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The Rise of Social Media and the Fall in Mental Well-Being Among Young Australians

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ABSTRACT

Using multiple sources, we document a substantial worsening in the mental well-being of Australians aged 15–24 years, as measured by surveys, self-harm hospitalisations and suicide deaths. The shift began around 2007–2010 and is worse for young women than for young men. Although several factors could be to blame, we present six pieces of evidence suggesting that smartphones and social media may have played a causal role in damaging the mental health of young Australians.

JEL Classification: D91, I12, L82

1 | Introduction

Since around 2007–2010, the mental well-being of young Australians has worsened considerably. Over the period from 2007–2010 to 2019–2022, the share of young people reporting a mental disorder increased by 50%. The rate of self-harm hospitalisations of young people increased by 35%. The suicide rate among young people increased by 34%.

Although there are likely to be multiple reasons for this trend, an emerging body of evidence suggests that social media has played a key role. Recent systematic reviews report negative associations between screen time and mental well-being, with studies focusing on a range of adverse outcomes, including depression, anxiety, body image and eating disorders (Santos et al. 2023; Dane and Bhatia 2023; Khalaf et al. 2023).

Books by Jean Twenge (2017) and Jonathan Haidt (2024) argue that heavy device use by teens has produced an "anxious generation." Haidt notes that young women tend to be more invested in social media than young men (who spend more time gaming), and that the worsening of teen mental health tends to be more pronounced for females than males. Critics of this view argue that the reported associations are small (Tang et al. 2021) and that the worsening of adolescent mental health could be due to other factors, such as economic insecurity (Chivers 2018).

Policymakers are responding. US Surgeon-General Vivek Murthy has issued an advisory on social media and youth mental health (Murthy 2023). "[I]n an emergency," he argues, "you don't have the luxury to wait for perfect information. You assess the available facts, you use your best judgment, and you act quickly" (Murthy 2024). On this basis, Murthy has called for a surgeon general's warning label on social media platforms, stating that social media is associated with significant mental health harms for adolescents (Murthy 2024).

In Australia, all government schools and most non-government schools have implemented mobile phone bans. Following a federal parliamentary inquiry and a social media summit convened by the New South Wales and South Australian Governments, the Australian Government passed world-first legislation in November 2024, setting a minimum age of 16 to access social media. The age limit will take effect in December 2025, with the technological implementation to be informed by a trial of age assurance technologies. Understanding the Australian data is of considerable policy relevance.

The main goal of this article is to distil the available Australian evidence on trends in device use and youth mental health over the period since social media became widely available. Other researchers have shown trends from one or two data sources (see, e.g., the Australian Institute of Health and Welfare 2021; McGorry and Mei 2023), but ours is the most comprehensive analysis of the available Australian data. We also consider the evidence that might suggest a causal link between social media and the mental well-being of young people.

The remainder of our article is structured as follows. Section 2 outlines trends in smartphone access and device use. Section 3 presents the most comprehensive data available on trends in the mental well-being of those aged between 15 and 24, separating young men and young women. Section 4 presents six pieces of evidence suggesting that smartphones and social media may have played a causal role in damaging the mental health of young Australians. The final section concludes.

2 | iGen Australia

To analyse the impact of smartphones and social media on the mental well-being of young Australians, we first consider the time trends. The iPhone was released in 2007. The first commercial Android touchscreen phones launched in 2008. Key social media platforms had their genesis around this period, including Facebook (publicly launched in 2006), Twitter (founded 2006), Tumblr (2007), WhatsApp (2009), Instagram (2010), Snapchat (2010) and Pinterest (2010). Although other platforms such as TikTok and Discord came later, the period 2007–2010 marked a seismic shift in the online lives of young Australians.

Although the rapid growth of smartphones and social media is anecdotally obvious, data on trends in teens' device ownership and time use are frustratingly patchy. The Household, Income and Labour Dynamics in Australia survey and the Longitudinal Survey of Australian Youth do not provide long-run trend data on screen time, nor on smartphone ownership. The Longitudinal Survey of Australian Children contains questions on screen time, but with only two cohorts (born 4 years apart), and differences in question wording across those cohorts; it sheds little light on population-wide trends.

One helpful source of data is the Roy Morgan Young Australians survey, which reports that the share of 6- to 13-year-olds owning a mobile phone increased from 23% in 2006 to 33% in 2020 (since smartphones did not exist in 2006, this implies that smartphone ownership among 6- to 13-year-olds increased from 0% to 33%) (Roy Morgan various years). On time use, some insight can be gleaned from the Australian Bureau of Statistics survey on cultural participation, which shows that average weekly screen time among children aged 5 to 14 increased from 11.0 h in 2017–2018 to 12.3 h in 2021–2022 (Australian Bureau of Statistics 2019, 2023a).[1]

3 | Adolescent Anxiety

Data on mental health indicate that the share of young people experiencing a mental disorder, self-harming and taking their own lives has increased markedly from the point at which social media took off in 2007–2010 until the most recent surveys, conducted around 2019–2022 (Table 1). Specifically, rates of young people experiencing a mental disorder increased by 40% for young men and by 60% for young women. Rates of self-harm hospitalisation increased by 15% for young men and 43% for young women. Rates of suicide deaths increased by 23% for young men and 70% for young women.

TABLE 1 | Mental health trends among young Australians.

	2007–2010	2019–2022	Change (%)
Mental disorder in the prior 12 months			
Males (%)	23.2	32.4	+40
Females (%)	28.5	45.5	+60
Annual self-harm hospitalisations			
Males	141.79 per 100,000	162.89 per 100,000	+15
Females	345.05 per 100,000	492.06 per 100,000	+43
Annual suicide deaths			
Males	14.6 per 100,000	18.0 per 100,000	+23
Females	4.4 per 100,000	7.5 per 100,000	+70

Note: Mental disorders are for people aged 16–24 from 2007 to 2020–2022 (Australian Bureau of Statistics 2023b). Self-harm hospitalisations are for people aged 15–24 from the 3 financial years from 2008–09 to 2010–11 to the 3 financial years from 2019–20 to 2021–22 (Australian Institute of Health and Welfare 2022; Table NHMD S4). Suicide deaths are for people aged 15–24 from the 3 calendar years from 2007 to 2009 to the 3 calendar years from 2020 to 2022 (Australian Institute of Health and Welfare 2022; Table NMD S2).

Where data for the intervening years are available, they show a steady worsening through the 2010s, suggesting that this is not merely an artefact of poor mental health during the COVID pandemic years.[2] For example, if we analyse trends in self-harm hospitalisations and suicide deaths up to the period 2017–2019, we observe a similar pattern from that reported in Table 1.[3] Annual data on self-harm hospitalisations and suicide deaths are presented in Tables A1 and A2.

Survey data also make it possible to look at mental well-being across the population. For this purpose, we use data from the Household, Income and Labour Dynamics in Australia survey (Summerfield et al. 2023), which spans the period 2001 to 2022. The survey includes five mental health questions known as the MHI-5, which ask respondents about their nervousness, sadness, peacefulness, mood and happiness (as part of an overall health survey known as the SF-36). Unlike the other metrics presented in this paper, higher MHI-5 scores indicate better mental health.

In Figure 1, we plot the average mental health score for young respondents (aged 15–24), separating men and women. As a point of comparison, we also show average mental health scores for people aged 45 and older. These data indicate that the mental well-being of young people worsened from around 2010, that the drop is larger for young women than young men, and that young people's mental well-being remains low even

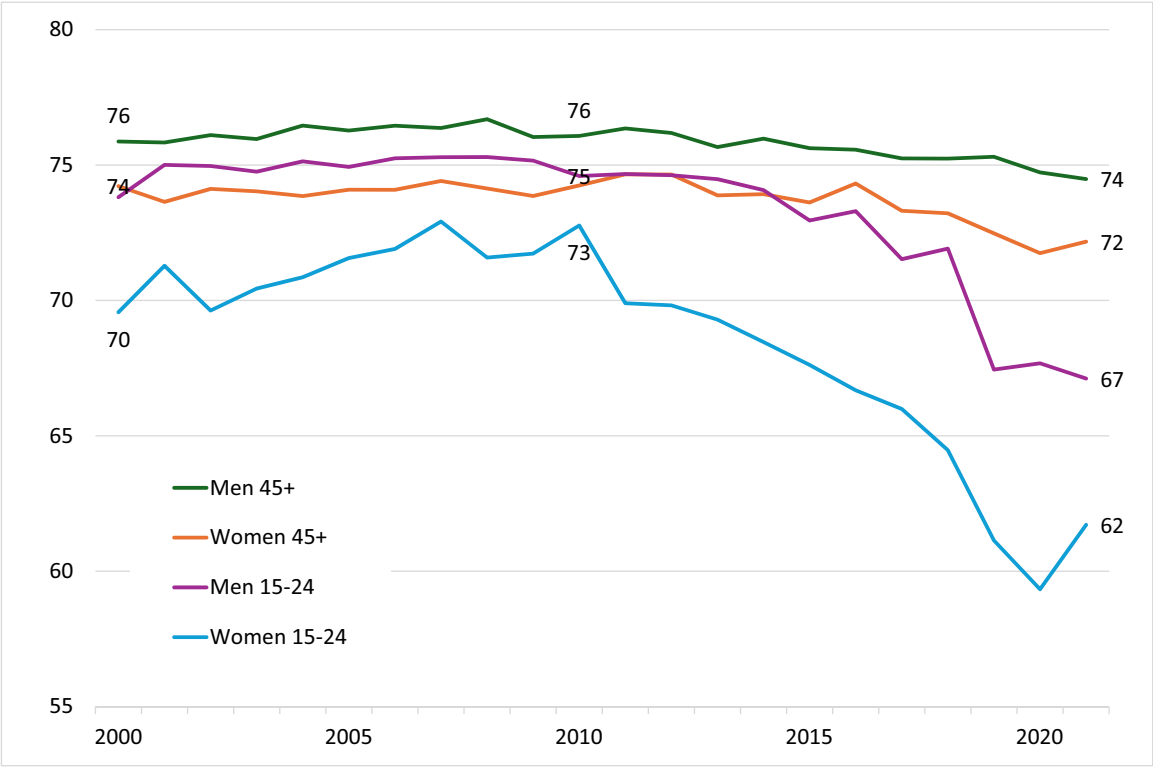

FIGURE 1 | Average MHI-5 mental health measure. *Source:* Authors' analysis, using the Household, Income and Labour Dynamics in Australia survey, 2001 to 2022. Higher scores on the MHI-5 scale indicate better mental health. Annual sample size averages 3593 for women 45+, 3127 for men 45+, 1181 for women 15–24 and 1082 for men 15–24.

post-pandemic (see also Wilkins et al. 2022, 2024). From the 3-year period 2007 to 2009 to the 3-year period 2020 to 2022, average mental health fell by 10% for young men and by 16% for young women. Average mental health scores for all years are presented in Table A3.

Corroborating evidence comes from Mission Australia's Youth Survey, which surveyed 15- to 19-year-olds using the 6-item Kessler Psychological Distress Scale (McHale et al. 2023). As Figure 2 shows, rates of psychological distress increased steadily in the 2010s, peaking during the pandemic and then improving afterwards. From 2012 to 2023, rates of psychological distress increased by 6% for young men and 38% for young women. Average psychological distress rates for all years are presented in Table A4.

4 | Correlation or Causation?

Moving beyond time-series evidence, there are six threads of evidence that are consistent with a causal relationship. First, we should expect social media's impact to be most pronounced among girls because they use the platforms more, and because girls tend to be more susceptible to social comparisons, relational aggression and online predation (Haidt 2024). Indeed, our evidence shows that the drop in young Australians' mental well-being is worse for young women than young men. Second, Australian evidence shows a dose–response relationship at an individual level between social media intensity and mental well-being. Among young people aged 11 to 17, surveyed in 2013–2014 for the Australian Child and Adolescent Survey of Mental Health and Wellbeing, those who used the internet for 2 or fewer hours on a typical weekend day had the lowest levels of psychological distress, with distress increasing by one and a half times among adolescents who used the internet for 3 to 6 hours, and by more than two times among those who used the internet for 7 or more hours (Hoare et al. 2017).

Third, when Australian teenagers are asked why they think mental health and mental disorders have worsened, the top answer that they give is "increased use of social media," which young people rank ahead of concerns about cost of living, drugs and alcohol, bullying or climate change (Duffy and McGorry 2024). Young Australians also report harms at a strikingly high rate. The average age at which young people first encounter online pornography is 13 (eSafety Commissioner 2023). Forty-four per cent of teens report having at least one negative experience online in the past 6 months, including being contacted by a stranger (30%), receiving inappropriate content (20%), being deliberately excluded from social groups (16%) and receiving online threats or abuse (15%) (eSafety Commissioner 2021).

A fourth source of evidence comes from the natural experiment created by the rollout of Facebook across US universities. After students at a university were granted access to Facebook, mental health worsened and usage of campus mental healthcare services increased (Braghieri, Levy, and Makarin 2022). Fifth, in randomised experiments, subjects asked to reduce levels of social media use for 3 weeks became less lonely and depressed (Tromholt 2016; Hunt et al. 2018).

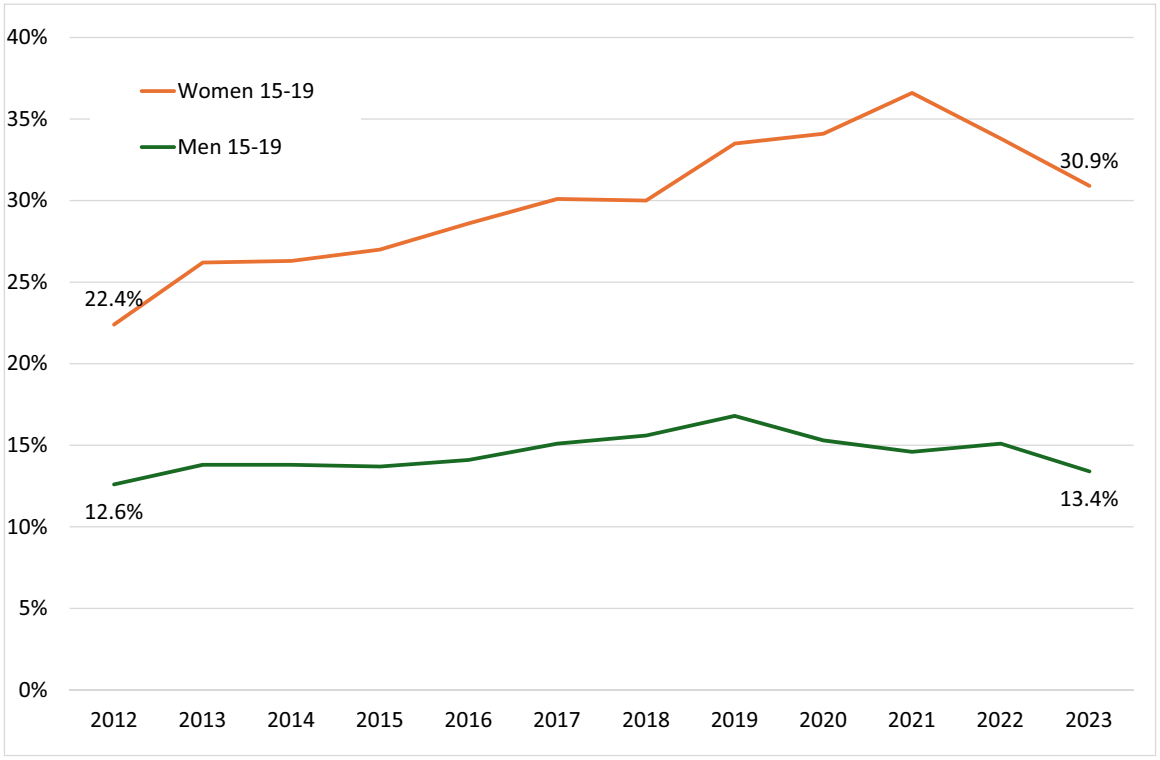

FIGURE 2 | Share of people experiencing psychological distress. *Source:* Mission Australia's Youth Survey, 2012 to 2023. Psychological distress is measured using the six-item Kessler Psychological Distress Scale score. Annual sample size averages 11,069 for young women and 7856 for young men.

Sixth, social media companies themselves perceive a link between use of their products and adverse mental health outcomes in young people (Wells, Horwitz, and Seetharaman 2021).

5 | From Screens to Serenity

These findings provide us with research and policy options in the Australian setting. To strengthen the evidence on causality, there is a need for Australian randomised trials that explore the impact of limiting access to social media and smartphones. Randomised trials could also investigate the impact on mental well-being of encouraging alternative activities, such as outdoor recreation or in-person socialising.

Yet even with the evidence we have now, there is a strong argument for restricting or banning use of mobile devices in schools, including during non-lesson breaks. Similarly, delaying access to smartphones and social media until the middle teenage years is supported by the available evidence. Social media companies should do more to reduce the harms caused by their products (Maidment et al. 2024).

The phenomenon of smartphone use with social media access now is almost universal across young Australians, and evidence is accumulating of harms associated with this trend. Although these technologies increase digital connectedness, they risk warping the emotional, physical, sexual and interpersonal development of young Australians. From a public health perspective, it is timely to curb the worst excesses of these technologies while better understanding the risks that they pose to the next generation.

Successful Replication

Successful replication of analysis using the Household Income and Labour Dynamics in Australia survey (HILDA): The authors provided a Stata Do command file for replication that was used in their analysis. The command file comprised of main data selection, data cleaning and descriptive summary information for tables. The information based on the HILDA, Figure 1 and Table A3 were replicated by the Editor and confirmed. Other results not based on HILDA were not addressed.

Acknowledgments

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Institute. As the data used in this paper are confidential, they cannot be shared with other researchers. Instructions on how to order the data are available at http://melbourneinstitute.com/hilda/data.html. The Stata do-file used to analyse the HILDA data is available from the authors upon request. Our thanks to Rachel Christie for sharing data from Mission Australia's Youth Survey and to Jonathan Haidt, Zach Rausch, editor John de New and two anonymous referees for valuable feedback on earlier drafts.

Data Availability Statement

The data that support the findings of this study are available in the supplementary material of this article.

Endnotes

[1]The Australian Bureau of Statistics survey asked parents and guardians about their children's participation in eight selected cultural activities, one of which was "screen-based activities" (presumably including social media, as well as television, gaming and internet browsing). Because the Australian Bureau of Statistics reports screen time in ranges, we calculate mean hours by assuming the value at the midpoint of the band (e.g., 10–19 h/week is coded as 14.5 h), coding 20+ h as 25 h and accounting for the share who report zero screen time. Our finding of an increase in screen time is not sensitive to our coding choices.

[2]The most recent wave of the Australian Bureau of Statistics survey on mental disorders was conducted from December 2020 to October 2022. Unfortunately, it is not possible to separate those respondents who answered the survey during COVID lockdowns from those who answered the survey after the lockdowns had been lifted.

[3]For self-harm hospitalisations, comparison of 2008–09 to 2010–11 with 2016–17 to 2018–19 shows a 20% increase for males aged 15–24 (from 141.79 to 170.22 per 100,000), and a 38% increase for females aged 15–24 (from 345.05 to 476.62 per 100,000). For suicide deaths, comparison of 2007 to 2009 with 2017 to 2019 shows a 37% increase in deaths for males aged 15–24 (from 14.6 to 20.0 per 100,000), and a 59% increase for females aged 15–24 (from 4.6 to 7.0 per 100,000).

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Appendix 1
Tables A1–A4

TABLE A1 | Annual self-harm hospitalisations per 100,000.

FInancial year	Men 15–24	Women 15–24
2008–09	136.86	334.37
2009–10	141.12	343.67
2010–11	147.41	357.10
2011–12	148.04	396.98
2012–13	153.73	403.03
2013–14	139.12	397.89
2014–15	151.33	417.81
2015–16	169.19	463.77
2016–17	182.36	523.41
2017–18	164.52	462.16
2018–19	163.79	444.30
2019–20	168.03	449.50
2020–21	172.24	537.27
2021–22	148.40	489.43

Source: Australian Institute of Health and Welfare 2022, Table NHMD S4.

TABLE A2 | Annual suicide deaths per 100,000.

Year	Men 15–24	Women 15–24
2001	20.8	4.9
2002	19.3	4.3
2003	18.2	3.7
2004	14.0	5.2
2005	16.3	4.2
2006	15.8	4.9
2007	15.7	4.7
2008	14.8	4.2
2009	13.3	4.4
2010	14.3	5.4
2011	15.2	6.2
2012	13.5	7.3
2013	16.9	6.2
2014	17.0	6.4
2015	17.6	7.3
2016	18.6	6.6
2017	18.7	7.0
2018	20.8	6.6
2019	20.6	7.5
2020	21.4	6.8
2021	17.5	8.1
2022	15.1	7.7

Source: Australian Institute of Health and Welfare 2022, Table NMD S2.

TABLE A3 | Average MHI-5 mental health measure.

Year	Men 15–24	Women 15–24	Men 45+	Women 45+
2001	73.8	69.6	75.9	74.2
2002	75.0	71.3	75.8	73.6
2003	75.0	69.6	76.1	74.1
2004	74.8	70.4	76.0	74.0
2005	75.1	70.9	76.5	73.9
2006	74.9	71.6	76.3	74.1
2007	75.3	71.9	76.5	74.1
2008	75.3	72.9	76.4	74.4
2009	75.3	71.6	76.7	74.1
2010	75.2	71.7	76.0	73.9
2011	74.6	72.8	76.1	74.2
2012	74.7	69.9	76.4	74.7
2013	74.6	69.8	76.2	74.7
2014	74.5	69.3	75.7	73.9
2015	74.1	68.5	76.0	73.9
2016	73.0	67.6	75.6	73.6
2017	73.3	66.7	75.6	74.3
2018	71.5	66.0	75.2	73.3
2019	71.9	64.5	75.2	73.2
2020	67.4	61.1	75.3	72.5
2021	67.7	59.3	74.7	71.7
2022	67.1	61.7	74.5	72.2

Source: Authors' analysis, using the Household, Income and Labour Dynamics in Australia survey. Higher scores on the MHI-5 scale indicate better mental health.

TABLE A4 | Share experiencing psychological distress (Kessler Psychological Distress Scale).

Year	Men 15–19 (%)	Women 15–19 (%)
2012	12.6	22.4
2013	13.8	26.2
2014	13.8	26.3
2015	13.7	27.0
2016	14.1	28.6
2017	15.1	30.1
2018	15.6	30.0
2019	16.8	33.5
2020	15.3	34.1
2021	14.6	36.6
2022	15.1	33.8
2023	13.4	30.9

Source: Mission Australia's Youth Survey. Psychological distress is measured using the six-item Kessler Psychological Distress Scale score.