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Life circumstances and the well-being of older people in different contexts[1]

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Abstract

Depression is an important public health problem, and one of the leading causes of disease burden worldwide. In old age, depression is becoming more and more common. There is a substantial multi-disciplinary research literature on this: health conditions, family circumstances, economic and income conditions play important roles in explaining the onset of depressive symptoms. This paper answers the following question: Is the association between a certain life circumstance and depression the same across different contexts or is there a mediating role of the context that make people feel less or more depressed? To investigate these context-heterogeneities, we use data for 10 European countries from six waves of the Survey of Health Ageing Retirement in Europe. We investigate how institutions and prevalent social norms mediate the relationship between physical health, activity status, family circumstances and depressive symptoms of people aged 50+ years. In general, consistently with the literature, we find beneficial effects of being retired and strong detrimental effects of widowhood and bad health conditions. We also observe that having children in better working and family conditions beneficially affects parental mental well-being. Additionally, we do find the effects vary across different cultural contexts and institutions. For example, in countries with better socio-economic conditions – in terms of pension benefits, health systems, labour markets - older people suffer less because of episodes of sickness, hospitalization and children's spells of unemployment.

Keywords: depression, mental health, SHARE, life circumstances, heterogeneous effects.

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1. Introduction

In Western societies depression is a common illness in old age, becoming an important public health problem, and one of the leading causes of disease burden worldwide (Moussavi et al., 2007). Beyond personal and family suffering, depression worsens the outcomes of many medical disorders and promotes disability (Alexopoulos, 2005). Depressed adults have poorer functioning, have a higher perception of poor health, and make use of more medical services (Cole and Dendukuri, 2003).

There is a substantial multi-disciplinary research literature on the determinants of depression in old age: the aging process itself, the deterioration of physical health, the lack of social networks, the distance from the extended family, painful events, a possible reduction in income are all possible causes. Empirical evidence shows the relative importance of these factors. However, almost nothing is known about the perception of these factors (and therefore the intensity of depression symptoms) in different contexts. Is the association between a certain life circumstance and depression the same across different contexts or is there a mediating role of the context that make people suffer more or less? Specifically, do people who live countries with better welfare and economic conditions deal better with difficult economic/health situations? Do people react differently to family circumstances in countries with different believes on family values and behaviours?

In this paper, we study the relationship between life circumstances and depression symptoms in countries with different institutional and cultural characteristics. We use data for 10 European countries from six waves of the Survey of Health Ageing Retirement in Europe, where we can observe current circumstances, and changes of conditions over time for older parents and their family. The large number of observations for 10 European countries allows the investigation of whether culture and institutions influence the relationship between what happens in life and how people feel.

We now report the existing empirical evidence concerning the determinants of depression in old age, which will be the starting point for our analyses.

In old age, depression is common. In a multiple regression framework, the association between age and depression, from positive, becomes negative when variables concerning basic demographic and physical health conditions are taken into account (Blazer, Burchett, Service and George, 1991). Controlling for education, work and health Cantarero-Prieto, Pascual-Sáez and Blazquez-Fernandez (2017) reached the same conclusions when looking at quality of life.

Worsening of physical conditions is one of the major sources of depressive symptoms in later life. Concerning the relationship between physical and mental health, among several papers, we refer to the detailed analysis on the effects of different physical health conditions on mental health carried out by Lindeboom, Portrait and van den Berg (2002). It is interesting to observe that, apart from the significant effect of experiencing serious diseases and surgeries, becoming aware of decreasing physical abilities importantly affects the mental well-being dimension.[1] Braam et al. (2005), using data for 11 European countries (EURODEP) found that, later in life, the relationship between physical health and depression is much stronger. Hill-Joseph (2018) found that chronic illnesses contribute greatly to mental health disparities among adults, especially if the illness onset was early in life (before age 36).

Another important determinant of mental health is the activity status. Given increased life expectancy and better physical conditions at later stages in life, policy suggestions have been made to encourage workers to postpone retirement; this has included increasing the statutory pension age. These policies are being discussed for their potential consequences on the mental and physical well-being of older people. Going on a pension may be a stressful event, leaving the person without a structured day or close network of colleagues and friends and making him or her feel lonely, useless, and obsolete. Retirement should, however, remove the stress and fatigue related to work, and therefore bring relief to the retired person. Answering these concerns requires empirical study, but as going on a pension is a choice and workers in bad physical and/or mental condition may be more likely to choose to become a pensioner, this may lead to biased estimates. When considering the risk of endogeneity (exploiting a discontinuity regression design), Johnston and Lee (2009) – among others (Kim and Moen, 2002; Oliffe et al., 2013; Choi, Stewart, and Dewey, 2013) – found that retirement had a beneficial effect on individuals' sense of well-being. Coe and Zamarro (2011), using as an instrument the different statutory retiring ages across Europe, found a null effect for pension on depression, while the corresponding OLS estimate would have indicated that retired people are more depressed. Reitzes, Mutran and Fernandez (1996) did not find that retirement had any detrimental effect on self-esteem.

The reasons for feeling depressed later in life may depend also on the family network in a broad sense, which does not only consider the current household where the person resides but also the members of the extended family with whom the person has contact. Certainly, being in a partnership is beneficial to old people (Bures, Koropeckyj-Cox, and Loree, 2009; Gibney, Delaney, Codd, and Fahey, 2017). There is a huge literature on the consequences (especially short term) of divorce (for a review, see Amato, 2000).

The multi-generation family is potentially an important influence on well-being in later life. There are thus good reasons to examine the role of adult offspring. Parents may feel proud of or shamed by the decisions their children make, and such feelings may affect their own well-being. These feelings may be especially important for parents because they have socialized their children and hence they may feel partly responsible for how their children turn out as adults (Ryff, Lee, Essex, and Schmutte, 1994). Parents care very much about their children, so it seems plausible that what happens to the children may affect the parents (Knoester, 2003). Children also provide parents with a sense of gratitude and feelings of meaning in life, which might positively affect mental health (Evenson and Simon, 2005).

A relatively large number of studies have looked at the effect of having children rather than remaining childless. In contrast to what has been theorized thus far, most of the empirical studies have found that having children has a null or small detrimental effect on parents' level of depression (Bures et al., 2009; Hank and Wagner, 2013; Koropeckyj-Cox, 1998; Umberson and Gove, 1989). The results appear more coherent once marital status is considered: high levels of depression are observed when considering never married parents and formerly married women who have outlived their children (Bures et al., 2009). Gibney et al. (2017) looked at the effect of childlessness: no main effect of childlessness is observed across different European regions for adults aged 50–75 years old. Again, detrimental effects emerge among separated parents. Mixed results were also found by Kruk and Reinhold (2013), who looked at the effect of the number of children: exploiting exogenous variation of the number of children due to multiple birth and sex composition of the first two children, they found additional children had no effect on men's mental health, while having a third child had a detrimental effect on women's mental health. Other studies highlight other sources of heterogeneity: Neuberger and Preisner (2017), for example, found that parenthood influences the quality of life positively later in life of people with less economic resources or in countries with worse economic conditions.

There is limited literature on the impact of children's life events, rather than the existence of children, on parents' mental well-being. Concerning the relationship between parents and their adult children, Buber and Engelhardt (2008) found that few contacts with adult children increased the presence of depressive symptoms among parents. With respect to adult children's family decisions, there is evidence that adult children's divorce has a detrimental effect on parents' mental well-being (Kalmijn and de Graaf, 2012; Tosi and Albertini, 2018, especially in Southern European countries), while adult children's marriage has a beneficial effect (Kalmijn and de Graaf, 2012). The effect of having

grandchildren seems to depend on the possibility of looking after them: Arpino, Bordone and Balbo (2018) found a negative association between grandparenthood without grandparental care and mental well-being in countries where intensive grandparental care is expected, while a positive association of grandparenthood and mental well-being was found in countries where intensive grandparental care is not expected (i.e. where weekly care is more common than daily care). Some studies have looked at the effects of problematic conditions in which adult children can find themselves, and the presence and number of children's problems (e.g. depression, poor health or use of alcohol) decreases parents' mental well-being (Greenfield and Marks, 2006; Pillemer and Suitor, 1991), as does adult children returning to the parental house as a result of unemployment or separation (Tosi and Grundy, 2018). Unemployment itself may affect parents' mental well-being. Courtin and Avendano (2016) found that, in the context of high unemployment during the Great Recession in Europe, the rate of co-residence between adult children and their older parents increased, with beneficial mental health effects for older parents. However, returns to home seem to decrease parents' quality of life in houses where none of their children are still residing (Tosi and Grundy, 2018).

To the best of our knowledge, there are only three studies that look at the effect of a specific determinant of depression in different contexts. Courtin and Avendano (2016) look at the impact of co-residence with adult-children across times with higher/lower unemployment; Arpino, Bordone and Balbo (2018) study the impact of grandparents' childcare in countries where their help is more or less expected; Tosi and Albertini (2018) find the effect of adult-children's divorce to be stronger in more traditional countries. We contribute to this strand of research by looking at a wider set of determinants and by investigating several country-heterogeneities: we will provide evidence of how the relationship between life circumstances and depression changes when considering countries with better/worse economic and welfare conditions, with different view on family values and behaviours, with different level of inequalities.

The paper is organized as follows. Section 2 presents the data, the sample selection and the variables used throughout the analyses, while Section 3 explains the empirical methods employed. Section 4 contains the results while conclusions follow in Section 5.

2. The data

We use data from the first six waves of the harmonized Survey of Health, Ageing and Retirement in Europe (SHARE). SHARE is an exceptional data source in several respects: it is cross-national, allowing national-level cultural differences to be explored; it provides evidence on well-being through a set of 13 subjective assessments; it includes current and past information over different personal dimensions (work, health, family); and it contains unusually extensive questions relating to a maximum of four non-coresident adult-children.

SHARE was launched in 2004 in 11 countries, and over time, was extended to 28 countries. It collects the same information, in a panel format, almost every two years: in 2006, 2008, 2011, 2013 and 2015. The only exception is represented by the 2008 survey (third wave – SHARELIFE) where a small selection of variables is the same as in the other data collections and most of the questions concern the entire past life (childhood, family, work, and mobility history).

We selected people in countries participating in wave 1, potentially followed for six waves, at least observed for two consecutive waves to be able to see, during the time of the survey, changes in their life and in the lives of their adult children. We dropped individuals with missing information for the variables used in the paper; we only included individuals aged 50+ years old who were We ended up with a sample of 81,281 observations. The 10 countries analysed in this paper are Austria, Germany, Sweden, the Netherlands, Spain, Italy, France, Denmark, Switzerland and Belgium.

Concerning our dependent variable, mental health, in SHARE it is measured by the 13 questions that compose the so-called EURO-D instrument (Prince et al., 1999). The EURO-D instrument has good test-retest reliability and internal consistency and, in terms of validity, correlates well with other well-known health measures (Prince et al., 1999). The scale covers the following 13 items: depression, pessimism, suicidal ideation (wishing death), guilt, sleep, interest, irritability, appetite, fatigue, concentration (in two sub-categories), enjoyment and tearfulness.

Table 1 summarizes the answers to the 13 questions. Of the total sample, 35% stated they have been sad or depressed in the last 12 months, while 13% do not have hopes for the future, 6% feel that they would rather be dead and 7% feel guilty for something she or he has done. Additionally, 22% have felt irritable, 8% have lost interest in things, 12% have not enjoyed anything recently and 23% have cried in the last month. Of the sample, 30% have had trouble sleeping, 8% have noticed they have

had less appetite and 32% have felt a sense of fatigue recently. Finally, 13% have had more difficulties in concentrating when reading and 12% more difficulties in concentrating in general.

Depression may influence the probability of continuing to participate in the survey. Attrition could thus be a problem if the probability of abandoning the survey is related to the object of our study. In Table A1 (Appendix), we report the estimates from a logistic model where the dependent variable is equal to one if an individual interviewed in wave 1 is not included in our final sample. We observe that irritability, tearfulness, and difficulty in concentrating on reading increase the probability of dropping out, while feeling depressed and guilty decreases it. We will try to understand, through simulations, how this selection may affect our main findings.

3. The methodological framework

The EURO-D instrument consists of 13 binary indicators that we observe in five waves. We assume the 13 binary indicators to be the expression of the individual's mental health. We follow the clinic practice, in studies concerning mental health, of summing up the 13 binary indicators. Table 2 shows the distribution of our dependent variable: we have around a fourth of the sample without any depressive symptom, half of the sample with three or less symptoms, while almost another fourth of the sample that displays four or more depressive symptoms.

We specify the relationship between depressive symptoms and the life circumstances to be linear:

$$Y_{i,t} = \alpha + D_i'\beta_D + S_{i,t}'\gamma_S + C_{i,t-1 \to t}'\delta_C + u_i + \varepsilon_{i,t} \tag{1}$$

where Y represents the mental well-being of the person i at time t, D represents a vector of time-invariant characteristics (gender, schooling), S represents a vector of characteristics at time t (employment situation, family structure, health, adult-children life conditions), C indicates changes between the previous wave and the current one in any S domain. Finally, u represents a random individual error, normally distributed, and ε is the usual error term, also normally distributed.

The independent variables are described in Table 3. On average, the sample is composed of 54% women, and the average age is 67 years old. The majority of the people are retired (57%), and only one out of four is still in paid employment. For 4% of the individuals, we observe a movement from

work to pension over time; 61% stated they have suffered from at least one illness, and 15% have been hospitalized in the last twelve months. 8% of people experienced the onset of a new illness between one wave and the following one. In the sample, 70% of the individuals are currently in a couple, and 2% experienced a widowhood during the time of the survey. Most (90%) have children, two on average. Concerning their adult children's lives, we observe that 4% of adult-children are unemployed (0.6% experienced a new episode of their children's unemployment during the time of the survey), 30% of adult children are married and 6% are divorced (12% experience the marriage of a child during the time of observation, but less than 1% a divorce). The average number of grandchildren is 2.5, and 4% of individuals in our samples look after grandchildren on daily basis and 10% on weekly basis. It is important to keep in mind that these figures contain zeros for the part of the samples without adult children (and/or without grandchildren). The inclusion of zeros also explains the relatively low mean for years of schooling.

Our hypothesis, expressed by equation (1), is that all dimensions taken into consideration may matter for individual mental well-being. The paper, however, contributes to this field of research by investigating the mediating role of the context that individuals face. We exploit countries' heterogeneity, along various dimensions (displayed in TABLES 4A, 4B, 4C) to test tree sets of hypotheses.

The first four hypotheses concern the economic and welfare (state?) prosperity that characterizes the context. In general, we expect people living in countries with better labour market conditions and welfare system to suffer less from adverse situations. Specifically:

1) Being retired decreases depression more in countries with more generous pension payments (measured as average pension amount over average earnings of an employed person in full time work, shown in Table 4A - second column).

2) Being sick and being hospitalized affects depression less in countries where more resources are spent for the healthcare system (measured as health expenditure as % over GDP, shown Table 4A - third column).

3) Getting older is better – in terms of decreasing depression - in countries with a lower old age dependency ratio (measured as people 65+ over people 15-64, shown in Table 4A - forth column).

4) Child's unemployment increases parental depression more in countries with worse labour market conditions (measured as youth unemployment rate, shown in Table 4A - fifth column).

The second four hypotheses concern the cultural dimension. In general, we expect people living in countries with different believes about family values and behaviours to suffer more/less from certain situations. To measure believes we use data from the European Values Study (2008). Specifically:

5) Having a family (a partner, children, and grandchildren) affects depression in a more beneficial way in countries where family is stated to be very important (measured as percentage of people stating that family is very important in their life (shown in Table 4B - second column).

6) Marriages and divorces matter more – in a beneficial and detrimental way – in countries where marriage is not considered an out-of-date institution (measured as the percentage of people who disagree with the statement "Marriage is an out of date institution", shown in Table 4B - third column).

7) Childcare activities are more a burden / less a pleasure in countries where parents are expected to prioritize the child's well-being rather than their own (measured as the percentage of people for which the statement "Parents' duty is to do their best for their children even at the expense of their own well-being" describes their view, shown in Table 4B - third column).

8) Taking care of the house affects depression differently in countries with different levels of agreement with the statement "being a housewife is just as fulfilling as working for pay" (measured as the percentage of people who agree with the statement – shown in Table 4B - fourth column).

The last hypothesis concerns inequalities.

9) Women are more depressed in countries with higher gender inequality (measured by the gender inequality index, Table 4C - second column).

To understand the influence of the context in the relationship between life circumstances and depression, we will estimate the parameters of the equation (1) separately for two sub-samples: the first sub-sample is composed of the 5 countries in a "high" position with respect to a certain dimension; the second sub-sample is composed of the 5 countries in a "low" position with respect to a certain dimension. Therefore, we will compare the pair of estimated effects of selected variables in the two contexts.

4. Results

We report the baseline results in Table 5. The first columns report coefficients, standard errors and significance of the specification used throughout the paper, without country dummies, in order to fully exploit the variability of the countries along the dimensions of our interest. For robustness, we also show (last columns of Table 5) how the estimates would appear with the inclusion of country variables.

The results, in terms of estimated coefficients and statistical significance, are very similar across the two specifications. We find a beneficial effect of age[3] and of being educated while a detrimental effect of being a woman. Compared to unemployment (excluded category), any other activity situation (work, retirement and house-caring) leads to lower depression. A new retirement, from one wave to the following, has an additional beneficial effect. A spouse's unemployment appears to be a reason for depression. Health, as expected at this age, has an important impact on depression. Suffering from illnesses increases depression, as does having experienced a hospital recovery in the last year. A long period of illness influences mental well-being more strongly: in fact, a new illness (from one wave to the following) increases depression but does so less than a 'persistent' one (0.477–0.156). We observe that family has a beneficial impact: being in a couple has a positive effect on mental health, as having children. However, the interaction between the two circumstances reveals important heterogeneities: being childless is detrimental only for currently un-partnered adults, probably because they need more meaning in their lives. A new widowhood is, in relative terms, the most important factor in determining depression for people over 50 years of age. Having better educated children beneficially affects parental mental well-being, while having unemployed children is detrimental. The family formation of adult children also significantly influences parental mental health: having married children decreases depression, while having divorced children increases it more intensely. Finally, having grandchildren does not matter in itself, while spending some regular time with them decreases depression only if it happens on weekly basis. On the contrary, grandparental childcare increases depression if this implies a daily commitment. We lose the significance of this last effect when we include country dummies suggesting that a few countries drive this result. Estimates are robust to attrition.[4]

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[3] The coefficient of the age squared is positive, suggesting a turning point. However, from age 50 to age 106 (considered as oldest age to reach), mental well-being is constantly increasing.

[4] We test the influence of attrition in Table A2 (Appendix). We compare the original estimates (first two columns) with the estimates we would get by dropping, respectively, those 10% more likely to leave the survey (third and fourth column) and those 20% (fifth and the sixth column) more likely to leave the survey. The probability of leaving the

We now explore the context heterogeneity. Is the association between a certain life circumstance and depression the same across different contexts or does the context mediate this relationship? In particular, do people who live in countries with more favourable economic and welfare state conditions deal better with difficult economic/health situations? Do people react differently to family events if they live in countries where related family opinions are more/less shared? Finally, women are always observed to be – ceteris paribus – more depressed. Is it due (at least, in part) to the inequality conditions they face in their country?

Analyses shown in Tables 6A, 6B, and 6C try to give an answer to these questions. In Table 6A, the economic prosperity of the country (proxied by more favourable labour market conditions and more generous pension systems) and better health/caring prospects (in terms of health expenditure and equilibrium across generations) are considered. For each dimension, we divide the sample into two sub-samples: 5 countries with "high" values versus 5 countries with "low" values (countries are listed from the "highest" to the "lowest"). We estimate the model for the two sub-samples and report the estimates of main interest. First, we observe that being retired in countries where pension benefits are higher (when compared to the average earnings) makes retired people even less depressed. Second, being sick and experiencing a hospital recovery increases depression but less in countries where more resources are spent for the health care system. Third, getting old in countries where the proportion of older people is lower decreases depression more intensely. Finally, we observe that having unemployed children does not affect depression in countries with low youth unemployment rate, while it does - strongly - in countries with high youth unemployment rate.

Table 6B looks at the heterogenous effect of family behaviors in countries with different cultural settings. The first two factors regard the family sphere: the share of individuals saying that family is a very important institution (? Se no toglierei "a" e lascerei very important), and the share of individuals who do not think marriage is an out-of-date institution. Then, we observe whether effects are different in countries where help from grandparents is perceived as due or, at least, expected. Finally, we consider the benefit or cost – in terms of depression - of being housewife in contexts where this role is more/less perceived as fulfilling. In countries where more people declare that family is important, being in a couple has a more beneficial impact, making people even less depressed. On the contrary, the relief of having children for un-partnered people is driven by countries with a

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survey is predicting using the estimates shown in Table A1 (Appendix). Estimated coefficients and standard errors across the three samples are very similar.

relatively lower importance of the family. The strongest results are found when formally talking about marriage: children's marriage and divorces affect depression only in countries where marriage is still an important institution. Very interesting are results concerning childcare activities carried out by grandparents: weekly care decreases homogenously depression while daily care is detrimental only in countries where grandparents' help is more expected than a free choice. Finally, being a housewife has a lot more decreasing effect on depression in countries where this social role is considered fulfilling as working for pay.

Table 6C show the last effects we wanted to explore. We observe that the depression-gap is higher in countries with higher inequality index.

All these heterogenous effects are significantly different, at least at 5% level. The only exceptions are given by the effects of child's marriage/divorce, where the null hypotheses are more difficult to reject (10% and 20% level respectively), given the small sample size. However, in these cases, the rejection of the null hypothesis that the coefficient is zero (in "high" countries) versus the non-rejection (in "low" countries) helps providing some empirical evidence.

5. Discussion of the results and Conclusions

This paper investigated the determinants of mental well-being among people aged 50 years and older in different contexts. We used data for 10 European countries from six waves of the Survey of Health Ageing Retirement in Europe, in which we could observe current circumstances and changes of conditions over time for older parents and their adult children.

Summarizing the results, considering past studies, we confirm the beneficial effect of ageing itself on mental well-being, after controlling for other dimensions (Blazer et al., 1991; Cantarero-Prieto et al., 2017) and the systematic difference between women and men (Acciai & Hardy, 2007). We also confirm the strong expected relationship between physical and mental health (Lindeboom et al., 2002) and the beneficial effect of being retired (Johnston & Lee, 2009), which is particularly high just after the exit from work. As suggested by previous studies (Bures et al., 2009; Gibney et al., 2017), we investigated the effect of childlessness, by interacting it with the partnership circumstance, and finding a detrimental impact only for individuals not in a couple. Our results concerning the impact of the (extended) family contribute to a more recent and growing literature: experiencing a recent widowhood, knowing their own adult children enjoying (or not) their work and family life, having

the possibility of looking after grandchildren – all of this has an important impact on individuals' depression.

The main contribution of the paper was to test whether the effects varied across different cultural contexts and institutions. Indeed, this was the case. We found that in countries with better economic and welfare conditions – in terms of pension benefits and health systems - older people suffer less because of episodes of sickness, hospitalization and enjoy more being retired. Worse labour market conditions also make more burdensome children's episodes of unemployment. Moreover, in countries where the share of the old age population over the share of those in their productive age is lower, becoming old is associated with lower levels of depression. This could be linked to a greater availability of intergenerational support and a greater potential in terms of the country's economic well-being.

For what concerns the cultural dimension, we observed that experiences of child's marriage and divorce is affecting depression more intensely in countries characterized by more conservative family values. Being in a union is always associated with lower level depression, especially in countries where more people think that family is very important in their life. In countries where family is relatively less important, we find a detrimental impact of childless for people not in a couple. Furthermore, while looking after grandchildren on a weekly basis has homogenously beneficial effects, we found that daily care is source of depressive symptoms for grandparents in countries where help is given for granted.

Women were observed to be, on average, more depressed than men. We found that this is even more the case in less gender-equal countries. On the other hand, being a housewife brings more relief in those countries where this role is as fulfilling as any other job.

Understanding the socio-economic determinants of mental health is particularly important from a public health perspective. Social isolation, life events and health issues strongly negatively impact on people in their old ages. The mental and physical health as the well-being consequences of these factors have been increasingly recognized (e.g. Courtine and Knapp 2017; Prince et al. 1997; Kraaij et al. 2002). To improve the knowledge on the determinants of depression in old ages, investigating the heterogeneity of the effects of potential risk factors in a variety of contexts is crucial. Institutional as cultural features, in fact, may magnify or reduce the negative or positive effect of certain life events on individual's well-being. This is consistent with our findings, which show that better environments

– in terms of labour markets, welfare, health system, gender-equality – can mitigate the detrimental effects of adverse circumstances on mental health.

Policy interventions, in this sense, can act indirectly on the mental well-being of people in their old ages by improving the welfare state support in several spheres; or directly, by supporting social participation and their involvement in the "active ageing" process (Boudiny 2013). As highlighted by the World Health Organization, in fact, the active ageing is the preferred way to "optimize the opportunities for health, participation and security in order to enhance quality of life as people age" (WHO 2002: 12) across countries.

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TABLES

Table 1: EURO-D instrument

Question	Percentage of interviewed people answering affirmatively
Sad or depressed last month	34.5
No hopes for the future	12.7
Felt would rather be dead	6.4
Feels guilty	6.6
Irritability	21.7
Less or same interest in things	7.9
No mention of any enjoyment	12.1
Tearfulness	23.2
Trouble with sleep	30.4
Diminution in appetite	7.9
Fatigue	32.1
Difficulty in concentrating	11.5
Difficulty in concentrating on reading	13.3
Observations	81,281

Table 2: Indicator of depressive symptoms

Number of EURO-D affirmative answers	Percentage of interviewed people
0	26.2
1	23.0
2	16.5
3	11.9
4	7.9
5	5.2
6	3.6
7	2.2
8	1.6
9	0.9
10	0.6
11	0.3
12	0.1
13	0.0
Observations	81,281

Table 3: Life circumstances

Age	67.1
Woman (%)	54.1
Years of schooling	11.2
Employed (%)	26.9
Retired (%)	57.0
New retirement (%)	3.8
Home carer (%)	8.7
Unemployed (%)	7.4
Spouse's unemployment (%)	2.9
Real income	11,612
Illness (%)	60.7
New illness (%)	7.8
Hospitalized (%)	14.9
In a couple (%)	70.3
New widowhood (%)	2.4
No offspring (%)	10.2
Number of children	2.1
Children: max years of schooling	9.4
At least one unemployed child (%)	3.7
Children: new unemployment (%)	0.6
At least one married child (%)	30.3
Children: new marriage (%)	12.3
At least one divorced child (%)	5.7
Children: new divorce (%)	0.6
Number of grandchildren	2.5
Grandchildren: daily care (%)	4.3
Grandchildren: weekly care (%)	10.3
Sweden	8.7
Denmark	9.9
Netherlands	6.0
Belgium	13.5
France	11.0
Germany	9.9
Austria	10.5
Switzerland	7.4
Italy	10.3
Spain	12.6
Observations	81,281

Table 4A: Work and welfare dimensions

Country	Pension generosity	Heath expenditure (% over GDP)	Old age dependency ratio (persons 65+/persons15-64*100)	Youth unemployment rate (%)
Sweden	51.6	11.01	31.1	17.2
Denmark	49.0	10.33	28.8	9.4
Netherlands	53.6	10.58	27.2	6.5
Belgium	47.5	10.48	27.8	15.4
France	65.7	11.00	29.2	20.1
Germany	42.3	11.15	32.0	6.0
Austria	56.6	10.32	27.4	8.4
Switzerland	44.4	11.37	26.4	2.4
Italy	64.7	9.00	33.7	33.0
Spain	65.7	9.17	27.9	32.6

Sources: Data on pension generosity are elaborated from EU-SILC (2016) by the authors: average pension amount / average earnings of an employed person in full time work.
Data on healthcare expenditure (2015) are taken from
https://ec.europa.eu/eurostat/statisticsexplained/index.php/Healthcare_expenditure_statistics
Data on old age dependency ratio (2019) are taken from
https://ec.europa.eu/eurostat/web/products-datasets/product?code=tps00198
Data on youth unemployment (2019) are taken from
https://www.statista.com/statistics/266228/youth-unemployment-rate-in-eu-countries/

Table 4B: Cultural dimension

Country	How family is important in your life (very important)	Marriage is an out of date institution (disagree)	Parents' duty is to do their best for their children even at the expense of their own well-being (describes your views)	Being a housewife is just as fulfilling as working for pay (agree / strongly agree)
Sweden	91.3	80.5	80.5	33.2
Denmark	87.2	67.3	67.3	40.9
Netherlands	85.1	79.9	79.9	52.2
Belgium	87.0	74.0	74.0	63.4
France	88.7	80.1	80.1	50.1
Germany	76.9	58.7	58.7	43.5
Austria	78.6	57.1	57.1	50.6
Switzerland	84.0	74.4	74.3	57.0
Italy	91.1	80.9	80.9	46.4
Spain	83.0	83.2	83.2	43.0

Sources: Percentages of people answering affirmatively to selected questions are elaborated from the European Values Study (2008) by the authors.

Table 4C: Inequality dimension

Country	Gender inequality index
Sweden	44
Denmark	40
Netherlands	44
Belgium	48
France	83
Germany	72
Austria	71
Switzerland	39
Italy	87
Spain	80

Sources: Data on gender inequality (2017) are taken from
http://hdr.undp.org/en/composite/GII

Table 5: Life circumstances and depression symptoms

	Baseline model			Model with country-dummies		
	Coef.	Std. Err.	Sign.	Coef.	Std. Err.	Sign.
Age	-0.227	0.011	***	-0.212	0.011	***
Age squared	0.002	0.000	***	0.002	0.000	***
Woman	0.712	0.020	***	0.723	0.020	***
Years of schooling	-0.044	0.002	***	-0.038	0.002	***
Employed	-0.621	0.030	***	-0.620	0.030	***
Retired	-0.159	0.036	***	-0.129	0.036	***
New retirement	-0.386	0.037	***	-0.457	0.037	***
Home maker	-0.772	0.031	***	-0.719	0.031	***
(Unemployed)						
Spouse's unemployment	0.301	0.044	***	0.270	0.044	***
Income	-0.005	0.004		-0.006	0.004	*
Illness	0.477	0.017	***	0.465	0.017	***
New illness	-0.156	0.025	***	-0.162	0.025	***
Hospitalized	0.591	0.019	***	0.617	0.019	***
In a couple	-0.265	0.023	***	-0.291	0.023	***
New widowhood	1.007	0.042	***	1.002	0.042	***
No offspring	0.105	0.047	**	0.108	0.046	**
No offspring*couple	-0.152	0.055	***	-0.117	0.054	**
Number of children	-0.000	0.012		0.009	0.012	
Children: max years of schooling	-0.005	0.002	***	-0.004	0.002	**
At least one unemployment child	0.258	0.039	***	0.199	0.038	***
Children: new unemployment	0.100	0.088		0.109	0.087	
At least one married child	-0.032	0.013	**	-0.035	0.013	***
Children: new marriage	-0.017	0.023		-0.007	0.023	
At least one divorced child	0.089	0.031	***	0.108	0.031	***
Children: new divorce	0.118	0.083		0.112	0.083	
Number of grandchildren	0.005	0.004		0.008	0.004	*
Grandchildren: daily care	0.086	0.036	**	0.004	0.036	
Grandchildren: weekly care	-0.084	0.024	***	-0.077	0.024	***
Denmark				-0.032	0.044	
Netherlands				0.049	0.049	
Belgium				0.498	0.041	***
France				0.798	0.042	***
Germany				0.227	0.043	***
Austria				-0.130	0.043	***
Switzerland				-0.092	0.047	*
Italy				0.769	0.044	***
Spain				0.481	0.041	***
(Sweden)						
Constant	10.075	0.381	***	9.160	0.382	***

Significance: $^{*}\,p < 0.10$, $^{**}\,p < 0.05$, $^{***}\,p < 0.01$.

Table 6A: The mediating role of the work and welfare dimensions

		Pension generosity					
		High (France, Spain, Italy, Austria, Netherlands)			**Low** (Sweden, Denmark, Belgium, Switzerland, Germany)		
		Coef.	**Std. Err.**	**Sign.**	**Coef.**	**Std. Err.**	**Sign.**
Retired		-0.636	0.045	***	-0.575	0.039	***
Observations		41,090			40,199		
		Heath expenditure (% over GDP)					
		High (Switzerland, Germany, Sweden, France, Netherlands)			**Low** (Belgium, Denmark, Austria, Spain, Italy)		
		Coef.	**Std. Err.**	**Sign.**	**Coef.**	**Std. Err.**	**Sign.**
Illness		0.408	0.024	***	0.525	0.024	***
Hospitalized		0.520	0.027	***	0.651	0.026	***
Observations		46,232			35,057		
		Old age dependency ratio (persons 65+/persons15-64*100)					
		High (Italy, Germany, Sweden, France, Denmark)			**Low** (Spain, Belgium, Austria, Netherlands, Switzerland)		
		Coef.	**Std. Err.**	**Sign.**	**Coef.**	**Std. Err.**	**Sign.**
Age		-0.190	0.015	***	-0.262	0.016	***
Age squared		0.001	0.000	***	0.002	0.000	***
Observations		40,563			40,726		
		Youth unemployment rate (%)					
		High (Italy, Spain, France, Sweden, Belgium)			**Low** (Denmark, Austria, Netherlands, Germany, Switzerland)		
		Coef.	**Std. Err.**	**Sign.**	**Coef.**	**Std. Err.**	**Sign.**
At least one unemployment child		0.271	0.049	***	0.053	0.064	
Observations		45,726			35,563		

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Table 6B: The mediating role of the cultural dimension

		How family is important in your life (very important)					
		High (Sweden, Italy, France, Denmark, Belgium)			**Low** (Netherlands, Switzerland, Spain, Austria, Germany)		
		Coef.	**Std. Err.**	**Sign.**	**Coef.**	**Std. Err.**	**Sign.**
In a couple		-0.295	0.031	***	-0.220	0.034	***
No offspring		0.021	0.066		0.228	0.065	***
No offspring*couple		-0.100	0.082		-0.172	0.074	**
Children		-0.024	0.016		0.033	0.017	*
Grandchildren		-0.003	0.006		0.005	0.007	
Observations		43,474			37,815		
		Marriage is an out of date institution (disagree)					
		High (Spain, Italy, Sweden, France, Netherlands)			**Low** (Switzerland, Belgium, Denmark, Germany, Austria		
		Coef.	**Std. Err.**	**Sign.**	**Coef.**	**Std. Err.**	**Sign.**
At least one married child		-0.048	0.019	**	-0.006	0.019	
At least one divorced child		0.147	0.044	***	0.031	0.043	
Observations		43,679			37,610		
		Parents' duty is to do their best for their children even at the expense of their own well-being (describes your views)					
		High (Sweden, Spain, Italy, France, Netherlands)			**Low** (Switzerland, Belgium, Denmark, Germany, Austria)		
		Coef.	**Std. Err.**	**Sign.**	**Coef.**	**Std. Err.**	**Sign.**
Grandchildren: daily care		0.144	0.050	***	-0.060	0.051	
Grandchildren: weekly care		-0.074	0.038	*	-0.083	0.030	***
Observations		39,646			41,643		
		Being a housewife is just as fulfilling as working for pay (agree / strongly agree)					
		High (Belgium, Switzerland, Netherlands, Austria, France)			**Low** (Italy, Germany, Spain, Denmark, Sweden)		
		Coef.	**Std. Err.**	**Sign.**	**Coef.**	**Std. Err.**	**Sign.**
Home maker		-0.690	0.052	***	-0.159	0.051	***
Observations		39,412			41,877		

Table 6C: The mediating role of the inequality dimension

		Gender inequality index					
		High (Italy, France, Spain, Germany, Austria)			**Low** (Belgium, Sweden, Netherlands, Denmark, Switzerland)		
		Coef.	**Std. Err.**	**Sign.**	**Coef.**	**Std. Err.**	**Sign.**
Woman		0.790	0.029	***	0.622	0.027	***
Observations		44,259			37,030		

APPENDIX

Table A1: Attrition analysis

	OR	Std. Err.	Sign.
Sad or depressed last month	0.80	0.029	***
No hopes for the future	0.98	0.044	
Felt would rather be dead	0.92	0.061	
Feels guilty	0.86	0.054	**
Irritability	1.08	0.041	**
Less or same interest in things	1.02	0.062	
No mention of any enjoyment	1.01	0.045	
Tearfulness	1.15	0.043	***
Trouble with sleep	0.96	0.033	
Diminution in appetite	0.99	0.059	
Fatigue	0.97	0.034	
Difficulty in concentrating	1.02	0.053	
Difficulty in concentrating on reading	1.12	0.054	**
Constant	1.10	0.051	**
Observations	19,564		

Significance: $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A2: Robustness analysis for attrition

	Table 5		Excluding the 10% more likely to leave the survey		Excluding the 20% more likely to leave the survey	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Age	-0.227	0.011	-0.228	0.012	-0.233	0.013
Age squared	0.002	0.000	0.002	0.000	0.002	0.000
Woman	0.712	0.020	0.768	0.021	0.777	0.023
Years of schooling	-0.044	0.002	-0.042	0.002	-0.039	0.002
Employed	-0.621	0.030	-0.646	0.032	-0.657	0.035
Retired	-0.159	0.036	-0.160	0.039	-0.177	0.041
New retirement	-0.386	0.037	-0.402	0.040	-0.438	0.042
Home maker	-0.772	0.031	-0.807	0.033	-0.839	0.035
(Unemployed)						
Spouse's unemployment	0.301	0.044	0.341	0.048	0.338	0.051
Income	-0.005	0.004	-0.003	0.004	-0.006	0.006
Illness	0.477	0.017	0.502	0.018	0.524	0.019
New illness	-0.156	0.025	-0.184	0.027	-0.184	0.029
Hospitalized	0.591	0.019	0.623	0.020	0.626	0.022
In a couple	-0.265	0.023	-0.303	0.024	-0.315	0.026
New widowhood	1.007	0.042	1.077	0.045	1.060	0.048
No offspring	0.105	0.047	0.095	0.049	0.099	0.052
No offspring*couple	-0.152	0.055	-0.133	0.058	-0.141	0.062
Number of children	-0.000	0.012	0.004	0.013	0.004	0.013
Children: max years of schooling	-0.005	0.002	-0.006	0.002	-0.006	0.002
At least one unemployment child	0.258	0.039	0.253	0.041	0.235	0.044
Children: new unemployment	0.100	0.088	0.170	0.094	0.157	0.102
At least one married child	-0.032	0.013	-0.030	0.014	-0.038	0.015
Children: new marriage	-0.017	0.023	-0.024	0.024	-0.014	0.026
At least one divorced child	0.089	0.031	0.101	0.033	0.093	0.035
Children: new divorce	0.118	0.083	0.112	0.089	0.130	0.095
Number of grandchildren	0.005	0.004	0.006	0.005	0.006	0.005
Grandchildren: daily care	0.086	0.036	0.077	0.039	0.096	0.042
Grandchildren: weekly care	-0.084	0.024	-0.078	0.026	-0.077	0.027
Constant	10.075	0.381	10.130	0.407	10.313	0.436
Observations	81,281		73,154		65,027	

Significance: $^{*}\, p < 0.10$, $^{**}\, p < 0.05$, $^{***}\, p < 0.01$.