SOME OF US R NOT OK: THE DECLINE IN YOUTH MENTAL HEALTH

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The e61 Institute – a non-partisan economic research institute – is pleased to make this submission to the Joint Select Committee on Social Media and Australian Society. This submission provides the Committee with data-driven evidence that can shed light on the widely reported decline in mental health among young Australians, which many have speculated is driven by the use of social media. **We find that youth mental health began falling sharply after 2012 and reflects low rates of mental health and high rates of self-reported social isolation for young females born since the late 1990s.** This generation lived their teenage and early adult years during the creation and proliferation of image and video-sharing social media platforms. The coincident timing suggests a link between social media use and mental health. However, more data and research are needed to establish a causal link. Ideally, individual-level smart phone data would be collected and integrated with people's health records in the confidentialised datasets that are maintained by the Australian Bureau of Statistics.

1. Overview

1.1 Key findings

Using the Household, Income, Labour Dynamics in Australia (HILDA) Survey, we find that:

1. Average self-reported mental health has been falling since the early 2010s for women and girls aged 15 to 24, with a more gradual decline taking place for their male counterparts.
2. Women and girls born since the late 1990s report much lower levels of both mental health and friendship connections than others.
3. The decline in self-reported mental health since the early 2010s is strongly linked to when an individual was born and how lonely they feel.

1.2 The role of social media

Our research suggests that social media exposure may be linked to lower mental health based on three observations in the household survey data:

1. The coincident timing of the decline in mental health and the rising popularity of social media. For example, those born in the late 1990s would have been teenagers when Instagram and Snapchat were launched and became widely available.
2. The particularly low levels of self-reported mental health for females aged 15 to 24 years and their higher use of social media than their male counterparts and other age groups.
3. A strong link between poor mental health and social isolation, and a coincident rise in feelings of social isolation for females aged 15 to 24 years.

Importantly, some experts have made clear that social media can be a source of good for young people and its net impact is individual specific.

Other common interpretations do not appear to explain the observed patterns. For instance, reductions in stigma around mental health – which may lead to more individuals being comfortable with reporting mental ill health – would not explain a sudden drop in the early 2010s. Further, declines in youth mental health occurring alongside the growth of social media have been observed in comparable nations such as the United States. Researchers have also documented increased loneliness globally among young people coinciding with smartphones and social media growth. Australian-specific factors cannot explain such a global phenomenon.

1.3 More individual-level data on social media usage are needed

Nonetheless, more research is necessary to isolate the causal impact of social media on the mental health of Australians. Data on the number of young people using the various social media platforms are not readily available with researchers relying on household surveys that are not well targeted at the issue, or sourcing their own small sample surveys which may not be representative.

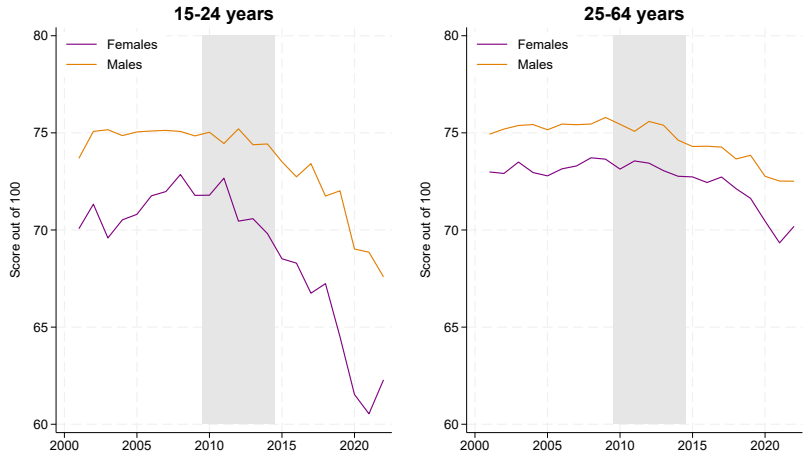
To gain a better understanding, access to data on usage of social media is critical. The ideal dataset would integrate individual-level mobile phone usage data with confidential medical, social security and tax records in the Person-level Integrated Data Asset (PLIDA) maintained by the Australian Bureau of Statistics (ABS). The next best alternatives would be to include new questions on social media use for specific platforms in the HILDA Survey or the ABS' National Study of Mental Health and Wellbeing.

2. Declines in self-reported mental health

We use individual-level data from the Household, Income, Labour Dynamics in Australia (HILDA) Survey to observe the self-reported mental health (see Box 1) of respondents from 2001 to 2022. We find that self-reported mental health has been on the decline for women and girls aged 15 to 24 since 2012 (Figure 1). Declines in self-reported mental health for young females are not just a subjective assessment. There is publicly available data to indicate that females aged 15 to 24 experience higher rates of mental health disorders, greater shares of need for help from mental health professionals and increasing rates of mental health-related hospitalisations than other groups.

Declines in self-reported mental health are observed for males aged 15 to 24 and people aged 25 to 64, but those experienced by women and girls aged 15 to 24 are much larger. The observed decline in mental health for young women could be due to individuals reporting lower levels of mental health over time or because of a change in the composition of the 15 to 24 age cohort such that those entering the cohort have lower self-reported mental health. The longitudinal nature of the survey data allows us to separate these two effects as we can observe the same individuals over time.

Figure 1: Average Self-reported Mental Health by Age Group and Sex, 2001 to 2022



Notes: Shaded bars indicate years between 2010 and 2014
Sources: e61 Institute; HILDA Survey Release 22.0

Box 1: What is self-reported mental health?
Self-reported mental health is created using a 0 to 100 scale. The scale is constructed according to Ware, Snow, Kosinski, (2000), SF-36 Health Survey. This is based upon response from a self-completed questionnaire that has respondents answering questions about how respondents feel and how things have been for them in the past 4 weeks on a scale from "none of the time" to "all of the time" on the following: "been a nervous person", "felt so down in the dumps nothing could cheer you up", "felt calm and peaceful", "felt down" and/or "been a happy person". Higher scores correspond to better mental health.

3. The role of birth year

We examine the role of birth year to understand if young people entering the 15 to 24 year-age cohort have lower mental health than those already in that age group. We find that young women born since the late 1990s – who are now aged 15 to around 27 – have, on average, strikingly lower self-reported mental health than their older female counterparts, and all men regardless of their birth year (Figure 2). The gender gap in mental health is noticeably wider for those born since the late 1990s.

Figure 2: Self-reported Mental Health by Birth Cohort and Sex; Average over 2001 to 2022

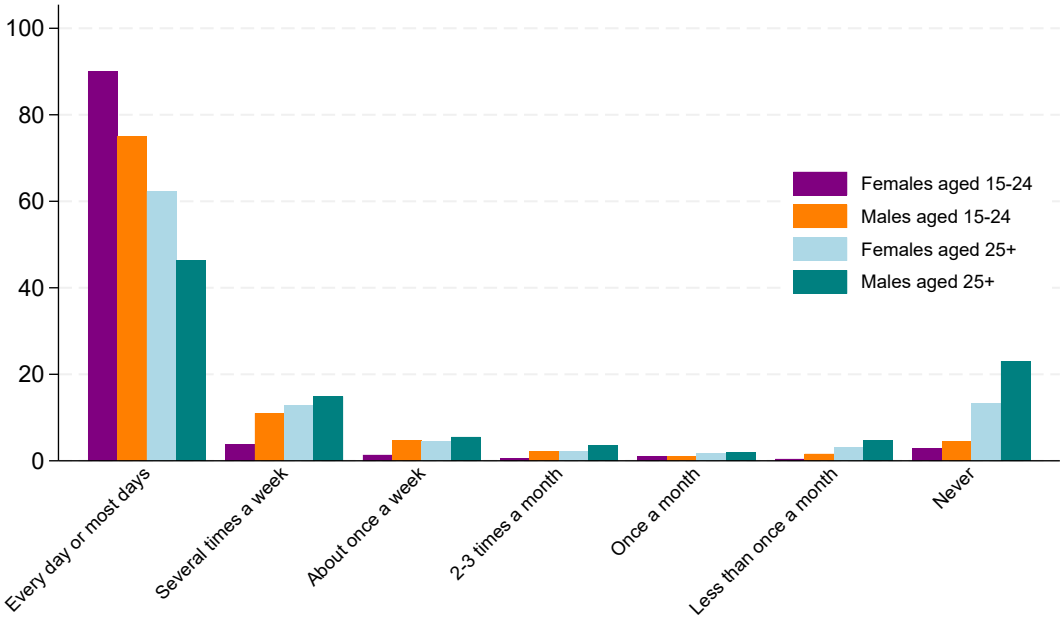
Notes: Shaded bar indicates years between 1995 to 1999
Sources: e61 Institute; HILDA Survey Release 22.0

The trend in self-reported mental health for young women born in the late 1990s suggests social media may have a role to play. Women and girls born during the 20 years since the late 1990s would have experienced their teenage years during the most notable moments in the adoption and growth of photo and video-sharing social media platforms. This generation grew up during pivotal changes in social media platforms, such as the:

- Introduction of the 'like' button on Facebook in 2009;
- Launch of Instagram on Apple in 2010 and on Android in 2012;
- Launch of Snapchat in 2011 on Apple and on Android in 2012; and
- Introduction of video share function ('stories') on Snapchat in 2012 and Instagram in 2013.

The household survey data indicate that females aged 15 to 24 are much more likely to use social media every day compared to their male counterparts and older age groups (Figure 3). This suggests they are more vulnerable to the potential health-related impacts of social media. The HILDA Survey does not include data on usage of different social media platforms – not all platforms will have the same impact.

Figure 3: Social Media Usage by Age Group and Sex; 2020

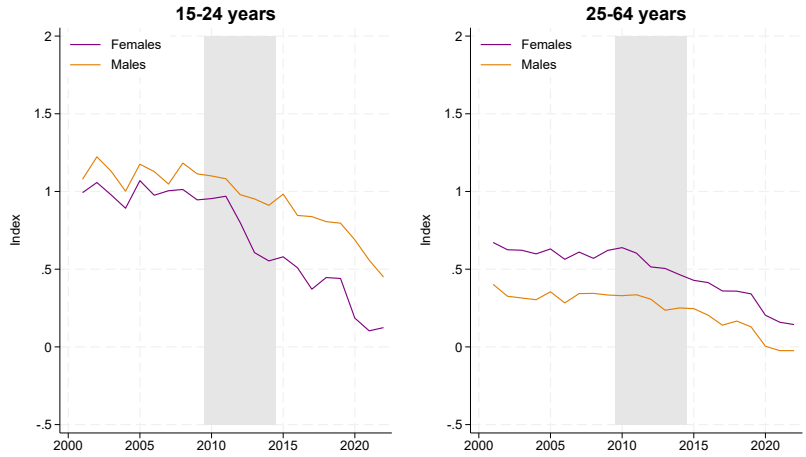


Sources: e61 Institute; HILDA Survey Release 22.0

4. The role of declines in friendship

A similar picture emerges when looking at subjective assessments of "isolation" among young people. A self-reported measure of friendship connections (which we refer to as the 'Friendship Index') also begins to decline sharply in 2012, particularly for young women, after a stable period (Figure 4).

Figure 4: Friendship Index By Age Group and Sex, 2001 to 2022



Notes: Friendship index based on responses to statement 'I seem to have a lot of friends'. Average score between -3 and 3. Higher scores indicate stronger sense of friendship. Shaded bars indicate years between 2010 and 2014
Sources: e61 Institute; HILDA Survey Release 22.0

Box 2: What is the Friendship Index?
The Friendship Index measures the extent to which respondents agree or disagree with the statement: 'I seem to have a lot of friends' on a scale from strongly disagree (a score of 1) to strongly agree (a score of 7). Higher scores correspond to a greater sense of friendship. The index is rescaled to vary between -3 and 3 for expositional purposes.

The average score fell from around 1 in 2011 to close to 0 by 2022 – this means that females aged 15 to 24 went from being likely to "agree" to being more neutral on whether they "seem to have a lot of friends." A similar decline emerges for their

male counterparts but to a lesser extent. Notably, this decline in the Friendship Index also coincides with declines in mental health documented above, as well as the widening of a gender gap in 2012 and onwards.

5. Declining mental health is linked to birth year and friendship

To examine potential drivers of the decline in mental health, we undertake regression analysis of the household survey data. The longitudinal nature of the survey lets us track mental health for a given individual over time and across different generations. The regression analysis indicates that two key factors could account for the decline in average mental health: 1) Birth cohort and 2) the Friendship Index. The analysis suggests that about half of the decline in average mental health between 2001 and 2022 is associated with people feeling more socially isolated and another half is linked to younger generations making up a bigger share of the Australian population over time. The detailed regression analysis is reported in Appendix A. The results are correlations and do not establish causality.

6. Conclusion

Overall, young women born since the late 1990s report much lower levels of mental health than earlier generations and compared to their male counterparts. This generation has lived their teenage years when photo and video-sharing social media platforms became popular in Australia. We also find that lower mental health is highly correlated with self-reported feelings of social isolation as measured through friendship connections.

But our research is not definitive. We need better data on the quantity and quality of individual Australians' social media usage to uncover the causal links between social media exposure and mental health.

A.1. Regression Analysis

To examine the drivers of lower mental health, we use regression modelling of the household survey data. Specifically, we estimate a linear (OLS) regression for a baseline model (Model 1):

$$MHEALTH_{it} = \alpha + \lambda_t + \epsilon_{it} \quad (1)$$

Where the dependent variable is the mental health ($MHEALTH_{it}$) of individual i in year t which is a self-reported score that varies between 0 and 100. The baseline model includes year dummies (λ_t) that capture how mental health evolves each year for the average Australian. The model also includes a white noise error term (ϵ_{it}).

We compare estimates from Model 1 to a model that also includes the Friendship Index (Model 2):

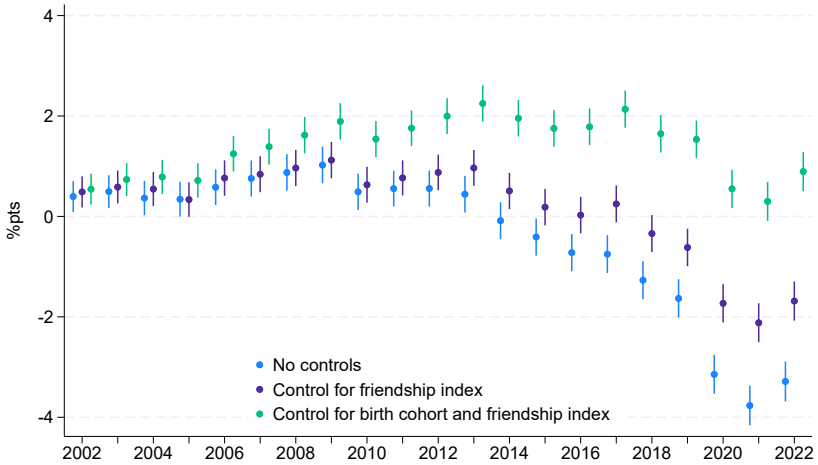
$$MHEALTH_{it} = \alpha + \beta FRIENDS_{it} + \lambda_t + \epsilon_{it} \quad (2)$$

This model includes the self-reported measure of friendship ($FRIENDS_{it}$) as proxied by the Friendship Index. We add a third model that also includes the birth year of every survey respondent (Model 3):

$$MHEALTH_{it} = \alpha + \beta FRIENDS_{it} + \sum_{j=1}^{N} \gamma_j BIRTH_{ij} + \lambda_t + \epsilon_{it} \quad (3)$$

This model adds a dummy variable for the birth cohort ($BIRTH_{ij}$) of each individual i born in the year j. The models are estimated on about 32,200 survey respondents over a sample period from 2001 to 2022 (with around 291,000 observations in total).

Figure A.1: Average Self-reported Mental Health Relative to 2001



Notes: Estimated year fixed effects from an OLS regression
Sources: e61 Institute; HILDA Survey Release 22.0

We illustrate the importance of friendship and birth year by comparing the time trends in each of the models. We plot estimates of the year dummies ($\hat{\lambda}_t$) for the 3 models. Self-reported mental health falls by 4 percentage points on average between 2001

and 2022 in the baseline model (the blue dots in Figure A.1). This corresponds to the raw data (shown in Figure 1). In Model 2, self-reported mental health falls by about 2 percentage points when the Friendship Index is held constant (the purple dots in Figure A.1). In Model 3, mental health is basically unchanged through the sample period when the Friendship Index and the birth cohort is held constant (the green dots in Figure A.1).

A.2. Disclaimer

HILDA Survey Disclaimer

This paper uses unit record data from Household, Income and Labour Dynamics in Australia Survey [HILDA] conducted by the Australian Government Department of Social Services (DSS). The findings and views reported in this paper, however, are those of the authors and should not be attributed to the Australian Government, DSS, or any of DSS' contractors or partners.