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The female happiness paradox

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Abstract

Using data across countries and over time, we show that women have worse mental health than men in negative affect equations, irrespective of the measure used — anxiety, depression, fearfulness, sadness, loneliness, anger — and they have more days with bad mental health and more restless sleep. Women are also less satisfied with many aspects of their lives, such as democracy, the economy, the state of education, and health services. They are also less satisfied in the moment in terms of peace and calm, cheerfulness, feeling active, vigorous, fresh, and rested. However, prior evidence on gender differences in happiness and life satisfaction is less clear cut. Differences vary over time, location, and with model specification and the inclusion of controls, especially marital status. We now find strong evidence that males have *higher* levels of both happiness and life satisfaction in recent years even before the onset of the pandemic. As in the past, women continue to have worse mental health. A detailed analysis of several data files, with various metrics, for the UK confirms that men now are happier than women and the size of the effect is not trivial.

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1 Introduction

The female wellbeing paradox is that women are happier than men in happiness equations but show worse mental health, depression, and anxiety in negative affect equations. Mental health and happiness are often treated as flip sides of the same concept and, when one considers many of their correlates, this appears to be the case. For instance, correlates of happiness such as unemployment, income, age, being married, and having a degree are the mirror images of each other in a happiness and anxiety or poor mental health equations and simply flip signs (Blanchflower 2020, 2021). However, this is not the case with regard to gender. There is also evidence that at least in relation to happiness in the USA, the gap closed over time in the years before the Great Recession as women became relatively less happy (Blanchflower and Oswald 2004; Stevenson and Wolfers 2009). It seems this trend has been exacerbated by the COVID pandemic, which differentially impacted the wellbeing of women. However, women appear to be resilient to wellbeing shocks during the pandemic since their happiness recovers faster than men (Fancourt et al. 2020).

In this paper, we show that gender differences in wellbeing — at a point in time and across time — are sensitive to the measures of wellbeing one uses, the timing of the data collection, the conditioning covariates, and the location of the individuals providing the information.

We find that one part of the female happiness paradox is very robust: when answering questions about negative affect, women *always and everywhere* report higher levels of depression, stress, sadness, and anxiety, for example, than men. This is true across time, country, and across different metrics of negative affect. This is perhaps best illustrated by anxiety: women are consistently more anxious than men, both pre- and post-COVID. However, it is also true with respect to other measures on negative affect such as being depressed, downhearted, tense, lonely, frustrated, stressed, sad, and having restless sleep and other measures.

Another set of results is also consistent. It is men (not women) who tend to have higher wellbeing when wellbeing is measured in terms of momentary positive affect (enjoyment, feeling fresh and rested, active and vigorous, cheerful, and in good spirits), and in terms of domain-specific satisfaction with aspects of their life such as satisfaction with their marriage, their financial status along with wider political and economic issues as captured by satisfaction with national government, democracy, the economy, the education system, health services, and the standard of living.

Confusion arises, however, *only* when analysts focus on the two most popular "global" metrics of wellbeing, namely life satisfaction and happiness. Here, the evidence on gender differences is far less clear cut. It is correct that women's happiness has declined relative to men's since the 1970s in the USA, but this trend is not apparent in the UK where, over the same period, women tend to be a little happier than men. Furthermore, whether women are happier or more satisfied with life than men, varies tremendously across countries and over time, as well as across states within the USA.

It is the case though that women's life satisfaction and happiness have fallen relative to men's during COVID. In part, this is due to the burden the pandemic has placed upon them as the person primarily responsible for caring for children, many of whom have been at home during school closures. Women have also been more adversely affected in their role as workers because they are more likely to be front-line key workers facing considerable strain at work, and because they have been more likely to be furloughed or otherwise faced disruptions to their labour market participation (Hansen et al. 2022; Wielgoszewska et al. 2023). However, it is not clear whether this switch will persist. Furthermore, these trends started prior to COVID so are unlikely to relate exclusively to the pandemic.

We examine data for the USA using the General Social Survey, 1972–2021, and for Europe using the Eurobarometer Surveys, 1975–2021, and the European Quality of Life Surveys, 2003–2016, as well as data from the Gallup World Poll, 2005–2021, across many countries, both developed and developing. We also conduct a detailed analysis for the UK with several data files — the Annual Population Survey, 2012–2021; the Health Survey for England, 2010–2019; and four birth cohort data files. On every metric, including happiness, life satisfaction and anxiety, sadness, loneliness, enjoyment, being helpless, fearful, tense, and stressed, we find that there is no female happiness paradox. Women, we find, in these data have lower wellbeing than men in every dimension, and hence, there is no longer a female happiness paradox.

2 Past research on women and wellbeing

2.1 Pre-pandemic wellbeing of men and women

The early literature on men's and women's wellbeing relied heavily on the longest-standing data series on wellbeing which is the *General Social Survey* (GSS). It allows analysts to track the wellbeing of men and women in the USA since 1972 with ordinal responses to a 3-point happiness scale. Pre-pandemic debate in the USA was dominated by the question as to whether there had been any convergence in the happiness of men and women. Using GSS data for the period 1972–1998, Blanchflower and Oswald (2004) reported that women were happier than men but that, over time, the gap was closing because women were becoming less happy. This conclusion was based on a downward trend in happiness for females in the GSS but no significant time trend for men. Stevenson and Wolfers (2009) confirmed these results using the same GSS data file extended through to 2006. These findings on gender differences were subsequently questioned by Bond and Lang (2019) who said differential trends by sex were not robust to functional form assumptions regarding the ordinal scales on which happiness was measured. In turn, Chen et al. (2022) argue that this critique does not hold if one focuses on ranking median happiness as opposed to mean happiness. Below we use OLS and show the GSS gender differences do not persist over a longer time-frame.

In any event, the work by Stevenson and Wolfers (2009) prompted much speculation as to whether women could "have it all" — a career and a family — among

cohorts of women who were better educated than men and yet faced persistent pressures to conform to social norms about women being primary carers in the household (Goldin 2020; Bertrand 2010; Bertrand 2013; Bertrand et al. 2015).

However, several studies, including some of our own, continued to find women express greater happiness and life satisfaction than men. Blanchflower and Oswald (2011) found life satisfaction was higher for women than for men in the USA in 2009 using BRFSS, but so too was the number of bad mental health days — confirming the female happiness paradox. Blanchflower and Bryson (2022a) confirmed the finding that men were less happy than women in data for 2009–2020 using Cantril's life satisfaction variable in the US Gallup Daily Tracker Survey. Herbst (2011) questioned the faster rate of decline in life satisfaction among women in the USA. Instead, using the DDB Needham Lifestyle Surveys of 1985–2005, he found men and women experienced similar decreases over time in life satisfaction. In the pre-pandemic period, it seems life satisfaction was also higher for women than for men in Europe. Blanchflower and Clark (2021) find negative male coefficients in life satisfaction equations using the Eurobarometer survey series data from 2009 to 2019. All of these studies included marital status along with other variables as controls.

Evidence across the world pre-pandemic also suggested women's life satisfaction was greater than that of men's with full sets of controls. Using data for 60 developed and developing countries from the World Values Surveys 1981–2009, Matteucci and Lima (2016) found life satisfaction was higher for women compared to men. They included a "large set of individual socio-economic and demographic controls" although they do not identify which. Montgomery (2022) reports a negative male coefficient in Cantril life satisfaction equations using the Gallup World Poll (GWP) from 2011 to 2014.[1] Fortin et al. (2015) also using Cantril life satisfaction variable using GWP data from 2005–2014 using raw data found that "on a global average basis, females have higher life evaluations than do males." They also found that females smile and laugh and had more enjoyment than men. Yet women reported more depression, again providing support for the paradox in female happiness.

Zweig (2014) used the Cantril life satisfaction with the GWP data for 2005–2008 and found that the magnitude of the female–male happiness gap was *not* associated with economic development or women's rights and there were no systematic patterns by geography or religion. However, others find the gender differential in happiness does vary with country-level traits. Meisenberg and Woodley (2015) examine data from the World Values Survey, 1981–2008 ($n = 355{,}298$), across 90 country * year cells finding a high level of female relative to male happiness and life satisfaction if the country includes a high proportion of Muslims, a low proportion of Catholics, and an absence of a Communist history.

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[1] In her table 2, Montgomery (2022) column 1 includes indicators for female, age, and age squared, while column 2 adds indicators for urban, marital status, employment status, education level, and whether they have health problems, as well as a continuous measure, log of equivalized income, and in both cases, the female coefficient is positive.

In a similar vein, Graham and Chattopadhyay (2013) examine GWP data for 160 countries from 2005 to 2011 ($n = 510,613$) and included a variety of controls including marital status and income and reported higher levels of life satisfaction for women than men, using the Cantril measure, but at the same time, women reported more daily stress. And while this finding of *higher* life satisfaction among women holds across countries on average, they found it did not hold in countries where gender rights are compromised, as in much of the Middle East and sub-Saharan Africa. They also found women were much happier than men in wealthier contexts, among more educated and older cohorts, and in urban areas.

This paradox of women being at both ends of the wellbeing spectrum is apparent as far back as 1996 in the study by Weissman et al (1996) across ten countries — USA, Canada, Puerto Rico, France, West Germany, Italy, Lebanon, Taiwan, Korea, and New Zealand — which shows women had higher rates of mental ill-health. More recently, Becchetti and Conzo (2022) examined sweeps 4–8 of the European Social Surveys (ESS), 2008–2016, across 31 countries, with a long list of controls including marital status, and pointed to a paradox whereby women reported higher happiness *and* higher levels of depression than men and that this result was robust when they split the sample by age, education, health status, wave, and seasons within years. They suggest their results are consistent with women's life satisfaction being more sensitive to good and bad events than men's.

There is also evidence for this paradox in the UK. Using the Annual Population Survey (APS) we explore later, Bell and Blanchflower (2021) showed men had significantly lower life satisfaction levels than women in England, Scotland, Wales, and Northern Ireland over the period 2016–2019, with controls. However, men scored significantly below women in GHQ poor mental health equations in Scotland using the Scottish Health Survey, 2008–2018, and in England using the Health Survey of England, 2003–2016, confirming the paradox. Blanchflower and Oswald (2016) found that men were also less likely to take anti-depressant medications. Using data from the Health Survey for England for the period 1998–2018, Blanchflower and Bryson (2022c) found that men had significantly lower pulse rates than women as well as lower GHQ scores, were less anxious, and had better general health. This was true with and without controls for marital status and income.

It has also been suggested that there are gender differences in reporting behaviour for health and wellbeing questions. However, Oksuzyan et al. (2019) challenge this suggestion. Using the Survey of Health, Ageing, and Retirement in Europe, they found no clear gender-specific patterns in reporting health. They conclude that there is no evidence that women over-report and men under-report health problems.

2.2 Wellbeing of men and women post-pandemic

The COVID pandemic was a negative shock, not only to the economy but to people's wellbeing. A substantial literature has investigated whether this shock to wellbeing differed markedly by gender and, if so, how and why.

Analysts have been tracking mental health in the USA using a new survey conducted by the US Census Bureau, the US Census Household Pulse Survey, which

has been running since April 2021. Analysing these data through to December 2021, Blanchflower and Bryson (2021a) found that men had lower levels of anxiety, worried less, and were less likely than women to say they were unhappy and depressed in 2020 and 2021. These findings tend to confirm the pre-pandemic gender differential, with women expressing worse mental health than men. However, the pandemic may have compounded the stress and anxiety faced by women due to the differential impact of COVID on their time-use.

Using time-use data for mid-March to mid-June 2020, Giurge et al. (2021) reported that time spent completing household chores was linked to lower wellbeing, in the USA, Canada, Denmark, Brazil, and Spain. There were pervasive gender differences in time use during COVID-19 with women, especially mothers, spending more time on necessities such as caretaking tasks, childcare, and chores. The implication is that some of the gender differences in wellbeing during COVID may be linked to differences in the tasks and responsibilities performed by men and women.

However, Del Boca et al. (2020) noted, using a sample of Italian women in April 2020, that the negative consequences of additional chore provision were offset by completing these activities together or in the presence of other family members.[2] Working women, they found, bear the brunt of the increased time needed for household chores and childcare. Men are more likely to be spending more time with the children, hence in what they call "more gratifying family work" rather than chores. The work-life balance on working women with children they found was greatest when their partners continued working outside the home.

Wellbeing deteriorated markedly with the on-set of COVID in the UK too. Using data from the UK Household Longitudinal Study (UKHLS), Proto and Quintana-Domeque (2021) confirmed a deterioration in mental health due to COVID, using the GHQ12 measure from 2017–2019 to April 2020. They found increases in mental distress which varied by ethnicity and gender. Women — regardless of their ethnicity — and minority ethnic men experienced a higher average increase in mental distress than white British men. Pierce et al. (2021) also analysed UKHLS, this time though to October 2020, and found that women had higher GHQ12 scores than men, at all ages. Banks et al. (2021) also used the UKHLS and observed a much greater rise in GHQ scores for women than men in both April and September 2020.

For the UK, the journal *The Lancet* set up a Covid-19 Commission Mental Health Task Force to review the evidence through to April 2021. It concluded that

A clear and consistent body of evidence suggests that psychological distress increased during the early months of the COVID-19 pandemic and that most (but not all) facets returned to pre-pandemic levels by mid-2020. While some components of subjective well-being showed signs of strain (e.g., increasing negative emotions), the data also reveal notable signs of resilience in life satisfaction, loneliness, social connection, and suicide." (Aknin et al. 2022).

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[2] This is consistent with evidence for the UK prior to the pandemic that people are happier when they are completing tasks together with others (Bryson and MacKerron 2017).

Clearly what happened in the first couple of months of lockdown in March and April 2020 were crucial: psychological distress increased markedly in March and April 2020 but then fell back in mid-2020 to pre-pandemic levels (Banks and Xu 2020; Fancourt, Steptoe and Bu, 2020).

However, the Task Force's pronouncement appears a little premature. There have been subsequent peaks and troughs in wellbeing with the coming and going of COVID cases. But that is not the end of the story. Zhou and Kan (2021) analysed the GHQ12 score from the UKHLS, but their analysis window extended through to March 2021. They found that the score rose from 11.8 pre-COVID to 13.1 in April 2020 in the first lockdown, declining to 12.4 in July 2020 with easing of measures, then rising back to 13.4 in the second lockdown from November 2020 through January 2021 and then falling back to 12.9 when schools reopened in March 2021. The authors found that the rise in distress level was greater for women than for men with distress levels of women always higher. The distress levels of both women and men hit their lowest level in July to September 2020 but hit a new peak following a surge in cases leading to the reimposition of lockdown restrictions in November 2020 and January 2021, when women again suffered from a larger increase in distress levels than men. This is remarkably similar to the path we observe below in our analysis of the Annual Population Survey (APS).

The UCL Covid Social Study (www.covidsocialstudy.org), henceforth CSS, has tracked wellbeing in the UK since March 21, 2020, just before the first lockdown was announced, through to January 9, 2022. The study has tracked various measures of wellbeing. Of particular note is the evidence on life satisfaction which uses the same question as used in the APS we examine below. For the period 2015–2019, the average life satisfaction score in the APS averaged 7.7. In the first week of the pandemic, life satisfaction dropped to 5.40, which is a much larger fall than observed in the APS. It picked up to a high of 6.5 over the week of 7th–13th September before dropping back to a low of 5.63 in the week of 25th–31st January.

The most recent data are available for the first week in January 2022 in report #42 which show that life satisfaction was broadly flat from August to November 2021 at around 6.6 before falling again at the start of 2022 to around 6.4. As we show below, some of this is likely a seasonal effect, as January appears to be the least happy month.

Foa et al. (2022) examined wellbeing using 2 years of data from YouGov's Great Britain Mood Tracker Poll through to July 2021. They found that the 11-step Cantril ladder of life satisfaction peaked at 7.15 at the start of 2020 before falling to a low of around 6.73 in March/April, before rising to 7.0 in July 2021, with a further low of just under 6.8 at the start of 2021. These changes are much smaller than in other surveys although the time paths look similar.

The Office for National Statistics (ONS) in the UK conducts its own large-scale survey of adults in Great Britain called the Opinions and Lifestyle Survey. ONS (2021b) found that 17% adults experienced some depression in the summer of 2021 which is a decrease from 21% at the start of 2021 but a substantial rise compared

with 10% prior to the pandemic. The table below shows the percentage of men and women experiencing moderate to severe symptoms.[3]

	Men	Women
July 2019 to March 2020	7	12
June 2020	15	23
November 2020	15	22
January–March 2021	17	24
July–August 2021	14	20

We can surmise from this longer time frame that depression rose for both men and women through to the first quarter of 2021, before falling back in summer 2021. But throughout, women were more likely than men to experience some form of depression. The ONS (2021a) noted that women had higher death rates from COVID-19; women were more likely to be furloughed and to spend significantly less time working from home and more time on unpaid household work and childcare. In April and early May 2020, around one in three women (34%) reported that their wellbeing was negatively affected by homeschooling a school age child compared with only one in five men (20%). By late January and early February 2021, it was taking a greater toll on both women (53%) and men (45%).

Adams-Prassl et al. (2020) collected two independent waves of survey data in late March and early April 2020 in the UK, USA, and Germany. They find that women in the UK and the USA (though not in Germany) were more likely to lose their jobs than men, while younger individuals were significantly more likely to experience a fall in their earnings. Of note though is that in the UK, employment rates of women fell sharply in early 2020 but at the time of writing in February 2022, they have recovered at least as well as those of men. Indeed, the October 2021 rate for females is 98.4% of the January 2020 rate compared with 97.6% for men.

Although there is consensus that the pandemic is associated with some deterioration in wellbeing, the review above indicates that there are substantial shifts in people's mental health since March 2020 and that some of this is to be expected given previous work on the seasonality of subjective wellbeing and ill-being. Banks et al. (2021) noted that "while there is very little large-scale evidence on the most extreme consequences of mental health problems – suicide and self-harm – what evidence there is has yet to show any consistent or significant trends in terms of causal effects of the pandemic" (p.124).

That looks right if one considers evidence on suicide rates. These tend to be markedly higher among men than women. For example, in the UK suicide, rates for men fell from 16.9/100,000 in 2019 to 15.4 in 2020. For women, rates fell from 5.3 to 4.9 over those 2 years.[4] Curtin et al. (2021) found for the USA that the age

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adjusted suicide rate for males fell from 22.4/100,000 in 2019 to 21.9 in 2020, while for females, rates fell from 6.0 to 5.5. Appleby et al. (2021) found no increase in suicides in England in the 3 months January 2020 to March 2020 compared to April–October 2020. Pirkis et al. (2021) found no evidence of a rise in suicides, from 1st January 2019 to 31 July 2020 in 21 countries, while several had fewer suicides.

3 Empirical evidence

In this section, we present empirical analyses of change over time in wellbeing, variously measured, pre- and post-pandemic. We use data for the USA, Europe, and a large group of developed and developing countries before moving on to the UK. We report declines in wellbeing in 2020 and 2021. We also identify different impacts on men and women. We provide estimates using the raw data as well as with a limited set of controls, for race, age, and location.

3.1 The USA

Figure 1a updates the earlier work discussed above for the USA using happiness data from the General Social Survey through to 2021. It plots three-step happiness for the USA with the latest GSS data for the longer period 1972–2021 ($n = 64,460$) and shows that the happiness rates of men and women have moved closely together. The question asked is

Q1. "Taken all together, how would you say things are these days? Would you say that you are very happy = 3, pretty happy = 2, or not too happy = 1?"

Over time happiness in the USA in the GSS has fallen for both men and women. There was a particularly sharp fall in 2021 to levels never seen before in the previous 50 years, in contrast to the very small decline in the Great Recession of 2008 and 2009. This suggests that the health element to the COVID shock, perhaps coupled with the policy-induced responses to it (lockdowns, school closures, and social distancing), impacted individuals' wellbeing in a way that a more "conventional" recession does not.

There is some evidence that female happiness fell more than male happiness in 2021 as COVID hit. If we run a regression of happiness using these GSS data from 1972 to 2021 on a set of year dummies, and a male dummy, the male dummy is insignificant. However, if we then add a male dummy interacted with a year 2021 variable, it is significantly positive.[5]

As noted earlier, Blanchflower and Oswald (2004) examined the GSS data for the period 1972–1998 and found evidence of a positive dummy on a female equation

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[5] The results are as follows, with a full set of year dummies ($n = 63,976$). Equation is 2.1421 −.0090 (1.72) male + .0487 (2.30) male * year 2021, Adjusted R^2 = .0095. If a 2021 equation is estimated, the results is ($n = 3922$) 1.9453 + .0397 (1.89) male. With t = statistics in parentheses. The results are similar using the proportion very happy as the dependent variable.
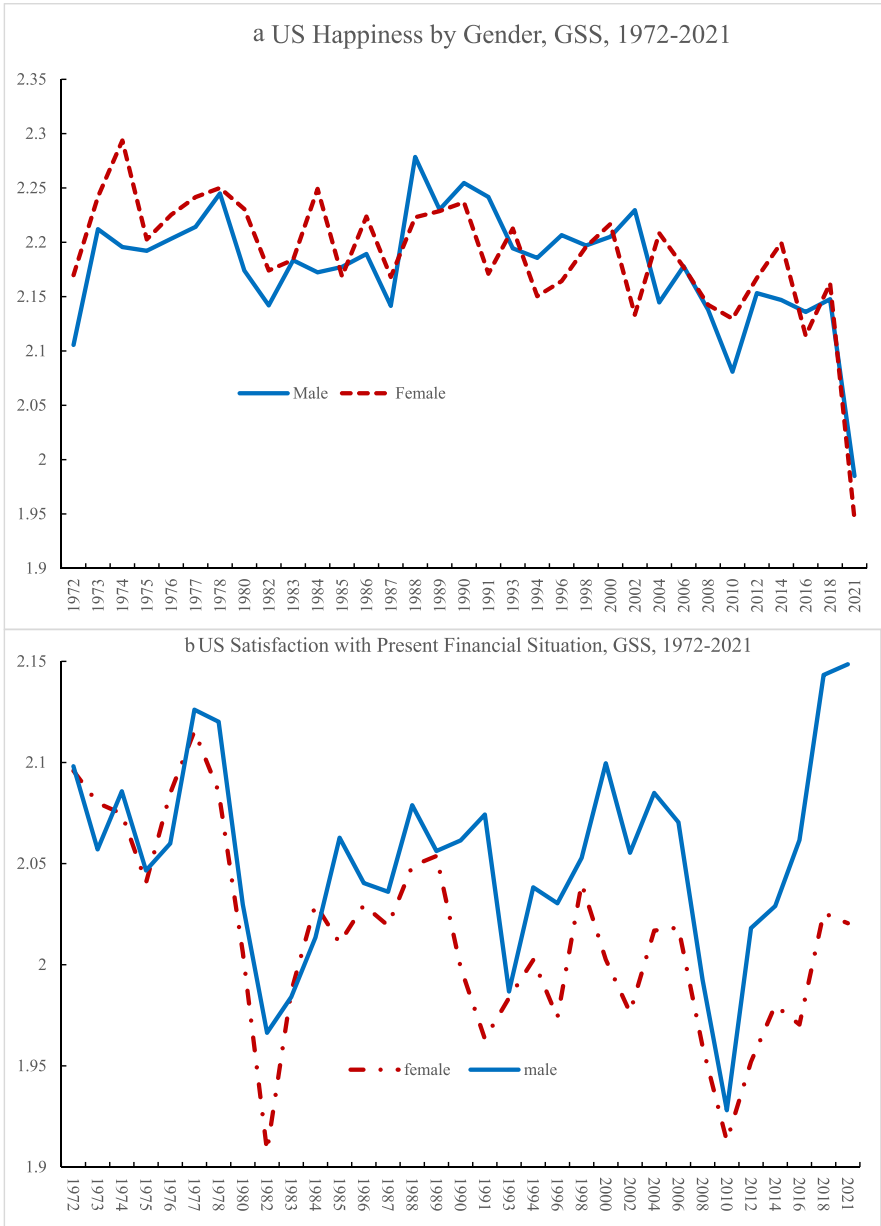
Fig. 1 **a** US Happiness by Gender, GSS, 1972-2021. **b** US Satisfaction with present financial situation, GSS, 1972-2021

that included controls for age and its square and race. When separate equations were run by gender, there was a negative time trend in the female equation and an insignificant one in the male equation. Stevenson and Wolfers (2009) extended this work

Table 1 US happiness regressions from the General Social Survey, 1972–2021

a) OLS: Happiness

	1972-2006	2008-2021	1972-2021	1972-2006	2008-2021	1972-2021
Female dummy	.0409 (3.57)	.2248 (2.30)	.0282 (2.91)	.0064 (1.09)	.0048 (0.49)	.0060 (1.18)
Female time trend	-.0016 (4.19)	-.0142 (9.36)	-.0032 (13.95)			
Male time trend	.0004 (0.89)	-.0090 (5.37)	-.0023 (9.03)			
Year dummies				Yes	Yes	Yes
Adjusted R^2	.0004	.0064	.0043	.0016	.0139	.0094
N	46,303	17,673	63,976	46,303	17,673	63,976

b) Probit: Very happy

	1972-2006	2008-2021	1972-2021	1972-2006	2008-2021	1972-2021
Female dummy	.0915 (3.90)	.5963 (2.95)	.0789 (3.99)	.0318 (2.60)	-.0002 (0.01)	.0233 (2.22)
Female time trend	-.0047 (5.83)	-.0258 (8.18)	-.0059 (12.50)			
Male time trend	-.0011 (1.26)	-.0118 (3.40)	-.0036 (6.81)			
Year dummies				Yes	Yes	Yes
Pseudo R^2	.0007	.0038	.0026	.0018	.0082	.0053
N	46,303	17,673	63,976	46,303	17,673	63,976

c) Family finances and marital happines

"We are interested in how people are getting along financially these days. So far as you and your family are concerned, would you say that you are [3] Pretty well satisfied with your present financial situation; [2] More or less satisfied; or [1] Not satisfied at all?" If currently married: "Taking things all together, how would you describe your marriage? Would you say that your marriage is [3] Very happy; [2] Pretty happy; or [1] Not too happy?"

	Family finances			Marital happiness		
	1972-2006	2008-2021	1972-2021	1972-2006	2008-2021	1972-2021
Female dummy	-.0324 (4.65)	-.0786 (6.97)	-.0452 (7.62)	-.0514 (7.37)	-.0529 (4.25)	-.0518 (8.51)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	.0025	.0073	.0094	.0040	.0029	.0040
N	46,433	17,671	63,976	24,455	8044	32,499

d) Satisfaction with location, family and friends, 1972-1994

"For each area of life I am going to name tell me the number that shows how much satisfaction you get from that area: [7] A very great deal; [6] A great deal; [5] Quite a bit; [4] A fair amount; [3] Some; [2] A little; [1] None." – i) The city or place you live in 2) your family life and 3) your friendships?"

	Place	Family life	Friendships
Female dummy	-.0884 (4.51)	-.1614 (9.11)	-.1498 (9.33)
Year dummies	Yes	Yes	Yes
Adjusted R^2	.0037	.0044	.0078
N	24,133	24,070	24,128

t-statistics reported in parentheses

through 2006 and also found negative time trends for women and not for men. However, it turns out these results are sensitive to model specification. For simplicity in what follows, we examine the performance of the male dummy by time period as shown in Fig. 1a.

Part (a) of Table 1 reports the results of estimating a simple OLS happiness equation regression for three time periods that contain a female dummy. The first three columns incorporate separate male and female time-trends, while the second three replace these time-trends with year dummies. Whereas the female dummy is positive but not statistically significant with year dummies incorporated, it is negative and statistically significant in the first three columns containing separate sex time-trends. Those time-trends are negative for women and turn negative for men after the Great Recession of 2008. Results are similar in part b) which models being "very happy." In contrast, part (b) for financial satisfaction, examined by Easterlin (2006), shows that in each of these time periods, the female coefficient is significantly negative. The female negative coefficient is also apparent in relation to satisfaction with marriage (part b) columns 4–6, and with the place you live, family life, and friendships (part c) columns 1–3.

The evidence of declining happiness in the USA is confirmed with evidence of rising deaths of despair, from drug overdoses, suicide, and alcohol poisoning (Case and Deaton 2019) along with increases in pain in the USA (Blanchflower and Bryson 2022b), and distress. Blanchflower and Oswald (2020), for example, show a steady rise over time in the proportion of people saying that every one of the prior 30 days were bad mental health days. This extreme distress is especially marked in less educated, prime age whites that are also disproportionately impacted by deaths of despair. Although there is evidence of increasing amounts of pain, there are few gender differences. Instead, what is most marked is poorer mental health among the least educated, whites, and especially among Native peoples (Blanchflower and Feir, 2023).

3.2 Europe

In Table 2, we examine gender effects on four-step life satisfaction using the Eurobarometer Surveys for 39 European countries for the 19-year period 2003–2021.[6] The Eurobarometer life satisfaction question used previously in Blanchflower (2021) and Blanchflower and Clark (2021) is:

Q2. "On the whole, are you very satisfied, fairly satisfied, not very satisfied or not at all satisfied with the life you lead? Not at all satisfied (= 1), not very satisfied (= 2), fairly satisfied (= 3), and very satisfied (= 4)."

In the first column of Table 2, we report the results of regressing the life satisfaction variable on a male dummy and a full set of year dummies separately for 36 countries using the Eurobarometer data for the pooled years 2003–2021.[7] We report the coefficients and *t*-values on the male variable for each separate country

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[6] The file also includes data for 2021 only for Switzerland, Norway, Bosnia Herzegovina, and Kosovo.
[7] In what follows for comparability purposes in the various wellbeing regressions we report, we include a standard set of controls including gender, state, or country of residence and year dummies.

Table 2 Four-step life satisfaction equations and male coefficients for 36 European countries

Country	2003-2021		1975-2002	
	Coefficient	N	Coefficient	N
All	.0000 (0.00)	1,740,043	-.0126 (7.17)	647,865
Belgium	.0331 (6.30)	60,247		
Bulgaria	.0128 (1.92)	58,247		
Cyprus	.0574 (6.42)	29,124		
France	.0396 (6.83)	59,969		
Germany	.0054 (1.23)	91,188		
Greece	.0462 (6.79)	59,385	.0239 (2.82)	41,945
Hungary	.0162 (2.62)	59,661		
Italy	.0132 (2.31)	60,046	.0510 (8.12)	56,099
Malta	.0340 (4.42)	29,102		
Portugal	.0550 (9.82)	60,471	.0616 (8.17)	33,781
Romania	.0215 (3.37)	59,631		
Slovenia	.0155 (2.90)	59,230		
Spain	.0218 (3.79)	59,622		
Sweden	-.0404 (8.37)	60,457		

All equations include year dummies, with *t*-statistics in parentheses. Source: Eurobarometers 2003–2021 and The Mannheim Eurobarometer Trend File, 1970–2002

regression and for all countries pooled. In the pooled 13 country regressions, the male coefficient is precisely estimated to be zero. In 13 of these countries, the coefficient on the male dummy is *significantly positive* (Belgium, Bulgaria, Cyprus, France, Greece, Hungary, Italy, Malta, Portugal, Romania, Slovenia, Spain, and Switzerland). It is negative and significant in ten (Albania, Austria, Croatia, Estonia, Finland, Iceland, Ireland, Sweden, Turkey, and the UK results not reported) and insignificant in 13.

In the second section of Table 2, we report equivalent estimates from the Mannheim Eurotrends file, 1973–2002 for the original 15 EU countries plus Norway. The dependent variable is the same life satisfaction variable, and we include a set of year dummies along with a male dummy. In the three countries reported — Greece, Italy, and Portugal — the male coefficient is positive and significant, just as it was for the later period. Similarly, the male coefficient is significant and negative in both for Austria, Denmark, Finland, Ireland, and the UK. Overall, there are three positive and significant male coefficients, eight significant negatives, and five insignificant. Plus, the pooled regression, with country dummies, is significantly negative in the earlier period.

Taken together these estimates suggest that men had *lower* life satisfaction in earlier years, whereas there is little overall difference since the turn of the century. However, there is huge heterogeneity in the correlation between gender and life satisfaction across countries in both periods, with male satisfaction above that of females in many instances.

In Table 3, we report the results of estimating happiness and life satisfaction equations using sweeps 1–9 of the European Social Surveys, for 2002–2018 across 39 European countries. The two wellbeing questions used are as follows.

Q3. "Taking all things together, how happy would you say you are 0 = extremely unhappy… 10 = extremely happy"

Q4. "All things considered, how satisfied are you with your life as a whole nowadays 0 = extremely dissatisfied… 10 = extremely satisfied"

The models condition on country fixed effects, and year. We find that the male coefficient is negative for happiness but insignificantly different from zero for life satisfaction. However, gender differences in wellbeing look very different across other wellbeing variables in these surveys. In panel (a) of Table 3, there are eight measures of life domain satisfaction, also scored from 0 to 10, in relation to issues such as democracy, national government, the state of the economy, education and health services, and one's standard of living. In all cases, the male coefficient is significant and positive. It seems men are more satisfied than women with most aspects

Table 3 Wellbeing in 39 countries, European Social Survey sweeps 1–9, 2002–2018

	Male coefficient	N
a) 2002-2018		
1. How happy are you? (scale of 0 to 10)	-.0240 (4.11)	430,755
How satisfied with… (0 = extremely dissatisfied to 10 = extremely satisfied)		
2. Life as a whole	-.0090 (1.38)	431,345
3. National government	.0538 (7.37)	416,920
4. The way democracy works in your country	.1329 (18.38)	415,025
5. Present state of the economy in country	.2074 (30.58)	425,122
6. State of education in country nowadays	.0372 (5.46)	411,703
7. State of health services in country nowadays	.2272 (32.31)	428,131
8. How life turned out so far (2006)	.1185 (6.47)	46,709
9. Standard of living (2006)	.1424 (7.26)	46,693
b) 2006, 2012 and 2014		
How often in the past week have you felt – none or almost none of the time (1), some of the time (2), most of the time (3), all or almost all the time (4)		
10. Depressed	-.1431 (39.51)	140,611
11. Anxious	-.1338 (29.99)	100,520
12. Sad	-.1714 (47.44)	140,612
13. Lonely	-.1053 (27.44)	140,658
14. Sleep was restless	-.1895 (42.29)	140,993

Equations include eight sweep and thirty-eight country dummies, with *t*-statistics in parentheses. Countries are Albania, Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Kosovo, Latvia, Lithuania, Luxembourg, Montenegro, Netherlands, Norway, Poland, Portugal, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, and UK. Years in survey by country found here: https://www.europeansocialsurvey.org/data/country_index.html

of their daily lives, even if the gender difference on global happiness and satisfaction is not clear-cut.

In the years 2006, 2012, and 2014, the European Social Survey (ESS) respondents provided information on five negative affect variables regarding how often in the last week they had felt depressed, anxious, sad, lonely, and that their sleep was restless (for more on restless sleep see Blanchflower and Bryson 2021b). Responses were coded none or almost none of the time (=1); some of the time (=2); most of the time (=3); all or almost all of the time (=4). In every case, the male coefficient was negative, confirming that women scored more highly than men on negative affect. Taken together with the evidence on domain satisfaction, the ESS findings appear to cast doubt on the paradox of female (un)happiness. Instead, it appears men express greater satisfaction with most aspects of life and are less likely to express poor mental health.

Further doubts are raised about the paradox in Table 4, which reports wellbeing equations using four sweeps of the European Quality of Life Surveys (EQLS) from 2003, 2007, 2011, and 2016. With controls for wave and country, the coefficient on male in a happiness equation is *positive* and significant, while on life satisfaction, it is positive with the *t*-value of 1.6.

However, it turns out that there are nine other wellbeing variables in the 2007, 2011, and 2016 surveys. Five of them are related to positive affect — feeling cheerful and being in good spirits; calm and relaxed; active and vigorous; they woke up

Table 4 Wellbeing in 36 European countries from European Quality of Life Surveys, 2003–2016

	Male coefficient	N
a) 2003-2016		
1) Happiness (1=10)	.0229 (2.23)	141,184
2) Life satisfaction (1-10)	.0177 (1.61)	141,780
b) 2007, 2011 & 2016 *"I have felt …….at no time; some of the time; less than half of the time; more than half of the time; most of the time and all of the time?"*		
3) Cheerful and in good spirits	.1279 (18.22)	115,635
4) Calm and in good spirits	.2239 (30.50)	115,649
5) Active and vigorous	.1829 (23.58)	115,565
6) Woke up feeling fresh and rested	.2388 (29.12)	115,563
7) My daily life has been filled with things that interest me	.1368 (17.85)	115,081
8) Lonely (2011, 2016)	-.1922 (20.86)	80,026
9) Downhearted and depressed (2011, 2016)	-.2007 (22.79)	79,916
10) Tense (2011, 2016)	-.1459 (15.37)	79,976
c) 2007, 2011, 2016 "Strongly disagree; disagree; neither; agree and strongly agree:"		
11) I feel left out of society	-.0279 (4.73)	115,305

Controls are country and wave, with *t*-statistics in parentheses. Countries are Albania, Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Macedonia, Germany, Greece, Hungary, Iceland, Ireland, Italy, Kosovo, Latvia, Lithuania, Luxembourg, Malta, Montenegro, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Turkey, and UK

feeling fresh and rested and say that their daily life has been filled with things that interest them. Answers have five options including at no time and less than half the time as explained in the table. In all five cases, the male coefficient is significant and positive.

There are also four negative affect variables — feeling left out of society, feeling lonely, downhearted, and depressed or feeling tense. Here, the male coefficients are all negative and significant.

Part (a) of Table 5 makes use of ten-step rather than the usual four-step life satisfaction variable. When this variable is regressed on a male dummy with country controls, the coefficient is significantly positive. The male dummy is also positive, and significant in estimates of ten-step positive affect variables regarding health, ability to perform daily tasks, and living conditions are used as dependent variables. These patterns in the male coefficient are replicated in the COVID period, as indicated in part (b) of Table 5, which estimates gender differentials in wellbeing using a recent Eurobarometer #95.1 for March–April 2021 for 39 European countries. It contains a number of variables on wellbeing, with the questions set out in the table, along with the standard four-step life satisfaction question in which the male coefficient is insignificant. This contrasts with the coefficients on the remaining six variables which are responses to a question on the respondent's current emotional status. The one positive affect variable — calm — has a positive and significant male coefficient. The remaining five negative affect variables — loneliness, fear, helplessness, frustration, and uncertainty — all have significant negative coefficients.

We also find a positive male effect in *expectations*. Part (c) uses data from two Eurobarometer surveys taken in 2021, #94.3 and #95.3. They show positive male coefficients on expectations of the financial situation in the household as well as the economic and employment situation the respondent's country. However, the male coefficient is insignificant when the question relates to "life in general."

The evidence from these European surveys is that men tend to express greater satisfaction with various aspects of their lives, while women express worse mental health when reporting on questions regarding negative affect. However, there is less consistency in the male/female differential on "global" happiness and satisfaction responses. It also seems to matter if life satisfaction has a ten-step or a four-step response.

3.3 The world

To capture male/female differences in wellbeing across the world, we make use of data from the Gallup World Polls (GWP) of 2005–2021. Zweig (2014) had previously used the 2005–2008 GWP Cantril ladder variable to examine the male/female happiness gap. It is apparent from the raw data she presents that male happiness is above female happiness in 30 of the 73 countries she examines

Table 6 reports male coefficients and *t*-statistics from regressions for 166 countries pooled. The first two columns estimate differences on enjoyment "yesterday" as captured by the question:

Q5. "Did you experience the following feelings during a lot of the day yesterday? How about enjoyment?"

Table 5 Wellbeing in 39 European countries in Eurobarometers, 2011 and 2021

a) 2011 Eurobarometer #76.2, September November
Could you please tell me on a scale of 1 to 10 how satisfied you are with each of the following items, where '1' means you are "very dissatisfied" and '10' means you are "very satisfied"?

Male coefficient

1. Your life in general (n=31,144)	.0756 (3.40)
2. Your health (n=31,231)	.2872 (11.08)
3. Your ability to perform day to day activities (n=31,187)	.1408 (5.88)
4. Your living conditions (n=31,161)	.0911 (4.03)

b) 2021 Eurobarometer #95.1, March-April

Male coefficient

1. Life satisfaction (n=26,613)	-.0135 (1.68)

Feelings describing current emotional status (1,0 dummies) n=26,669:

Male coefficient

2. Calm	.0742 (15.37)
3. Loneliness	-.0341 (7.70)
4. Fear	-.0690 (15.09)
5. Helplessness	-.0403 (7.94)
6. Frustration	-.0154 (2.78)
7. Uncertainty	-.0601 (10.00)

c) 2021 Eurobarometers 94.3, February-March and 95.3 June-July pooled
What are your expectations for the next twelve months: will the next twelve months be better (=3), worse (=1) or the same (=2), when it comes to...? (n=73,812)

Male coefficient

Financial situation of your household	.0158 (3.43)
Economic situation in our country	.0420 (7.19)
Employment situation in our country	.0213 (3.72)
Your life in general	.0004 (0.09)

t-statistics in parentheses. Panel (a): Controls are country dummies only. Countries are Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Macedonia, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Turkey, and the UK. Panel (b): Controls are country dummies only. Countries are Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, and Sweden. Panel (c): Controls are a wave dummy and country dummies for Albania, Austria, Belgium, Bosnia, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Kosovo, Latvia, Lithuania, Luxembourg, Malta, Montenegro, Netherlands, North Macedonia, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Turkish Cyprus, and the UK

For comparison purposes, the last two columns report male coefficients on Cantril's life satisfaction variable where the question asked is:

Q6. "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. On which step of the ladder would you say you personally feel you stand at this time,

Table 6. Enjoyment and Cantril life satisfaction from Gallup World Poll, 2005–2021

	Enjoyment		Cantril Life satisfaction	
Male	.0083 (13.97)	.0048 (7.95)	-.0700 (25.07)	-.1094 (38.85)
Age		-.0051 (59.09)		-.0372 (91.55)
Age^2*100		.0037 (33.02)		.0307 (70.33)
Year dummies	Yes	Yes	Yes	Yes
Country dummies	Yes	Yes	Yes	Yes
Education dummies	No	Yes	No	Yes
Constant	.8790	1.0724	7.5015	7.5243
Adjusted R^2	.0523	.0655	.1901	.2147
N	2,267, 773	2,178,946	2,333,834	2,244,571

t-statistics in parentheses

assuming that the higher the step the better you feel about your life, and the lower the step the worse you feel about it? Which step comes closest to the way you feel?"

The mean on enjoyment is 0.70, while the Cantril mean is 5.526. The answers are contradictory. Male enters positively for enjoyment yesterday and negatively to the Cantril variable that relates to life in general rather than yesterday. It seems men are happier "in the moment" than women but less happy if asked a question inviting them to reflect on their general happiness.

3.4 The UK

We now move on to look at gender differences in wellbeing for the UK in the Eurobarometer Surveys, 1973–2021; the Annual Population Surveys, 2012–2021; the Opinions and Lifestyle Survey, 2020–2022; the Health Survey for England, 2010–2019; and the 2020–2021 British Birth Cohort COVID surveys.

We begin by comparing files similar to the GSS for the US tracking life satisfaction back to the early 1970s. The trends in four-step life satisfaction scores in Fig. 2 plot average four-step life satisfaction scores for the UK for men and women using the 2003–2021 Eurobarometer files and the Mannheim Eurobarometer Trend files of 1973–2002. In contrast to the USA, life satisfaction rose steadily over time for men and women and female life satisfaction was above the male rate in the majority of years. Men's and women's life satisfaction plummets with the COVID pandemic. The female life satisfaction score for 2021 is below its prior historic lows, while for men, it is on a par with lows only previously seen in 1995 and the mid-1970s.

The bulk of our analysis involves examining microdata for the UK from the Annual Population Surveys of 2012–2021 (APS) which contains information on three 11-step wellbeing variables.[8] The questions asked are as follows, where respondents are asked to give their answers on a scale of 0 to 10.

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[8] Data is also available on this question — "overall, to what extent do you feel the things you do in your life are worthwhile?" It follows closely the path followed by life satisfaction, given both relate to the integral of the past and we do not report separate results here. In the regressions, we restrict the data to the years 2013–2021 as the highest qualification variable was not included in the 2012 survey.
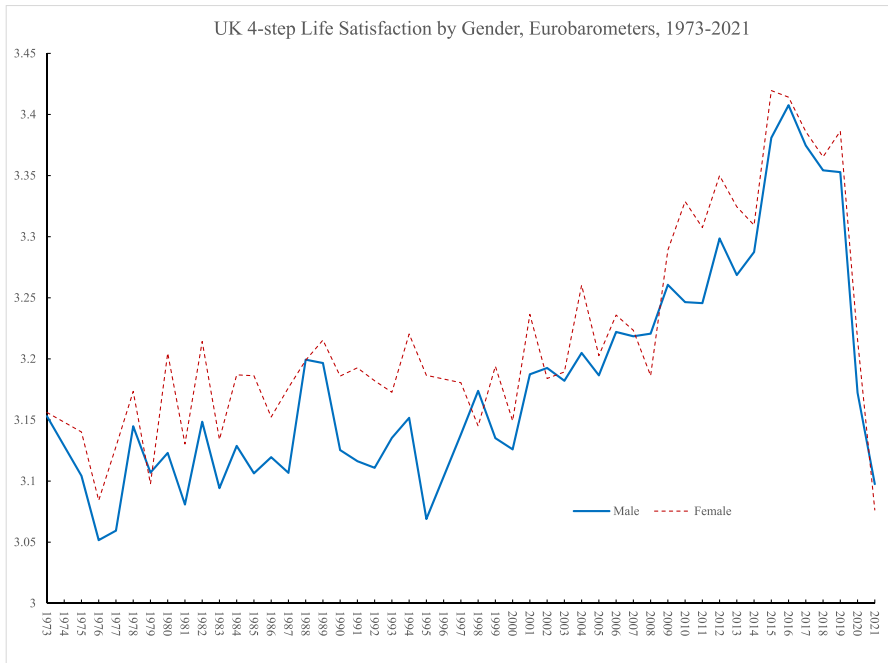
Fig. 2 UK 4-step Life Satisfaction by Gender, Eurobarometers, 1973-2021

Q7. "Life satisfaction — Overall, how satisfied are you with your life nowadays?"
Q8. "Happiness — Overall, how happy did you feel yesterday?"
Q9. "Anxious — Overall, how anxious did you feel yesterday?"

The results are reported quarterly by the Office of National Statistics.[9] The first of these variables refers to the integral of how life has been going and is unlikely to be changed quickly as compared with happiness and anxiety which relate directly to what happened the previous day. As would be expected, movements from the latter two are more pronounced and sharper than movements in the former that are initially slower to decline.

We trace the monthly path of wellbeing during period when the COVID virus had its greatest impact. This especially occurred in March and April 2020 and then recovery followed through September 2020, only to drop precipitously in late 2020 to reach a low on all measures in January 2021. Once again, wellbeing rose through to July 2021 but has slowed since then with an especially big drop in October 2021 as the Omicron variant of the COVID virus hit. We find that the negative sign on the male variable observed in earlier studies and in the UK for the period 2012–2019

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[9] ONS (2020) also reported on the early impact of COVID-19 on anxiety in April and May 2020 using the APS data. It found that factors most strongly associated with high anxiety during lockdown include loneliness, marital status, sex, disability, whether someone feels safe at home or not\, and work being affected by the coronavirus (COVID-19) pandemic. The odds of reporting high anxiety they found were twice as large for those aged 75 years and over than those aged 16 to 24 years.

switched and became positive in the case of the two positive affect measures. The anxiety gap between men and women increased in the pandemic; it seems that rise is driven by a rise in loneliness.

New data by gender from the Opinions and Lifestyle Survey (OALS) in the UK from March 2020 through to February 2022.[10] As in the case of the APS, the questions regarding happiness and anxiety refer to "yesterday."

Q10. "Overall, how happy did you feel yesterday?"

Q11. "Overall, how anxious did you feel yesterday?"

These questions are answered on a scale of 0 to 10, where 0 is "not at all" and 10 is "completely."

The time paths for men and women's happiness in the OALS are very similar to those reported in the APS data above, although the levels in the OALS are lower. Both have lows in March 2020 with recovery to a peak around July 2020 and a major trough at the start of 2021.[11] The low for females of 6.1 in 20–30 March 2020 is well below that of men of 6.6. The low in January 2021 is also a lot lower for women than men. For example, in the survey for 27–31 January, the male happiness score was 6.6 versus 6.2 for females. The APS data stopped in October 2021, having started falling; the extent of that drop looks greater than in the OALS data. By the start of February 2022, happiness levels were above their March 2020 levels but below what they had been in the summer of 2021 before omicron. Male and female happiness rates were both 6.9. These raw data reflect the findings discussed earlier, confirming that women tend to be more anxious than men, whereas differences in happiness are much less clear-cut.

Table 7 presents pre-COVID (2013–2019) and post-COVID (2020–2021) wellbeing equations for happiness, life satisfaction, and anxiety using the APS *by year* from 2012 to 2021 that provide very similar evidence to the OALS in 2020 and 2021. Controls are race, year, and country of residence — England, Northern Ireland, Scotland, or Wales. In the case of happiness, the sign on the male coefficient switches from negative to positive over time. The coefficient is negative and significant in 2012 only and negative but insignificant from 2015 to 2017. The sign switches to positive but insignificant in 2018 and positive and significant in 2019–2021. The phenomenon of a positive male coefficient started pre-COVID and so cannot be attributed solely to the effects of the pandemic. We do not know why.

For life satisfaction, there are negative and significant male coefficients in every year through 2017; in 2018 and 2019, they are insignificant and then both are positive in 2020 and 2021. In the case of anxiety, the negative coefficient gets larger over

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[10] See "Coronavirus and the Social Impacts on Great Britain," ONS, 18 February 2022.

[11] To get a sense of the decline in happiness in March 2020, between 2015 and 2019, weighted APS happiness averaged 7.53. For 2020, happiness averaged 7.38 for men and 7.30 for women and 7.47 and 7.39 for women in 2021. In the case of OALS, happiness averaged 7.00 for men and 6.86 for women in 2020 and 6.99 for men and 6.91 for women in 2021. The UCL Covid Social Survey has even lower happiness scores, which dropped to 5.6 for women and 6.0 for men in April 2020 and in the latest report #41 at the end of 2021 were at 6.4 for women and 6.8 for men.

Table 7. UK OLS coefficients on male dummy in wellbeing equations APS 2012–2021

	Happiness		Life satisfaction		Anxious	
All	.0058 (1.62)	1,453,690	-.0107 (3.52)	1,454,283	-.3749 (78.32)	1,452,481
2012	-.0421 (3.84)	166,339	-.0598 (6.41)	166,406	-.2561 (17.90)	166,122
2013	-.0170 (1.57)	166,132	-.0416 (4.49)	166,212	-.2961 (20.83)	165,895
2014	-.0147 (1.36)	165,597	-.0448 (4.95)	165,693	-.3092 (21.74)	165,393
2015	-.0070 (0.65)	158,326	-.0239 (2.63)	158,377	-.3355 (23.17)	158,138
2016	-.0182 (1.63)	150,645	-.0338 (3.65)	150,706	-.3421 (23.10)	150,530
2017	-.1046 (1.35)	154,295	-.0259 (2.84)	154,349	-.3760 (25.62)	154,219
2018	.0098 (0.88)	148,046	.0109 (1.17)	148,105	-.4240 (28.35)	147,980
2019	.0277 (2.49)	145,439	.0102 (1.08)	145,505	-.4486 (29.69)	145,380
2020	.1080 (8.66)	112,536	.0860 (7.92)	112,566	-.5582 (32.60)	112,520
2021	.1089 (7.77)	86,335	.1027 (8.32)	86,364	-.5621 (29.16)	86,304

Controls are race, country of residence, and month, with t-statistics in parentheses and number of observations following. Source: Annual Population Surveys

time. There is therefore a clear reversal whereby under COVID, men's wellbeing has improved compared with the wellbeing of women.

In Table 8, we examine pre-pandemic estimates of two wellbeing metrics from the English Health Surveys 2010–2019 in the first two columns. The questions were:

Q12. "Overall satisfaction with life nowadays? 0–10 — mean.

Table 8 Wellbeing from four UK birth cohorts, 2020–2021, and the Health Survey for England, 2010–2019

	Health Survey for England		Birth Cohorts	
	Life satisfaction 2016-2019	Good for me 2010-2019	Life satisfaction 2020-2021	Lonely 2020-2021
Male	.0680 (2.81)	.1609 (20.91)	.1610 (10.84)	-.1191 (25.39)
BCS70			-.2054 (9.13)	.0534 (7.51)
Next Steps			-.4554 (17.43)	.2842 (34.44)
MCS Cohort Member		-1.0873 (42.14)	.5249 (64.44)	
MCS Parent			-.0861 (3.59)	.0085 (1.12)
Constant	7.1895	3.4507	7.2830	1.4578
Adjusted R^2	.0091	.01207	.0457	.0958
N	28,773	57,084	63,863	63,796

t-statistics in parentheses. Equations include wave, region, and year dummies. Source for columns 1 and 2: Health surveys for England. Source for columns 3 and 4: British birth cohorts. Dependent variables are: Q12. "Overall satisfaction with life nowadays? 0–10; mean = 7.44. Q13. "Been feeling good about myself — none of the time (=2%); rarely (8%)" some of the time (34%), often (41%), and all of the time (15%) coded 1 through 5. For columns 3 and 4, the omitted category is NCDS. The data are from the birth cohort COVID surveys. Wave 1 April 2020; Wave 2 September 2020; Wave 3 February 2021. Millennium cohort study (born 2000–2002) both cohort members and parents (MCS). Next steps (born 1989–1990) was Longitudinal Study of Young People in England; 1970 British Cohort Study (BCS70); 1958 National Child Development Study (NCDS)

Q13. "Been feeling good about myself — none of the time (=1), rarely (=2), some of the time (=3), often (=4), and all of the time (=5).

Men have both higher life satisfaction than women and spend more time than women feeling good about themselves. In the two right-hand columns, we estimate equations using British birth cohort data post-pandemic in relation to 11-step life satisfaction and a three-step loneliness variable using data on 64,000 respondents of various ages for 2020 and 2021 from three waves of a COVID-19 study. These are (1) Millennium Cohort Study (born 2000–2002) both cohort members and parents (MCS); (2) Next Steps (born 1989–1990), which formerly was The Longitudinal Study of Young People in England; (3) 1970 British Cohort Study (BCS70); and (4) 1958 National Child Development Study (NCDS).

The questions asked were the same for all four cohorts: was Q8 above for life satisfaction and

Q14. "Lonely — how often do you feel lonely — hardly ever (=1); some of the time (=2) often (=3)?"

We include wave and cohort dummies along with regional controls plus a gender dummy. In column 3, the male variable is significantly positive in a life satisfaction equation. In the fourth column, the dependent variable is loneliness with a higher number meaning more loneliness and the male coefficient is negative. Hence, males have higher levels of life satisfaction and are less lonely. This confirms evidence from the APS for 2020 and 2021.

The patterns by gender we observed in the period since 2020 after the onset of the pandemic are also entirely consistent with those found for the UK in UCL's Covid Social Study. In report #41 for December 2021, separate results by gender are reported.[12] A number of factors are apparent in their report:

a) Males have lower levels of depression and anxiety across all months of the survey (Figure 5) and have lower levels of loneliness (Figure 22i) and covid-19 stress (Figure 9i). and the gender gap is broadly constant in all of them over time.
b) Financial (Figure 11i), food security (Figure 12i), and unemployment stress (Figure 10i); thoughts of death (Figure 14i) and self-harm (Figure 16i) are broadly flat over time with only small gender differences.
c) Life satisfaction and happiness are always higher for men than women (Figures 20i and 24i).

Women are less happy than men in these data for the UK.

The question that this finding begs is, how large are these effects? There is no simple way to do this, but we took the data from the Annual Population Survey reported in Table 7 and pooled the years 2019–2021 together and found the male coefficient with race, country of residence, month, and year controls was 0.074. To get a sense of whether this is large or not, we calculated the weighted means of four comparables by labour force status, education, age, and race. The male differential is slightly smaller than in the regression when controls are included for race, year, and country, at 0.06.

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[12] https://www.covidsocialstudy.org/_files/ugd/064c8b_8023e18f2f0a44fda625e222d7cf50a3.pdf.

Male	7.47
Female	7.41
Employee	7.47
Unemployed	6.97
Degree	7.43
No qualification	7.08
Age 16-17	7.67
Age 50-54	7.25
White	7.44
Pakistani	7.36
Chinese	7.42
Black	7.40

There is a difference of 0.50 happiness points between employees and the unemployed; 0.35 between those with no qualifications and those with a degree and 0.42 between teenagers with the highest happiness levels and those with the lowest (ages 50–54).[13] Of particular note is the male differential of 0.06 happiness points is larger than that between whites and blacks and whites and Chinese and is slightly more than between whites and Pakistanis. The difference in happiness levels between men and women in their happiness scores is statistically significant and positive since 2019 and thus also seems to be non-trivial.

4 Discussion

For the last few years, there is increasing consistent evidence that there is not a female paradox in wellbeing. Men have higher wellbeing than women, whether that is measured using negative or positive affect variables and the gap has increased during the COVID-19 pandemic and associated lockdowns. There is some evidence though that the trend to observing a positive male coefficient in happiness equations had been in train prior to COVID. What we have seen is something quite unusual — a sign change on a variable in happiness and life satisfaction equations in the UK. In this case, the male dummy goes from significantly negative to significantly positive.[14] The question is whether this will continue in the future.

We contribute to the literature in several ways. First, using the General Social Survey (GSS) for the USA, we track men and women's happiness between 1973 and 2021. We show mean happiness does not differ between men and women over that long time period, but these results do shift over time, but there is instability as Bond and Lang (2019) found. Some periods show a significant negative male

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[13] See Graham and Ruiz Pozuelo (2017), Blanchflower (2020, 2021), and Blanchflower and Feir (2023) on the U-shape in age in wellbeing data.

[14] Blanchflower and Clark (2021) found the same in relation to the sign on children in a happiness equation. For school-aged children, the sign flipped from negative to positive once controls were included for difficulty in paying the bills.

coefficient (1972–1987), while others show a significant positive (1988–2003). Happiness then plummets in 2021 for both, though women's satisfaction falls further. However, measures of satisfaction with finances shows men having higher wellbeing than women in all five time periods examined. We attempted to re-estimate using the median estimator method proposed by Chen et al. (2022) using a nonparametric estimator as an alternative. We found difficulty in having the estimates converge. The problem is that median regressions do not work well on a dependent variable that is categorical like happiness (there is such a big lump of people at 8 that the median is 8 for every group, so not very informative). For example, when we calculate the median for every possible subgroup based on male/race/month/year and country using the UK happiness data, the median is exactly 8 for 95.6% of the observations.

Furthermore, if you compare the mean differences between men's and women's wellbeing from Table 1 in the paper with the differences in medians below, the same pattern of results is obtained. The fact that the raw differences are not that different at the median and the mean suggest our results are likely robust to this concern.

Second, using data for Europe from the European Social Surveys and the European Quality of Life Surveys as well as a Eurobarometer Survey from 2020, we find broad evidence from a variety of wellbeing questions — on calmness, restless sleep., being cheerful, lonely, fearful, helpless, anxious, frustrated, tense, and more — we find that men have higher wellbeing than women. We also find that men are more satisfied than women in regard to broader questions about the state of the economy, democracy, and the state of health services and education in their country. We confirm that result using Gallup World Poll data on enjoyment.

Third, we turn to our main focus, namely gender differences in wellbeing and whether these have changed as a result of the COVID pandemic. We examine data for the UK from the Annual Population Survey and find that over time the sign on the male coefficient has shifted from negative to positive, but this change was already in train prior to the pandemic. The years 2020 and 2021 mark an important change but the change was already underway in 2018 and 2019. Data from the Opinion and Lifestyle Survey for the UK finds that for most of the period from April 2020 through February 2022, male happiness, yesterday, was above female happiness. We also find evidence for this from the Health Survey for England and from four UK birth cohorts.

Fourth, we show that in *all* of the various negative affect variables we examine, including anxiety depression, sadness, loneliness, and being tense, we confirm that women are always and everywhere have worse mental health, including higher levels of stress, anxiety, sadness, and depression than men.

Fifth, we find that the size of the gender differential in happiness does not appear to be trivial. Using UK data for 2019, we found that the male differential was about 0.6 happiness points which is more than the difference between the happiness of whites and blacks and about a quarter of the difference between someone with no qualifications and someone with a degree.

At the time of writing in July 2022, we find that the latest wellbeing data for the years since 2020 for the USA, the EU27 and the UK suggest that there is increasing evidence that there is no longer *any* female paradox. We report some evidence

from the UK that this pattern started before the COVID pandemic. There is strong evidence, from a number of data sources, and countries that men are happier, and have better mental health, than women. The question is whether this will change as the virus recedes and societies return to something resembling normal, possibly with some long run changes remaining such as remote working. The female paradox in wellbeing, for now at least, seems resolved. For now, men are happier than women.

Declarations

Conflict of interest The authors declare no competing interests.

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