

# Scope of Australian Social Survey Inadequate in Representing Residents' Mental Health and Socioeconomic Standards of Living during COVID-19\*

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## Abstract

This paper investigates how much trust Australians have in the Australian healthcare system and how gender and socioeconomic status influences their mental health and level of trust. The data analyzed in this paper is the 2020 Australia General Social Survey: Summary Results obtained from the Australian Bureau of Statistics. Within this paper, we visualize different contributors to socio-economic advantage, including gender, socioeconomic status, and health. We found that generally: females are more likely to be affected by stressors; gender and mental health affects the population's trust for others in society; more females trust the Australian healthcare system than males, health does not necessarily reflect why a population is benign discriminate on; and lastly, those who had physical and mental health conditions reported achieving a lower levels of education than those without. It is important to note that the dataset used may not be the most accurate representation of Australian mental health and dependency on healthcare since the pandemic has led to a substantial increase in mental health conditions.

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\*Code and data are available at: <https://github.com/ChristinaChanYing/Australian-Social-Determinants-of-Health>

# 1 Introduction

It is always important to understand the mental and physical health of a country's population, as this is the first step in trying to find pain points and exploring opportunities for improving systems involved in the experiences of residents there. In Australia, health is a hot topic that has been seriously exacerbated by the COVID-19 pandemic. When the Bureau of Statistics conducted the once-in-four-years survey at the start of the pandemic, it would be apparent that this survey would be different as the conditions would be affected by pandemic measures and data would possibly be unusual due to the physical and mental health effects of the pandemic. Since this is the case, the survey presents an unusual snapshot of the experiences of Australia's population during a pandemic, and the enduring social characteristics that remain evident through their views on healthcare and trust for others. These are important topics to analyze and discuss as we were curious to see just how different the experiences are for the opposite genders when it comes to mental health conditions, trusting others and the healthcare system, receiving family/community support, experiences of discrimination, and effects of contributing stressors. Through this paper, we wanted to see whether or not the data supports or rejects our assumptions.

In this paper, we examine the stressors, trust levels (of other people and the healthcare system), mental health conditions, and the discrimination experienced by the Australian population and correlate them to gender (specifically male vs. female), and socioeconomic factors such as their household income, age, and labour force status. In section 2 we review the data source used in this paper and examine its methodology and questionnaire. We discuss the data survey's key features, strengths, and weaknesses and examine the In section 3, we go into a discussion over the three most interesting points of the paper, its weaknesses and the potential next steps for it; all the while discussing ethics, biases, and references to the literature. We discuss how stressors affect each gender, the sampled populations' views on Australia's healthcare system, and how socioeconomic status presents specific disadvantages. The last section of the paper section 4 includes references from the literature and additional resources to supplement the paper, such as the supplementary survey as part of the appendix.

# 2 Data

This paper was written in R, a programming language for statistical computing (R Core Team 2020) and uses various R packages for data analysis and manipulation. These packages include readxl (Wickham and Bryan 2019) for reading the .xlsx file and tidyverse (Wickham et al. 2019) and dplyr (Wickham et al. 2021) for handling the data. Knitr (Xie 2021) and kableExtra (Zhu 2021) to construct and style tables, while tibble (Müller and Wickham 2021) was used to handle tibbles and reshape2 (Wickham 2007) was used to transform the data between wide and long formats. The data itself was the 2020 Australia General Social Survey: Summary Results – Tables 3: Persons aged 15 years and over, Social Experiences–By Sex and Health Characteristics obtained from the Australian Bureau of Statistics (Australia 2020a). Since the data was a .xlsx file and contained three separate tables (Males, Females, and Persons) in a single sheet, we split the table in excel into three separate sheets. We also took the subheading in each table and created another column titled 'Section' in excel to make it easier to convert to a .csv file in R and manipulate the data.

## 2.1 Source and Methodology

The key features of the dataset we utilized for this analysis was procured by the Australian Bureau of Statistics, sending out the General Social Survey to Australian residents over the age of 15 over a period of 4 months from June to September 2020 (Australia 2020b). Since this survey was conducted at the start of the COVID-19 pandemic, all surveys were completed online or by a phone interview, excluding any opportunities for face-to-face interviews or paper copies. Sample recruitment was conducted randomly from rural to urban

areas, choosing to target lower socio-economic areas and randomly selecting individuals in one household to complete the survey in these target areas. Unfortunately, data could not be collected for households residing in the most remote parts of the country. More than 5000 households completed this survey across Australia, with 3 764 completed online and 1 540 completed over the phone. This accounts for 60.5% response rate, and due to the nature of the pandemic, no face-to-face follow ups were conducted for non-responses, leading to an unusually high non-response rate of 37.9%. The rest of the surveys sent were either refused or partly-responded to.

With the key features of the methodology highlighted, we can further discuss its strengths and weaknesses. Since the survey targeted areas with lower socio-economic status (SES) to see how residents of these areas would be more vulnerable to socio-economic disadvantage, there are a number of key demographics that would be excluded. Namely, those that reside in non-private dwellings such as hospitals and nursing homes. If this is the case, exclusion of such households presents a bias to the survey and possibly skews survey results in some way because the dataset we chose from this social survey included questions about trust in the healthcare system and self-reported mental health conditions. If Australian residents that live in hospitals and nursing homes were excluded and could not share their lived experiences about the hospitals and nursing homes they lived in, then the dataset does not truly reflect an accurate sample of the population in which it is targeting and thus is a weakness to the report. Living in hospitals, nursing homes, and other non-private dwellings already indicate a sort of instability in individuals' housing conditions, which could indicate these socio-economic disadvantages.

Additionally, due to the unfortunate timing of the survey at the start of the COVID-19 pandemic in 2020, the social survey had an unusually high percentage of non-responses due to the inability of the Bureau of Statistics to follow-up to non-responses in person. This means that survey is vulnerable to non-response bias where those who chose to participate may not necessarily represent the population from which they were sampled. Those who filled it out may have had access to the internet whereas those who did not fill out may not have had access to public services that allowed them to have access to the internet, such as a public library. This tradeoff presents a non-response bias that could be seen as a weakness to the dataset. However, the strength of this survey is evident in its disclosure of such limitations. They made clear that comparisons between this year and previous surveys should be done with care as this year is highly unusual. They also did a good job targeting their sample population towards a specific SES area so as to accurately reflect the aims of the study. If they had sampled all SES, high and low, then the responses may not have uncovered responses from individuals experiencing socio-economic disadvantages. Overall, the study's methodology was strong, sampling data from an accurate part of the population and presenting enough random sampling to remove as much bias as they can.

## 2.2 Questionnaire Details

The questionnaire collected data from approximately 5,300 households around Australia which is a generally good sample size. However, the survey did not cover people who live in "very remote parts of Australia" and "discrete Aboriginal and Torres Strait Islander communities." As such, this exclusion in the survey may have been either done to make the survey distribution or data collection process simpler or as a result of the bias against discrete aboriginals, Torres Strait Islanders, or ruralites in general. Given that this survey was completed online or via a telephone interview, it is unlikely that the first reason is responsible for this exclusion, especially given that there is a history of Australia's implicit racial bias against aboriginals and Torres Strait Islanders. Coverage of discrete aboriginals and Torres Strait Islanders would have been beneficial for our study since "[h]istorically they have been mistreated by healthcare institutions with inequitable care prevalent within emergency settings" (Quigley 2020).

One of the major drawbacks of this survey was that compared to their previous survey, this one had no face-to-face interviews. As such, the answers received may not be as accurate as previous years' questionnaires since the interviewer would be unable to capture the interviewee's verbal and non-verbal cues. Additionally, this has caused there to be a "higher than usual proportion of non-response (37.9%)" (Australia 2020b).

The questions asked had a good selection of options for the participant to choose from and often included more open-ended options such as "Other (please specify)" or "Not stated [Allow blank response/skip question

Table 1: Demographics Related to Labour and Income

Current Status	Population
<b>Labour force status</b>	
Full-time	7822.8
Part-time	4478.0
Unemployed	885.2
Not in the labour force	7118.8
<b>Main Source of Household Income</b>	
Employee income	13558.3
Unincorporated business income	336.3
Government pensions and allowances	3670.7
Other income	1771.1
<b>Current weekly household equivalised gross income quintiles</b>	
Lowest quintile	3670.5
Second quintile	3583.9
Third quintile	3814.7
Fourth quintile	4153.2
Highest quintile	4049.1
<b>Government support has been the main source of income in last 2 years</b>	
Government support has been the main source of income in last 2 years	5126.0

functionality]” for people who may not fall into the other options. For instance, when asking for gender, the questionnaire had “male,” “female,” and “other” options for selection. While most of their questions had a good variety of answers to select from, there were some exclusions in the questions they asked. For example, while there are various questions relating to the participant’s marital status, none were asking about their relationship status. This exclusion ignores the people who are in a serious relationship but do not wish to get married. This could lead to the survey missing some important information since being in a serious relationship with another individual often has a similar effect on one’s mental well-being to a married relationship.

The questions were explicit and easy to read and understand. Many of the questions included an example to ensure that the participant understood what the question was asking and that they know how to properly answer it. The questions also had a good flow and order to them. For instance, in “Module 7.2: Contact with Family and Friends (CWF)” they would start by asking “In the last 3 months have you seen family or friends who do not live with you in person?” then follow up with asking other questions relating to it such as “How often have you seen them in person in the last 3 months?” or “In the last 3 months, have you used any of these other types of contact with family or friends [CWF\_WS1]?”

### 3 Results

We chose to analyze a subset of the data titled Social Experiences–By Sex and Health Characteristics from the 2020 Australia General Social Survey. From this survey, we wanted to see how much trust Australians have in their healthcare system and whether or not gender and socioeconomic status influences their mental health and level of trust.

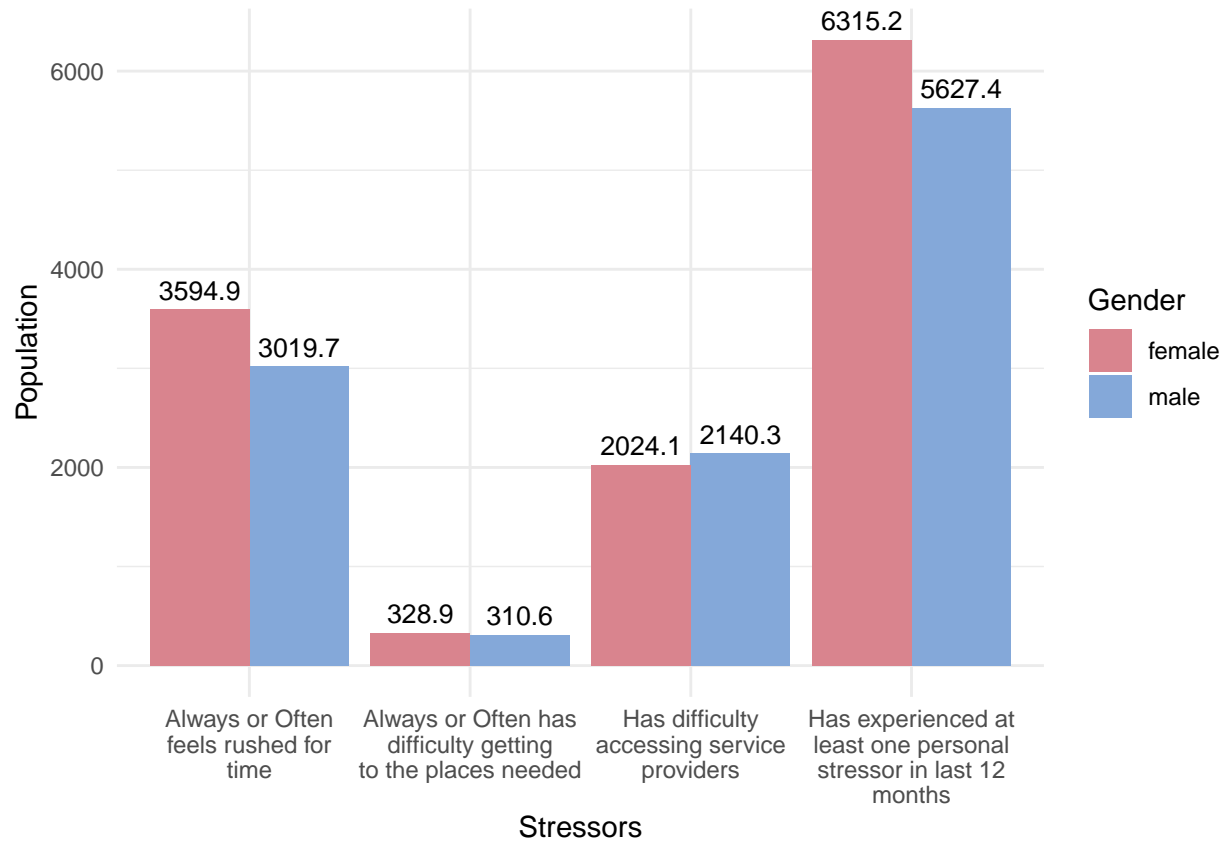


Figure 1: Likelihood of Stressors Affecting Each Gender

In Figure 1, we wanted to visualize the likelihood of stressors affecting each gender. For each stressor, participants were asked how likely they were affected by them. When feeling rushed for time, more females felt they were always or often feeling rushed more than males did. When getting to places, slightly more females reported feeling like they always or often had difficulty getting to places they needed more than males. More females also experienced at least one personal stressor in the last 12 months from the survey than males. On the other hand, more males reported having difficulty accessing service providers than females did. Generally, females are more likely to be affected by stressors.

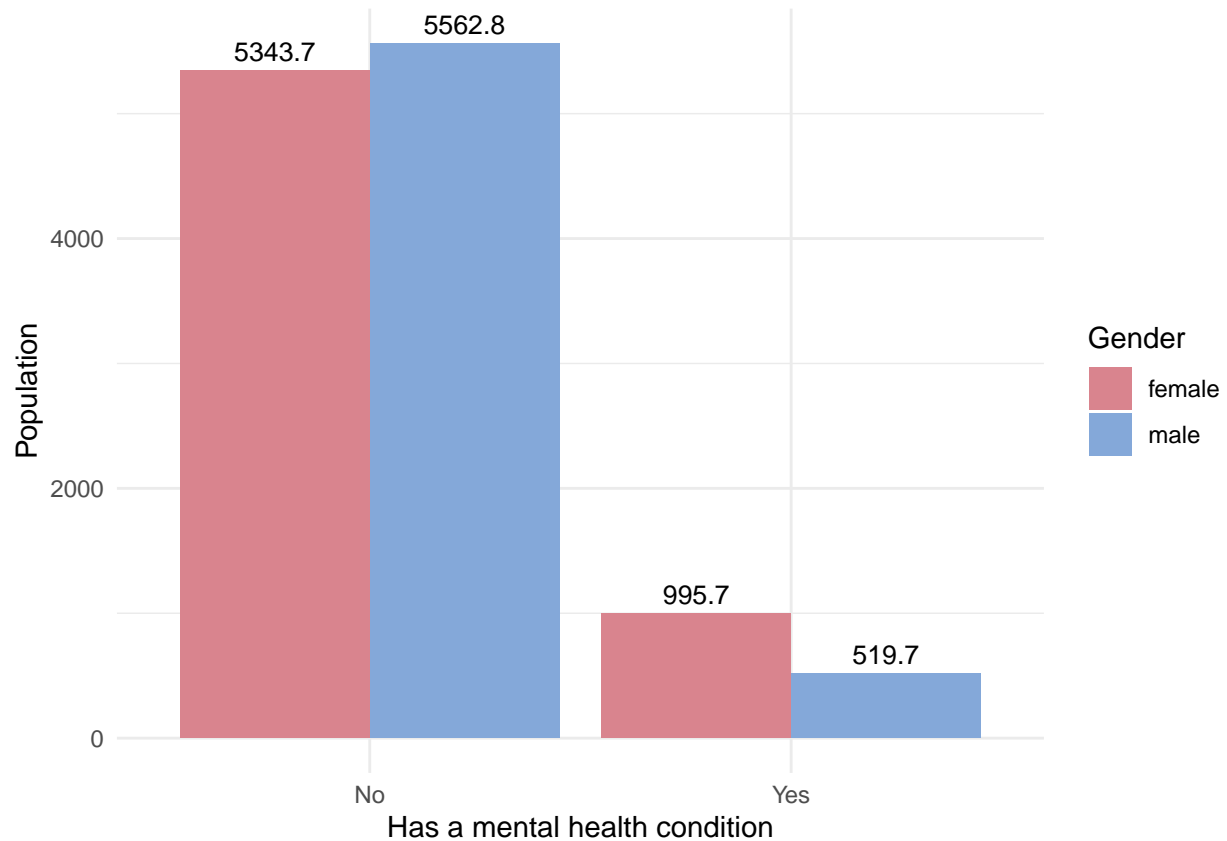


Figure 2: Proportion of People by Gender and Mental Health Conditions Who Have Strong Trust for Others

In Figure 2, we wanted to visualize the proportion of the population by gender and their mental health conditions who strongly felt that they agreed in the perception that most people can be trusted. This self-reported question indicates at the most basic level how individuals perceive others and the amount of trust that individuals have for others. This subset of the data was taken from a list of answers of the overall topic of trust for others. Other answers for this topic included “Agree,” “Neither agree nor disagree,” “Disagree,” and “Strongly disagree.” For the portion of people that strongly agreed that most people can be trusted, we segregated them into the two genders: male or female. For each gender, we wanted to visualize which portions had a mental health condition and which did not. More male survey participants that did not have a mental health condition strongly agreed that most people can be trusted, more than females reported they did. For participants that self-reported a mental health condition, more females strongly agreed that most people can be trusted. By comparing the perception of genders with their mental health conditions, we were able to visualize just how much gender and mental health affects the population’s trust for others in society.

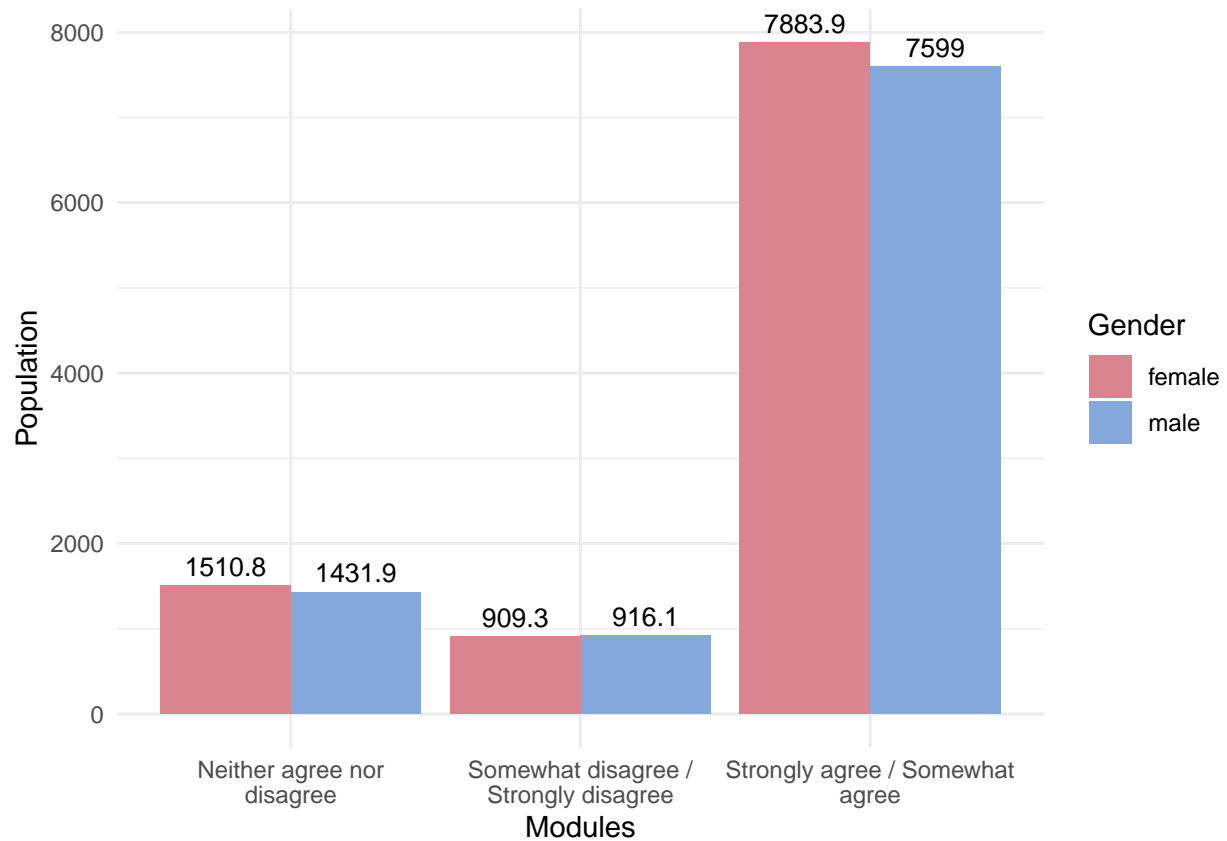


Figure 3: Proportion of population by gender and their trust on the healthcare system

In Figure 3, we wanted to visualize the proportion of the population by gender and their trust on the healthcare system. We picked three answers out of the five possible ones on the Likert system to represent, choosing from Strongly Agrees to Strongly Disagrees. For these three answers, we wanted to compare by gender how the population felt about trusting Australia’s healthcare system. For those that had strong feelings of agreement (“Strongly agree/Somewhat agree”), more females reported agreeing to trusting the healthcare system. On the other hand, slightly less females reported that they strongly disagree/somewhat disagree with the idea that they could trust the healthcare system. These two answers corroborate the key result that more females have mostly feelings of trust towards the Australian healthcare system more than males did. In the less extreme parts of the spectrum where participants neither agreed or disagreed to the idea of trusting the healthcare system, still slightly more females felt neutral about the idea.

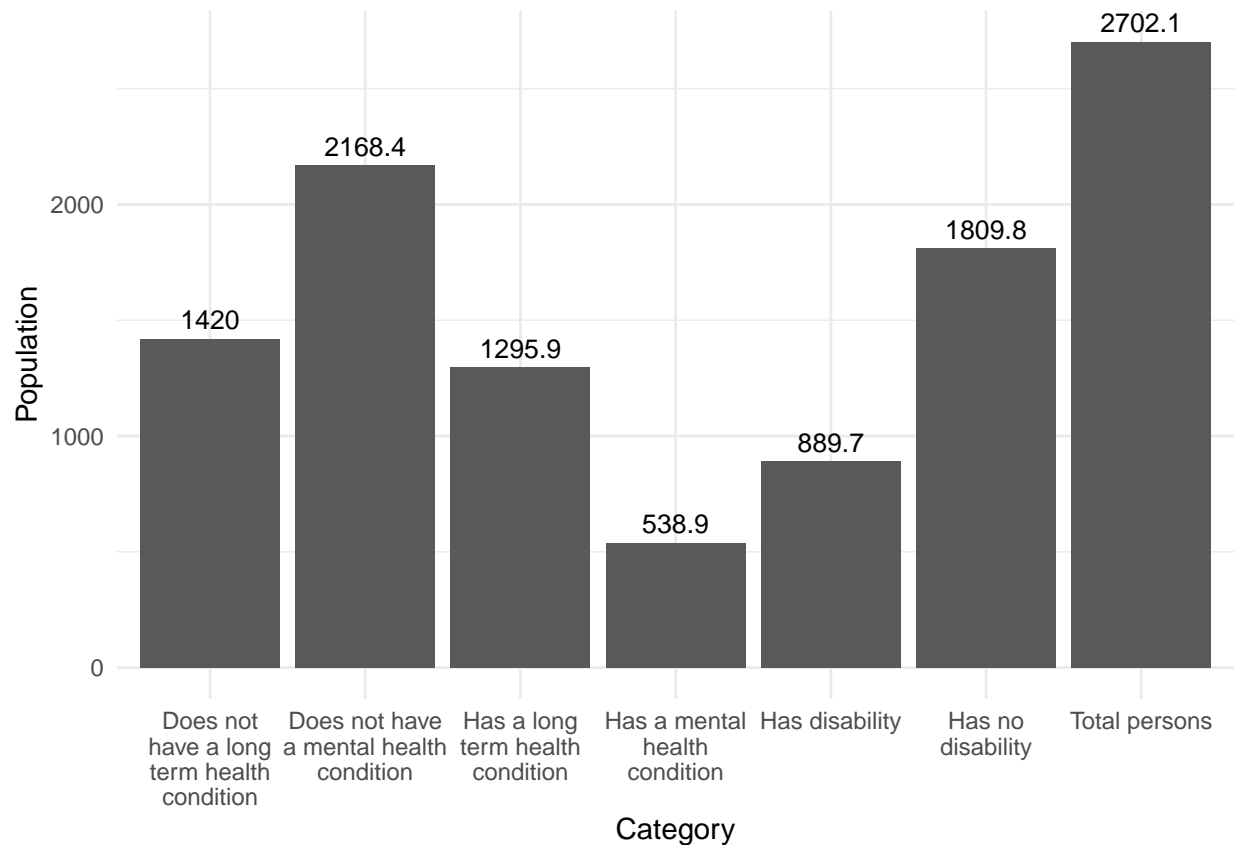


Figure 4: Physical and mental health conditions for population who has experienced discrimination in the last 12 months

In Figure 4, we wanted to visualize the portion of the population who have experienced discrimination in the last 12 months and their physical and mental health conditions. For those who have experienced discrimination in the last 12 months, 2168.4 of them did not have a mental health condition, while 538.9 did, showing a lower proportion of people with mental health that have recently experienced discrimination. A similar number of people who do and do not have a long term health condition reported experiencing discrimination in the last 12 months, showing no difference or a slight difference in discrimination experiences with or without long term health conditions. There were also more people without a disability that reported experiencing discrimination in the last 12 months, than did those with a disability. However, it is important to remember that correlation does not mean causation, and perhaps there were just more people in the sample population that did not have a disability, long term health condition, or mental health condition than those who did have them, presenting a sampling bias when reporting raw numbers.



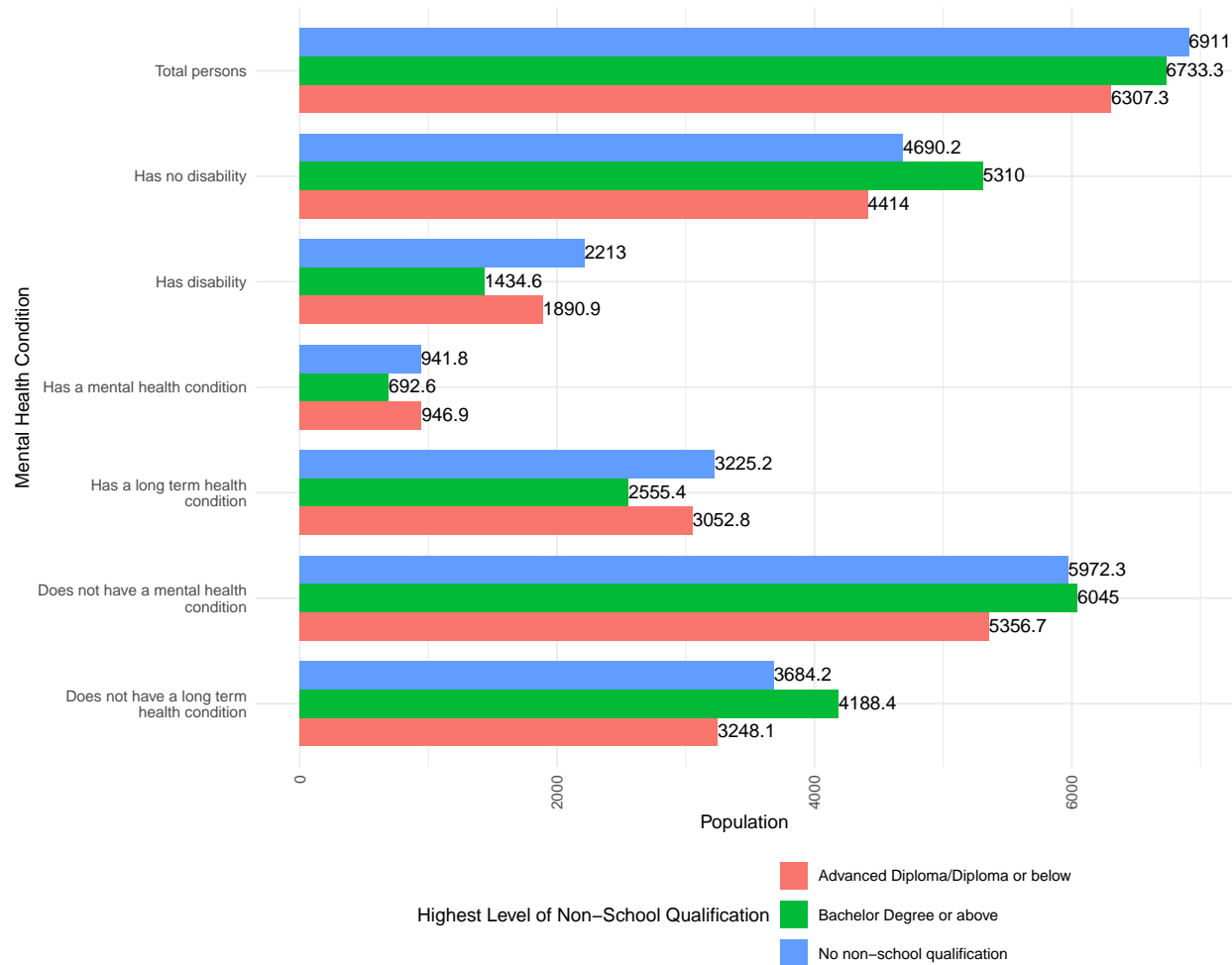


Figure 5: Mental Health Conditions vs. Level of highest non-school qualification

Note: Non-school qualifications refers to educational attainments other than those of pre-primary, primary or secondary education qualifications.

Lastly, in Figure 5, we wanted to visualize the proportion of the population's physical and mental health conditions side-by-side with their level of highest non-school qualifications. For those who do not have a disability, the highest number of the sampled population achieved a Bachelor degree or above with 5,310 participants who reported so. The least number of people who did not have a disability reported achieving an Advanced Diploma/Diploma or below. For those that did have a disability, the most number of people reported having no non-school qualifications. Less number of people achieved a Bachelor Degree or above. In comparing the different physical conditions, this data shows that those who did have a disability had less individuals reporting having achieved a Bachelor Degree or above; indicating either less access to higher education or a choice to pursue no school or the tendency to choose to pursue advanced diplomas instead of a degree. For participants that did not have a mental health condition, more reported achieving a Bachelor Degree; whereas, for those who did have a mental health condition, more reported having achieved an advanced diploma/diploma or below. For participants who did not have a long term condition, more reported having achieved a Bachelor Degree; whereas, for those who did have a long term condition, more reported having achieved no further education. The answers show a pretty consistent pattern, where those who did not have a physical or mental health condition achieved higher education in reporting having a Bachelor Degree. For those who did have a physical or mental health condition, most reported having

achieved an Advanced Diploma/Diploma or below, or having no non-school qualifications. This shows a socio-economic disadvantage based for those who have physical and mental health conditions.

## 4 Discussion

### 4.1 Stress and Anxiety

In comparison to the feelings of anxiety or stress, 700 females with mental health issues reported “Always” or “Often” to feeling stressed or rushed. This was much higher than males, in which only 300 participants felt consistent stressors or anxiety. Due to societal pressures and expectations, it is extremely likely that women would feel stressors, much more often than men would. According to The Guardian, Australian women encounter stress on a much higher level than men do. This is in regards to finances, family, and physical health (The Guardian Reference). Citizens with mental health conditions already experience difficulties from other day activities and events. The addition of a permanent illness will greatly affect the ways Australian men and women approach daily life.

There are many other factors that affect Australian citizens’ experiences with stress and anxiety. This includes intersectionality of race, gender, ethnicity, and sexual orientation. In the survey, 2,168.4 people without mental illness and 538.9 people with mental illness reported experiencing some form of discrimination in the past 12 months. This justifies the fact that those with mental health conditions are not as likely to experience oppression because of their illness. For example, a white male with mental illness will have different experiences in navigating daily anxiety and stress than a black woman would. Women, LGBTQ+, and BIPOC experience systematic oppression in a white straight male dominated society. Those who do not identify with these groups may experience difficulties due to their mental illness, but will not face discrimination because of their identity.

### 4.2 View on Healthcare

In this survey, we understand the differences between men and women who trust the healthcare system with and without mental health conditions. According to Figure 3, this is quite a drastic contrast. 995 women with mental health conditions reported that they have trust among most people, and men sat slightly lower, with 519.7 people. Men without mental illness are at 5,563, whereas women without are 5,343. The key question is why is the amount of trust so much higher in those without mental illness, than those with? Lack of trust in most people equates to common everyday services, including healthcare and treatment. In order to understand the lack of trust that those with mental illness or disabilities have regarding the healthcare system, we must look at history. Up until a few decades ago, the treatment of those with bipolar disorder, depression, anxiety, and other common illnesses, were through a myriad of inhumane theories and practices. In 2006, the Bureau of Justice Statistics reported that “705,600 mentally ill men were incarcerated in the state prison system, and another 78,800 were incarcerated in the federal prison system” (Dumper 2014).

Only until recently, considerations and understandings of mental illness in modern society have been considered. However, a history of societal neglect justifies the lack of trust which both male and female Australians with mental illness obtain.

### 4.3 Weaknesses

This data set, which has been conducted during a 4-month time frame in the middle of COVID-19, may not be the most accurate representation of Australian mental health and dependency on healthcare. Mental health issues have massively increased since the pandemic began, as the result of a lack of social interaction, and a sudden halt in regular activities. In addition, people are more likely to report dissatisfaction in the colder months, which is when the survey occurred. Many other weaknesses come into play considering the method of conduction, which was online and by telephone. In lots of situations, these results may be

random, inaccurate, or even miss a variety of Australian citizens. This includes a lack of connection with those who live in rural areas or Indigenous communities. In this survey, citizens do not disclose the area of Australia they live, nor is there information about the specific regions within the country. This could possibly include wealthier regions of Australia, and not those who lack a lower income, which may experience more socioeconomic difficulties. Lastly, justification of gender according to male and female is inconsiderate of non-binary persons, and not an accurate representation of Australian society.

#### **4.4 Next Steps**

We will discuss some potential next steps to further improve the social survey, and their results. Firstly, this would involve reaching out to mental health clinics in Australia, and communicating with professionals in the industry. This would allow the survey conductors to improve the quality of the questions, and how they are being asked. Another potential next step could be to split up the variable, 'Has a mental illness', so it is more specific. This could include dividing it up into multiple sectors, specifying the illness and providing more variety to the survey.

# Appendix

## .1 Supplementary Survey

The survey supplement asks respondents to report the their socioeconomic status, their physical and mental wellbeing, and their trust in the Australian healthcare system. The supplemental survey can be accessed via the following link <https://forms.gle/f8uucLhMUiiJUavv8>.

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