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How Gender Norms Shape the Health of Women and Men?

Elena Bassoli

JEL Codes: D90, I12, I14, J16

Keywords: Gender, Gender Norms, Health, Health inequalities, Mental Health, EVS, SHARE



How Gender Norms Shape the Health of Women and Men?*

Elena Bassoli[†]

Abstract

The role of gender norms in determining women's and men's health has been largely overlooked by the economic discipline. This paper is among the first to evaluate the role of social norms on health disparities, a topic that has received limited attention. By combining two European cross-country data sources, I propose a novel approach to measuring gender norms and identifying the causal effect of changes in social norms on individuals' health. I exploit the European Value Study (EVS) and build time-varying measures of gender norms in the family and the work domains at the country-year level. These measures are then linked with the Survey of Health Ageing and Retirement in Europe (SHARE) data, which is representative at the older population in Europe. I set up an OLS model, including individuals and time-fixed effects, and investigate the role of norms on health status. I show that stronger traditional gender norms in the family increase women's depression. I also find that more gendered norms at work decrease women's reporting of poor health. I disentangle some potential mechanisms to test the precise channel by which the type of norm leads to the selected outcomes: financial difficulties, smoking and drinking are among the most critical drivers. Given that reducing gender health inequalities is crucial for fostering an equitable society, targeting neutral gender norms remains a crucial goal of public policies.

JEL Classification: D90, I12, I14, J16

Keywords: Gender, Gender Norms, Health, Health inequalities, Mental Health, EVS, SHARE

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1 Introduction

Although women live longer than men, gender health inequalities are largely persisting in nowadays societies (OECD (2022)). Women are more likely to experience more years in bad health status, affected by comorbidities and chronic conditions, so the number of years in good health by sex almost equalises (WHO 2016, OECD 2022). Nevertheless, the reasons behind these disparities are yet to be fully explored (Heise et al. 2019).

In this paper, I assess the role of social norms on individuals' health status in a longitudinal framework. I exploit the definition of norms given by Akerlof & Kranton (2000) as “prescriptions”, i.e. “shared expectations about how the group members ought ideally to behave”. By applying an OLS model including individuals and time-fixed effects, I show that traditional gender norms in the family and work contexts influence individuals' health status and, in particular, women's mental health and self-reported poor health status. Potential mechanisms that explain the effect of norms on health are financial distress, smoking and drinking habits.

Health disparities by gender have long been documented (Arber & Cooper 1999). While at first glance, the differences appeared to be caused by biological mechanisms, in such a way that disparities can be attributed to mere differences in genetic component and hormonal level, the recent findings in the sociological, epidemiological and medical literature have shown other potential drivers. As a matter of fact, while both men and women face different health challenges, the disparities are often rooted in social, cultural, economic and biological factors.

Indeed, even if the association between gender norms and individual's health has been long conceptualised and discussed in the psychological, (Saltonstall (1993), Courtenay (2000) Wingood & DiClemente (2000), Phillips (2005), Backhans et al. (2007), Fleming & Agnew-Brune (2015), epidemiological (Krieger (2003), Crimmins et al. (2010), Smith & Koehoorn (2016), Colineaux et al. (2023)) and sociological literature (Read & Gorman (2010), Pavalko et al. (2003), Schofield (2015), Homan (2019)), the economic literature has largely neglected the role of social norms in affecting an individual's health status and wellbeing. The above studies found that health status is associated with the social norms that pervade individuals' context, particularly the degree of “gender” within the social norms. Thus, a sharp distinction between biological health models and socioeconomic models has been long criticised: cultural and social conditions are closely intertwined with biological factors; thus, drawing a clear mark between

the two is nonsense.

This paper takes these findings as a starting point and provides novel evidence on the causal impact of gender norms on the health status of both men and women by exploiting a panel dataset of European countries.

Understanding and addressing gender health disparities is crucial for achieving equitable and encompassing healthcare systems and supporting individuals' wellbeing, regardless of their identity. So, investigating the relationship between social norms and health status is relevant from economic and societal perspectives.

However, providing a causal link between health inequalities and gender norms is empirically challenging. Indeed, the measure of gender norms is difficult to identify due to its complexity: gender norms are widely diffused in society and largely pervade each individual's life, both for men and women. They are a set of unwritten rules and customs that individuals adapt to, but are not written in regulations or laws.

Upon my knowledge, no study has addressed the role of gender norms in different domains on health outcomes. Gender norms and reported health measures from the same individual might be affected by endogeneity bias due to the same measures coming from the same source (belief about the norms and self-reported health). Thus, measuring gender norms and the health status of the same individuals may pose significant concerns. In this paper, I overcome this issue and measure gender norms from an external source to evaluate the role of the measures on individuals' health in a different population.

To conduct the analysis, I combine two sources of data. First, I exploit the Survey of Health Ageing and Retirement in Europe (SHARE) (Börsch-Supan et al. 2013), which is representative of the older population in Europe and provides information about the health status and socioeconomic characteristics of individuals aged 50 and above. The survey covers 27 European countries, and I exploit information from 9 countries for my study. I use this information to measure physical, mental, and self-reported health. The survey is panel, providing the longitudinal dimension.

Following on, I use the European Value Study (EVS) survey to compute the gender norms measures. The EVS dataset is a validated comprehensive survey of European countries requiring respondents to answer gender-related questions regarding women's (and men's) roles in society. The study focused on samples representative of the adult population level in each country. The

survey is a repeated cross-section, enabling me to capture changes in norms over time. I build two indicators of gender norms measured at the country and year level, and merge them to each respondent of the SHARE survey, at country and year level.

The measure of gender norms is based on a series of individual-level questions about women's roles in the family and at work. The questions are asked to both men and women. For each set of questions (either family or work-related), I compute a country-year measure of norms by averaging individual replies in each country and for each year. The time span considered goes from 2000 to 2009. Following this approach, I exploit time and country variations in gender norms and attitudes.

Using this external data, I can ensure an exogenous measure of gender norms and assess the causal impact on the respondent's health. By averaging the measures at the country and year levels, I provide reliable measures of gender norms and match them at the country-year level with the SHARE data, which reports the individual's health status information.

As identification strategy, I run an OLS model controlling for individual and time-fixed effects and investigate the role of gender norms on health outcomes later in life. In this way, I control for time-invariant unobserved heterogeneity. By doing this, I am able to identify the effect of gender norms and account for their variation over time. This variation may come from individual changes in attitude toward the role of women in the context of the family or work. About health, I test a battery of physical health onsets (such as cardiovascular diseases, stroke, heart disease and diabetes), mental health measured through the depression score [Prince et al. \(1999\)](#) and self-reported health status. Provided with these rich health measures, I investigate the role of social norms on multiple health dimensions.

I show that stronger traditional gender norms in the family increase women's depression, not males'. I also find that more gendered norms at work decrease women's reporting of bad health status, I disentangle some potential mechanisms to test the precise channel by which the type of norm leads to the outcomes considered. Financial difficulties, smoking and drinking are among the most important drivers. These are the three likely explanations that may mediate the relationship between gender norms and men's and women's health status.

Overall, I find several results. First, more traditional family norms, i.e. the woman is seen as the caregiver and housing keeper; increase women's depression, while no effect is found on men's mental health. One potential explanation is that women bear a higher psychological

cost of being in charge of the house and family caring activities, resulting in worse mental health conditions. When looking at traditional work norms, i.e. men are those performing at work while women should focus on the family; increasing conservative working norms reduces women's depression and also poor health status reported. This last result aligns with the one found by [Caroli & Weber-Baghdiguian \(2016\)](#), where gendered working environments prevent women from reporting worse health status. No significant effect is found for the effect of norms on physical health status.

Observed results mask substantial heterogeneity. Thus, I conducted several analyses to understand whether there were additional sources of variation in the data. I group individuals by age and divide the sample into those 50-64 and those above 65 to isolate individuals still active in the labour market from those who do not. Evidence suggests that the younger group is affected in terms of physical health, whereas traditional gender norms reduce heart disease for both men and women (also for women aged 65+). Regarding mental health, both groups are affected; however, women aged 65+ and men show an increase in depression when traditional family norms are stronger. This evidence suggests that the psychological effect of the care burden is prolonged later in the life cycle for them. I run analyses by the education group. I found that low educated and individuals with high school diploma are more affected by changes in gender norms on their physical health status. The effect of traditional family norms is negative, suggesting a reduction of the conditions. In contrast, low and high school-educated individuals are more impacted in their mental health level by traditional gender norms. However, I also show that with stronger gendered family norms, high school-educated men experience an increase in worse mental health. No effect is found for the highly educated group. This evidence suggests a heterogeneous effect of the norms based on age and educational level.

Sensitivity tests using norms at the cohort year country level confirm the baseline results. I also include the health status dynamics to account for previous health conditions when assessing mental health status: results do not change.

Finally, I explore the channels through which norms take place and find that financial constraints, smoking and drinking are among the most important drivers.

This paper contributes to several strands of the literature. First, it is among the first to evaluate the role of social norms on health disparities, also exploiting a cross-countries dimension. Indeed, some scholars have explained gender differences in health due to differences in self-

reporting health style [Bago d’Uva et al. \(2008\)](#). Others have suggested that the inequalities stem from differences in the distribution of chronic conditions ([Case & Paxson 2005](#), [Crimmins & Beltrán-Sánchez 2011](#)), while a recent stream has looked at the role of peers in affecting behaviours and, as a consequence, health status ([Powdthavee 2009](#), [Christakis & Fowler 2007](#), [Etilé 2007](#), [Fletcher 2010](#), [Bauer et al. 2007](#), [Gamper et al. 2022](#)). However, except for [Caroli & Weber-Baghdiguian \(2016\)](#), no study has investigated the role of social norms from family and work contexts and how they affect individuals’ physical and mental health, using a multi-country dataset.

On top of that, I propose a novel approach to measure gender norms and to identify the causal effect of changes in social norms on individuals’ health. I define gender norms in a multi-dimension setting: the previous literature has focused on one dimension at a time, either the individual’s work environment, the individual’s family, or the group of peers, while I am the first to provide a multifaceted approach by exploiting general questions on the role of women in the family or at work. In the past, only [Caroli & Weber-Baghdiguian \(2016\)](#) have used the gender ratio at work as a proxy for social norms in the health literature. They found that women in environments with a higher female-to-male ratio report worse health status than individuals in male-dominated work situations. Thus, gender environment at work plays a role in explaining differences in self-reported health.

Second, I provide causal evidence of the effect of gender norms on physical health status, mental health, and self-perceived health status. In this way, I show evidence of several components of individual health conditions. This adds to the studies on how norms affect individuals in many contexts. For example, the effect of norms on labour market choices [Stutzer & Lalive \(2004\)](#), [Moriconi & Rodríguez-Planas \(2021\)](#), [Rodríguez-Planas & de Galdeano \(2019\)](#) or on intimate partner violence ([González & Rodríguez-Planas 2020](#)) or education ([Bertrand et al. 2015](#), [Nollenberger & Rodríguez-Planas 2017](#)). These papers show that gendered norms prevent women’s participation in the labour market, limit women’s reporting of abuse and lower the education of women in the STEM field. My paper adds to this vast literature by showing how gendered norms also impact individuals’ health status, in particular mental health wellbeing.

Finally, I disentangle some potential mechanisms and test the precise channel by which the type of norm leads to the outcome we considered. Financial difficulties, smoking and drinking are among the most important drivers. These channels align with recent evidence suggesting

that norms act on multiple stages and affect health outcomes and healthcare overall (Weber et al. 2019). In conclusion, this line of research remains yet to be fully explored (Heise et al. 2019).

The rest of the paper proceeds as follows. Section 2 introduces the data and the related descriptive analyses. Section 3 presents the empirical strategy and its identification. Section 4 illustrates the results and 5 the analysis of heterogeneity. Finally, 6 concludes.

2 Data

2.1 Survey of Health Ageing and Retirement in Europe (SHARE)

I combined the Survey of Health Ageing and Retirement in Europe (SHARE) and the European Value Study (EVS) for this study. The Share survey contains information on individuals aged 50 and beyond from 27 European Countries and represents the ageing population in each country. The survey is available from 2004 to 2022 and is biannual; about 140,000 people have been interviewed. However, since I matched the information with those presented in the EVS, I selected only wave 1 and wave 2, which were collected in 2004 and 2007, respectively.

The survey follows a panel of European individuals, and for my purpose, I considered a set of countries for which gender measures are available in both waves of the EVS study. Thus, this choice leaves me with Germany, Sweden, the Netherlands, Spain, Italy, France, Greece, Denmark and Belgium.

The longitudinal dimension enables me to follow individuals over time, which is a characteristic that I will exploit in my identification strategy, as I will explain in section 3. SHARE provides individuals information on socioeconomic characteristics, including education, marital status, job situation, economic situation, health status and healthcare usage. This extensive information set enables me to control for many important individuals' characteristics in the analysis.

By using an external dataset to compute the gender norms measures, I overcome the endogeneity that would emerge if health status and gender norms were subjectively reported by the same respondent, which could have included bias by individual unobserved characteristics and attitudes. Furthermore, this strategy contributes to controlling for the potential so-called 'justification bias' (Barnay (2016)), where individuals with worse health status tend to report

worse conditions, in general, to give grounds to their circumstances.

Taking advantage of the richness of the SHARE data, I exploit information such as age, marital status and the current job status, particularly whether the respondent is working or not. I also exploit income at the household level to account for changes in the respondent’s financial condition. In subsequent analyses, I also take into account the respondent’s education level and the age group where she belongs, to explore heterogeneity based on individual characteristics.

2.2 The health status

I measure health status through several pieces of information available in the data. The richness of information enables me to measure: (i) physical health conditions, (ii) mental health status, and (iii) self-reported health. In this way, I can capture several health dimensions to understand which one could be more affected by gender norms.

First, I look at physical conditions. I focused on cardiovascular diseases such as hypertension, stroke, heart disease, and lung disease and all together in the cardiovascular variable (CVD *henceforth*). This information is self-reported and follow the question “As the doctor ever told you/Do you currently have (in case the item is checked already) one of the following disease?”. A list of diseases is provided at each interview. This measure has been primarily used in the literature to measure health status of the respondent (Smith 1999, Finkelstein et al. 2013, Zantomio & Trevisan 2015, Banks et al. 2020). These diseases enter the set of chronic diseases and can have long-lasting impacts on the individual’s life, so understanding to what extent gender norms can impact them is crucial.

Following on, I consider depression through two measures available in the data. The first is the euro-depression score, which is a 12-item scale, proposed by Prince et al. (1999). The item collected is experiencing depression, pessimism, suicidality, guilt, irritability, (loss of) concentration, sleep, interest, appetite, fatigue, joy, and tearfulness. It consists of 12 items, each evaluating whether the respondents have a given condition. Each item has a score of 1.

The second variable is a dummy for depression equals to one if at least 3 out of 12 items in the depression score are reported. The depression scale and related dummy have been validated in the medical field Prince et al. (1999). Therefore, in the analysis, I exploit both depression score and the corresponding dummy for depression.

Finally, health is also measured by exploiting the subjective question where the respondent

was asked to rate her health on a five-item scale from excellent to poor. Although self-declared, this variable has been extensively used in the literature, and many studies have shown consistency between subjective health situations and objective health status (Wu et al. 2013).

2.3 European Values Study

The information about gender norms comes from the European Values Study (EVS). This dataset is a cross section and includes 49 countries; it started in 1981 and goes up to 2020. In total, about 224,000 adult residents in Europe have been interviewed. It provides insights into European citizens' ideas, beliefs, preferences, attitudes, values, and opinions. For my purpose, I focused on information regarding the role of women in the family and the labour market. Given this choice, I can use information collected in 2000 and 2008/9 to match the year available for SHARE¹. In this way, I am left with about 13,000 individuals interviewed twice, so about 26,000 observations in total. For each gender norm dimension, I have information at the individual level. I aggregate the information and compute the average value at the country and wave level and then link the information in the SHARE data at the same level. The following section explains the procedure in detail.

2.4 The gender norms measures

The gender norms variables are measured in two different domains: women in the family and in the labour market.

Although several dimensions could impact women and men in general, I think these two spheres offer an essential starting point to measure society's attitude towards gender norms. The respondents of the EVS study answer the questions presented in Table 1. The answer varies from: (1) Strongly Agree, (2) Agree, (3) Disagree, (4) Strongly Disagree for questions 1-2 and 5-7. Instead, answer are Agree/Disagree for questions 3-4 and 8-9.

I recode the Strongly Agree/Agree reply as 0 and Strongly Disagree/Disagree as 1; this choice measures how much gender norms are traditional versus neutral. In this way, each measure of gender norm is increasing in the degree of traditionality: the more a woman is seen as someone

¹The first wave of SHARE is in 2004, and it is matched with the closest wave available in the EVS survey, which is in 2000, the second wave of SHARE is in 2007, and it is matched with the EVS 2008/9 wave. Wave 7 of SHARE (2017) is not included because it is available mainly for new countries that reached the survey. Thus, I decided not to include it.

who has to take care of the family and caring activities instead of working and having a career as a man, the more the family/work norms measure is increasing. Also, the more the concept of family is traditional (meaning a couple with children), the more the family norm is considered traditional.

Table 1: Questions on gender norms

Questions
Family Context
1 “A pres-school child suffers with a working mother.”
2 “A job is all right, but what most women really want is a home and children.”
3 “A child needs a home with both a father and a mother to grow up happily.”
4 “ Do you approve a woman who wants to have a child as a single parent?”
Work context
5 “Being a housewife is just as fulfilling as working for pay.
6 “ Husband and wife should both contribute to income.”
7 “Having a job is the best way for a woman to be an independent person”.
NOTE: For questions from 1-2 and 5-7, the respondent can answer 1 Strongly Agree 2 Agree 3 Disagree 4 Strongly Disagree. For questions 3-4 and 8-9, the answers are Agree/Disagree

I build two gender norms measures based on the family and work context. For each measure, I sum the responses and create an index at the individual level. Then, I average the responses at the country wave level; in this way, I obtain country-specific norms, which are based on the adult population responses and vary at the year level. The richness of the questions, along with the time variation, enable me to provide time-variant gender norms measures. In the sensitivity analysis I also compute the same measure at cohort-country-wave level. As for cohort I include 5 adjacent year of birth following Rodríguez-Planas et al. (2022). More details are presented in section 4.2.

Table 3 reports the average value for each measure by country. Southern countries such as Greece and Italy have the highest average value of traditional family norms, while Sweden and Denmark have the lowest. This finding is consistent with the sociological literature and the welfare state theory of Esping-Andersen (1990). Indeed, in Southern countries, welfare is based on the family structure, and women are more involved in caring activities than men. This traditional norm approach is also found in the working measure and the abortion attitude, as shown by the average values in Greece and Italy. However, it is worth noting that average working norms are higher in Belgium and the Netherlands, potentially suggesting that women

in the work setting are subjected to differences based on gender.

Figures [1](#) report the average measure per index (family and work) per country in a visual way. As expected, Southern Europe countries such as Greece, France, and Italy show the highest prevalence of traditional gender norms in both dimensions considered. Instead, Northern Europe countries such as the Netherlands and Denmark are among the lowest in terms of traditional gender norms.

Figures from [A-2](#) to [A-15](#) show the initial and final levels of the indices by country in our sample period (2000-2009). This enables me to check the time variation of the gender norms. In each country, family norms decrease from the first to the second wave, even slightly for some countries such as Italy or Greece, while more pronounced for France, Denmark and Sweden. Changes in working norms are less marked, and in some cases, the average index increase, for example in Greece, or remain stable if we look at Spain and Italy.

Changes in the gender norms may result from changes in the sample of respondents or due to the ageing of the population of the EVS survey. However, I make sure to select individuals who stayed several waves in the EVS study. Furthermore, following the literature on changes in preferences, older people are thought to become more risk averse, which would increase each measure. This is not the case since some indices increase, while others decrease. Thus, this suggests that the variation is driven by changes in attitudes towards women's condition.

2.5 Sample selection and descriptive statistics

I start from an overall SHARE sample of 460,000 observations with 170,000 respondents from 2004 to 2022. I selected individuals who were present in wave 1 and wave 2, and so we dropped about 394,000 observations. This choice is to be able to match SHARE with the EVS measures that I have created. I further select only individuals aged 50 to 90 to avoid attrition due to death, thus dropping other 2,554 observations. I select countries for which all the questions in the EVS survey were available to compute the gender norm measures. Austria and Switzerland were missing some items for the family norm measure. Thus, I dropped them. Because many countries joined SHARE recently, meaning from wave 7 (2017), I could not have multiple observations over time for them, and thus, I dropped all cross-sectional countries. Thus, I select Germany, Sweden, Spain, France, Italy, Greece, Denmark and Belgium and exclude 15,856 observations. The sample is weakly balanced. The final sample is 49,152 observations, and the summary

statistics are reported by gender in Table .

Men are 45% in the sample, which is consistent with women living longer overall. Focusing on our variables of interest, when comparing men and women, the averages are similar for cardiovascular diseases, suggesting a certain degree of homogeneity in the sample for this indicator. When looking at depression, women seem to report more depression than men, as it is often found in the mental health literature. When looking at each item in the depression score, we see that gender differences in mental health are driven by women reporting on average higher levels of depression, guilt, loss of sleep, interest, appetite and feeling tearful.

Women are also more likely to report poor health than men, with an average score of 3.06 versus 2.93.

The sample is balanced in age composition; on average, both men and women are 65 years old; 3.37% of men are working, while only 2.38% of women. Finally, as expected, women’s prevalence of being widowed is higher (20%) than the one for men (5%).

3 Empirical Strategy

Identifying the effect of gender norms on individuals’ health is challenging because many issues could arise. First, health and health status changes might be affected by changes in the individuals’ circumstances related to their personal situation. For example, changes in the working conditions [Ravesteijn et al. \(2018\)](#), [Britton et al. \(2021\)](#), [Belloni et al. \(2022\)](#) or changes in the family composition [Lindeboom et al. \(2002\)](#), [Siflinger \(2017\)](#) [Bassoli et al. \(2022\)](#) could cause a deterioration of the individual’s health status. Next, there might be time-invariant characteristics such as education or genetic predisposition that could confound the effect of gender norms on health. In addition, health is a latent variable, and several dimensions need to be considered to capture the “true” health status: not only physical health but also mental health contribute to measuring the health condition.

To take these issues into account, I set up an econometric model which includes several individuals characteristics as well as the gender norms measure. To do that, I model health

status as in the following model at the individual level:

$$\begin{aligned}
 Health_{it} = & \alpha + \gamma_1 TraditionalFamily_{ct} + \gamma_2 TraditionalWorking_{ct} \\
 & + \beta \mathbf{X}_{it} + \theta_i + w_t + \epsilon_{it}
 \end{aligned}
 \tag{1}$$

Where t is the time of the first or second wave in which the respondent is interviewed, i refers to the individual and c to the country. $Health_{it}$ is measured at the time of the interview: I considered a series of health diseases separately (hypertension, heart disease, lung disease and stroke) and together for cardiovascular diseases. I further exploit the response to self-perceived health status. I also depression scale and a corresponding dummy.

Gender norms are considered by dimension, and to account for each effect separately, they are captured by the coefficient of γ_1 and γ_2 . The idea is that changes in the country's gender norms over time are independent of the respondent's behaviour, as the entire society shapes them, and the norm can directly impact the individual's health. The vector \mathbf{X} includes time-variant characteristics that might confound the effect of gender norms on the individual's health, such as being working, becoming a widow and changes in family income. I also include age and age-squared terms to account for the non-linear effect of age on health.

θ_i is the individual fixed effect to control for unobserved heterogeneity and w_t the wave fixed effect. ϵ_{it} is an i.i.d. error term. I cluster standard error at the individual level. My primary interest lies in the γ_1 and γ_2 coefficients, which measure the causal effect of gender norms on health status.

I apply an OLS model controlling for individuals and time-fixed effects. In this way, I cancel out the time-invariant unobserved characteristic of health status. I also take into account time-varying characteristics of health correlated with gender norms.

Since the literature has shown that men and women are impacted differently by exogenous events such as changes in working conditions (Belloni et al. 2022) or family changes (Siflinger 2017); and because I make the hypothesis that gender norms affect sexes differently based on the biological sex attributed at born, I run the analyses separate for men and women.

The measurement of gender norms has been only partially addressed by the economic literature, which proposed different approaches such as the ratio of women to men in the work environment (Caroli & Weber-Baghdiguian 2016), the health status measured in BMI in the peer group Etile (2007), or the number of sick members in the family Powdthavee (2009). In

this paper, I present a novel approach in which gender norms are measured through changes in the average level of gender norms in the country c of the respondent at time t . In this setting, the variation in the average gender norms indicator at country c is exogenous from the individual perspective.

The idea is to exploit the variation in gender norms across time and countries and evaluate the effect on the individuals' health. A priori, the effect of gender norms on individuals' health is not given. Indeed, let's think about a setting of "traditional family norms" where the man is supposed to be the breadwinner and the woman the homemaker and caregiver. This can have both positive and negative effects on both sexes. For example, depending on their preferences, men with preferences for work and career could benefit from a traditional family norms setting, as also women with preferences for leisure, housing and caring activities. However, women with work preferences could suffer from these traditional norms and be unhappy and more vulnerable. A priori, the results are not known. Also, men with preferences for family vs work could suffer too. So, it is unclear how traditional family norms could impact the individual's health and their chances of reporting health conditions.

Another dimension of gender norms that I consider is the work environment. Gender norms can shape the work environment and impact individuals' health by imposing a specific structure and appropriate behaviour. For example, in a "traditional" work environment, men are considered leaders and those entitled to success. At the same time, women are expected to be in occupations with caring aspects, such as teachers or nurses, with little to no expectation of their career development. In this setting, as suggested above, depending on their work preferences, individuals may experience social stigma if they do not fit into the classical working "stereotypes", which could affect their health status.

4 Results

4.1 Main Results

The main results are reported in Table 4 and 5. First, I focus on several physical diseases: stroke, hypertension, heart disease, the sum of all these diseases together labelled as cardiovascular diseases (CVD) and diabetes. This choice lets me understand whether gender norms directly affect physical health conditions. Then, in Table 5, I focus on mental health measured using

the 12-item depression scale available in the SHARE data and the related binary indicator for depression, where at least three of the twelve items of the scale are reported. I proceed by looking at the gender norms' effect on the chance of reporting to be in poor health. I include individual and time-fixed effects and control for age, age squared, being a widow, being working and income (at the household level). In this way, we account for potential factors that could impact the individual's health status, aside from the measures of gender norms considered. For example, changes in the family composition (becoming a widow) or in the income level could play a role in an individual's wellbeing and overall health. By controlling for changes in these characteristics, I capture the remaining gender norm effect. Results are reported separately by sex; the "F" column reports the coefficients for the model estimated for females, while the "M" column is for males. The coefficients of interest are the effect of each gender norm by domain on the health outcomes.

I recall that each gender norm measure is increasing in the degree of conservatism, meaning that the higher the score, the more traditional is the gender norm.

Overall, my results suggest different patterns of the effect of gender norms on physical and mental health. Differences are present by sex, as expected.

In Table 4, overall, I found that gender norms impact mildly physical health depending on the sex considered. Traditional family norms impact men's health on cardiovascular and heart disease, while for women, they affect only lung diseases. In particular, one unit increase in traditional family norms decreases the chance of having cardiovascular diseases by 0.09 and heart disease by about 6.9 percentage points (pp henceforth) for men, while increasing diabetes by 3.8 pp for men. At first glance, this evidence seems to suggest that when men are in a more traditional family gender norms country, they could invest more in their health due to their role as breadwinners, and, thus, this has a positive impact on their cardiovascular health. Of course, this is only one potential explanation for understanding the channel of traditional gender norms. No effect is found for women for traditional gender norms.

The results are insignificant when looking at the effect of traditional working norms on both women and men. This suggests no effect of norms at work on physical health status.

When focusing on Table 5, we investigate the effect of gender norms on mental health and self-reported health. Altogether, the results suggest that the role of social norms is influential for women, especially for depression and poor health status. Starting from traditional family

norms, I found that they increase depression when using the depression scale scores (measured on a 12-item scale, so 1 point increase in the family norms increases 0.60 points in the depression score) and of 13.8 pp on the chances of being depressed (dummy). Men are instead not affected by increasing traditional family norms. This evidence suggests no opposite effect of traditional family norms on mental health compared to the negative one found in Table 4 for physical health. Indeed, women are negatively affected when the norm is more gendered, while men experience no effect on their mental health.

One of the potential mechanisms is that women could suffer more in mental health when the caring activities are meant to be for them only, compared to a more gender-neutral family norms context. For self-perceived health status, women experience a decrease of 6.1 pp in reported poor health when traditional family norms are stronger. However, this coefficient is not significant, as well as the one for men (decrease of 2.8 pp).

Overall, this result suggests that women are more affected than men in mental health when traditional family norms are present.

When looking at the effect of traditional working norms, increasing gendered work norms reduces women's depression (measured using the scales) by 2.1 points or by 38.6 pp when using the binary depression measure. The result is strongly significant. Also, men's depression is statistically significantly affected by changes in gender norms at work only when we use the binary measure of depression. The effect is a 15.6 pp decrease in depression for 1 unit increase in traditional working norms. Whilst traditional family norms might put an increasing care burden that reflects on women's mental health, this result is not found in the working dimension.

When looking at poor health, more traditional work norms reduce poor health by about 8.07 pp for women and 0.20 pp for men; however, the latter is not significant. Women seem more affected than men when working norms are gendered. This means that for 1 point increase in the working norms, there is a 0.80 point decrease in the poor health scale for women. In particular, this result is in line with the one of [Caroli & Weber-Baghdiguian \(2016\)](#) who found that women are more likely to report poor health status if they work in an environment with a higher female-to-male ratio. Indeed, in a context with stronger gendered norms on work, where women are potentially more discriminated against in their careers, they might be less likely to report poor health status. One potential explanation is that women in these working contexts should not show any sign of weakness or vulnerability; thus, they underreport their true health

status. On the other hand, they may invest more in prevention and healthcare in general to keep up with these work circumstances.

These primary results highlight an interesting pattern of the effect of gender norms in different contexts on health outcomes, particularly considering mental health status.

In the next section, I explore the presence of further heterogeneity in the sample and test the robustness of the analyses by applying alternative strategies and controls.

4.2 Alternative measures of gender norms: Cohort Norms

In this section, we explore alternative gender norms level. Indeed, individuals could also be affected by peer group norms, as suggested by scholars in the field of labour literature. For example, women are found to be less likely to work when the husband earns less than them (Bertrand et al. 2015), or depending on the share of high school peers' mothers who work (Olivetti et al. 2020) or based on the attitudes towards traditional family values of adjacent cohorts (i.e. the precise statement refers to “men should work outside the house while women should look after the family”) (Rodríguez-Planas & Tanaka 2022).

Although I explain in section 2.4 that our measures are taken from a sample which is representative of the adult population, which does not include SHARE respondents, and it allows us to avoid the reverse causality issue, I test the robustness of our strategy by applying an alternative level of the gender norms, namely norms measured at 5 groups of cohort level (adjacent cohorts) using the reply of individuals in the EVS study born in the adjacent years. These measures vary at cohort country and year level. In this way, we allow individuals to be affected by the peer group norms. Descriptive statistics of these measures are reported in Table A-1 in the Appendix. The norms are less traditional for young cohorts, which is in line with expectations about inter-generational changes in norms. Indeed, the mean of each measure is decreasing as we consider younger groups of cohorts.

Results are reported in Table 6. The model includes cohort and time-fixed effects, as well as the baseline controls. Starting from the cohort norms in the family context, the effect of these norms is positive and significant in each of the outcomes considered. Interestingly, men are also now affected by traditional family norms on depression. However, when comparing the magnitude of the effect, for a one unit increase in traditional norms, men and women differ largely, with the latter experiencing an increase of 0.04 points in the depression scores compared

to 0.010 points for men. The same effect in terms of magnitude (about 5 times the difference) is also found for the binary outcome of depression. Traditional family norms also increase the likelihood of reporting poor health status, but only for women.

Additionally, the effect of traditional working norms is not significant for women’s depression. This effect was also found in the baseline analysis of Table 5, and suggests that there might not be a cohort effect of norms at work on depression for women. When looking at poor health status, when considering one unit increase in traditional working norms, the effect is negative and of about 2.7 pp, which is in line with the baseline. The results are also found for men and negative as well, with a 4.3 pp reduction in poor health reporting.

Overall, these results confirm the effect of traditional family norms at the cohort level on depression and also highlight the role of traditional working norms at the cohort level in reporting poor health status. The evidence is in line with the baseline results and confirms the robustness of our baseline strategy.

4.3 Health Dynamics

Health inequalities have multiple dimensions and can be the result of a life process. In this way, some of the health outcomes measured at age 50 or beyond are the result of long term process that occur from childhood to early adulthood and this should consider when looking at health diseases later in life.

In this context, the health literature has proposed to account for health over the life cycle using some index measures: the frailty index (Hosseini et al. 2022) and the Poterba Venti Wise Index (Poterba et al. 2017).

The first measure exploits several objective health information and gathers them into a single index. In this index, the information is equally weighted and offers a more comprehensive measure of health status. The frailty measures contain the number of ADL and IADL, such as difficulties in mobility and in activities of daily living; the number of medical diagnoses such as high blood pressure, diabetes, heart disease, cancer, high BMI and if ever smoking; and finally, cognitive impairment in terms of loss of memory. The index is constructed as the fraction of conditions reported over the total number of conditions. Hosseini et al. (2022) follow the pioneering work of Mitnitski et al. (2004, 2001), which shows that the index is predictive of future adverse health events as the death of institutionalisation and used in the gerontology

literature (Goggins et al. 2005).

The second measure is the Poterba Venti Wise Index following their work (Poterba et al. 2017)². This measure uses several objective health indicators and takes the first principal component of the indicators as the health status measure. It accounts for the same conditions as the frailty index. However, the first principal component selects the weights to maximise the proportion of the variance in the variables captured by the index.

Both measures have been validated and used in the literature as a robust proxy of health status.

Table 7 reports the results, including the norms measures and the frailty index (top part of the Table) or the PVW index (bottom part). In both models, the results confirm the baseline evidence presented in section 4.1. In line with expectations, the frailty index has a positive and significant effect on the chances of reporting depression (both measured with a score or binary variable). In particular, if the frailty index increases by 0.10 standard deviation, it increases the depression score by 0.72 points for women and 0.71 points for men, and the chances of becoming depressed (columns III and IV) by 0.11 and 0.12 pp, respectively. Similar effects are found for poor health status both for men and women. The effect of the traditional family is confirmed and in line with the baseline results of Table 4. For traditional work norms, the effect is negative for both depression and poor health, and only for women. Similar effects are found in the bottom part of the Table for the PVW index: this measure is strongly predictive of depression and poor health, both for men and women, and has similar effects, although smaller in magnitude. This evidence confirms the appropriateness of the measure to account for the health dynamics of the individual. The norms' effects are confirmed, and the effects are of the same order of magnitude. It is worth noticing that the negative effect of traditional work norms on depression is confirmed here, too. This effect was negative but not significant in the baseline Table 4. It suggests that working norms, when traditional, reduce women's depression. One potential explanation is that they reflect the male-oriented environment that inhibits women's self-reported vulnerabilities for mental health.

²The measure we built does not include mental health issues as in the original measure proposed by the authors since it is one of the outcomes of interest.

4.4 Potential Mechanisms

So far, we have shown that gender norms in the family and work context are able to affect individuals' mental health and self-reported health. In this section, we test some of the potential mechanisms that could explain the effect we found for gender norms on health outcomes. More precisely, we want to test the precise channel by which the type of norm leads to the outcome we considered. Here, we investigate several potential paths: financial stress, unhealthy behaviours, hospitalisation due to mental health issues and liver or lung diagnosis as a proxy for unhealthy behaviours (either drinking or smoking).

Table 8 shows the results for each channel tested. Results are reported by sex. The first outcome is facing financial stress: it is a dummy variable equal to one if the individuals reply "With great/some difficulty" to the following question: "Are you able to make ends meet?". In traditional contexts, women are more likely to stay at home and provide informal care, thus, in this way, they could be more exposed to financial difficulties, because of their financial dependence to the partner.

The results in columns (i) and (ii) show that traditional gender norms in the family reduce the likelihood of financial distress while traditional working norms increase it. Both results are strongly significant for this later variable. It is interesting to note that the measures are predictive for both women and men and have the same effects for sign and magnitude.

The results suggest that when norms are more traditional in the family women financial distress reduces of 6.5 pp, while for men of 7.9. This could be explained by a pooling resources effects that protects the partner from financial difficulties. However, when looking at the effect of traditional work norms, the measure increases financial constraint for both men and women. Indeed, more gendered working setting could prevent women career and expose them to financial hardship.

Following on, we test the effect of the norms on unhealthy behaviours. Indeed, there is evidence that gender norms affect smoking and drinking habits, with evidence that women are more likely to smoke in gender-neutral society compared to men, starting from adolescence (Rodríguez-Planas & de Galdeano 2019). In columns (iii) and (iv), we see that traditional gender norms in the family increase the chances of smoking for women. One potential mechanism could be that women could suffer more relative to men's stress and take more smoking behaviours. Indeed, if women are the primary caregivers, this could potentially decrease their social life

and also affect their smoking habits (Castro et al. 2007). No effect on the working measures is present. Finally, the last behaviour considered is drinking more than two units of alcohol daily. Evidence in col. (v) and (vi) show a negative effect of traditional family norms both for women and men, while a positive effect for traditional working norms. These results are strongly significant and could underline the psychological pressure at work as a mechanism that enhances drinking habits.

Finally, we turn towards hospitalisation for mental health conditions as a proxy for low psychological wellbeing and liver and lung diagnosis as a proxy for excessive behaviours following Borra et al. (2024)³. As for the results, traditional family norms increase the chances of hospitalisation only for women, highlighting low psychological wellbeing as a mechanism through which norms affect the individual. Instead, traditional working norms decrease hospitalisation for mental health for women and increase lung disease diagnosis for men. This second result could align with the positive coefficient of the working norm on men’s smoking habits, even if not significant.

Overall, this evidence suggests that among the several mechanisms that could explain the effect of gender norms on health outcomes, financial hardship, drinking and smoking behaviours and psychological wellbeing are those more important. As a matter of fact, societal norms could act at multiple level and in several spheres of the individuals’ life, from the financial to the unhealthy habits, as well as wellbeing in general, and their effect could then lead to health changes.

4.5 Mental health components

Given that the depression score seems to be the indicator among the most affected by the gender norms, I investigate which items are more affected in the score by the changes in the norms. To do that, I disaggregate the index in its 12 items and run the analysis of equation 1 by taking each item as an outcome. Tables 9 and 10 report the results. In this way, I am able to disentangle the mechanism through which variation in gender norms impacts the psychological wellbeing of the respondents. The literature using the depression score finds that the measure is comparable across different populations (Tomás et al. 2022) and it has been recognised as an international

³The authors exploit hospitalisation for lung diseases such as neoplasms or liver problems. However, SHARE data only provide information on the diagnosis, not on the type of hospitalisation, except for mental health events. Thus, we consider the diagnosis to be a proxy for unhealthy behaviours due to data limitations.

proxy for depression (Larraga et al. 2006, Maskileyson et al. 2021). So, understanding which components are more affected by gender norms is important.

Table 9 shows that increasing traditional family norms augment depression for women and suicidality for men and women. The effect on depression is 17.3 pp, while suicidality is about 5.1 pp for women and 4.1 pp for men. When moving towards the effect of traditional working norms, they decrease self-reported depression for both sexes, and suicidality and guilt for women.

Following on, in Table 10, I find that traditional family norms increase lack of appetite and tearfulness and decrease enjoyment, but only for women. Instead, the effect of working norms is negative, reducing women’s irritability, appetite, fatigue, lack of concentration and tearfulness. No effect is found for men.

Based on these results, I find that gender norms strongly increase women’s reported depression, suicidality, lack of appetite and tearfulness. For men, the most affected items are self-reported depression (decrease) and suicidality (increase). This evidence suggests that there are heterogeneous effects and that gender norms impact individuals’ mental health differently based on sex.

4.6 Analyses of norms’ sub-index components

In this section, I expand the primary analysis by focusing on the sub-components of each index to try to understand which one is affecting more physical and mental health. I proceed by substituting one index at a time with each index sub-component, i.e. I replace the family index with each component and leave the remaining two indices of work and abortion norms aggregated as regressors. The econometric model remains as in 1. For the sake of space, I report the results for the most interesting outcomes, which are cardiovascular disease, depression score, and poor health reported, with only the sub-index components coefficients. Figures from A-11 to ?? show the results by sub-index components.

Starting from the family norms component, I report Figures A-11 to A-13. By looking at its components, I find that being in favour of the item “Women desire a home and children” has a negative effect on depression levels for women and a positive effect (meaning an increase) in poor health for men. Furthermore, the item “Child needs a mother and a father” increases the depression score for women only. Apart from these results, no specific channel of the family index sub-component can explain the effect on health status. However, one possible reason is

the lack of statistical power of the single component due to a weak correlation. After a check, the highest correlation is 0.6 for self-reported health.

Moving towards the work norms sub-component, from Figures [A-14](#) to [A-16](#), I find that the item “Both partners work” decreases women’s depression, while being against “Working women independence” increases both men’s and women’s poor health status. No significant effect is found for cardiovascular diseases, in line with the main results of Table [4](#).

Overall, this analysis shows that several components of each index contribute to explaining the effect of gender norms on physical and mental health, both for men and women. This evidence supports the multidimensional framework of gender norms, highlighting its importance.

5 Heterogeneity

5.1 Age Group and education level

In this section, I proceed by looking at potential heterogeneity by individual characteristics. I focus on age groups and education levels.

First, I split the sample into individuals aged 50-64 and above 65 and performed the baseline analysis of equation [1](#) by group. In this way, I disentangle a potential source of heterogeneity to understand if results are driven by individuals who are (likely) still active in the labour force. I am also interested in understanding the impact of gender norms on the time of the individual’s life cycle. Results are presented from Table [11](#) to [12](#), first for physical and then for mental health status.

In Table [11](#), the findings are significant for the younger group aged 50-64 for heart disease, both men and women, while only for women for heart disease a significant effect in the older group, the 65+. The signs of the effects are confirmed. For women, stronger family norms reduce heart diseases by 4.4 pp, while for men, the effect is a reduction of 8.3 pp. For 65+ women, there is a reduction in heart disease reported when working norms are traditional; the effect is 1.6 pp. This evidence overall indicates that heart diseases of younger individuals are more likely to be impacted by gender norms, in line with the fact that they are still active in the labour market and, thus, in some way, potentially more exposed to societal norms.

When looking at the results for depression in Table [12](#), evidence is found for men and women in both age groups, but with different patterns. All women are affected by traditional gender

norms in the family, with a positive effect that increases depression by 0.62 points for women aged 50-64 and 0.80 points for women 65+. The result is higher for older women in terms of magnitude and could be driven by the pressure of caring activities towards grandchildren (Eibich & Zai 2022) and older parents that women above age 65 face (Bassoli et al. 2023). Interestingly, for men, in the younger group, the family norms reduce the likelihood of depression by 0.53 points, while for the older group, there is a 0.61 points increase in the depression score. This evidence on depression, which varies depending on the age group and the sex, suggests a heterogeneous effect of the family norm. One potential explanation is that these people are at different points in their life cycle, and thus, they are influenced differently by norms.

Following on, when looking at the effect of traditional work norms, it has a negative effect on all women and older men (65+), suggesting a prolonged impact of working norms on mental health status. The result for women is in line with the baseline one, indicating that a more traditional work environment potentially prevents women from reporting their mental health status.

Finally, when focusing on poor health status as an outcome, results seem to be driven by young men (reduction in reporting status for increasing traditional family norms) and older women (reduction when considering working norms).

As a second step, I run the analysis of equation 1 by grouping individuals by education level. Gender norms might have different effects depending on the level of education obtained. Different education might be associated with different information sets and socio-economic positions. However, the fixed effect model set-up does not allow the inclusion of this information in the analysis; thus, running a separate analysis by education level is essential to understanding the impact of gender norms based on this characteristic.

I divide education level into three groups: low educated are those with elementary education at most (52.25%), middle educated with a high school diploma (28.27%) and, finally, high educated those with at least a degree (19.5%).

The first results reported are for physical health in Table 13. The only significant effect for low-educated individuals is for men when looking at CVD and heart disease. In particular, one unitary increase in traditional gender norms in the family reduces CVD by 0.13 unit and heart disease by 0.7 pp. For the middle-educated group, women display significant effects for stroke. The effects are multiple: family norms reduce stroke by 9.4 pp, while traditional work

norms increase it by 12.3 pp. High-educated individuals do not seem to be affected by changes in gender norms.

This first set of evidence highlights that low and middle-educated individuals are those more exposed to changes in gender norms and, in particular, to those in the family context.

Following on, I move to the mental and self-perceived health findings in Table [14](#). Here, low-educated women are more affected than middle and high-educated ones for what concerns depression. In particular, in column (i), more traditional family norms increase the depression scale by 0.68 points, while no effect is found in the other groups. This evidence suggests that the mental health of low-educated women is more exposed to changes in family norms than higher educated women.

Another interesting result is found for men: middle educated experience an increase in the depression scale of 0.71 points when family norms are more traditional (col. ii), while the no result is found for low and highly educated men. This would suggest that the middle educated are more exposed to family norms than the other groups.

When looking at traditional work norms, the effect is negative for low and middle-educated women for depression and for low-educated women's poor health status. For men, the effect is negative and significant for middle-educated for depression.

Overall, low-educated women and middle-educated men and women are the most affected in terms of depression when we assess the influence of gender norms. No effect is found for highly educated, potentially suggesting that their socioeconomic status might expose them less to traditional social norms.

To summarise, I find different effects of the norms based on education groups. Altogether, education appears to be an important individual characteristic that accounts for the heterogeneity in the effect of gender norms.

6 Conclusion

Gender health differences are still an open issue in the field of social sciences. Since biological factors alone as potential drivers have been overcome, epidemiologists, sociologists, and psychologists have proposed other perspectives: disparities are rooted in social, cultural and economic components present in society, which shape individuals' health.

Nevertheless, the economic field has largely neglected social norms' role in predicting health status. Some scholars have suggested that part of the gender health inequalities is due to the differences in the distribution of chronic diseases by sexes (Case & Paxson (2005)), others have attributed it to differences in the norms of the peer group, such as the family (Powdthavee (2009)), the group of friends at school (Etilé (2007), Fletcher (2010)) or the work environment (Caroli & Weber-Baghdiguian (2016)). However, what is the effect of gender norms, measured at the societal level, on health remains unexplored.

This paper brings new evidence on the role of traditional gender norms on health and found evidence for both men and women. By taking advantage of two European panel data surveys, I set up an empirical framework where I can measure both health status at the individual level and gender norms at the country-year level. Specifically, I take individuals' health status from the Survey of Health Ageing and Retirement in Europe (SHARE) and combine this data with gender norms measures built from the European Value Study. This last survey contains information on the role of women in the context of family and work. It provides the ground to build two separate measures of gender norms at the individual level, which I consequently average at the country and year levels. Endowed with this information, I set up an econometric model where I investigate the effect of gender norms by domain on respondents' health in the SHARE data. The model includes individuals and time-fixed effects to account for potential unobserved heterogeneity. Results show that increasing traditional gender norms at the family level increases depression levels for women but not for males. Furthermore, the role of traditional working norms seems to reduce poor health reporting for both men and women, in line with the evidence of Caroli & Weber-Baghdiguian (2016). Little evidence is found on physical health status.

Heterogeneous analyses by age group found that individuals aged 50 to 64 experience a significant effect of norms on physical health, while mental health is affected in the overall

sample, even by age group. By education, low-educated women and middle-educated men are those more negatively impacted by changes in gender norms compared to the other categories, in particular for mental health. Sensitivity analyses are run, including alternative norms at the cohort level or the health dynamics of the respondents; results do not change. Finally, when looking at the mechanisms beyond the results, financial constraints, smoking, and drinking are the most critical factors.

Some limitations of the analyses remain. Since SHARE is representative at the older population in Europe, I cannot extend the results to individuals below 50, which is an interesting population to analyse. Unfortunately, I do not have access to this sample of individuals.

Moreover, due to the interview matching time, I can only explore a two-period window in time. However, given that changes in gender norms might take decades, evaluating the long-run effect of changes in norms on health is important. I leave this question for further research when there will be more waves of both the SHARE and EVS surveys.

In conclusion, my results have important implications for policymakers. The evidence suggests that traditional gender norms can explain differences in health conditions by sexes, and this result sheds light on the role of social norms in shaping the individual's health status.

Gender norms impact not only women's labour market and financial situations but also their health status overall, particularly their mental health. Thus, promoting gender-neutral policies is the ultimate goal to reduce gender health inequalities.

Tables and Figures

Table 2: Summary statistics of the SHARE sample

Variable	Obs	Men		Obs	Women	
		Mean	Std. Dev.		Mean	Std. Dev.
Cardiovascular	22545	0.496	0.67	26607	0.466	0.633
stroke	22446	0.04	0.195	26503	0.031	0.172
hypertension	22446	0.309	0.462	26503	0.342	0.474
heart disease	22446	0.15	0.357	26503	0.095	0.293
lung disease	22446	0.062	0.24	26503	0.047	0.211
Depression (score)	22545	1.78	1.975	26607	2.7	2.358
Depression (dummy)	22545	0.267	0.443	26607	0.45	0.497
depression (item)	22428	0.249	0.464	26500	0.428	0.521
pessimism	22427	0.108	0.361	26500	0.121	0.373
suicidality	22426	0.03	0.249	26500	0.069	0.308
guilt	22427	0.041	0.271	26500	0.079	0.324
sleep	22425	0.205	0.436	26500	0.362	0.507
interest	22426	0.061	0.296	26499	0.091	0.333
irritability	22425	0.22	0.448	26499	0.236	0.457
appetite	22426	0.05	0.272	26498	0.084	0.32
fatigue	22425	0.247	0.465	26497	0.355	0.507
concentration	22353	0.172	0.413	26414	0.207	0.436
enjoyment	22424	0.105	0.357	26497	0.119	0.369
tearfulness	22424	0.115	0.362	26497	0.355	0.507
Poor health (score)	22545	2.93	1.072	26607	3.067	1.062
age	22545	64.927	9.509	26607	65.008	10.063
working	22545	0.337	0.473	26607	0.238	0.426
widow	22545	0.057	0.232	26607	0.207	0.405

NOTE: the sample included 17557 women and 14995 men interviewed in the Survey of Health Ageing and Retirement in Europe, aged 50-90, who were interviewed in 2004 and 2007/2008.

Table 3: Average gender norms by country, European Value Study sample

Country	Family norms	Working Norms	Against Abortion
Greece	2.975	0.714	0.947
Italy	2.889	0.810	1.171
France	2.335	0.833	0.588
Germany	2.323	0.643	0.698
Belgium	2.221	1.022	0.919
Netherlands	1.916	1.429	0.846
Spain	1.897	0.742	0.916
Sweden	1.600	0.752	0.209
Denmark	1.172	0.806	0.339
Total	2.184	0.868	0.747

NOTE: the sample included 14256 women and 12529 men interviewed in the European Value Studies, aged 16-90, who were interviewed in 1999/2000 and 2008/2009.

Figure 1: Family norms

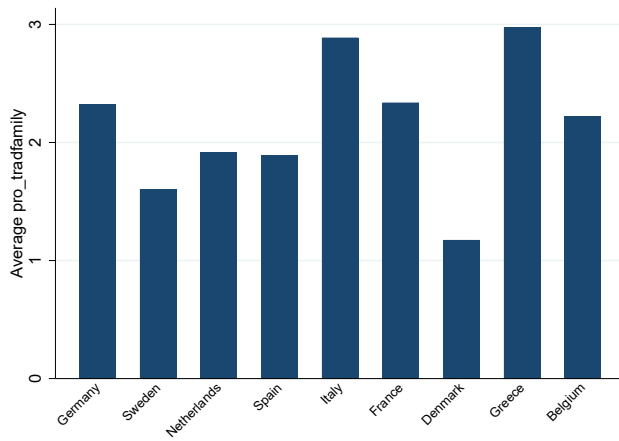


Figure 2: Working norms

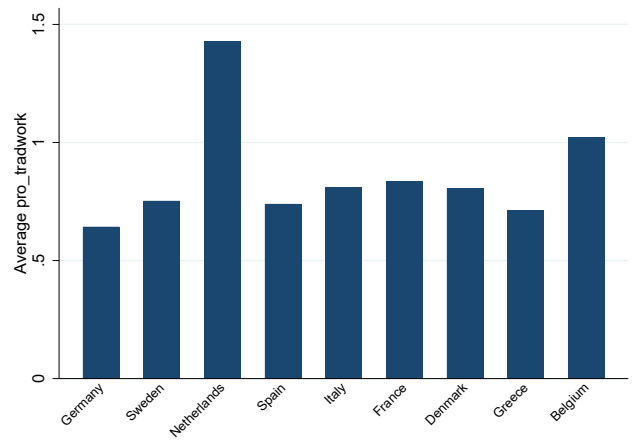


Table 4: Main results: effect of changes in gender norms on physical health status

	cvd		stroke		hypertension		heart disease		diabetes	
	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)
	F	M	F	M	F	M	F	M	F	M
tradfamily	-0.067 (0.047)	-0.091* (0.053)	-0.017 (0.016)	-0.022 (0.018)	-0.029 (0.035)	-0.008 (0.039)	-0.023 (0.024)	-0.069** (0.028)	0.018 (0.017)	0.038* (0.022)
tradwork	-0.043 (0.093)	-0.010 (0.103)	-0.001 (0.031)	0.001 (0.034)	-0.021 (0.071)	-0.044 (0.079)	-0.016 (0.048)	0.060 (0.054)	-0.012 (0.037)	-0.061 (0.044)
age	-0.017 (0.018)	-0.002 (0.021)	-0.001 (0.006)	-0.013* (0.007)	0.004 (0.013)	-0.005 (0.016)	-0.020** (0.010)	0.023** (0.011)	-0.004 (0.007)	0.007 (0.008)
age ²	0.000* (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000** (0.000)	-0.000** (0.000)	0.000 (0.000)	-0.000 (0.000)
widow	0.045 (0.047)	0.095 (0.079)	0.033* (0.019)	0.036 (0.023)	0.025 (0.032)	0.029 (0.051)	-0.013 (0.026)	0.076 (0.051)	0.017 (0.017)	0.054 (0.034)
working	0.027 (0.018)	-0.041* (0.021)	-0.005 (0.003)	-0.010 (0.006)	0.026 (0.016)	-0.007 (0.016)	0.004 (0.008)	-0.025** (0.011)	0.011* (0.006)	-0.008 (0.009)
income	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)
constant	0.711 (0.743)	0.808 (0.883)	0.004 (0.244)	0.609** (0.297)	-0.024 (0.551)	0.461 (0.655)	0.730* (0.391)	-0.583 (0.466)	0.179 (0.288)	-0.203 (0.337)
R-squared	0.004	0.007	0.002	0.002	0.004	0.009	0.002	0.003	0.004	0.006
N	26607	22545	26503	22446	26503	22446	26503	22446	26503	22446

NOTE: The dependent variables is the number of cardiovascular diseases (cvd), or the single disease as stroke, hypertension, heart disease and diabetes. The analysis is run for females (F) and males (M) separately. The model is estimated with individual and time fixed effect. Results include age, age squared, being widow, working and income as controls. Standard errors are in parenthesis. P-values:

* p<0.05, ** p<0.01, *** p<0.001

Table 5: Main results: effect of changes in gender norms on mental health status and self-reported poor health

	depression (scale)		depression (dummy)		poor health (dummy)	
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
	F	M	F	M	F	M
tradfamily	0.608*** (0.192)	0.022 (0.191)	0.138*** (0.049)	-0.022 (0.048)	-0.061 (0.084)	-0.028 (0.024)
tradwork	-2.151*** (0.400)	-0.627 (0.383)	-0.386*** (0.097)	-0.156* (0.093)	-0.807*** (0.163)	-0.020 (0.050)
age	-0.283*** (0.076)	-0.331*** (0.074)	-0.063*** (0.018)	-0.050*** (0.018)	-0.062** (0.031)	-0.037*** (0.011)
age ²	0.001** (0.001)	0.002*** (0.001)	0.000** (0.000)	0.000*** (0.000)	0.001** (0.000)	0.000*** (0.000)
widow	0.946*** (0.204)	1.267*** (0.297)	0.181*** (0.042)	0.276*** (0.058)	-0.056 (0.070)	0.052 (0.037)
working	-0.026 (0.094)	-0.120 (0.075)	-0.012 (0.022)	-0.011 (0.019)	-0.091** (0.036)	-0.025** (0.010)
income	-0.000* (0.000)	-0.000 (0.000)	-0.000** (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)
constant	16.072*** (3.174)	13.908*** (3.054)	3.420*** (0.770)	2.261*** (0.779)	5.766*** (1.308)	0.983** (0.459)
R-squared	0.011	0.009	0.008	0.006	0.042	0.017
N	26607	22545	26607	22545	26607	22545

NOTE: The dependent variables are depression measured with a 12 item scale, a dummy variable considering depressed individuals with at least 3 condition on the scale, and a dummy for being in poor health. The analysis is run for females (F) and males (M) separately. The model is estimated with individual and time fixed effect. Results include age, age squared, being widow, working and income as controls. P-values: * p<0.05, ** p<0.01, *** p<0.001

Table 6: **Effects of changes in gender norms at cohort group level on depression and poor health status**

	depression score		depression dummy		poor health	
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
	F	M	F	M	F	M
tradfamily	0.041*** (0.006)	0.010* (0.006)	0.233*** (0.030)	0.045* (0.026)	0.008** (0.003)	0.001 (0.003)
tradwork	0.009 (0.014)	0.011 (0.013)	0.067 (0.063)	0.095 (0.060)	-0.027*** (0.007)	-0.043*** (0.007)
R-squared	0.025	0.028	0.039	0.040	0.037	0.041
N	25763	21990	25763	21990	25763	21990

NOTE: The dependent variables are depression measured with a 12 item scale, a dummy variable considering depressed individuals with at least 3 condition on the scale, and a dummy for being in poor health. The analysis is run for females (F) and males (M) separately. The model is estimated with cohort and time fixed effect. Results include age, being widow, at work and income as controls.

Standard errors are in parenthesis. P-values: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 7: **Effects of changes in gender norms at country level on depression and poor health status with health dynamics**

	depression score		depression dummy		poor health	
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
	F	M	F	M	F	M
Frailty Index						
tradfamily	0.535*** (0.181)	-0.152 (0.171)	0.107** (0.044)	-0.055 (0.041)	0.010 (0.022)	-0.028 (0.021)
tradwork	-1.768*** (0.389)	0.046 (0.355)	-0.302*** (0.089)	0.005 (0.084)	-0.137*** (0.047)	0.002 (0.043)
frailty_index	7.268*** (0.221)	7.108*** (0.242)	1.144*** (0.037)	1.226*** (0.042)	1.232*** (0.031)	1.290*** (0.035)
R-squared	0.147	0.143	0.086	0.090	0.200	0.211
N	25984	22214	25984	22214	25984	22214
Poterba Venti Wise Index						
tradfamily	0.615*** (0.178)	-0.102 (0.169)	0.118*** (0.043)	-0.047 (0.041)	0.015 (0.022)	-0.022 (0.021)
tradwork	-2.083*** (0.383)	-0.076 (0.350)	-0.354*** (0.088)	-0.015 (0.083)	-0.164*** (0.048)	-0.009 (0.044)
PVW Index	0.030*** (0.001)	0.028*** (0.001)	0.006*** (0.000)	0.005*** (0.000)	0.003*** (0.000)	0.003*** (0.000)
R-squared	0.193	0.182	0.133	0.128	0.135	0.159
N	25827	22041	25827	22041	25827	22041

NOTE: The dependent variables are depression measured with a 12 item scale, a dummy variable considering depressed individuals with at least 3 condition on the scale, and a dummy for being in poor health. The analysis is run for females (F) and males (M) separately. The model is estimated with country, cohort and time fixed effect. Results include age, being widow, at work and income as controls. Standard errors are in parenthesis. P-values: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 8: **Effects of changes in gender norms at country level on financial stress, behaviours and healthcare**

Behavioural Channel:	Financial Stress		Ever smoked		Drinking daily >2	
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
	F	M	F	M	F	M
tradfamily	-0.065*	-0.079**	0.073**	-0.002	-0.407***	-0.760***
	(0.036)	(0.038)	(0.029)	(0.032)	(0.030)	(0.045)
tradwork	0.249***	0.300***	-0.078	0.071	0.860***	1.672***
	(0.074)	(0.081)	(0.055)	(0.063)	(0.061)	(0.098)
R-squared	0.188	0.192	0.126	0.014	0.046	0.050
N	26497	22482	26502	22491	26502	22491
Health outcomes	Hospitalisation MH		Liver Disease		Lung disease	
	F	M	F	M	F	M
tradfamily	0.012***	-0.002	0.001	0.003	-0.019	-0.026
	(0.004)	(0.004)	(0.001)	(0.004)	(0.019)	(0.021)
tradwork	-0.018*	0.009	0.000	-0.005	0.031	0.078*
	(0.010)	(0.008)	(0.003)	(0.006)	(0.037)	(0.043)
R-squared	0.002	0.002	0.000	0.000	0.010	0.021
N	26607	22543	26607	22543	26503	22445

NOTE: The dependent variables are financial stress, ever smoked and drinking daily in the top panel; hospitalisation for mental health issues, liver and lung diagnosis in the bottom panel of the Table. The analysis is run for females (F) and males (M) separately. The model is estimated with country, cohort and time fixed effect. Results include age, being widow, at work and income as controls. Standard errors are in parenthesis. P-values: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 9: **Effects of changes in gender norms on depression score components**

	depression		pessimism		suicidality		guilt		sleep		interest	
	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)	(xi)	(xii)
	F	M	F	M	F	M	F	M	F	M	F	M
tradfamily	0.173***	-0.011	-0.010	-0.021	0.051**	0.041*	0.049	-0.020	0.023	0.008	0.036	0.023
	(0.050)	(0.048)	(0.034)	(0.037)	(0.023)	(0.022)	(0.033)	(0.030)	(0.046)	(0.043)	(0.032)	(0.032)
tradwork	-0.497***	-0.154*	-0.011	0.066	-0.142***	-0.069	-0.172***	-0.020	-0.108	-0.029	-0.078	-0.055
	(0.099)	(0.093)	(0.073)	(0.076)	(0.051)	(0.045)	(0.062)	(0.058)	(0.090)	(0.083)	(0.066)	(0.064)
R-squared	0.013	0.007	0.001	0.002	0.002	0.006	0.002	0.003	0.001	0.002	0.002	0.003
N	26209	22182	26142	22119	26174	22140	26153	22132	26219	22189	26186	22158

NOTE: The dependent variables are 6 of the 12 item to measure depression following the depression score. The analysis is run for females (F) and males (M) separately. The model is estimated with individual and time fixed effect. Results include age, being widow, at work and income as controls. Standard errors are in parenthesis. P-values: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 10: **Effects of changes in gender norms on depression score components**

	Irritability		Appetite		Fatigue		Concentration		Enjoyment		Tearfulness	
	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)	(xi)	(xii)
	F	M	F	M	F	M	F	M	F	M	F	M
tradfamily	0.060 (0.043)	0.042 (0.048)	0.058** (0.029)	0.013 (0.025)	0.050 (0.049)	-0.060 (0.050)	0.046 (0.040)	0.019 (0.045)	-0.064* (0.039)	-0.063 (0.043)	0.125** (0.050)	0.016 (0.038)
tradwork	-0.193** (0.087)	-0.141 (0.097)	-0.124** (0.061)	-0.075 (0.052)	-0.234** (0.095)	-0.010 (0.092)	-0.214*** (0.082)	-0.088 (0.087)	0.009 (0.079)	-0.048 (0.082)	-0.315*** (0.098)	-0.119 (0.074)
R-squared	0.003	0.002	0.006	0.005	0.004	0.002	0.004	0.003	0.003	0.003	0.011	0.009
N	26189	22173	26225	22197	26191	22164	26132	22111	26160	22128	26213	22185

NOTE: The dependent variables are 6 of the 12 item to measure depression following the depression score. The analysis is run for females (F) and males (M) separately, with individuals aged 65+. The model is estimated with individual and time fixed effect. Results include age as controls. Standard errors are in parenthesis. P-values: * p<0.05, ** p<0.01, *** p<0.001

Table 11: **Results by age sub-groups: effect of changes in gender norms on physical health status**

	cvd		stroke		hypertension		heart disease		diabetes	
	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)
	F	M	F	M	F	M	F	M	F	M
Age 50-64										
tradfamily	-0.050 (0.053)	-0.087 (0.064)	-0.023 (0.015)	-0.009 (0.018)	0.015 (0.044)	-0.003 (0.051)	-0.044* (0.025)	-0.083*** (0.032)	0.014 (0.021)	0.028 (0.030)
tradwork	0.015 (0.107)	-0.033 (0.125)	0.044 (0.032)	0.020 (0.033)	-0.088 (0.089)	-0.076 (0.102)	0.063 (0.048)	0.049 (0.061)	-0.034 (0.046)	-0.042 (0.057)
R-squared	0.003	0.009	0.002	0.001	0.004	0.010	0.003	0.005	0.004	0.007
N	14097	11812	14047	11754	14047	11754	14047	11754	14047	11754
Age 65+										
tradfamily	-0.035 (0.088)	-0.129 (0.092)	-0.006 (0.033)	-0.037 (0.036)	-0.080 (0.062)	-0.053 (0.064)	0.043 (0.048)	-0.050 (0.051)	0.036 (0.031)	0.040 (0.038)
tradwork	-0.167 (0.170)	0.078 (0.181)	-0.067 (0.061)	-0.018 (0.067)	0.072 (0.122)	0.059 (0.132)	-0.160* (0.092)	0.070 (0.099)	0.001 (0.065)	-0.071 (0.074)
R-squared	0.004	0.006	0.004	0.004	0.004	0.010	0.003	0.003	0.006	0.005
N	12510	10733	12456	10692	12456	10692	12456	10692	12456	10692

NOTE: The dependent variables is the number of cardiovascular diseases (cvd), or the single disease as stroke, hypertension, heart disease and diabetes. The analysis is run for females (F) and males (M) separately for age groups. The model is estimated with individual and time fixed effect. Results include age, age squared, being widow, working and income as controls. Standard errors are in parenthesis. P-values: * p<0.05, ** p<0.01, *** p<0.001

Table 12: Results by age sub-groups: effect of changes in gender norms on mental health status and self-perceived health

	depression (scale)		depression (dummy)		poor health (dummy)	
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
	F	M	F	M	F	M
Age 50-64						
tradfamily	0.624** (0.269)	-0.530* (0.278)	0.142** (0.069)	-0.175** (0.068)	0.001 (0.030)	-0.055* (0.030)
tradwork	-2.437*** (0.571)	0.152 (0.538)	-0.482*** (0.139)	0.103 (0.132)	-0.051 (0.059)	0.079 (0.060)
R-squared	0.013	0.007	0.010	0.007	0.004	0.010
N	14097	11812	14097	11812	14097	11812
Age 65+						
tradfamily	0.800*** (0.308)	0.611** (0.300)	0.140* (0.077)	0.166** (0.073)	0.072 (0.047)	-0.009 (0.042)
tradwork	-2.313*** (0.620)	-1.398** (0.617)	-0.323** (0.147)	-0.466*** (0.146)	-0.376*** (0.100)	-0.115 (0.089)
R-squared	0.013	0.013	0.009	0.010	0.024	0.026
N	12510	10733	12510	10733	12510	10733

NOTE: The dependent variables are depression measured with a 12 item scale, a dummy variable considering depressed individuals with at least 3 condition on the scale, and a dummy for being in poor health. The analysis is run for females (F) and males (M) separately, for age groups. The model is estimated with individual and time fixed effect. Results include age, age squared, being widow, working and income as controls. Standard errors are in parenthesis. P-values: * p<0.05, ** p<0.01, *** p<0.001

Table 13: **Results by sub-groups: effect of changes in gender norms on physical health (education level)**

	cvd		stroke		hypertension		heart disease		diabetes	
	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)
	F	M	F	M	F	M	F	M	F	M
Low educated										
tradfamily	-0.069	-0.130*	-0.009	-0.019	-0.060	-0.050	-0.004	-0.071*	0.012	0.039
	(0.066)	(0.078)	(0.022)	(0.029)	(0.049)	(0.056)	(0.035)	(0.041)	(0.023)	(0.031)
tradwork	-0.127	0.104	-0.027	-0.004	-0.010	0.071	-0.082	0.061	-0.004	-0.083
	(0.124)	(0.147)	(0.043)	(0.052)	(0.094)	(0.113)	(0.066)	(0.075)	(0.049)	(0.063)
R-squared	0.006	0.006	0.003	0.002	0.006	0.011	0.002	0.002	0.006	0.004
N	15154	10526	15083	10476	15083	10476	15083	10476	15083	10476
Middle educated										
tradfamily	-0.123	-0.069	-0.094**	-0.027	0.014	0.001	-0.043	-0.052	0.012	0.023
	(0.097)	(0.100)	(0.038)	(0.030)	(0.068)	(0.072)	(0.048)	(0.055)	(0.037)	(0.048)
tradwork	0.149	-0.104	0.123*	-0.024	-0.068	-0.098	0.089	0.038	-0.015	-0.047
	(0.189)	(0.194)	(0.067)	(0.059)	(0.136)	(0.144)	(0.091)	(0.106)	(0.073)	(0.091)
R-squared	0.001	0.015	0.010	0.003	0.003	0.013	0.003	0.005	0.004	0.015
N	6982	6914	6963	6887	6963	6887	6963	6887	6963	6887
High educated										
tradfamily	-0.080	-0.029	0.022	-0.031	-0.048	0.077	-0.054	-0.089	-0.016	0.064
	(0.089)	(0.105)	(0.022)	(0.035)	(0.077)	(0.081)	(0.038)	(0.062)	(0.033)	(0.044)
tradwork	0.141	-0.152	-0.038	0.052	0.118	-0.249	0.061	0.090	0.090	-0.047
	(0.196)	(0.213)	(0.056)	(0.066)	(0.165)	(0.168)	(0.083)	(0.123)	(0.070)	(0.083)
R-squared	0.015	0.007	0.002	0.003	0.007	0.009	0.010	0.006	0.010	0.008
N	4471	5105	4457	5083	4457	5083	4457	5083	4457	5083

NOTE: The dependent variables is the number of cardiovascular diseases (cvd), or the single disease as stroke, hypertension, heart disease and diabetes. The analysis is run for females (F) and males (M) separately for education groups. The model is estimated with individual and time fixed effect. Results include age, age squared, being widow, working and income as controls. Standard errors are in parenthesis. P-values: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 14: **Results by sub-groups: effect of changes in gender norms on mental health status and self-perceived health (education level)**

	depression (scale)		depression (dummy)		poor health (dummy)	
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
	F	M	F	M	F	M
Low educated						
tradfamily	0.681*** (0.262)	0.075 (0.290)	0.129** (0.065)	-0.039 (0.071)	0.031 (0.038)	-0.001 (0.040)
tradwork	-2.740*** (0.521)	-0.634 (0.562)	-0.421*** (0.120)	-0.153 (0.134)	-0.241*** (0.075)	-0.103 (0.081)
R-squared	0.016	0.010	0.010	0.007	0.020	0.016
N	15154	10526	15154	10526	15154	10526
Middle educated						
tradfamily	0.515 (0.391)	0.719** (0.342)	0.198* (0.111)	0.129 (0.089)	-0.011 (0.043)	-0.085** (0.040)
tradwork	-1.610** (0.814)	-2.079*** (0.700)	-0.468** (0.224)	-0.382** (0.176)	-0.068 (0.087)	0.114 (0.081)
R-squared	0.013	0.019	0.009	0.009	0.003	0.017
N	6982	6914	6982	6914	6982	6914
High educated						
tradfamily	0.561 (0.449)	-0.538 (0.365)	0.095 (0.117)	-0.096 (0.091)	-0.007 (0.041)	-0.020 (0.038)
tradwork	-0.532 (0.991)	0.465 (0.738)	-0.058 (0.254)	-0.002 (0.189)	-0.104 (0.096)	0.007 (0.077)
R-squared	0.003	0.010	0.008	0.012	0.005	0.021
N	4471	5105	4471	5105	4471	5105

NOTE: The dependent variables are depression measured with a 12 item scale, a dummy variable considering depressed individuals with at least 3 condition on the scale, and a dummy for being in poor health. The analysis is run for females (F) and males (M) separately, for education groups. The model is estimated with individual and time fixed effect. Results include age, age squared, being widow, working and income as controls. Standard errors are in parenthesis. P-values: * p<0.05, ** p<0.01, *** p<0.001

References

- Akerlof, G. A. & Kranton, R. E. (2000), ‘Economics and identity’, *The quarterly journal of economics* **115**(3), 715–753.
- Arber, S. & Cooper, H. (1999), ‘Gender differences in health in later life: the new paradox?’, *Social Science Medicine* **48**(1), 61–76.
- Backhans, M. C., Lundberg, M. & Månsdotter, A. (2007), ‘Does increased gender equality lead to a convergence of health outcomes for men and women? a study of swedish municipalities’, *Social science & medicine* **64**(9), 1892–1903.
- Bago d’Uva, T., Van Doorslaer, E., Lindeboom, M. & O’Donnell, O. (2008), ‘Does reporting heterogeneity bias the measurement of health disparities?’, *Health Economics* **17**(3), 351–375.
- Banks, J., Bassoli, E. & Mammi, I. (2020), ‘Changing attitudes to risk at older ages: The role of health and other life events’, *Journal of Economic Psychology* **79**, 102208. The Impact of Life Experiences on Risk Taking.
- Barnay, T. (2016), ‘Health, work and working conditions: a review of the european economic literature’, *The European Journal of Health Economics* **17**(6), 693–709.
- Bassoli, E., Bonsang, E., Brugiavini, A. & Pasini, G. (2022), ‘End-of-life care and depression’, *Applied Economics Letters* **0**(0), 1–10.
- Bassoli, E., Bonsang, E., Brugiavini, A. & Pasini, G. (2023), ‘End-of-life care and depression’, *Applied Economics Letters* **30**(18), 2515–2524.
- Bauer, T., Göhlmann, S. & Sinning, M. (2007), ‘Gender differences in smoking behavior’, *Health Economics* **16**(9), 895–909.
- Belloni, M., Carrino, L. & Meschi, E. (2022), ‘The impact of working conditions on mental health: Novel evidence from the uk’, *Labour Economics* **76**, 102176.
- Bertrand, M., Kamenica, E. & Pan, J. (2015), ‘Gender identity and relative income within households’, *The Quarterly Journal of Economics* **130**(2), 571–614.

- Borra, C., González, L. & Patiño, D. (2024), ‘Mothers’ school starting age and infant health’, *Health Economics* .
- Börsch-Supan, A., Brandt, M., Hunkler, C., Kneip, T., Korbmacher, J., Malter, F., Schaan, B., Stuck, S. & Zuber, S. (2013), ‘Data resource profile: the survey of health, ageing and retirement in europe (share)’, *International journal of epidemiology* **42**(4), 992–1001.
- Britton, J. W., Blundell, R., Costas Dias, M. & French, E. (2021), ‘The impact of health on labor supply near retirement’, *Journal of Human Resources* .
- Caroli, E. & Weber-Baghdiguian, L. (2016), ‘Self-reported health and gender: The role of social norms’, *Social Science Medicine* **153**, 220–229.
- Case, A. & Paxson, C. (2005), ‘Sex differences in morbidity and mortality’, *Demography* **42**(2), 189–214.
- Castro, C. M., King, A. C., Housemann, R., Bacak, S. J., McMullen, K. M. & Brownson, R. C. (2007), ‘Rural family caregivers and health behaviors: Results from an epidemiologic survey’, *Journal of Aging and Health* **19**(1), 87–105.
- Christakis, N. A. & Fowler, J. H. (2007), ‘The spread of obesity in a large social network over 32 years’, *New England Journal of Medicine* **357**(4), 370–379.
- Colineaux, H., Neufcourt, L., Delpierre, C., Kelly-Irving, M. & Lepage, B. (2023), ‘Explaining biological differences between men and women by gendered mechanisms’, *Emerging Themes in Epidemiology* **20**(1), 2.
- Courtenay, W. H. (2000), ‘Constructions of masculinity and their influence on men’s well-being: a theory of gender and health’, *Social science & medicine* **50**(10), 1385–1401.
- Crimmins, E. M. & Beltrán-Sánchez, H. (2011), ‘Mortality and Morbidity Trends: Is There Compression of Morbidity?’, *The Journals of Gerontology: Series B* **66B**(1), 75–86.
- Crimmins, E. M., Kim, J. K. & Solé-Auró, A. (2010), ‘Gender differences in health: results from SHARE, ELSA and HRS’, *European Journal of Public Health* **21**(1), 81–91.
- Eibich, P. & Zai, X. (2022), Are the grandparents alright?: The health consequences of grandparental childcare provision, Technical report, CINCH Series.

- Esping-Andersen, G. (1990), ‘The three worlds of’, *Welfare Capitalism* .
- Etilé, F. (2007), ‘Social norms, ideal body weight and food attitudes’, *Health Economics* **16**(9), 945–966.
- Finkelstein, A., Luttmer, E. & Notowidigdo, M. (2013), ‘What good is wealth without health? the effect of health on the marginal utility of consumption’, *Journal of the European Economic Association* **11**, 221–258.
- Fleming, P. J. & Agnew-Brune, C. (2015), ‘Current trends in the study of gender norms and health behaviors’, *Current opinion in psychology* **5**, 72–77.
- Fletcher, J. M. (2010), ‘Social interactions and smoking: Evidence using multiple student cohorts, instrumental variables, and school fixed effects’, *Health economics* **19**(4), 466–484.
- Gamper, M., Seidel, J., Kupfer, A., Keim-Klärner, S. & Klärner, A. (2022), *Gender and Health Inequalities: Social Networks in the Context of Health and Health Behavior*.
- Goggins, W. B., Woo, J., Sham, A. & Ho, S. C. (2005), ‘Frailty Index as a Measure of Biological Age in a Chinese Population’, *The Journals of Gerontology: Series A* **60**(8), 1046–1051.
- González, L. & Rodríguez-Planas, N. (2020), ‘Gender norms and intimate partner violence’, *Journal of Economic Behavior & Organization* **178**, 223–248.
- Heise, L., Greene, M. E., Opper, N., Stavropoulou, M., Harper, C., Nascimento, M., Zewdie, D., Darmstadt, G. L., Greene, M. E., Hawkes, S., Heise, L., Henry, S., Heymann, J., Klugman, J., Levine, R., Raj, A. & Rao Gupta, G. (2019), ‘Gender inequality and restrictive gender norms: framing the challenges to health’, *The Lancet* **393**(10189), 2440–2454.
- Homan, P. (2019), ‘Structural sexism and health in the united states: A new perspective on health inequality and the gender system’, *American Sociological Review* **84**(3), 486–516.
- Hosseini, R., Kopecky, K. A. & Zhao, K. (2022), ‘The evolution of health over the life cycle’, *Review of Economic Dynamics* **45**, 237–263.
- Krieger, N. (2003), ‘Genders, sexes, and health: what are the connections—and why does it matter?’, *International journal of epidemiology* **32**(4), 652–657.

- Larraga, L., Saz, P., Dewey, M. E., Marcos, G. & Lobo, A. (2006), 'Validation of the spanish version of the euro-d scale: an instrument for detecting depression in older people', *International Journal of Geriatric Psychiatry: A Journal of the psychiatry of late life and allied sciences* **21**(12), 1199–1205.
- Lindeboom, M., Portrait, F. & van den Berg, G. J. (2002), 'An econometric analysis of the mental-health effects of major events in the life of older individuals', *Health Economics* **11**(6), 505–520.
- Maskileyson, D., Seddig, D. & Davidov, E. (2021), 'The euro-d measure of depressive symptoms in the aging population: Comparability across european countries and israel', *Frontiers in Political Science* **3**.
- Mitnitski, A. B., Song, X. & Rockwood, K. (2004), 'The estimation of relative fitness and frailty in community-dwelling older adults using self-report data', *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences* **59**(6), M627–M632.
- Mitnitski, A., Mogilner, A. & Rockwood, K. (2001), 'Accumulation of deficits as a proxy measure of aging', *TheScientificWorldJournal* **1**, 323–336.
- Moriconi, S. & Rodríguez-Planas, N. (2021), 'Gender norms and the motherhood employment gap'.
- Nollenberger, N. & Rodríguez-Planas, N. (2017), 'Let the girls learn! i it is not only about math... it s about gender social norm'.
- OECD, E. U. (2022), *Health at a Glance: Europe 2022*.
- Olivetti, C., Patacchini, E. & Zenou, Y. (2020), 'Mothers, peers, and gender-role identity', *Journal of the European Economic Association* **18**(1), 266–301.
- Pavalko, E. K., Mossakowski, K. N. & Hamilton, V. J. (2003), 'Does perceived discrimination affect health? longitudinal relationships between work discrimination and women's physical and emotional health', *Journal of Health and social Behavior* pp. 18–33.
- Phillips, S. P. (2005), 'Defining and measuring gender: a social determinant of health whose time has come', *Int J Equity Health* **4**, 11.

- Poterba, J. M., Venti, S. F. & Wise, D. A. (2017), 'The asset cost of poor health', *The Journal of the Economics of Ageing* **9**, 172 – 184.
- Powdthavee, N. (2009), 'Ill-health as a household norm: Evidence from other people's health problems', *Social Science Medicine* **68**(2), 251–259.
- Prince, M. J., Reischies, F., Beekman, A. T. F., Fuhrer, R., Jonker, C., Kivela, S. L., Lawlor, B. A., Lobo, A., Magnusson, H., Fichter, M. & et al. (1999), 'Development of the euro-d scale – a european union initiative to compare symptoms of depression in 14 european centres', *British Journal of Psychiatry* **174**(4), 330–338.
- Ravesteijn, B., Kippersluis, H. v. & Doorslaer, E. v. (2018), 'The wear and tear on health: What is the role of occupation?', *Health Economics* **27**(2), e69–e86.
- Read, J. G. & Gorman, B. K. (2010), 'Gender and health inequality', *Annual Review of Sociology* **36**(1), 371–386.
- Rodríguez-Planas, N. & Tanaka, R. (2022), 'Gender norms and women's decision to work: evidence from japan', *Review of Economics of the Household* **20**(1), 15–36.
- Rodríguez-Planas, N. & de Galdeano, A. S. (2019), 'Intergenerational transmission of gender social norms and teenage smoking', *Social Science Medicine* **222**, 122–132.
- Rodríguez-Planas, N., de Galdeano, A. S. & Terskaya, A. (2022), 'Gender norms in high school: Impacts on risky behaviors from adolescence to adulthood', *Journal of Economic Behavior Organization* **196**, 429–456.
- Saltonstall, R. (1993), 'Healthy bodies, social bodies: men's and women's concepts and practices of health in everyday life', *Social science & medicine* **36**(1), 7–14.
- Schofield, T. (2015), *A Sociological Approach to Health Determinants*, Cambridge University Press.
- Siflinger, B. (2017), 'The effect of widowhood on mental health - an analysis of anticipation patterns surrounding the death of a spouse', *Health Economics* **26**(12), 1505–1523.
- Smith, J. (1999), 'Healthy bodies and thick wallets: The dual relation between health and economic status', *Journal of Economic Perspectives* **13**(2), 145–166.

- Smith, P. M. & Koehoorn, M. (2016), ‘Measuring gender when you don’t have a gender measure: constructing a gender index using survey data’, *International journal for equity in health* **15**, 1–9.
- Stutzer, A. & Lalive, R. (2004), ‘The role of social work norms in job searching and subjective well-being’, *Journal of the European Economic Association* **2**(4), 696–719.
- Tomás, J. M., Torres, Z., Oliver, A., Enrique, S. & Fernández, I. (2022), ‘Psychometric properties of the euro-d scale of depressive symptomatology: Evidence from share wave 8’, *Journal of Affective Disorders* **313**, 49–55.
- Weber, A. M., Cislighi, B., Meausoone, V., Abdalla, S., Mejía-Guevara, I., Loftus, P., Hallgren, E., Seff, I., Stark, L., Victora, C. G., Buffarini, R., Barros, A. J. D., Domingue, B. W., Bhushan, D., Gupta, R., Nagata, J. M., Shakya, H. B., Richter, L. M., Norris, S. A., Ngo, T. D., Chae, S., Haberland, N., McCarthy, K., Cullen, M. R., Darmstadt, G. L., Darmstadt, G. L., Greene, M. E., Hawkes, S., Heise, L., Henry, S., Heymann, J., Klugman, J., Levine, R., Raj, A. & Rao Gupta, G. (2019), ‘Gender norms and health: insights from global survey data’, *The Lancet* **393**(10189), 2455–2468.
- WHO, W. H. O. (2016), *Women’s health and well-being in Europe: beyond the mortality advantage*, World Health Organization. Regional Office for Europe.
- Wingood, G. M. & DiClemente, R. J. (2000), ‘Application of the theory of gender and power to examine hiv-related exposures, risk factors, and effective interventions for women’, *Health education & behavior* **27**(5), 539–565.
- Wu, S., Wang, R., Zhao, Y., Ma, X., Wu, M., Yan, X. & He, J. (2013), ‘The relationship between self-rated health and objective health status: a population-based study’, *BMC Public Health* **13**, 320.
- Zantomio, F. & Trevisan, E. (2015), ‘The impact of acute health shocks on the labour supply of older workers: Evidence from sixteen european countries’.

A Appendix

Figure A-1: Average norms by country and wave (Blue bars are family norms, red bars are working norms)

Figure A-2: Germany

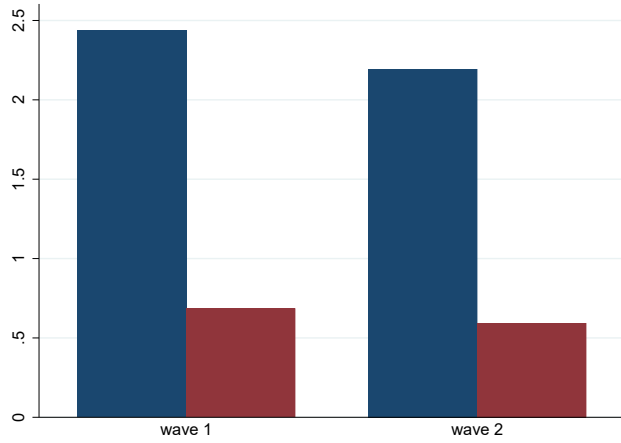


Figure A-3: Sweden

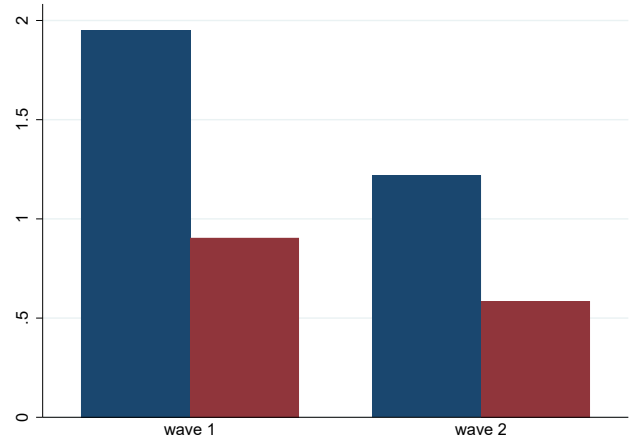


Figure A-4: the Netherlands

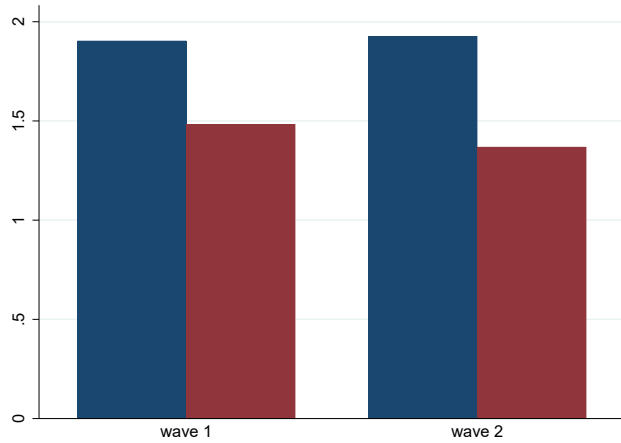


Figure A-5: Spain

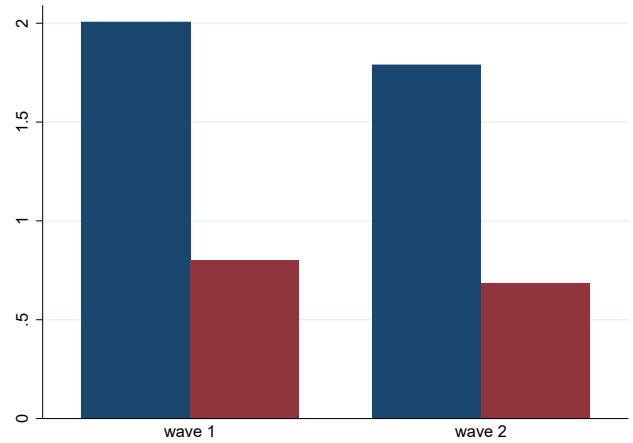


Figure A-6: Italy

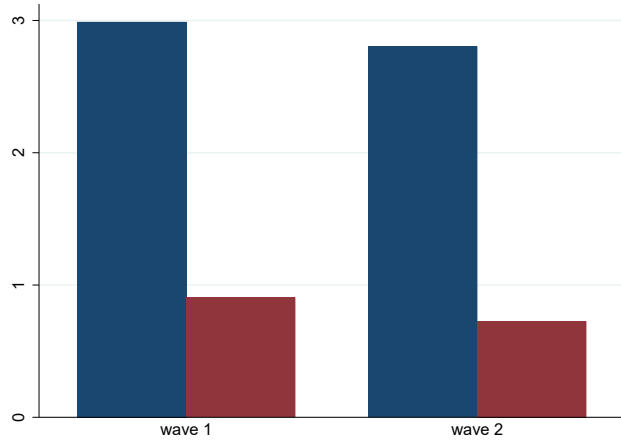


Figure A-7: France

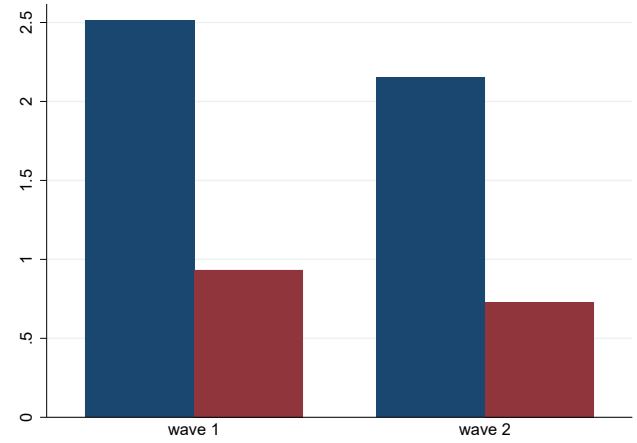


Figure A-8: Denmark

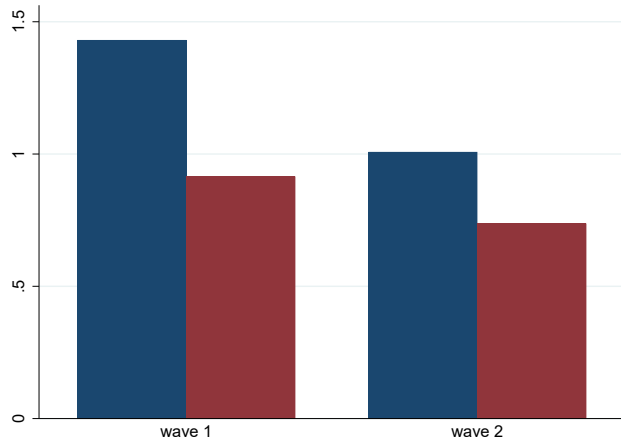


Figure A-9: Greece

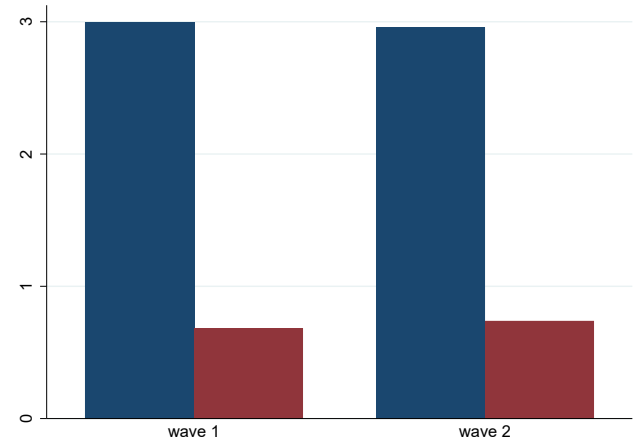


Figure A-10: Belgium

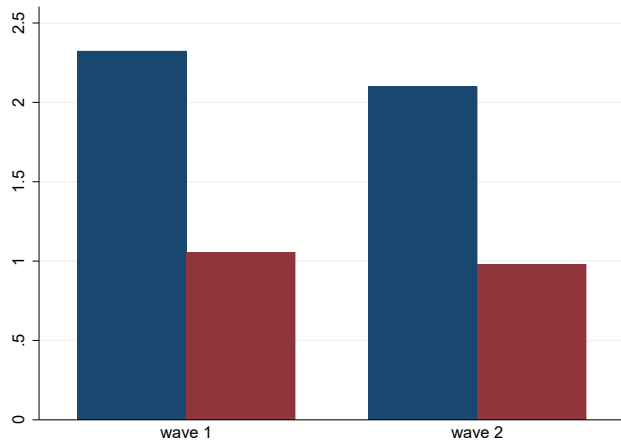


Figure A-11: Cardiovascular Disease

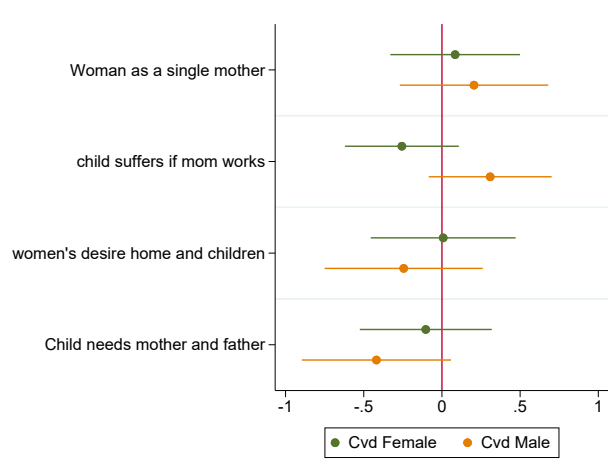


Figure A-12: Depression score

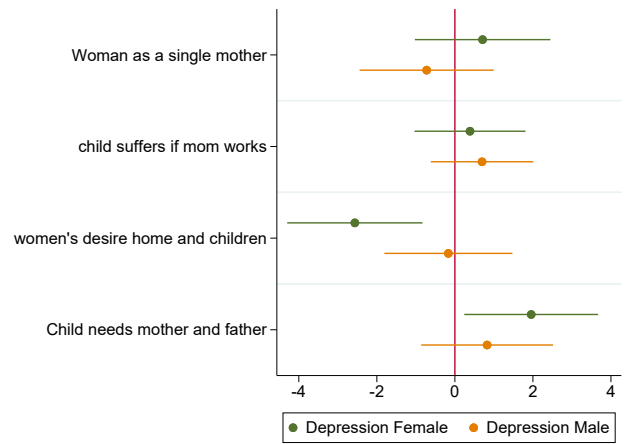


Figure A-13: Poor health

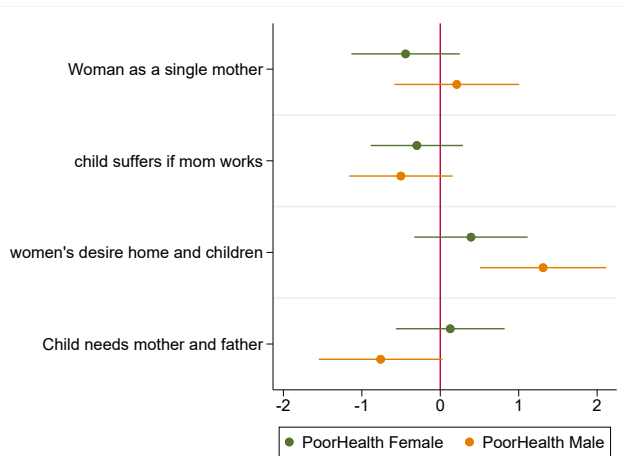


Figure A-14: Cardiovascular Disease

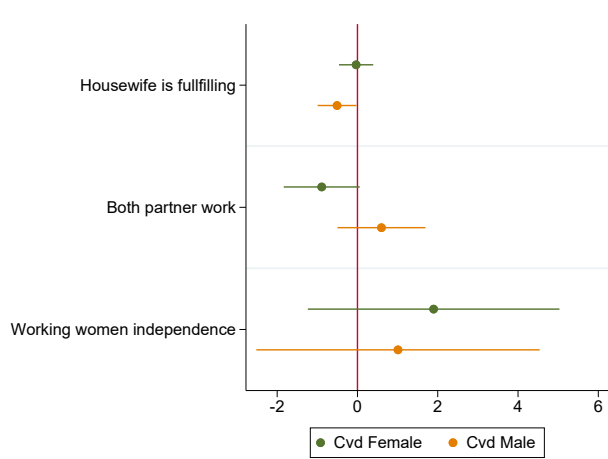


Figure A-15: Depression score

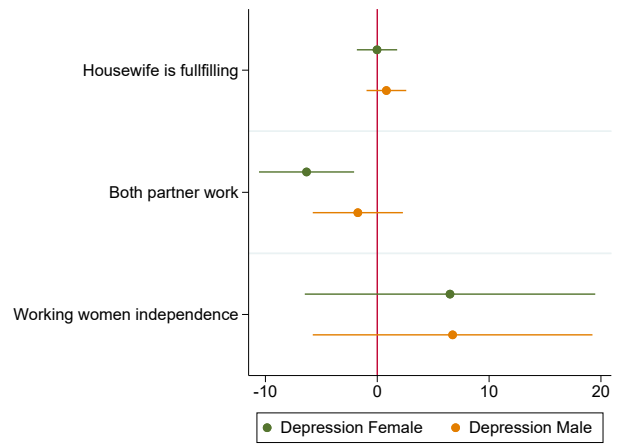


Figure A-16: Poor health

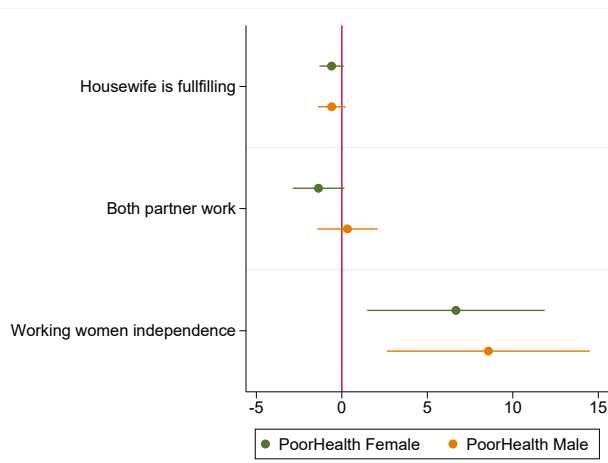


Table A-1: Descriptive statistics of gender norms at the group of cohorts level by country

Cohorts	1920-25	1926-30	1931-35	1936-40	1941-45	1946-50	1951-55	1956-60
Country								
Germany								
family	2.824	2.837	2.694	2.586	2.489	2.289	2.159	2.285
work	0.810	0.866	0.823	0.717	0.614	0.559	0.596	0.678
Sweden								
family	2.739	2.271	1.905	1.946	1.816	1.670	1.681	1.060
work	1.478	1.067	0.841	0.669	0.753	0.726	0.723	0.686
Netherlands								
family	3.064	2.703	2.342	2.274	2.098	1.896	1.866	1.500
work	1.469	1.577	1.604	1.245	1.424	1.466	1.435	1.296
Spain								
family	2.735	2.693	2.559	2.558	2.276	2.149	1.848	1.476
work	1.067	0.924	1.021	1.022	0.933	0.869	0.596	0.476
Italy								
family	3.130	3.374	3.163	3.167	3.161	3.109	2.769	2.731
work	1.092	1.009	0.968	0.864	0.965	0.806	0.852	0.716
France								
family	3.067	3.086	2.804	2.657	2.434	2.427	2.219	1.992
work	0.820	0.931	0.843	0.780	0.824	0.788	0.816	0.773
Denmark								
family	1.811	1.866	1.517	1.472	1.334	1.175	1.052	0.905
work	0.843	0.813	0.801	0.678	0.763	0.823	0.827	0.744
Greece								
family	3.513	3.499	3.296	3.352	3.286	3.182	3.097	3.023
work	0.967	1.052	0.896	0.998	0.930	0.786	0.758	0.825
Belgium								
family	2.972	2.940	2.747	2.624	2.3613	2.255	2.126	1.993
work	1.027	1.136	1.145	1.079	0.997	0.995	1.049	0.979

NOTE: The Table reports the mean values for family and work norms by group of cohorts and country.