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FURTHER EVIDENCE ON THE GLOBAL DECLINE IN
THE MENTAL HEALTH OF THE YOUNG

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ABSTRACT

Prior to around 2011, there was a pronounced curvilinear relationship between age and wellbeing: poor mental health was hump-shaped with respect to age, whilst subjective well-being was U-shaped. We examine data from a European panel for France, Germany, Italy, Spain and Sweden called, Come-Here, for 2020-2023, plus data from International Social Survey Program (ISSP) surveys for 2011 and 2021 and some country-specific data. Mental ill-health now declines in a roughly monotonic fashion with age, whilst subjective well-being rises with age. We also show that young people with poorer mental health spend more time daily in front of a screen on the internet or their smartphone, and that within-person increases in poor mental health are correlated with spending more time in front of a screen. This evidence appears important because it is among the first pieces of research to use panel data on individuals to track the relationship between screen time and changes in mental health, and because the results caution against simply using the presence of the internet in the household, or low usage indicators (such as having used the internet in the last week) to capture the role played by screen time in the growth of mental ill-health.

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1. Introduction

There is a growing literature suggesting that there has been a decline in the wellbeing of the young in the years since the Great Recession, particularly among young women, although the trend is also apparent among young men. This decline is apparent in Australia (Botha et al., 2023), Canada (Garriguet, 2021) the UK (Banks and Xu, 2020) and the United States (Blanchflower, Bryson and Xu, 2024; Twenge, 2020; Udupa et al., 2023) and, indeed, across a number of other countries (Rausch and Haidt, 2023; Haidt, 2024a, 2024b; Blanchflower Bryson and Xu, 2024).

There is some debate as to whether the declining mental health of the young reflects an underlying deterioration in young peoples' health, or is driven, at least in part, by an increased willingness to report mental ill-health due to a reduced social stigma attached to doing so (Corredor-Waldron and Currie, 2023). If there is reduced stigma in reporting mental ill-health it is possible that the data are now more accurately reflecting underlying mental health problems that were previously under-recorded due to stigma. However, there are a number of reasons to question this proposition.

First, increases in reported poor mental health among the young have coincided with an increase in suicide among the young over the same period (Udupa et al., 2023). In the United States suicide rates of young women have risen. According to Garnett and Curtin (2023) suicide rates rose from 3.9/100000 in 2010 to 6.1 in 2021 for females aged under-25 and from 16.9 to 23.8 for young males. Ormiston, Lawrence, Sulley et al. (2024) noted suicide rates increased from 1999 to 2020 for all racial and ethnic groups in the United States, but that the increasing rates of firearm, poisoning, and hanging and asphyxiation suicides among American Indian and Alaska Native, Black, and Asian and Pacific Islander youth was particularly concerning.

Recently Twenge has noted that the suicide rate of young men ages 20-29 in the United States is the highest of any male age group.¹ There is also evidence from Canada that the rate of youths with mental health visits rose from 11.7/1000 in 2003 to 13.5 in 2009 (15%) and to 24.1 (78%) by 2017 (Gardener et al., 2019). Gardener and co-authors note that since 2010 there has been a 138% increase in self-harm hospitalization for 13-17-year-old girls (from a low of 294.0 per 100,000 teens in 2010 to a high of 701.6 per 100,000 in 2017). Boys show an increase too, but from a much lower baseline, and there is no spike around 2012.

Yard et al (2022) reported on unsuccessful suicide attempts in the United States in Covid. During February 21–March 20, 2021, suspected suicide attempt Emergency Department visits were 51% higher among girls aged 12–17 years than during the same period in 2019; among boys aged 12–17 years, suspected suicide attempt ED visits increased 3.7%. Marcotte and Hansen (2024) noted that in the US among 15-year-olds, suicide rates almost doubled after 2010 - from 4.1 per 100,000 in 2010 to 6.2 in 2015 and 7.2 in 2020. Suicide rates increased from 11.5 to 14 to 15.6 per 100,000 over the same years among 20-year-olds.

Second, it is unclear why the 'stigma' effect would apply more to the young people, and young women in particular, compared with other groups in the population.

¹ Jean M. Twenge (2024), 'Suicide rates are now higher among young adults than the middle-aged', After Babel. April 24.

Third, a gradual decline in the stigma of reporting might help explain gradual increases in poor mental health among the young but, as we show in this paper and has been shown elsewhere, the trend has been quite abrupt, not gradual. As Corredor-Waldron and Currie (2023) note:

“We expect that reductions in the stigma associated with mental health conditions may have both increased the propensity to seek treatment and reduced doctors’ reluctance to make mental health diagnoses. However, both of these changes are expected to have taken place gradually. Hence, while they can explain a general upward trend in diagnoses, they probably cannot explain sharp jumps” (our italics)

This paper extends the recent literature by focusing on evidence from three European surveys to establish whether trends reported in previous studies can be replicated. We then examine the association between mental health and the use of the internet and cellphones to establish whether there is a partial correlation between screen time and social media and the rise of poor mental health among the young. This issue has come to prominence, in part, because the growth in access to the internet and cellphones, and the explosion in social media, including increasing screen time, has coincided in time with the growth in mental ill-health of the young.

2. Previous Literature

2.1: Trends in Mental Ill-health by Age

In recent research Blanchflower, Bryson and Xu (2024b) analyze trends in mental health in the United States using the Behavioral Risk Factor Surveillance System Surveys (BRFSS) and showed a deterioration in mental health, especially for women, from around 2011. The authors undertook a similar analysis with for the UK using the UK Household Longitudinal Survey (UKHLS) and the UK Annual Population Survey and found very similar results. The paper finds that the hump-shape in ill-being as shown in Blanchflower (2021) and the U-shape in well-being in Blanchflower (2020) has disappeared in both the UK and the US and has been replaced with a linear decline in age. Of further note is they found confirming evidence of declining ill-being in age in 34 countries using data from the Global Minds database of 2020-2024.

Blanchflower and Bryson (2024a) show that Adverse Child Experiences (ACEs) are strongly and significantly associated with mental health in adulthood. Their evidence is taken from eight BRFSS surveys from 2009-2023 which contain a special supplement asking respondents to recall abuse in their childhood. ACEs were strongly correlated with poor mental health among both the young and older people and the effect is additive. The impact of living with a household member with poor mental health was large relative to other ACEs and was particularly pronounced among younger people. The paper also finds poor mental health is on the rise in the United States, particularly among young women. This upward trend among the young is apparent from the National Health Interview Surveys 1997-2021, the Healthy Minds surveys of 2007-2023 and the Youth Risk Behavior Surveillance System of 1999-2021, for high school students.

Whether the prevalence of ACEs or sensitivity to ACEs can help explain changing patterns in mental ill-being across age groups or cohorts is a moot point. There is, to this point, little reliable evidence regarding the incidence over time of ACEs collected prospectively across cohorts. Nor is there evidence regarding change in the negative impact of a given ACE, or ACEs, on individuals’

mental health. What we do know is that ACEs have a very marked scarring effect on individuals' mental ill-being into adulthood. Evidence for this comes from the analysis by Blanchflower and Bryson (2024b) who use data for Europe and the United States to examine the impact of a number of ACE variables on wellbeing in later life. Death of a parent, parental separation or divorce, financial difficulties, the prolonged absence of a parent, quarreling between parents, parental unemployment, sexual assault, experiencing long-term health problems, being bullied at school and being beaten or punched as a child were all found to have long-term impacts on wellbeing.

The evidence of ACEs impacting adult wellbeing outcomes was consistent across 50 different wellbeing measures including sixteen positive affect measures (including happiness, life satisfaction and satisfaction with family and social life), and twenty-six negative affect measures such as the GHQ6, high blood pressure, loneliness, being down and depressed and tired. In addition, it was found that childhood adversity impacts views on the area where the respondent lives in eight variables, including unemployment, drugs, violence and vandalism plus democracy in their country.

One potential criticism of the study by Blanchflower and Bryson (2024a) is that it relies on retrospective recall of ACEs by those in adulthood. However, in an accompanying paper using the National Child Development Study (NCDS), which tracks a cohort of British people born in a single week in 1958 through to their early 60s, they find one of those ACEs – being bullied in childhood - collected prospectively in childhood impacted mental health and wellbeing across the life-course (Blanchflower and Bryson, 2024c). Bullying negatively impacted life satisfaction at ages 42, 46, 50 and 62 as well as several other wellbeing measures at ages 42, 50 and 55. It also significantly lowered the probability of having a job as an adult right through to age 62. These effects were independent of a number of other childhood experiences, such as whether the child reported that they got on well with their mother or father when they were 16, many of which also have persistent effects on outcomes in adulthood. A child who is bullied appears to carry scars for a lifetime. The concern is that this is suggestive that cyberbullying may have long-term harmful effects many decades later, including whether the bullied child was alive or not.

The findings in Blanchflower, Bryson and Xu (2024) and Banks and Xu (2020) regarding rising poor mental health in the UK are confirmed by other studies. Using repeated cross-section data for England, Scotland and Wales Pitchforth et al. (2019) found a consistent and significant increase, between 1995 and 2014, in the reporting of long-standing mental health conditions of children and young people aged from ages 4-24. The trend is more pronounced in England than in Scotland and Wales though this may reflect the fact that the surveys for both Wales and Scotland were only consistent from 2007 and 2008 respectively. Of especial focus in this study were the years 2011-14, where sensitivity analyses revealed that trends in this more recent period were broadly consistent with their found longer term trends, though there was some evidence of worsening psychological health and wellbeing for young adults.

Recent evidence from the National Health Service in the UK from Mental Health of Children and Young People in England 2023 - wave 4 follow up to the 2017 survey shows declining mental health of young people.² Below we report the percent classified as having a 'probable disorder'

² <https://digital.nhs.uk/data-and-information/publications/statistical/mental-health-of-children-and-young-people-in-england/2023-wave-4-follow-up/data-sets>

for three age groups 8-16; 17-19 and 20-23 both for girls and boys. The disorders are rising over time, especially among girls ages 17-19.

	2017	2020	2021	2022	2023
Ages 8-16					
Boys	12.6	16.9	17.4	19.4	20.8
Girls	12.4	17.2	18.0	18.5	19.8
Ages 17-19					
Boys	7.0	8.7	10.3	18.7	15.4
Girls	13.4	27.3	24.8	33.1	31.6
Ages 20-23					
Boys			10.9	10.2	14.5
Girls			22.6	28.3	29.0

A recent study by Marquez and Long (2021) investigated changes in life satisfaction, measured by Cantril’s 11-step ladder, of 15-year-old students between 2015 (n=312,038) and 2018 (n=331,587) using data from the Programme for International Student Assessment (PISA). In almost all cases girls reported lower scores than boys. They demonstrated a global decline in mean levels of life satisfaction which fell more among girls than among boys. They found a statistically significant decline in life satisfaction scores ($p<.001$) in 35 countries (Austria; Brazil; Bulgaria; Chile; Colombia; Costa Rica; Croatia; Czechia; Estonia; Finland; France; Germany; Hong Kong; Iceland; Ireland; Japan; Latvia; Lithuania; Luxembourg; Macao; Mexico; Netherlands; Peru; Poland; Portugal; Qatar; Russia; Slovakia; Slovenia; Switzerland; Turkey; UAE; UK, USA and Uruguay). The difference was not significant at that .001 level in nine countries - Czech Republic, Greece, Italy, Hungary, Montenegro, Spain, South Korea, Thailand and Taiwan.

In our analyses below, we focus on a subset of countries which includes Germany, where studies find somewhat contradictory trends in depression and the relative incidence of depression among men and women. Arias-de la Torre et al. (2021) report an increased prevalence of depression (measured using the PHQ-8) for females compared to males in almost all of 27 European countries between 2013 and 2015. Depression was particularly high in Germany, one of the countries covered in the COME-HERE data we examine below. Using ambulatory claims data covering a high percentage of the population, Steffen et al. (2020) report an increase of 26% in depression between 2009 and 2017, an increase that was higher for males than females. Mauz et al. (2023) found increases in depression symptoms in Germany between April 2019 and June 2022 across all demographic groups, and especially so for females and young adults ages 18-29.

Husky et al. (2023), using French data, found that the prevalence of major depressive episodes of young adults was basically stable between 2005 and 2017, but doubled from 2017 to 2021. Self-reported nervousness or anxiety has increased in the Swedish population from 31 percent in 2011 to 42 percent in 2021. It was reported in 20 percent of young women aged between 16 and 29 in 2021 versus 9 percent in 2011. For young men, also 16-29, there has been a similar increase, but at half the levels, from 5 percent in 2011 to 10 percent 2021.³ In the Czech Republic a study by the Czech National Institute of Mental Health (NUDZ) found that 40 percent of ninth-grade

³ <https://www.folkhalsomyndigheten.se/the-public-health-agency-of-sweden/living-conditions-and-lifestyle/mental-health/>

elementary school students showed signs of moderate to severe depression, and 30 percent of them have signs of anxiety. Girls are more affected.⁴

According to Zítková in 2021 “*the incidence of mental illness in the adult population has risen to almost 30 percent in the Czech Republic. By comparison, in 2017 it was around 20 percent.*”⁵ Portrebny et al (2024) found a clear increase in mental health problems among young females in Norway over the past few decades, while the trends were less marked for males. The results from a meta-regression analysis showed that across all surveys, mean symptom scores increased by 17% among females and 5% among males from 1992 to 2019.

Castelpietra et al. (2022) report that almost 17 million young people (19.8%) in thirty-one European countries, including the five COME-HERE countries, had a mental or substance use disorder in 2019. The authors also found that the prevalence of mental disorders increased over between 1990 – 2019, with notable increases observed in eating disorders, ADHD, and anxiety. Self-harm, in contrast, went down by at least 20% over the same period. Eating disorders, anxiety and depressive disorders were more prevalent among females than males.

A recent study from the World Health Organization (Cosma et al, 2023) of children ages 11, 13 and 15 across 44 countries found that girls reported worse outcomes for mental health and well-being than boys across all outcomes included in the 2021/2022 *Health Behaviour in School-aged Children* (HBSC) survey. Life satisfaction and mental well-being were higher among boys than girls across all three age groups in most countries and regions. Girls consistently reported higher levels of loneliness than boys. Almost twice as many 15-year-olds (13% for boys and 28% for girls) than 11-year-olds (8% for boys and 14% for girls) reported feeling lonely in the last year. Girls also reported more frequent health complaints than boys across all age groups.

De Looze et al (2020) examined wellbeing of adolescents in five of these surveys (2002, 2006, 2010, 2014, and 2018). They found declines between 2002 and 2018 in mental well-being of children ages 11, 13 and 15 (increasing psychosomatic complaints and declining life satisfaction) in Austria, Belgium (Flemish), Canada, Denmark, Finland, Ireland, the Netherlands, North Macedonia, Sweden, and Switzerland.

These studies indicate that increasing proportions of populations in North America, Europe and elsewhere are experiencing mental health problems, and that the trend is most pronounced among the young, particularly women. The trends are apparent across a range of ill-being metrics, as well as some behavioral outcomes. Most of the evidence comes from repeat cross-section studies, and there is a paucity of evidence as to what might lie behind these trends. Other research investigating mental health trends by age and age group presents a mixed picture and a need for more longitudinal assessments of change within person over time, something we undertake in this paper below.

2.2: A Role for Smartphone and Internet Usage?

⁴ https://www.irozhlas.cz/zivotni-styl/zdravi/deti-teenageri-nactileti-nactilety-deprese-trpi-uzkostmi-uzkosti-40-procent_2310100918_jar

⁵ <https://nasezdravotnictvi.cz/aktualita/kazdy-treti-dospely-trpi-dusevnmim-onemocnenim-na-odbornika-se-pritom-ceka-i-mesice>

One potential contributor to the rise in mental ill-health among the young is the rise of the smartphone and social media in general. The iPhone was unveiled in January 2007 and sold 4.7 million phones in Q32008, and the iPad was launched in January 2010. In Q12011 Apple sold 18.6 million iPhones, while Samsung sold 17.5m. Sales of smartphones worldwide rose from 122m in 2007; 297m in 2010; 472m in 2011; 690m in 2012; 970m in 2013; 1.2 billion in 2014 and 1.5 billion yearly since 2018. Launched in October 2010 Instagram had one million registered users in two months, 10 million in a year, and 1 billion by June 2018 (<https://about.instagram.com/about-us/instagram-product-evolution>).

A series of papers have argued that the rise in ill-being of the young is associated with – and even caused by - the rise in the use of the internet and smartphones (Haidt, 2024a, Twenge and Farley; Twenge and Martin, 2020; Twenge, Martin and Campbell, 2018 and Udupa, Twenge, McAllister and Joiner, 2023). Using the UK Millennium Study, a cohort born in 2000 and 2001 Twenge and Farley (2020) showed that hours spent on social media and Internet use were more strongly associated with mental ill-health than hours spent on electronic gaming and TV watching with girls showing stronger correlations than boys.

A related literature identifies cyber-bullying as one potential mechanism by which smartphone use adversely impacts young people's mental health. Rees et al. (2022) show that in the United States where anti-bullying laws were implemented, female students in middle and high school report an 8% reduction in the probability of having been a victim of bullying. Beneitoa and Vicente-Chirivellab (2020) find that after a mobile phone ban was implemented in two regions in Spain, average cases of bullying declined by 15-18% for 12-14 years old and 9-18% for 15-17 years old. Bohnert and Gracia (2021) found for Ireland that children aged 9. who spent more than 3 daily hours on TV/digital activities was associated with significant declines in child socioemotional well-being, with such effects being stronger in 2018 than they were in 2007.

The Government of Ireland (2023) examined the Irish My World Surveys of 2012 and 2019 and reported a rise in severe symptoms among children and adolescents ages 12-19. They found an increase in very severe symptoms was particularly significant among females: the percentage that reported very severe anxiety symptoms more than doubled from 8% to 19%, and the percentage that reported very severe depression symptoms more than doubled from 5% to 11%. In the case of boys, the rises for anxiety were 6% to 9% and for depression 3% to 5% respectively.

Blanchflower and Bryson (2024a) examined ill-being data from US high school students ages 14-18 from the Youth Risk Behavior Surveillance System (YRBSS) for the years 1999-2021. There was evidence of a dramatic rise in daily screen time of female high school students. In 2011 16 % said they spent 4 hours or more a day online; by 2021 the figure had risen to 61%; for boys the numbers were 22% and 53% respectively. Over the same years 2011-2021, the proportion of high school girl students saying they were 'sad or hopeless' every day over the prior two weeks, rose from 36% to 57% and for boys from 21% to 29%.

There are critics of this view that the rise in youth ill-being is due to what Haidt (2024a) calls the 'great rewiring.' Odgers (2024) has argued that this confuses causation with correlation.⁶ She

⁶ The debate is reminiscent of early debates regarding the harm to health caused by tobacco (Oreskes and Conway, 2011 and Brandt, 2012).

claims that “*there is no evidence that using these platforms is rewiring children’s brains or driving an epidemic of mental illness.*” Odgers goes on to claim that ringing of a false alarm “might distract us from effectively responding to the real causes of the current mental-health crisis in young people,” which, she suggests, are social ills such as racism, economic hardship, and the lingering impact of the 2008 Global Financial Crisis and its impact on children from poorer social backgrounds. Twenge that unemployment was going down from 2012 or so when most of the rise in youth unhappiness happened, suggesting the trends are the opposite to what you would expect if unemployment was driving up recession.⁷ Indeed, Twenge, Haidt et al (2021) dismiss the argument that unemployment and income inequality are predictors of rising levels of loneliness which has also been on the rise.

Haidt (2024b) counters and argues that Odgers is wrong to claim there is no evidence of causality and points to experiments showing positive effects when leaving social media (e.g. Alcott et al., 2020 and Brailovskaia, 2022). He also notes experiments that looked at Instagram’s negative impact on women (Lowe-Calverley and Grieve, 2021), including the finding that it is more harmful to women than Facebook (Engeln, Loach, Imundo and Zola, 2020). This is consistent with recent evidence from Norway from Abrahamsson (2024) who combined detailed administrative data with survey data on middle schools’ smartphone policies, together with an event study design. She found that banning smartphones significantly decreases the health care take-up for psychological symptoms and diseases among girls. Post-ban bullying among both boys and girls decreased. Additionally, girls’ GPA improved, and their likelihood of attending an academic high school track increases as a result of a smartphone ban. The effects were especially large for girls from low socio-economic backgrounds.

Haidt (2024b) also argues that Odgers’ theory cannot explain why rates of anxiety and depression were generally flat in the 2000s and then started to rise quickly four years after the start of the Global Financial Crisis. He asks, “*did life in America suddenly get that much worse during President Obama’s second term, as the economy was steadily improving? Her theory also cannot explain why adolescent mental health collapsed in similar ways around the same time in Canada, the UK, Australia, and New Zealand?*” This seems right.

In the remainder of the paper, we contribute to this literature by examining recent trends in mental health across a number of countries around the world, but with a particular focus on European countries where we rely on new panel data. We go on to examine the role screen time plays in mental ill-health. There is broad evidence across datasets and countries, that those aged under-25 are suffering from poorer mental health than their elders, and that screen-time is correlated with this poor mental health.

3. Data and Estimation

⁷ In private communication Jean Twenge has pointed out to us that if it were the economy, you’d expect bigger increases among working-age adults, less among late adolescents, and the least among younger adolescents. Instead, she argues, it’s the opposite; the largest increases are among younger adolescents. In a recent Substack post looking at middle-aged parents in national Survey of Drug Use and Health (NSDUH) Twenge (2024) finds that there basically no change in depression, mental distress, or suicidal thoughts among parents 35-64 in NSDUH. In BRFSS overall there’s only a tiny bump in poor mental health during the recession years, and once again increases are larger among young adults, present among 26- to 49-year-olds, and basically flat after 2012 for those 50+.
<https://jeanmtwenge.substack.com/p/this-group-is-the-most-likely-to>

We explore the issue of declining well-being of the young and internet usage with three data sets. We concentrate particularly on five European countries, France, Germany, Spain, Italy and Sweden, but start first with an international data file across many countries. We back those findings up with recent evidence from the Netherlands and New Zealand and a number of other countries.⁸

Our secondary analyses focus on two large-scale quantitative surveys:

- The International Social Survey Programme (ISSP) surveys of 2011 and 2021.
- The Come Here panel conducted by the University of Luxembourg of five European countries – France, Germany, Sweden, Spain and Italy, from 2020-2023.

3.1: The International Social Survey Programme (ISSP) 2011 and 2021

The International Social Survey Programme (ISSP) conducts annual surveys across countries on diverse topics relevant to the social sciences. Surveys are available from 1985 onwards (<https://issp.org/data-download/by-year/>). Established in 1984 by its founding members Australia, Germany, Great Britain and the US, the ISSP has subsequently grown to cover countries around the globe. We compare results of measures of positive affect (happiness) and three measures of negative affect (being unhappy and depressed; having lost confidence and could not overcome problems) over the prior 4 weeks which are included in both surveys. These are the only years these questions are available.

In 2011 the sample size was 55,081 and the survey was conducted across 33 countries (France; Belgium; Bulgaria; Chile; China; Taiwan; Croatia; Czechia; Denmark; Finland; France; Germany; Israel; Italy; Japan; Korea; Lithuania; Netherlands; Norway; Philippines; Poland; Portugal; Russia; Slovakia; Slovenia; South Africa Spain; Sweden; Switzerland; Turkey; UK; and the USA).⁹ The 2021 survey had a sample size of 27,276 across twenty countries (Croatia; Czech Republic; Denmark; Finland; Germany; Greece; Iceland; Israel; Italy; Japan; New Zealand; Norway; Philippines; Poland; Russia; Slovakia; Slovenia; Switzerland; Taiwan and Thailand). The data for Greece was not included in the overall file release due to deviations from the ISSP rules but is available for download so we include it here.¹⁰

In both 2011 and 2021 the ISSP surveys included a Health and Healthcare module, which included the same questions, and the reason for our choice of these years. It also included a 7-step happiness question:

Q1. If you were to consider your life in general these days, how happy or unhappy would you say you are, on the whole? Completely happy (1); very happy (2); fairly happy (3); neither happy nor unhappy (4); fairly unhappy (5); very unhappy (6) and completely unhappy (7).

⁸ We obtained data on the Netherlands from John Banks-Murdoch and from New Zealand as first reported by Raisch and Haidt (2024)

⁹ <https://www.gesis.org/en/issp/data-and-documentation/health-and-health-care/2011>

¹⁰ ISSP Research Group (2024). ZA8000 International Social Survey Programme: Health and Health Care II - ISSP 2021. GESIS, Cologne. ZA8000 Data file Version 1.0.0, <https://doi.org/10.4232/5.ZA8000.1.0.0>.

Both surveys also included three further 5-step questions on mental ill-being with the following possible responses: never; seldom; sometimes; often and very often. The three questions were as follows.

Q2. Past 4 weeks: felt unhappy and depressed?

Q3. Past 4 weeks: lost confidence?

Q4. Past 4 weeks: not overcome problems?

We are particularly interested in those reporting either often or very often, so we created a dummy variable set to 1 if a respondent is in either of those two categories, zero otherwise.

We run ordinary least squares (OLS) estimates for pooled countries for various wellbeing outcomes in 2011 and 2021 separately, identifying the age pattern with age group indicators. We capture the partial correlation having controlled for country fixed effects and a female dummy. We also run country-specific regressions where age is entered as a linear term due to smaller sample sizes.

3.2: The Come-Here Panel Survey 2020-2023

The Come-Here (COVID-19, Mental Health, Resilience and Self-regulation) survey – henceforth CH - conducted by the University of Luxembourg consists of representative samples (on the basis of age, gender and region of residence) of adults from France, Germany, Italy, Spain and Sweden. It is a longitudinal survey and includes information on individuals' living conditions, life events, and health during the pandemic, alongside standard sociodemographic characteristics such as age, gender, education, number of children in the household, labor-force status, and country of residence. The dataset has been used by other studies including Clark and Lepinteur (2022) and Jabakhanji et al. (2022).

We analyze eleven CM survey waves, spanning just above three years following the COVID-19 outbreak at roughly three to six-month intervals: April, June, August and November 2020, March, June and October 2021, February, June and November 2022 and June 2023. There were 8,063 respondents in Wave 1, 86 percent of whom participated in at least one other survey wave. With attrition rising (only 4,271 respondents participated to Wave 6), a refreshment sample has been reached out in Wave 7 to make the French, German, Italian, Spanish and Sweden samples nationally representative again. Note that we use attrition weights throughout the analysis when relevant to guarantee national representativeness of our analysis samples when we report means.

We have available to us three main wellbeing variables, the PHQ9, GAD7 and life satisfaction. Life satisfaction is a twelve-step variable.

Q5. “Overall, in the past week, how satisfied have you been with your life?” using a standard 10-point Likert scale from 0=not at all to 10=completely.

The PHQ9 is the sum of nine variables relating to depression with each sub-component coded from 0 to 3, in response to the following questions.

Q6. Over the last 2 weeks how often have you been bothered by any of the following problems - Not at all (0), several days (1), more than half the days (2) nearly every day (3)

PHQ1=Little interest or pleasure in doing things?

PHQ2 =Feeling down, depressed, or hopeless?

PHQ3=Trouble falling or staying asleep, or sleeping too much?

PHQ4=Feeling tired or having little energy?

PHQ5=Poor appetite or overeating?

PHQ6=Feeling bad about yourself — or that you are a failure or have let yourself or your family down?

PHQ7=Trouble concentrating on things, such as reading the newspaper or watching television?

PHQ8=Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual?

PHQ9=Thoughts that you would be better off dead or of hurting yourself in some way?

The PHQ9 total variable is thus coded from 0 to 27. The GAD7 anxiety variable is the sum of seven anxiety variables also coded from 0 to 3.

Q7. Over the last 2 weeks how often have you been bothered by any of the following problems - Not at all (0), several days (1), more than half the days (2) nearly every day (3)?

GAD1 Feeling nervous, anxious or on edge?

GAD2 Not being able to stop or control worrying?

GAD3 Worrying too much about different things?

GAD4 Trouble relaxing?

GAD5 Being so restless that it is hard to sit still?

GAD6 Becoming easily annoyed or irritable?

GAD7 Feeling afraid as if something awful might happen?

The GAD variable is coded from 0 to 21 which allows classification into four anxiety groupings: i) minimal ii) mild iii) moderate iv) severe.

4. Results

4.1: ISSP and Supporting Evidence from Other Countries around the World

In column 1 of **Table 1** we estimate a happiness regression with ISSP data for pooled countries in 2011. The equation includes five year-dummies, with age 15-24 excluded along with a gender dummy and a full set of country dummies, with Australia the excluded category. Happiness declines in age, with the youngest being the happiest. There is no gender effect. Switzerland is the happiest country with the largest positive coefficient (+.157) and Lithuania the least happy, with the largest negative coefficient (-.803).

In columns 2-4 of **Table 1** we regress these three negative affect variables in turn on the age, gender and country dummies. In all cases the female variable is significantly positive which is a standard finding in the unhappiness literature (Blanchflower and Bryson, 2024c, 2024d). Consistent with the happiness result which shows happiness declining in age, mental ill-health rises with age as the coefficients on age get larger the older the individual is. In the unhappiness and depressed equation Turkey is the most unhappy (+.069) and Switzerland the least unhappy.

Table 2 now performs a similar exercise with the same questions across 20 countries with Taiwan the excluded nation, using the 2021 ISSP. Remarkably now though, for each of the three negative affect variables, ill-being declines with age. The female coefficient is insignificant for happiness but positive and significant for the three negative affect variables. Once again happiness is U-shaped in age. This is consistent with findings in the ISSP using life satisfaction. In Blanchflower (2020) 7-step life satisfaction equations were estimated using the 2012 and 2017 ISSP surveys. We re-estimated those equations in the 2017 file in a regression containing age dummies, gender and country dummies. As with happiness in the 2021 ISSP the life satisfaction continues to decline with age through mid-life and then rise.¹¹

Chart 1 reports the results of regressing the percentage who say that, over the past four weeks, they were often or very often unhappy and depressed on gender, plus a full set of age and country dummies for each of the two ISSP surveys, for 2011 and 2021. We simply added the constant to the excluded values, starting at age 18 in each year. Remarkably, the two lines cross: that for 2011 slopes upwards in age, that for 2021 slopes down in age. Something has changed in the intervening years, and that of course is the mental health of the young.

In **Table 3** we report country-level results using each of the three negative affect 1,0 dummy variables. For simplicity, given the small numbers of observations per country, age is entered as a linear term. The table reports its coefficient and t-value. In the advanced countries the age variable is mostly significant and negative, consistent with what was found in Blanchflower and Bryson (2024a) using the Global Minds, 2020-2024 data. This includes Denmark, Finland, Germany, Greece, Iceland, Israel, Italy, New Zealand, Norway, Slovenia and Switzerland. The age variable is significantly positive in Russia and Croatia and insignificant in Taiwan, Czechia, Italy, the Philippines, Poland, Slovakia and Thailand.

As supporting international evidence, **Table 4** reports on data for the Netherlands between 2010 and 2021.¹² It shows a dramatic rise in the percent reporting they are mentally unhealthy or have ever been anxious over the last twelve months. The proportion of those aged 16-19 and 20-29 saying they were mentally unhealthy doubled between the two surveys. In the first period mental unhealthiness rose with age and in the later period it fell with age. A similar picture emerges with anxious in the prior year. Supporting evidence for a decline in adolescent wellbeing in the Netherlands is provided by de Looze et al (2020) using the Dutch Health Behaviour in School-aged Children study (N = 21,901). They found that adolescent emotional wellbeing slightly declined over time while life satisfaction was lower in 2017 versus 2005 and was lower for girls than boys.

Table 5 reports consistent results for New Zealand which show that one in four (23.4%) females aged 15–24 years experienced high or very high levels of psychological distress, up from 6.2% in 2011.¹³ For young males the rise was from 4.0% to 17.5%. By 2022 the incidence of high or very

¹¹ The coefficients on the age dummies in a regression for ages <75 (n=40395) with country dummies and age are as follows with t-statistics in parentheses with 15-24 the excluded category – 25-34 -.088 (3.89); 35-44 -.133 (5.97); 45-54 -.150 (6.76); 55-64 -.162 (7.26); 65-74 -.086 (3.78).

¹² We thank John Burn-Murdoch for pointing out these data to us.

¹³ https://minhealthnz.shinyapps.io/nz-health-survey-2022-23-annual-data-explorer/_w_ae685d5a/#!/key-indicators

high levels of psychological stress in New Zealand is higher for young men and women ages 15-24 than it is for any other age group. The incidence of psychological distress declines in age.

4.2: Evidence from Five European countries - France, Germany, Italy, Spain and Sweden

In this section we turn to survey evidence from Come-Here and the GWP on five European countries (France, Germany, Italy, Spain and Sweden) where other studies indicate a rise in ill-being among the young.

Spanish data from a global survey, UNICEF (2022), indicate that 36% of young university students suffer from a mental health problem and 13.6% of young people aged between 14 and 18 consumed tranquilizers, sedatives and sleeping pills in 2021; data that comes from a nationally representative sample consisting of 22,321 questionnaires answered by students aged 14 to 18 years in 1,311 classrooms from 523 public and private secondary schools (Spanish Observatory on Drugs and Addictions 2021). All-in-all the study estimates that over 20% of those aged 10-19 suffer from a diagnosed mental health problem.

For Germany data from a large insurance company found an increase in the incidence of females ages 12-17 with eating disorders (anorexia nervosa and bulimia nervosa) increased by over 30 percent between 2020 and 2021 (KKH, 2023). The actual prevalence figures, which come from a survey of over 1,000 parents, are not large, but do point to a worrying trend which they attribute to both COVID-19 and changes in how and how often social media is used. Further data from the same organization provides evidence of an increasing trend of absenteeism due to mental illness, which has even increased in comparison to the figures recorded during the pandemic. Another study from Germany shows that young females have caught up with young men regarding risky alcohol consumption, a trend that has been increasing since 2015.

In Italy, recent statistics highlight that adolescents have suffered the most of any age group due to the pandemic and the events of the last 3 years, with anxiety (28%), depression (23%), loneliness (5%), stress (5%) and fear (5%) being the most frequently encountered mental health problems (European House, 2022). This was further linked to a decrease in academic performance and dropping out of school.

Table 6 reports on the proportion of the population reporting chronic depression in the past 12 months based on the PHQ score. These data are from the second and third wave of the European Health Interview Survey (EHIS), conducted in 2014 and 2019 respectively covering people ages 15-24. Data are provided separately by gender. For previous work with these data see Hapke, Cohrdes and Nübel (2019) and Arias-de la Torre et al. (2021). It is apparent that chronic depression has risen over time in the EU as a whole, from 3.6% to 4.6% for both men (from 2.6% to 3.5%) and especially for women (from 4.7% to 5.7%). It rose between 2014 and 2019 for both men and women in France, Germany, Italy, and Sweden and for males in Spain but fell for Spanish females.

Chart 2 uses Eurostat data and reports on the percent of young people ages 16-29 who have a long-standing illness or health problem. In almost all countries females have higher rates of disability than men. Consistent with the evidence above Italy has the lowest rate. Of interest is that the

pattern in this chart is consistent with that for chronic pain in Table 6 where the lowest incidence of our five countries is in Italy and the highest in Sweden, followed by Germany.

4.3: Come-Here panel survey, 2020-2023 for France, Germany, Italy, Spain and Sweden

The PHQ depression total score is distributed in the CH surveys as follows overall and for the young with the scores allowing respondents to be grouped into six categories none ii) minimal iii) mild iv) moderate v) moderately severe and vi) severe.¹⁴ So 25% of young females, 22% of young males, and 10% males ≥ 25 and 13% of females ages 25 and over have moderately severe or severe depression (scores ≥ 15).

PHQ Total Score Depression Severity	<25	<25	≥ 25	≥ 25
	Men	Women	Men	Women
0	12	7	28	17
1-4 Minimal depression	18	17	32	29
5-9 Mild depression	22	27	20	26
10-14 Moderate depression	26	24	11	14
15-19 Moderately severe depression	16	18	7	9
20-27 Severe depression	6	7	3	5

The table below suggests 13% of young women have severe anxiety compared with 9% for young men 8% for older women and 5% for older men.

GAD Anxiety severity	<25	<25	≥ 25	≥ 25
	Men	Women	Men	Women
0-4 minimal anxiety	35	25	60	46
5-9 mild anxiety	29	34	24	30
10-14 moderate anxiety	27	28	12	16
15-21 severe anxiety	9	13	5	8

Chart 3 simply plots the two series by age, and they slope down while life satisfaction slopes up with age. **Chart 4** plots high depression – defined as PHQ9 ≥ 15 and high anxiety where GAD7 > 14 and the results of PHQ9 which relates to suicidal thoughts, by age. All slope downwards. Now wellbeing rises with age and illbeing, whether measured as depression, anxiety or suicidal ideation, declines in age. As noted in Blanchflower, Bryson and Xu (2024) this means that there is no longer a mid-life crisis – happiness is no longer U-shaped in age and unhappiness is no longer hump shaped in age.

Table 7 uses the CH surveys with all waves pooled and in turn we report regressions using the PHQ and GAD scores. We then create 1,0 dummies when PHQ is ≥ 15 or GAD ≥ 15 and finally used life satisfaction as dependent variables and the results are the same. In all five negative affect variables in the first four columns ill-being declines with age and it rises with age for life satisfaction. **Appendix Table 1** reports the equivalent results for each of the nine individual components of the PHQ score. **Appendix Table 2** does the same for the seven GAD components

¹⁴ Noting that the PHQ9 scores are classified as follows Total Score Depression Severity = 1-4 Minimal depression; 5-9 Mild depression; 10-14 Moderate depression; 15-19 Moderately severe depression; 20-27 Severe depression.

In part b) of the table, we regressed the PHQ, GAD and life satisfaction on an age variable, gender and wave dummies for each of the five countries. For PHQ and GAD age variable enters negatively and is positive and significant for life satisfaction in all five countries. All of the coefficients have large t-values and are statistically significant.¹⁵

We took the PHQ and GAD7 total scores in turn and pooled the waves and regress them on wave dummies and extract the people fixed effects. We then simply tabulated them by age bands below which show they decline with age, consistent with our earlier findings.

	PHQ9	GAD7
<25	3.651	2.852
25-34	2.513	2.026
35-44	1.048	.959
45-54	.313	.283
55-64	-1.522	-1.257
≥65	-2.374	-1.972

Chart 5 plots the fixed effects by single year of age, which clearly slopes downwards.

In **Table 8** we further examine data from the Come Here survey on screen time per day for those aged under 25. The question asked is as follows.

Q17. *“How much time did you spend using media, like TV, internet, on an average weekday? Include only recreational use, not use for work/school”.*

Respondents were given the following options: 0, 0.5, 1, 1.5, 2, 2.5 ... 23, 23.5, 24 hours per day. We report mean screen time hours per day for those aged under-25 according to their responses on depression (PHQ) and anxiety (GAD7). We see in **Table 11** that for all countries reported screentime rises among those with the most severe depression and anxiety. This finding differs from other papers such as Graham and Nikolova (2013) and Vuorre and Przyblski (2024) who include dummy variable measures of access to internet and cellphones in wellbeing equations using the Gallup World Poll, with no account taken of the extent of technology usage. They find that technology access is positive for well-being, not least as the availability of the internet and cellphones are likely proxies for income. Graham and Nikolova (2013) did find signs of increased stress and anger among cohorts for whom access to the technologies was new.

Finally in **Table 9** we run equations for six mental health outcomes - the PHQ and GAD7, high depression and high anxiety, suicidal thoughts (PHQ9 which is thoughts that you would be better

¹⁵ In **Appendix Table 3** we used data from the Gallup World Poll, 2020-2023 – see Helliwell et al (2024) - for these five countries with eight different dependent variables starting with the Cantril’s 11-step ladder and then seven (1,0) dummies relating to whether the respondent experienced the following feelings *“during a lot of the day yesterday? Enjoyment/sadness/stress/worry/pain– Yes/No and Did you smile or laugh a lot yesterday Yes/No? Were you well-rested yes/no?”* These results look very different from those using Come Here and show no evidence of declining ill-being by age. The use of dependent variables that are (1,0) dummies are likely a major part of the explanation. Blanchflower and Bryson (2024f, 2023) discuss reasons why GWP is an outlier.

off dead or of hurting yourself in some way) and life satisfaction. We pool the CM data across the five countries and incorporate wave fixed effects.

For each of the six outcomes there are two model variants. The first treats the data as repeat cross-sectional data which allows us to incorporate country fixed effects, a female dummy variable, and age categories for individual respondents. For all the metrics mental ill-health is highest among the under-25s, and life satisfaction is lowest among the under-25s. Women have poorer mental health than men, and lower life satisfaction, but they are also less likely to be suicidal. Of particular note is the daily time individuals spend in front of a screen. Four hours or more in a day in front of a screen increases depression and anxiety and lowers life satisfaction, whilst six or more hours is positively associated with suicidal thoughts.

The second model variant uses the panel component of the data by incorporating person fixed effects, so that estimates capture change in mental health within person over time. Consequently, fixed traits such as age and sex drop out of the model, together with country fixed effects. What remains is screen time, which is time-varying. These panel models confirm that mental health deteriorates as an individual spends more time in front of a screen.

Depression and anxiety rise when individuals have spent at least four hours in a day in front of a screen. The threshold is a little higher for high depression (6+ hours), and a little lower (2+ hours) for dissatisfaction with life. Within-person variance in suicidal thoughts and high anxiety are unaffected by screen time. These findings are important because they are among the first to indicate that it is not screen time, per se, that can generate lower wellbeing. Rather, declining mental health is associated with substantial daily screen time.

The results caution against simply using the presence of the internet in the household, or low usage indicators (such as having used the internet in the last week) to capture the role played by screen time in the growth of mental ill-health. Although we cannot establish whether the association runs causally from screen time to poorer mental health, or whether those with poorer mental health are more likely to resort to more time on the internet and their smartphone, we do know that the association is not driven by fixed character and other traits across individuals.

5. Discussion and Conclusions

In this paper we have added to the growing empirical evidence that there has been a fundamental shift in the relationship between age and one's mental health. Well-being improves with age. Ill-being, or unhappiness, declines with age. Prior to around 2011, there was a pronounced curvilinear relationship between age and wellbeing: poor mental health was hump-shaped with respect to age, whilst subjective well-being was U-shaped. Using data from Come Here for France, Germany, Italy, Spain and Sweden, the ISSP for many countries and some country-specific data for the Netherlands and New Zealand in particular, we confirm that this relationship changed fundamentally in recent years such that mental ill-health now declines in a roughly monotonic fashion with age, whilst subjective well-being rises with age.

This pattern of declining ill-being of the young in recent years has also been shown in a number of other countries (Blanchflower, Bryson and Xu, 2024 for the US and the UK and 34 other countries using the Global Minds dataset, 2020-2024; Blanchflower and Bryson 2024c for the US,

including for high school and college students, and Botha, et al, 2023 for Australia and Garriguet, 2021 for Canada). Overall, we have evidence of declining ill-being through age in 47 countries.¹⁶

We go on to show that those with poorer mental health spend more time daily in front of a screen on the internet or their smartphone, and that within-person increases in poor mental health are correlated with spending more time in front of a screen from the Come Here Surveys for France, Germany, Italy, Spain and Sweden. This evidence is especially apparent for young women, and it seems to have started in 2011, predating the COVID lockdowns. The deterioration in the mental health of the young does not seem to be driven by the Great Recession either. Our evidence appears particularly important because it is among the first pieces of research to use panel data on individuals to track the relationship between screen time and changes in mental health.

The vanishing well-being of the young appears to be global. The waning seems to have started in 2011 just as there was a rapid pick up in both internet and smart phone use. The decline in mental health appears to be most rapid among young women ages 14-24 who had the most rapid rise in screen time. Investigating a potential causal link between screen time and declining mental health of the young is an urgent priority for social scientists.

¹⁶ Algeria; Angola; Argentina; Australia; Austria; Brazil; Canada; Chile; Colombia; Croatia*, Denmark*, Ecuador; Egypt; Finland*, France; Germany; Greece*, Guatemala; Iceland*, India, Iraq; Israel*; Italy; Japan*; Jordan; Mexico; Morocco; Netherlands; New Zealand; Nigeria; Norway*; Pakistan; Paraguay; Peru; Philippines; Saudi Arabia; Slovenia*, South Africa; Spain; Sweden; Switzerland; Tunisia; UK; Uruguay; USA; Venezuela and Yemen. 32 of these countries were found using Global Minds data in Blanchflower, Bryson and Xu (2024). Those marked with * were from ISSP 2021 (our [Table 3](#)) and Netherlands, from our [Table 4](#) for mentally unhealthy in 2021 and Sweden was from the Come Here data file (our [Table 7](#)).

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Table 1. Pooled country poor mental health regressions. ISSP 2011 where set to 1 if often, very often. Happiness is 7-step score.

	Happiness	Unhappy	Problems	Confidence
25-34	-.0751 (3.88)	-.0021 (0.40)	-.0094 (2.02)	-.0056 (1.29)
35-44	-.1709 (9.07)	-.0053 (1.03)	-.0077 (1.71)	-.0121 (2.84)
45-54	-.2980 (15.86)	.0172 (3.32)	.0114 (2.53)	-.0006 (0.16)
55-64	-.2976 (15.59)	.0219 (4.14)	.0058 (1.27)	-.0011 (0.25)
65-74	-.3324 (16.49)	.0252 (4.50)	.0158 (3.24)	-.0054 (1.18)
Female	-.0116 (1.17)	.0360 (13.04)	.0252 (10.50)	.0278 (12.27)
constant	5.5859	.0828	.0601	.0702
Adjusted R ²	.0543	.0126	.0127	.0123
N	43,959	48,154	48,018	47,094

Excluded, age 15-24 and age<75. All equations include country dummies for Australia; Belgium; Bulgaria; Chile; China; Croatia; Czechia; Denmark; Finland; France; Germany; Israel; Italy; Japan; Korea; Lithuania; Netherlands; Norway; Philippines; Poland; Portugal; Russia; Slovakia; Slovenia; South Africa; Spain; Sweden; Switzerland; Taiwan; Turkey; UK and USA. T-statistics in parentheses.

Table 2. Pooled country poor mental health regressions. ISSP 2021 where set to 1 if often, very often. Happiness is 7-step score.

	Happiness	Unhappy	Problems	Confidence
25-34	-.0031 (0.12)	-.0257 (3.35)	-.0390 (5.61)	-.0355 (5.28)
35-44	-.0477 (1.81)	-.0618 (8.24)	-.0669 (9.84)	-.0740 (11.24)
45-54	-.1318 (5.06)	-.0767 (10.36)	-.0744 (11.07)	-.1008 (15.51)
55-64	-.1237 (4.77)	-.0737 (9.98)	-.0776 (11.59)	-.1020 (15.74)
65-74	-.1131 (4.19)	-.0917 (11.95)	-.0858 (12.32)	-.1197 (17.75)
Female	.0140 (1.09)	.0314 (8.56)	.0224 (6.72)	.0290 (9.00)
constant	5.2575	.1135	.0981	.1103
Adjusted R ²	.0535	.0325	.0234	.0412
N	26,218	26,369	26,222	26,234

Excluded, age 15-24 and age<75. All equations include country dummies for Croatia; Czechia; Denmark; Finland; Germany; Greece; Iceland; Israel; Italy; Japan; New Zealand; Norway; Philippines; Poland; Russia; Slovakia; Slovenia; Switzerland; Taiwan and Thailand. T-statistics in parentheses.

Table 3. Country level age effects age <75. ISSP 2021.

	Unhappy	Problems	Confidence	N
All	-.0016 (13.13)	-.0013 (12.39)	-.0017 (18.48)	24,683
Germany	-.0026 (4.14)	-.0023 (4.56)	-.0020 (5.58)	1,481
Italy	.0001 (0.24)	-.0007 (1.44)	-.0002 (0.52)	947
Croatia	.0013 (3.01)	.0016 (3.44)	.0011 (2.63)	1,071
Czech Republic	-.0000 (0.02)	-.0002 (0.38)	-.0001 (0.21)	1,153
Denmark	-.0027 (5.35)	-.0027 (5.53)	-.0038 (8.59)	1,475
Finland	-.0044 (7.60)	-.0026 (5.36)	-.0049 (9.85)	967
Greece	-.0046 (6.10)	-.0032 (4.79)	-.0066 (9.90)	1,668
Iceland	-.0045 (6.38)	-.0042 (6.71)	-.0045 (8.79)	958
Israel	-.0030 (4.08)	-.0022 (3.28)	-.0029 (5.08)	1,148
Japan	-.0022 (3.86)	-.0022 (3.30)	-.0016 (3.06)	1,188
New Zealand	-.0031 (4.37)	-.0031 (4.89)	-.0036 (7.03)	820
Norway	-.0028 (5.66)	-.0025 (4.98)	-.0026 (6.52)	1,390
Philippines	.0005 (0.15)	-.0004 (1.60)	-.0060 (2.76)	1,740
Poland	.0006 (1.23)	.0007 (1.56)	-.0003 (1.10)	997
Russia	.0009 (2.04)	.0012 (2.60)	.0008 (2.13)	1,533
Slovakia	-.0006 (1.42)	.0001 (0.16)	-.0002 (0.52)	969
Slovenia	-.0020 (3.13)	-.0027 (4.75)	-.0022 (4.80)	930
Switzerland	-.0031 (8.46)	-.0026 (7.91)	-.0025 (9.97)	2,968
Taiwan	-.0005 (1.16)	.0001 (0.36)	-.0001 (0.45)	1,498
Thailand	-.0002 (0.42)	-.0004 (1.04)	-.0001 (0.31)	1,450

These are the age coefficients and t-statistics of a regression of a 1,0 dummy for often or very often estimated for each country. Sample sizes refer to unhappy and depressed.

Table 4. Mental ill-health in the Netherlands

Age	Mentally unhealthy		Anxious last 12 months	
	2010	2021	2010	2021
12-15	5.6	7.8	6.4	8.3
16-19	10.8	20.6	14.5	16.6
20-29	9.7	20.5	12.9	23.1
30-39	10.0	16.5	12.2	19.4
40-49	12.4	14.7	12.9	17.6
50-54	11.9	17.4	14	17.1
55-64	9.8	13.7	12.7	15.7
65-74	8.9	10.1	10.9	11.4
75+	17.2	13.1	10.3	9.2

Source: Statistics Netherlands. <https://opendata.cbs.nl/statline/#/CBS/en/>

Source for 2010:

<https://opendata.cbs.nl/statline/#/CBS/nl/dataset/81173NED/table?ts=1712667103473>

Source for 2021:

<https://opendata.cbs.nl/statline/#/CBS/nl/dataset/83005NED/table?ts=1669624345667>

Table 5. Psychological distress – high or very high % New Zealand

A) Males

	2011	2014	2017	2020	2021	2022
15-24	4.0	4.3	9.3	12.3	17.3	17.5
25-34	3.8	5.4	8.4	9.7	12.1	14.0
35-44	4.2	5.4	6.8	6.7	9.9	10.1
45-54	3.8	5.0	7.7	6.4	8.0	6.4
55-64	3.0	4.5	7.1	o5.6	7.8	8.9
65-74	3.2	3.4	3.3	2.9	3.0	4.1
75+	3.0	3.3	3.9	3.5	1.5	5.9
All	3.7	4.6	7.1	7.3	9.5	10.2

B) Females

	2011	2014	2017	2020	2021	2022
15-24	6.2	11.0	17.6	26.4	30.0	23.4
25-34	6.7	10.0	12.2	13.5	18.4	16.8
35-44	5.9	9.2	7.9	9.8	10.0	11.2
45-54	5.3	6.3	9.1	11.8	10.6	12.8
55-64	4.4	6.0	7.8	6.8	10.3	11.0
65-74	3.9	4.4	6.2	4.8	6.1	7.2
75+	3.7	3.3	6.5	4.6	5.4	6.3
All	5.4	7.6	10.1	11.8	13.7	13.2

Psychological distress measured by the 10-item questionnaire Kessler Psychological Distress Scale (K10). It refers to a person’s experience of symptoms such as nervousness, restlessness, fatigue, or depression in the past four weeks. Source: New Zealand Health Surveys, <https://www.health.govt.nz/publication/annual-update-key-results-2022-23-new-zealand-health-survey>
https://minhealthnz.shinyapps.io/nz-health-survey-2022-23-annual-data-explorer/_w_a3c56ef6/#!/download-data-sets

Table 6. Chronic depression in Europe, 2014-2019 ages 15-24.

	2019			2014		
	Total	Males	Females	Total	Males	Females
EU27.	3.5	3.5	5.7	3.6	2.6	4.7
France	3.1	3.1	5.1	2.7	2.2	3.1
Germany	7.0	7.0	12.5	0.7	6.0	11.5
Italy	0.9	0.9	1.5	0.6	0.6	0.6
Spain	1.5	1.4	1.6	1.7	1.3	2.1
Sweden	2.6	2.6	18.0	10.3	6.0	14.8

Chronic depression refers to the proportion of the population reporting chronic depression in the past 12 month based on the PHQ score. These data are from the second and third wave of the European Health Interview Survey (EHIS), conducted in 2019 covering people aged 15-24. See Hapke, Cohrdes and Nübel (2019) and Arias-de la Torre et al. (2023). and <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/edn-20210910-1>

Table 7 COME-HERE Wellbeing equations, all waves pooled.

	(1)	(2)	(3)	(4)	(5)	(6)
	PHQ total	GAD7 total	High depression	High anxiety	Suicide	Life satisfaction
a) all						
25-34	-.9739 (3.54)	-.4994 (2.27)	-.0422 (2.74)	-.0026 (0.25)	-.0224 (1.46)	.1619 (1.77)
35-44	-2.3235 (8.62)	-1.5390 (7.16)	-.0941 (6.48)	-.0277 (2.82)	-.0939 (6.60)	.3603 (3.96)
45-54	-2.7568 (9.64)	-1.9253 (8.44)	-.1072 (6.47)	-.0299 (2.90)	-.1206 (8.41)	.3789 (4.03)
55-64	-4.7162 (18.62)	-3.5489 (16.88)	-.1709 (12.54)	-.0682 (7.63)	-.1786 (13.52)	.8878 (9.52)
65+	-5.5395 (23.04)	-4.2133 (21.52)	-.1947 (14.92)	-.0763 (8.54)	-.1995 (15.50)	1.1573 (13.1)
Female	.7781 (6.25)	.8442 (7.87)	.0151 (2.75)	.0233 (5.83)	-.0096 (1.83)	.1025 (1.48)
Germany	-.0561 (0.29)	-.0227 (0.14)	-.0091 (1.03)	-.0007 (.10)	-.0195 (2.16)	-.2271 (3.35)
Italy	1.4294 (7.28)	1.8168 (11.44)	.0180 (1.91)	.0337 (4.82)	.0231 (2.32)	.1898 (2.77)
Spain	.8264 (4.02)	.8918 (5.56)	.0202 (2.16)	.0084 (1.32)	.0184 (1.81)	-.2183 (2.38)
Sweden	.3930 (1.46)	-.1246 (0.57)	.0144 (1.02)	.0172 (1.90)	-.0074 (0.66)	-.0756 (1.80)
_cons	8.7168	7.0506	.2173	.0924	.2301	5.5158
N	56,200	56,200	56,200	56,200	56,200	56,200
Adj. R-sq	.1127	.1208	.0438	.0201	.0484	.0459

T-statistics in parentheses. France excluded category and ages 18-24 – includes ten wave dummies. High depression is with PHQ>15 and high anxiety is with GAD>15.

b) By country

	PHQ	GAD	Life satisfaction	N
France	-.0983 (13.74)	-.0750 (12.12)	.0195 (7.07)	12,453
Germany	-.1234 (17.09)	-.1023 (16.74)	.0256 (9.36)	11,073
Italy	-.1157 (17.13)	-.0847 (14.86)	.0155 (6.20)	12,260
Spain	-.1322 (16.08)	-.0966 (14.45)	.0237 (8.59)	12,708
Sweden	-.1367 (16.18)	-.1246 (18.22)	.0365 (11.11)	7,706

These are coefficients on age, with t-statistics in parentheses – also includes wave dummies and gender.

Table 8. Screen time / day and depression, Come Here, 2020-2023, age <25.

Depression	France		Germany		Italy		Spain		Sweden	
	Mean	%	Mean	%	Mean	%	Mean	%	Mean	%
None	3.6	33%	3.9	24%	2.9	20%	2.7	23%	3.0	27%
Mild	3.8	27%	3.8	25%	3.0	28%	3.2	23%	3.9	26%
Moderate	3.9	20%	3.4	26%	2.9	27%	2.9	28%	3.6	22%
Moderately severe	3.6	16%	3.0	17%	2.8	18%	2.6	19%	3.7	17%
Severe	5.5	4%	4.7	8%	3.7	7%	3.1	7%	4.4	8%
N		1,064		737		1741		867		673
Anxiety										
None	3.9	40%	3.6	28%	3.1	20%	3.0	23%	3.4	32%
Mild	3.3	27%	4.5	29%	2.8	35%	3.0	34%	3.7	30%
Moderate	4.0	24%	2.8	28%	2.8	30%	2.6	31%	3.4	24%
Moderately severe	3.7	6%	3.6	11%	3.6	12%	3.1	10%	4.2	10%
Severe	7.4	3%	4.5	3%	3.3	4%	3.3	2%	3.9	5%
N		1,076		740		1,755		877		683

Table 9. Depression and anxiety regressions with media time/day.

	(1)	(2)	(3)	(4)
	PHQ total	PHQ total	GAD7 total	GAD7 total
Age 25-34	-1.0228 (4.43)		-.6510 (3.45)	
Age 35-44	-2.4035 (1.87)		-1.6402 (9.04)	
Age 45-54	-3.0425 (13.73)		-2.1790 (11.82)	
Age 55-64	-4.8618 (22.28)		-3.6392 (2.06)	
Age 65+	-5.8162 (28.57)		-4.4092 (25.75)	
Media time (2 & <4)	-.1891 (2.06)	.0480 (0.85)	-.2078 (2.72)	-.0207 (0.43)
Media time (4 & <6)	.4476 (3.79)	.2201 (3.12)	.2287 (2.30)	.1198 (1.93)
Media time (6 & <8)	1.4443 (9.15)	.4347 (4.42)	.8536 (6.55)	.2505 (2.97)
Media time (8+)	1.5128 (8.40)	.4441 (4.79)	.6875 (4.74)	.1392 (1.69)
Germany	-.0487 (0.29)		-.1295 (0.95)	
Italy	1.6314 (9.81)		1.8892 (13.50)	
Spain	1.0145 (6.02)		.9701 (6.96)	
Sweden	.4631 (2.41)		-.1213 (0.76)	
Female	.7183 (5.83)		.7731 (6.97)	
_cons	8.4977	6.3886	7.1016	5.0776
Individual FE	No	Yes	No	Yes
N	55,385	55,385	55,385	55,385
	(5)	(6)	(7)	(8)
	High Depression	High Depression	High Anxiety	High Anxiety
Age 25-34	-.0408 (3.21)		-.0164 (1.76)	
Age 35-44	-.0951 (8.00)		-.0362 (4.12)	
Age 45-54	-.1208 (1.36)		-.0435 (5.00)	
Age 55-64	-.1738 (15.34)		-.0784 (9.47)	
Age 65+	-.2047 (19.10)		-.0950 (11.84)	
Media time (2 & <4)	-.0082 (1.86)	.0020 (0.49)	-.0017 (0.51)	-.0014 (0.43)
Media time (4 & <6)	.0144 (2.58)	.0049 (0.97)	.0183 (4.19)	.0045 (1.08)
Media time (6 & <8)	.0495 (6.21)	.0147 (2.08)	.0370 (6.01)	.0084 (1.45)
Media time (8+)	.0594 (6.60)	.0134 (2.13)	.0438 (6.34)	.0034 (0.61)
Germany	-.0067 (0.96)		-.0036 (0.71)	
Italy	.0260 (3.48)		.0349 (6.01)	
Spain	.0259 (3.52)		.0149 (2.77)	
Sweden	.0207 (2.43)		.0151 (2.38)	
Women	.0161 (3.34)		.0228 (5.88)	
_cons	.2134	.1204	.0922	.0776 (
Individual FE	No	Yes	No	Yes
N	55,385	55,385	55,385	55,385
	(9)	(10)	(11)	(12)
	Suicide	Suicide	Life satisfaction	Life satisfaction
Age 25-34	-.0206 (1.59)		.1119 (1.54)	
Age 35-44	-.0929 (7.72)		.3134 (4.36)	
Age 45-54	-.1328 (11.43)		.3294 (4.41)	
Age 55-64	-.1778 (15.68)		.7871 (1.42)	
Age 65+	-.2033 (18.79)		1.1110 (15.73)	
Media time (2 & <4)	-.0200 (4.46)	-.0047 (1.18)	.0444 (1.31)	-.0587 (2.72)
Media time (4 & <6)	-.0026 (0.47)	-.0007 (0.14)	-.1929 (4.38)	-.1608 (5.71)

Media time (6 & <8)	.0198 (2.58)	-.0036 (0.53)	-.4807 (8.08)	-.2156 (5.33)
Media time (8+)	.0151 (1.83)	-.0005 (0.08)	-.6115 (8.80)	-.1748 (4.56)
Germany	-.0162 (2.29)		.1279 (2.10)	
Italy	.0219 (2.87)		-.3153 (5.24)	
Spain	.0157 (2.12)		.0963 (1.64)	
Sweden	-.0101 (1.29)		-.2088 (2.88)	
Women	-.0109 (2.62)		-.0924 (2.28)	
_cons	.2381	.1182	5.7385	6.0792
Individual FE	No	Yes	No	Yes
N	55,385	55,385	55,385	55,385

Excluded France, media time <2hrs/day and age<25. Equations also include 10 wave dummies.

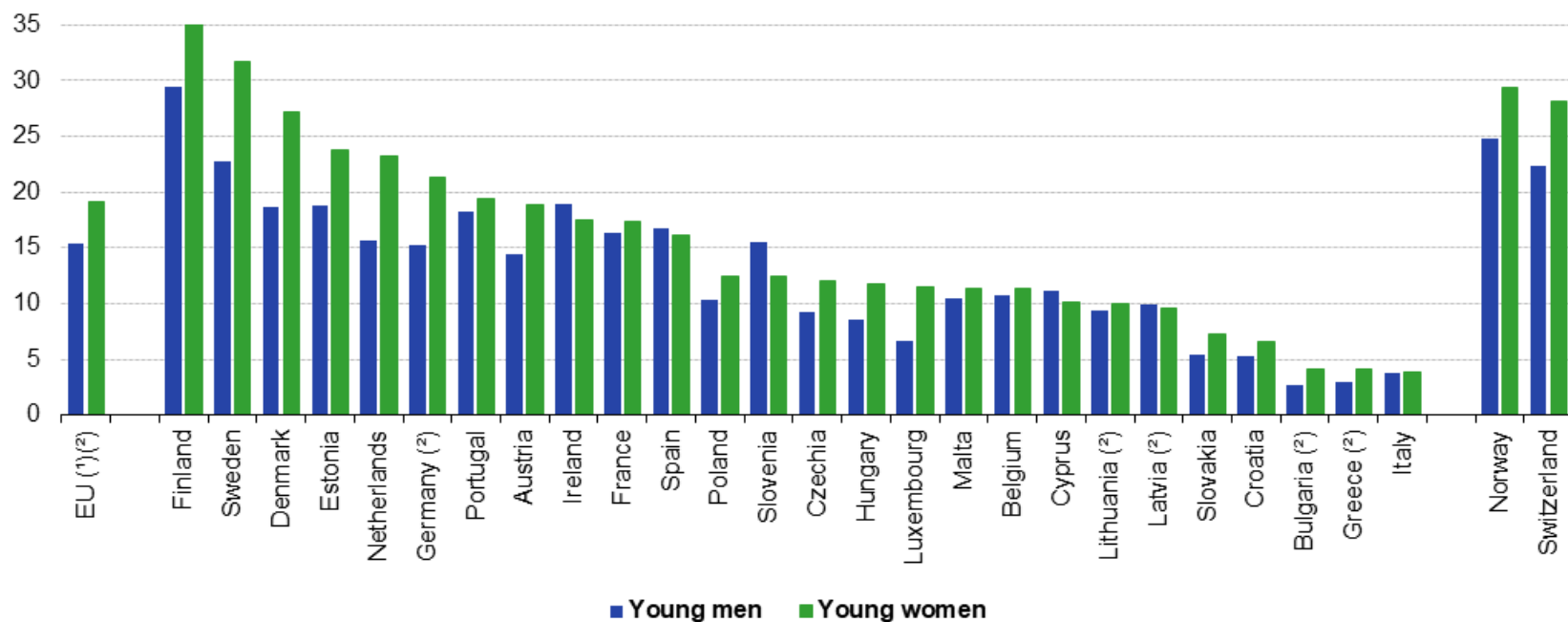
Chart 1. % saying often and very often were unhappy and depressed last 4 weeks, ISSP 2011 and 2021



Chart 2.

Young people aged 16-29 years suffering from a long-standing illness or health problem, by sex, 2022

(%)



⁽¹⁾ Estimate

⁽²⁾ Low reliability

Romania: no data available

Source: Eurostat (online data code: hth_silc_04)



[https://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Young_people_aged_16-29_years_suffering_from_a_long-standing_illness_or_health_problem,_by_sex,_2022_\(%25\)bg.png](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Young_people_aged_16-29_years_suffering_from_a_long-standing_illness_or_health_problem,_by_sex,_2022_(%25)bg.png)

Chart 3. PHQ, GAD7 and life satisfaction by age
COME-HERE, 2020-2023

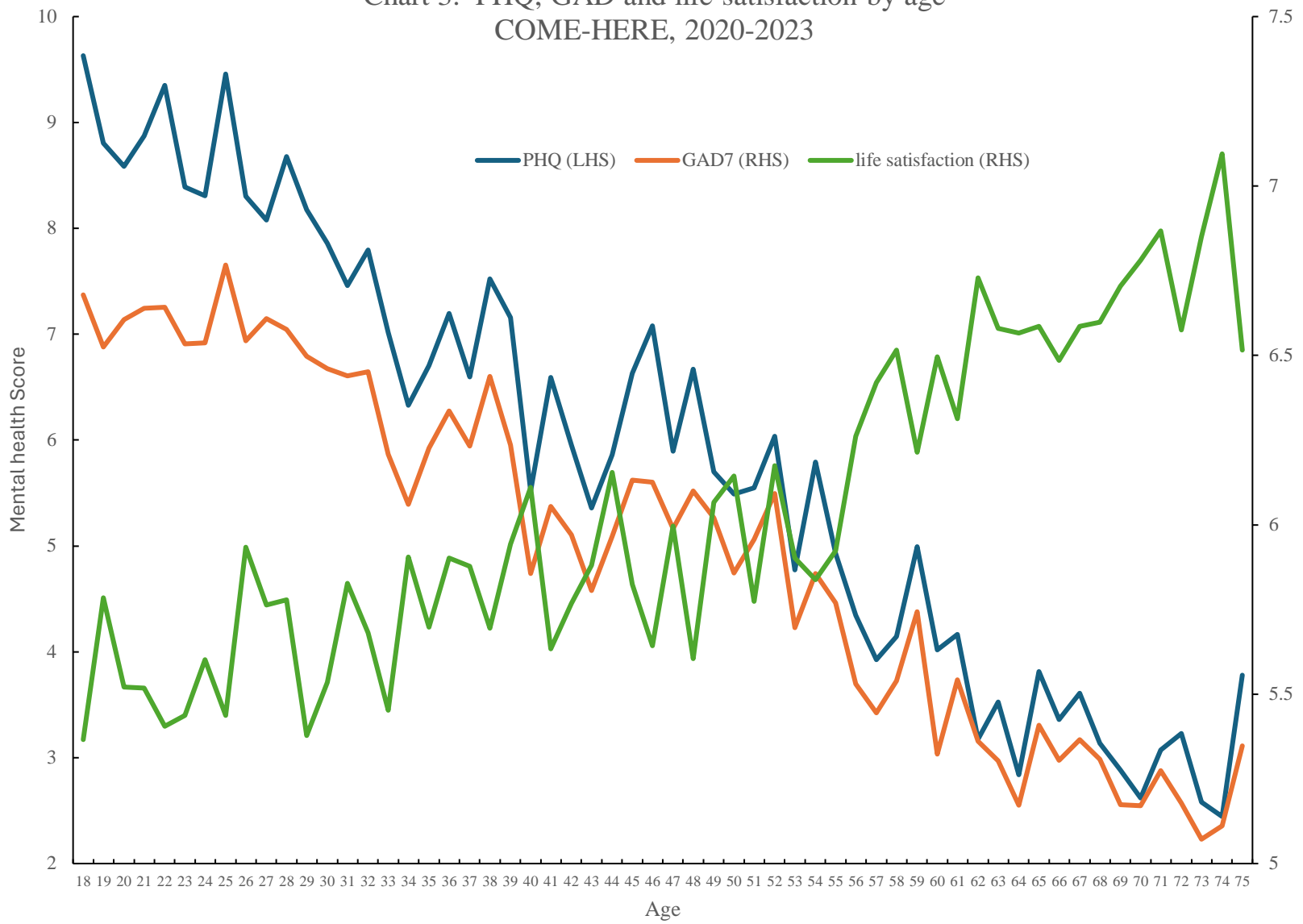


Chart 4. Anxiety Depression and suicide.

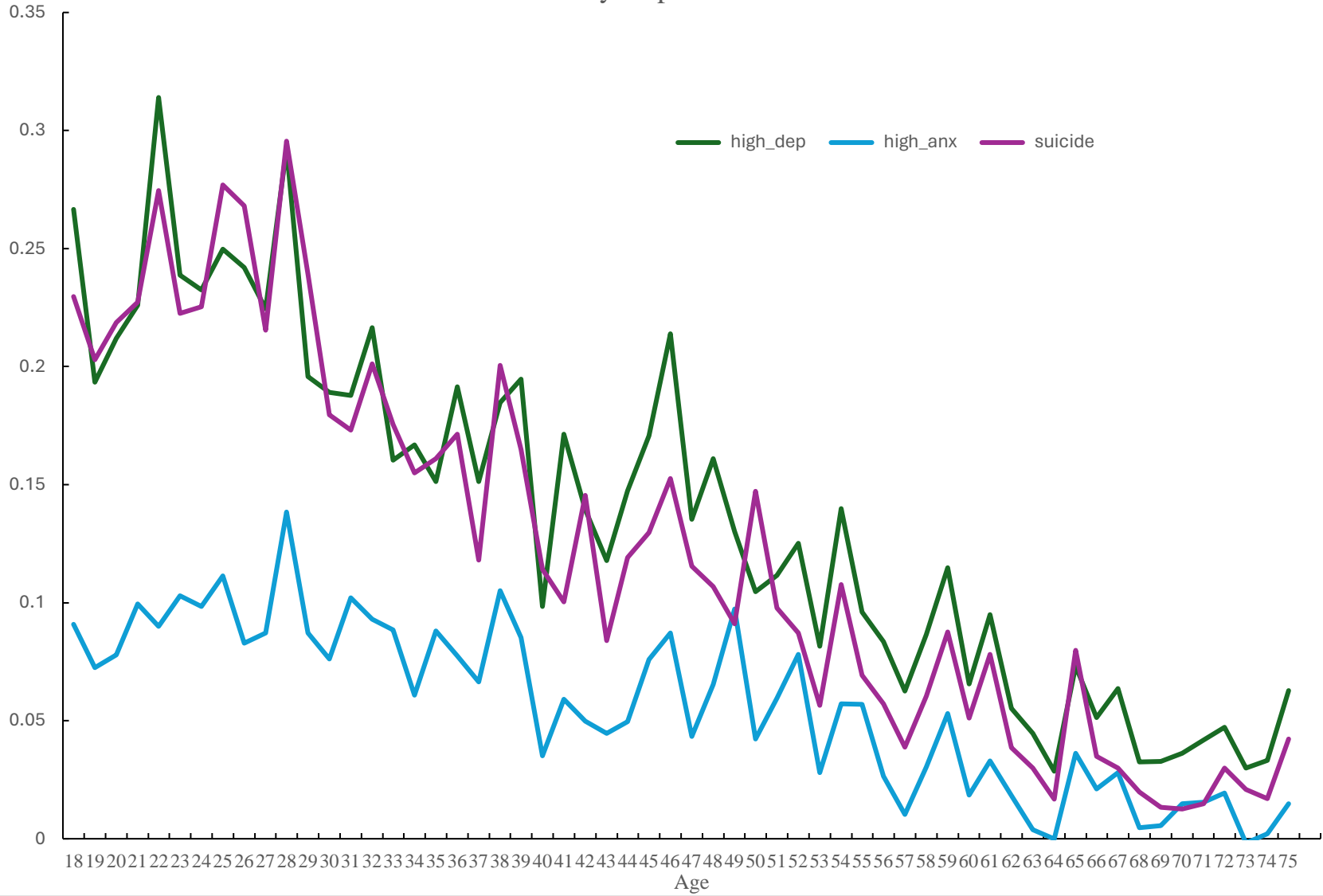
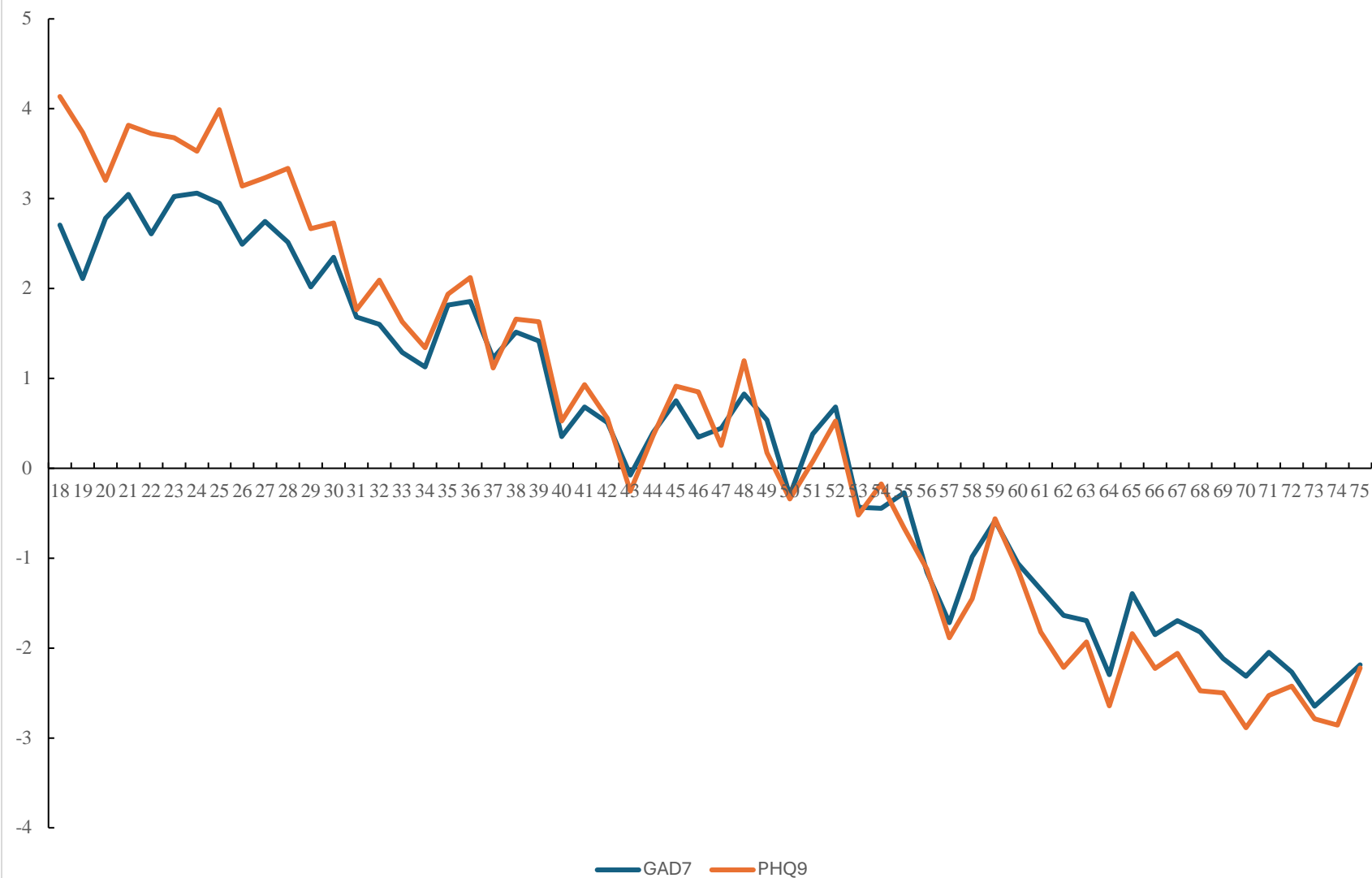


Chart 5. People fixed effects vs age



Appendix Table 1. Come Here individual PHQ-9 regressions

	PHQ1	PHQ2	PHQ3	PHQ4	PHQ5
25-34	-.0327 (2.08)	-.0455 (2.80)	-.0445 (2.76)	-.0506 (3.00)	-.0609 (3.69)
35-44	-.1014 (6.98)	-.1160 (7.60)	-.0785 (4.83)	-.1002 (5.58)	-.1204 (7.36)
45-54	-.1143 (7.83)	-.1340 (8.38)	-.0725 (4.45)	-.1178 (6.69)	-.1488 (9.01)
55-64	-.1884 (13.58)	-.2153 (14.98)	-.1403 (8.89)	-.2226 (13.57)	-.2235 (14.27)
65+	-.2054 (15.54)	-.2386 (17.43)	-.1966 (13.56)	-.2560 (16.46)	-.2591 (18.07)
Female	.0208 (3.66)	.0247 (4.13)	.0515 (6.65)	.0551 (6.66)	.0364 (5.71)
Germany	.0069 (0.68)	-.0026 (0.25)	.0164 (1.34)	-.0044 (0.33)	-.0252 (2.44)
Italy	.0287 (2.81)	.0490 (4.63)	.0241 (2.01)	.0237 (1.80)	.0308 (2.76)
Spain	.0426 (4.06)	.0403 (3.80)	.0016 (0.13)	.0108 (0.79)	.0208 (1.89)
Sweden	.0347 (2.98)	.0359 (2.69)	.0277 (1.92)	.0512 (3.04)	.0255 (1.76)
_cons	.2825	.2824	.3271	.3536	.3255
N	56,200	56,200	56,200	56,200	56,200
Adj. R ²	.0396	.0532	.0304	.0516	.0581

	PHQ6	PHQ7	PHQ8	PHQ9
25-34	-.0530 (3.22)	-.0686 (4.54)	-.0274 (1.80)	-.0224 (1.46)
35-44	-.1252 (8.10)	-.1151 (7.61)	-.0828 (5.42)	-.0939 (6.60)
45-54	-.1525 (8.94)	-.1353 (8.25)	-.1142 (8.20)	-.1206 (8.41)
55-64	-.2360 (16.11)	-.2202 (15.78)	-.1666 (12.55)	-.1786 (13.52)
65+	-.2597 (18.61)	-.2431 (18.25)	-.1938 (15.36)	-.1995 (15.50)
Female	.0239 (3.97)	.0145 (2.43)	-.0003 (0.06)	-.0096 (1.83)
Germany	-.0217 (2.26)	-.0071 (.73)	-.0235 (2.36)	-.0195 (2.16)
Italy	.0305 (3.04)	.0265 (2.75)	.0099 (0.90)	.0231 (2.32)
Spain	.0266 (2.56)	.0214 (2.17)	.0115 (1.06)	.0184 (1.81)
Sweden	.0075 (0.51)	.0255 (1.76)	-.0254 (2.32)	-.0074 (0.66)
_cons	.3028	.3004	.2288	.2301
N	56,200	56,200	56,200	56,200
Adj. R ²	.0621	.0500	.0453	.0484

PHQ1	Little interest or pleasure in doing things?
PHQ2	Feeling down, depressed, or hopeless?
PHQ3	Trouble falling or staying asleep, or sleeping too much?
PHQ4	Feeling tired or having little energy?
PHQ5	Poor appetite or overeating?
PHQ6	Feeling bad about yourself — or that you are a failure or have let yourself or your family down?
PHQ7	Trouble concentrating on things, such as reading the newspaper or watching television
PHQ8	Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual
PHQ9	Thoughts that you would be better off dead or of hurting yourself in some way

Appendix Table 2. COME_HERE individual GAD7 regressions

	GAD1	GAD2	GAD3	GAD4
25-34	-.0261 (1.58)	-.0269 (1.69)	-.0440 (2.73)	-.0283 (1.67)
35-44	-.0955 (6.12)	-.0997 (6.65)	-.1159 (7.37)	-.0942 (5.82)
45-54	-.1242 (7.63)	-.1070 (6.34)	-.1285 (7.44)	-.1166 (6.61)
55-64	-.2208 (14.83)	-.1828 (12.58)	-.2226 (14.99)	-.2184 (14.05)
65+	-.2585 (18.38)	-.2159 (15.67)	-.2526 (17.71)	-.2583 (17.60)
Female	.0445 (6.24)	.0381 (5.94)	.0393 (6.01)	.0408 (5.68)
Germany	-.0263 (2.42)	-.0230 (2.28)	.0015 (0.14)	-.0076 (0.69)
Italy	.0403 (3.70)	.0602 (5.67)	.0901 (8.25)	.0559 (4.93)
Spain	-.0004 (0.04)	.0253 (2.54)	.0650 (5.86)	.0140 (1.27)
Sweden	.0075 (0.56)	-.0007 (0.05)	.0197 (1.32)	.0019 (0.13)
_cons	.3245	.2710	.3045	.3320
N	56,200	56,200	56,200	56,200
adj. R ²	.0640	.0502	.0606	.0592
	GAD5	GAD6	GAD7	
25-34	-.0241 (1.556)	-.0315 (1.95)	-.0185 (1.13)	
35-44	-.0744 (4.89)	-.0970 (6.20)	-.0872 (5.79)	
45-54	-.1151 (7.78)	-.1319 (8.68)	-.0976 (6.27)	
55-64	-.1951 (14.62)	-.2160 (14.91)	-.1810 (12.62)	
65+	-.2124 (16.13)	-.2411 (17.36)	-.1999 (14.24)	
Female	.0124 (2.20)	.0261 (4.46)	.0299 (4.93)	
Germany	-.0025 (0.25)	-.0222 (2.09)	-.0223 (2.17)	
Italy	.0283 (2.70)	.0529 (4.73)	.0496 (4.60)	
Spain	.0258 (2.55)	-.0022 (0.21)	.0232 (2.16)	
Sweden	.0001 (0.01)	-.0174 (1.47)	-.0101 (0.85)	
_cons	.2751	.3352	.2747	
N	56,200	56,200	56,200	
adj. R ²	.0485	.0580	.0465	

Over the last 2 weeks how often have you been bothered by any of the following problems - Not at all (0), several days (1), more than half the days (2) nearly every day (3)

GAD1 Feeling nervous, anxious or on edge?
GAD2 Not being able to stop or control worrying?
GAD3 Worrying too much about different things?
GAD4 Trouble relaxing?
GAD5 Being so restless that it is hard to sit still?
GAD6 Becoming easily annoyed or irritable?
GAD7 Feeling afraid as if something awful might happen?

Appendix Table 3. Wellbeing variables in the Gallup World Poll, 2020-2023 for France, Germany, Italy, Spain and Sweden if age<75.

	Cantril	Enjoy	Laugh	Rested	Stress	Sadness	Worry	Pain
Internet use	.5367 (7.98)	.0735 (4.17)	.1193 (6.81)	.0257 (1.41)	.0361 (1.92)	-.0603 (3.63)	-.0485 (2.54)	-.0963 (5.60)
Age 25-34	.0351 (0.62)	-.0189 (1.27)	-.0168 (1.14)	-.0248 (1.62)	-.0047 (0.30)	.0030 (0.21)	-.0073 (0.46)	-.0041 (0.29)
Age 35-44	.0550 (0.95)	-.0654 (4.51)	-.0376 (2.60)	-.0615 (4.10)	.0141 (0.92)	.0355 (2.58)	.0416 (2.64)	.0083 (0.59)
Age 45-54	.0108 (0.20)	-.0684 (4.87)	-.0549 (3.93)	-.0248 (1.71)	-.0314 (2.10)	.0365 (2.74)	.0371 (2.44)	.0207 (1.51)
Age 55-64	.0124 (0.23)	-.1078 (7.65)	-.0738 (5.25)	.0111 (0.76)	-.0837 (5.55)	.0264 (1.97)	-.0007 (0.05)	.0657 (4.76)
Age 65-74	.0693 (1.27)	-.0934 (6.53)	-.0731 (5.14)	.0806 (5.46)	-.1835 (2.02)	.0402 (2.97)	-.0147 (0.95)	.0967 (6.91)
Female	-.0102 (0.41)	-.0052 (0.80)	-.0180 (2.76)	.0377 (5.55)	-.0156 (2.23)	-.0267 (4.29)	-.0313 (4.38)	-.0354 (5.49)
Germany	.2024 (5.05)	.0302 (2.88)	.0057 (0.55)	.0376 (3.47)	-.0332 (2.97)	.0014 (0.15)	-.0326 (2.87)	-.0482 (4.70)
Spain	-.2150 (5.52)	-.1378 (13.53)	.0179 (1.76)	.0810 (7.70)	-.0349 (3.21)	.0483 (5.02)	.1475 (13.33)	-.0136 (1.37)
Italy	-.1431 (3.66)	-.0922 (8.93)	-.0036 (0.36)	-.0306 (2.87)	.0685 (6.21)	.0746 (7.64)	.1397 (12.45)	-.0415 (4.11)
Sweden	.7524 (18.80)	.0610 (5.83)	.0403 (3.87)	-.0163 (1.51)	-.0413 (3.70)	-.0292 (2.94)	-.0400 (3.52)	-.1000 (9.75)
Constant	6.3581	.7573	.6928	.6652	.3758	.2431	.3974	.3570
Adjusted R ²	.0495	.0347	.0089	.0189	.0283	.0106	.0320	.0194
N	18,059	18,028	18,108	18,046	18,065	18,023	18,062	18,067

Questions. Please imagine a ladder with steps numbered from zero at the bottom to ten at the top. Suppose we say that the top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. If the top step is 10 and the bottom step is 0, on which step of the ladder do you feel you personally stand at the present time? Did you experience the following feelings during a lot of the day yesterday? Enjoyment/sadness/stress/worry/pain– Yes/No Did you smile or laugh a lot yesterday Yes/No? Were you well-rested yes/no? Also includes year dummies and in the second part 25 country dummies also. Excluded France