote	20 (1.8)
Very remote	45 (3.9)
<b>Ethnicity</b>	
European	332 (28.9)
Caucasian	608 (53.0)
Aboriginal	34 (3.0)
Asian	98 (8.5)
Others	75 (6.5)

reported the highest employment loss of 57.3% ( $n = 86$ ), and 26.7% ( $n = 13$ ), respectively (Table 2).

### 3.2 | Income loss

Income loss among all participants during the pandemic was 24.1% ( $n = 260$ ). Of these, income loss in major cities was 57.7% ( $n = 150$ ), inner regional areas was 26.5% ( $n = 69$ ), outer Within the socioeconomic status category, income loss was highest among those in the low socioeconomic status with 23.8% ( $n = 62$ ). Among the ethnic groups, income loss 56.9% ( $n = 148$ ) for Caucasians and 25.4% for Europeans (Table 2).

### 3.3 | Access to superannuation

Overall, 11.9% ( $n = 142$ ) of all participants accessed their superannuation during the pandemic, of these the majority were from major cities

50% ( $n = 71$ ). Within the socioeconomic status category, the highest access to superannuation during the pandemic came from participants in the low socioeconomic status 35.2% ( $n = 50$ ). Among the ethnic groups, the superannuation was accessed the highest from Caucasian 54.2% ( $n = 77$ ) and European 24.6% ( $n = 35$ ) participants.

### 3.4 | Financial inability to pay for services

A total of 24.9% ( $n = 265$ ) of all participants reported concerns over meeting their financial commitments during the pandemic. Financial inability to pay for services was highest in major cities (55.9%,  $n = 148$ ). Within the socioeconomic status category, concerns about financial inability to pay for services during the pandemic was highest among those who lived in the low socioeconomic status (25.3%,  $n = 67$ ). Among the ethnic groups, concern about financial inability to pay for services was highest among Caucasian participants (58.1%,  $n = 154$ ) (Table 2).

### 3.5 | Association between the economic wellbeing and ethnicity, socioeconomic status, and remoteness

During the COVID-19 pandemic those who identified as Caucasian (OR = 0.49; 95% CI 0.27, 0.90), or other (OR = 0.40; 95% CI 0.19, 0.88) had significantly higher odds of not losing income. Those in the low socioeconomic status category (OR = 1.65; 95% CI 1.01, 2.68) and those in the high socioeconomic status category (OR = 1.63; 95% CI 1.06, 2.51) had significantly higher odds of experiencing an income loss during the COVID-19 pandemic. Access to superannuation during the COVID-19 pandemic was associated with a significantly higher odds of living in outer regional areas (OR = 3.6; 95% CI 0.81, 16.03). Living in outer regional areas, middle socioeconomic status category (OR = 3.55; 95% CI 1.87, 6.73), and a high socioeconomic status category (OR = 3.42; 95% CI 1.82, 6.42) were associated with a significantly higher odds of accessing superannuation during the COVID-19 pandemic. Financial inability to pay for services was associated with significantly higher odds of living in remote areas (OR = 2.26; 95% CI 0.88, 5.80) (Table 3).

## 4 | DISCUSSION

Despite the COVID-19 pandemic being initially labelled as the great equalizer, the social and economic impacts are unequally felt. The results of this study have demonstrated that employment loss was most likely to occur among those residing in regional and remote areas, among those within the middle socioeconomic status group and in individuals who ethnically identify as Caucasian or Asian. Moreover, income loss was highest in individuals who were from remote and inner regional areas, and from the low socioeconomic status category. Those who identified as Caucasian were most likely not to lose income during the pandemic. Furthermore, the results demonstrate that individuals who accessed their superannuation during the COVID-19 pandemic

**TABLE 2** The relationship between economic wellbeing and remoteness, socio-economic status, and ethnicity

	Economic Wellbeing			
	Employment loss (n = 150) N (%)	Income loss (n = 260) N (%)	Access to super (n = 142) N (%)	Financial inability to pay for services (n = 265) N (%)
<b>Remoteness</b>				
Major cities	82 (55.0)	150 (57.7)	71 (50.0)	148 (55.9)
Inner regional	44 (29.0)	69 (26.5)	44 (31.0)	68 (25.6)
Outer regional	18 (12.0)	27 (10.4)	20 (14.0)	38 (14.3)
Remote	3 (2.0)	5 (1.9)	5 (3.5)	3 (1.1)
Very remote	3 (2.0)	9 (3.5)	2 (1.5)	8 (3.1)
<b>Socio-economic status</b>				
Lowest	19 (12.7)	43 (16.5)	21 (14.8)	35 (13.2)
Low	40 (26.7)	62 (23.8)	50 (35.2)	67 (25.3)
Middle	30 (20.0)	55 (21.2)	31 (21.8)	53 (20.0)
High	25 (16.6)	39 (15)	22 (15.5)	46 (17.4)
Highest	36 (24.0)	61 (23.5)	18 (12.7)	64 (24.1)
<b>Ethnicity</b>				
European	40 (26.7)	66 (25.4)	35 (24.6)	58 (21.9)
Caucasian	86 (57.3)	148 (56.9)	77 (54.2)	154 (58.1)
Aboriginal	3 (2.0)	6 (2.3)	5 (3.5)	12 (4.5)
Asian	13 (8.6)	15 (5.8)	13 (9.2)	23 (8.7)
Others	8 (5.4)	25 (9.6)	12 (8.5)	18 (6.8)

were most represented by those who lived in remote areas, resided in the low socioeconomic areas, and ethnically identified as Aboriginal or Torres Strait Islander. Finally, Australians who had concerns about the financial inability to pay for services during the COVID-19 pandemic were individuals who lived in outer regional and remote areas, were from low and middle socioeconomic areas and identified as Aboriginal and Torres Strait Islander.

Overall, employment loss during the pandemic in this study was 13.7% and is comparable to research conducted in the US with employment loss reported as 15% (Parker et al., 2020). Similarly, a study exploring employment loss in the European Union found this to be 17% (Aljazeera, 2021). The results of this study demonstrate that employment loss was more prevalent in outer regional and remote areas, with one suggested reason for this prevalence being that most individuals within these areas are employed in jobs that cannot be conducted from home. Additionally, individuals who reside in regional areas of Australia are also less likely to have completed high school (76%) compared to those in major cities (92.1%) (Australian Institute of Health and Welfare, 2021b), with this having a significant effect on obtaining secure employment. Overall, employment rates in regional Australia are worse than major cities, while the population in some regional areas continues to grow, particularly attracting immigrants as the proportion of the population born overseas is higher in regional Australia than in major cities (Daley et al., 2017). This reflects the Australian government refugee policy to focus resettlement of refugee populations

within regional and rural Australia (Wood et al., 2019), however reveals the lack of government policy to provide a safety net for migrants and refugees experiencing large scale negative events such as a pandemic. This aligns with the findings of this study that demonstrates employment loss associated with regional areas, and that migrant and refugee populations are therefore more vulnerable to economic challenges. This is an important insight for public health nurses' who care for individuals from regional and rural areas who will be central to identifying disparities and committed to the health of vulnerable populations. Precarious employment and population growth within regional Australia, especially among migrant and refugee populations, calls for policy change and action to address and generate long term employment options.

Despite the Australian government implementing the Job Keeper payment, overall income loss was found to be high with approximately a quarter of Australians in this study reporting an income loss during the pandemic. Similarly, a study in the US indicated that a third of individuals lost their income during the pandemic (Parker et al., 2020). Reported levels of income loss could be related to Job Keeper not matching an individual's pre-pandemic income levels (Kaine, 2020; Walkowiak, 2021), which would specifically be the case for individuals in high income areas or with higher paid employment. Moreover, Job Keeper was not provided to every sector or industry with some, such as higher education, excluded from this economic package (Lam & Kenworthy, 2021). The findings of this study indicate that there

**TABLE 3** Association between economic wellbeing and ethnicity, remoteness and socioeconomic status

	Wald	Exp (B) (Odds Ratio)	95% CI	P value
<b>Employment loss</b>				
<b>Ethnicity</b>				
European (Ref)	1.53	-	-	.82
Caucasian	0.01	1.04	0.44, 2.50	.92
Aboriginal	0.15	1.18	0.51, 2.75	.70
Asian	0.30	0.67	0.16, 2.86	.59
Others	0.36	1.36	0.50, 3.67	.55
<b>Remoteness</b>				
Major cities (ref)	3.46	-	-	.49
Inner regional	0.61	1.63	0.48, 5.53	.43
Outer regional	1.62	2.26	0.81, 16.03	.20
Remote	2.47	2.36	0.64, 8.72	.12
Very remote	0.83	2.26	0.40, 13.03	.36
<b>Socioeconomic status</b>				
Lowest (Ref)	2.13	-	-	.71
Low	0.17	1.14	0.61, 2.14	.68
Middle	0.01	1.04	0.59, 1.83	.91
High	1.83	1.44	0.85, 2.46	.18
Highest	0.13	1.11	0.63, 1.95	.72
<b>Income loss</b>				
<b>Ethnicity</b>				
European (Ref)	8.79	-	-	.07
Caucasian	5.22	0.49	0.27, 0.90	.02*
Aboriginal	2.45	0.63	0.35, 1.12	.12
Asian	3.60	0.36	0.13, 1.03	.06
Others	5.29	0.40	0.19, 0.88	.02*
<b>Remoteness</b>				
Major cities (ref)	1.06	-	-	.90
Inner regional	0.06	1.10	0.50, 2.45	.81
Outer regional	0.368	1.30	0.56, 3.00	.54
Remote	0.01	1.06	0.43, 2.60	.91
Very remote	0.19	1.34	0.36, 5.00	.66
<b>Socioeconomic status</b>				
Lowest (Ref)	7.66	-	-	.11
Low	4.02	1.65	1.01, 2.68	.04*
Middle	0.30	1.14	0.71, 1.82	.58
High	4.99	1.63	1.06, 2.51	.03*
Highest	0.20	1.11	0.70, 1.77	.65

(Continues)

**TABLE 3** (Continued)

	Wald	Exp (B) (Odds Ratio)	95% CI	P value
<b>Access to Superannuation</b>				
<b>Ethnicity</b>				
European (Ref)	2.31	-	-	.68
Caucasian	1.36	0.62	0.28, 1.38	.24
Aboriginal	0.98	0.68	0.32, 1.46	.32
Asian	0.29	0.72	0.21, 2.41	.60
Others	0.01	0.95	0.38, 2.41	.92
<b>Remoteness</b>				
Major cities (ref)	4.45	-	-	.35
Inner regional	1.77	2.70	0.63, 11.64	.18
Outer regional	2.84	3.61	0.81, 16.03	.03*
Remote	2.47	3.42	0.74, 15.82	.12
Very remote	3.13	5.06	0.84, 30.51	.08
<b>Socioeconomic status</b>				
Lowest (Ref)	18.82	-	-	.001*
Low	7.67	2.72	1.34, 5.53	.006*
Middle	15.06	3.55	1.87, 6.73	.000*
High	14.61	3.42	1.82, 6.42	.000*
Highest	5.19	2.20	1.12, 4.32	.023*
<b>Financial inability to pay for services</b>				
<b>Ethnicity</b>				
European (Ref)	8.95	-	-	.62
Caucasian	2.44	0.59	0.31, 1.14	.12
Aboriginal	0.10	0.90	0.49, 1.68	.75
Asian	0.60	1.45	0.56, 3.74	.44
Others	0.00	0.98	0.46, 2.10	.95
<b>Remoteness</b>				
Major cities (ref)	7.19	-	-	.13
Inner regional	0.27	1.26	0.53, 2.99	.61
Outer regional	0.77	1.50	0.61, 3.70	.38
Remote	2.85	2.26	0.88, 5.80	.04*
Very remote	0.07	0.81	0.18, 3.70	.79
<b>Socioeconomic status</b>				
Lowest (Ref)	2.91	-	-	.57
Low	0.02	0.97	0.58, 1.61	.90
Middle	0.12	1.08	0.69, 1.71	.73
High	2.20	1.39	0.90, 2.14	.14
Highest	0.45	1.17	0.74, 1.83	.50

\*Indicates significant P &lt; 0.05

is a significant association between income loss and residing in low or high socioeconomic areas, with people in low socioeconomic areas and those causally employed likely to be impacted more by income loss. Whereas for those who live in the high socioeconomic areas of Australia, income loss may be attributed to compulsory reductions in wages as occurred in the university sector or business owners who lost income due to lockdown and business closure. The aim of the Job Keeper payment was to provide a wage subsidy to assist businesses, with employers being paid to help retain their employees, however there were inherent flaws with this payment scheme (Cassells & Duncan, 2020). Firstly, a business had to demonstrate a turnover loss of 30% in comparison to 2019, this relied on the assumption that the business was in operation in 2019 (Australian Government Treasury, 2020). Additionally, the scheme did not apply to temporary migrant workers, including individuals from New Zealand. It also was paid to employers to pass onto their employees, with anecdotal evidence suggesting that some business employers profited from this payment (Walkowiak, 2021). Moreover, not all sectors could benefit from this scheme, such as the university sector despite staff having compulsory wages reduction (B. Phillips, Gray, et al., 2020). For many individuals who were self-employed, such as those in the music industry, a 30% turnover loss was difficult to demonstrate (Kaine, 2020). While the Job keeper scheme injected a mass of public funds, this payment ceased as of March 28, 2021 (Walkowiak, 2021), despite the pandemic and lockdown measures continuing. Job Keeper has only supported the economic wellbeing of Australians in the short term. However, there is an ongoing need to ensure social cash transfers are adequate and keep up with the rate of inflation as these are vital to ensuring Australians do not continue to live in poverty. Such an approach needs to be targeted and measured.

Superannuation is a compulsory payment made by an employer on behalf of the employee for their retirement and only accessible to the employee at retirement or in specific circumstances (Worthington, 2005). During the COVID-19 pandemic, the Australian government allowed Australians to temporarily access their superannuation savings if they were in financial distress (Australian Government Treasury, 2021a). The results of this study revealed that 11.9% of Australians accessed their superannuation during the pandemic. Accessing superannuation was associated with individuals living in outer regional areas and was more prevalent among those who identify as Aboriginal and Torres Strait Islander. It is important to note that while some Australians did access their superannuation, this is dependent upon having any superannuation available, and is therefore not available to everyone. Indeed, the Australian superannuation scheme is inadequate and inequitable, particularly for women (Feng et al., 2019). Periods of unemployment, low wages, and time out of the workforce due to illness or caring roles affect the capacity of Australians, especially women, to achieve sufficient superannuation funds (Broomhill et al., 2021). While the Australian government addressed the immediate needs of individuals during COVID-19, this was at the expense of financial security at a later stage in their lives. A well-structured policy and financial package are critical to the sustainability of a healthy society.

Along with employment and income loss, many Australians had concerns about meeting their financial commitments during the pandemic. The results of this study found that a quarter of Australians had concerns about the financial stability to pay for services during the pandemic, which is similar to a study in the US that reported 27% of individuals in the US frequently worried about paying their bills (Horowitz et al., 2021). Concerns about financial inability to pay for services were more prevalent among individuals who identify as Aboriginal and Torres Strait Islander and associated with those who live in remote areas. Recognizing and taking policy action to increase emergency funding for bill relief specifically for Aboriginal and Torres Strait Islander people and those who live in remote areas, is imperative to address health inequalities. In Australia, with a lifetime of disempowerment and segregation, the gap between Aboriginal and Torres Strait Islanders and non-Indigenous populations is well established, with a life expectancy of 20 years less than other Australians (Dodson, 2010). The forcible removal of Aboriginal and Torres Strait Islander children from their families, referred to as the Stolen Generation, continue to leave an impact of intergenerational trauma on Aboriginal and Torres Strait Islander families (Lord et al., 2021). Such trauma leads to disruptions in health and ability for economic participation (Lord et al., 2021). Regarding education, 38% fewer Aboriginal and Torres Strait Islanders complete schooling and the employment rate is 24% lower than non-Indigenous Australians (Dodson, 2010), thus making Aboriginal and Torres Strait Islander Australians potentially more vulnerable to the economic shocks of the COVID-19 pandemic. Additionally, Aboriginal and Torres Strait Islander people are in higher concentration within remote areas of Australia, comprising of 15% and 49% of remote and very remote populations respectively (Australian Institute of Family Studies, 2011). Therefore, the association with the financial inability to pay for services and remoteness and the Aboriginal and Torres Strait Islander population is mediating.

#### 4.1 | Implications for public health and future research

With COVID-19 disturbing the economic framework of Australian society, it is now more necessary than ever that Australian emerges as a more healthy and equitable nation. Indeed, the findings of this study indicate that COVID-19 has presented an opportunity to join in solidarity and have a renewed approach to the implementation of the United Nations (UN) Sustainable Development Goals (SDGs). Addressing the social determinants of health in all policies will ensure social and health disparities do not continue to widen. Public health professionals, including nurses, need to focus on the social determinants of health, becoming involved in health promotion strategies, lobbying governments, educating policy makers and promoting health and social equity through interdisciplinary collaboration and community partnerships. A commitment to addressing the economic wellbeing of Australians and disparities starts with increasing income support payments, employment securities with a less causal workforce, recognition of Aboriginal and Torres Strait Islanders and their leadership,

partnering with communities and investment in social infrastructure. Further large-scale research is required to understand the long-term implications of the COVID-19 pandemic on economic wellbeing and the social determinants of health.

## 4.2 | Limitations

While this study employed robust methods, it is important to acknowledge some limitations. A potential limitation and cause of recruitment bias may be the method used to recruit participants into this survey, as not all Australians have access to the internet or social media accounts, including the elderly and those financial insecure who went without the internet during the pandemic. However, according to the Australian and Communications Authority 91% of Australians have access to the internet (Australian Communications and Media Authority, 2020), demonstrating a high rate of accessibility. Recruitment via social media is also in keeping with a method that is most suitable for the lockdown periods in Australia during the pandemic and keeping within the budget constraints of the study. Additionally, online self-administered surveys are known to produce responder bias. This study also displays a gender bias with more participants identifying as female responding to the survey, this can also be said of ethnicity, with more participants who were Caucasian responding. Moreover, participants who felt impacted by the pandemic or perceived it as a threat may have been more inclined to respond.

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## CONCLUSION

This study has demonstrated that the economic wellbeing of people who live in regional or remote areas, in low socioeconomic areas and who are Aboriginal and Torres Strait Islander people have been impacted during the pandemic. Along with high rates of employment and income loss, having accessed superannuation and financial instability during the pandemic will have long lasted effects on these populations groups and potentially widen social and health inequalities. Such disparities between population groups, call for policies to address the underlying social determinants of health, which can be achieved through renewed action of the UNs Sustainable Development Goals.

## CONFLICT OF INTEREST

None.

## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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