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CHILDHOOD SOCIOECONOMIC STATUS AND LATE-ADULTHOOD MENTAL HEALTH:

RESULTS FROM THE SURVEY ON HEALTH, AGEING AND RETIREMENT IN EUROPE

REVISION 2

ABSTRACT

Objectives: A growing literature acknowledges the association between childhood socioeconomic status (SES) and health in late adulthood (i.e., 50+). Less, however, is known about the association with mental health outcomes, such as depression. We use the Survey on Health, Ageing and Retirement in Europe (SHARE) to analyse overall and gender-specific associations between childhood SES and late-adulthood depression.

Methods: Using life-history and contemporaneous data from 21,989 SHARE respondents in combination with principal component analysis we construct indices of childhood SES. We measure late-adulthood depression using the EURO-D scale. Contemporaneous SES is operationalized as the logarithm of household equivalised income. We estimate associations using linear regression models.

Results: We document a positive association between childhood SES and the late-adulthood EURO-D score. The association persists even when allowing for contemporaneous SES. Zooming in on gender-specific associations reveals that the association for mental health is particularly pronounced for women.

Discussion: Our findings reveal the long-term association between childhood socioeconomic conditions and depression later in life, which persists even after taking into account current socioeconomic conditions and are stronger for women than for men. These results imply that boosting childhood socioeconomic conditions can potentially have effects lasting well beyond the childhood phase.

KEYWORDS: Mental Health, Depression, Childhood Socioeconomic Status

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Introduction

An increasing body of literature acknowledges the association between adverse socioeconomic conditions in childhood and adverse health outcomes later in life. Almond & Currie (2011), Zimmer, Hanson & Smith (2016) and Cohen, Janicki-Deverts, Chen, & Matthews (2010) provide reviews from an economic, demographic and psychological perspective, respectively. Nevertheless, in spite of the rising burden of mental health illness at various stages of the life-course (Alexopoulos (2005), Ferrari et al. (2013) and World Health Organization (2017)) commensurately few contributions have considered the relationship between childhood socioeconomic status (SES) and mental health problems, such as depression, in late-adulthood (Smith, 2015). Indeed, while the early contributions of Power et al. (2007), Gilman, Kawachi, Fitzmaurice, & Buka (2002), Gilman, Kawachi, Fitzmaurice, & Buka (2003) and Lê-Scherban, Brenner, & Schoeni (2016) consider the association between childhood SES and depression at various points of the life-course, Luo & Waite (2005) and Tani et al. (2016) are some of the few contributions dealing with childhood SES and depression in late-adulthood – the former focusing on the United States and the latter on Japan.

In the light of the paucity of studies dealing with childhood SES and mental health in late-adulthood, it is tempting to generalize results from general health outcomes – such as mortality and cardiovascular disease – to mental health outcomes. However, as McFadden (2003) argues, considering general health as a meaningful individual entity is potentially incorrect for "a human body, where there may be a complex interaction between component failures and system failures". As a result, health "may be fundamentally multidimensional, requiring more work to identify and

measure its components, but also inviting new analysis; for example, are mental, cardiovascular, and skeletal capital complements or substitutes?"

Early work regarding socioeconomic inequality and health outcomes stems from the Whitehall and Whitehall II studies of British civil servants, which detail evidence of strong associations between both adult SES (Marmot, Rose, Shipley, & Hamilton, 1978) and childhood SES (Brunner, Shipley, Blane, Smith, & Marmot, 1999), and various forms of ill-health at several stages in later life. Such studies suggest, inter alia, associations between childhood SES and adverse cardiovascular conditions (Brunner et al., 1999), childhood SES and bronchitis (in women) and depression (in men) (Marmot, Shipley, Brunner, & Hemingway, 2001). Using the Dunedin Multidisciplinary Health and Development Study, Poulton et al. (2002) present evidence that while physical and dental health outcomes exhibit a grading by childhood SES, depression is not linked to childhood SES. Mäki et al. (2005), examining previous literature on childhood determinants of schizophrenia, paint a mixed picture regarding the relationship between childhood SES and schizophrenia, with some studies reporting evidence of links between either or both high and low SES and the condition, and others no such link at all. In sum, the extant literature reveals substantive evidence for a positive relationship between adverse childhood SES and many individual adverse health outcomes later in life. Mental health outcomes – and depression in particular – have, however, only received limited attention.

In this study, we take a life-course perspective and examine the association between childhood SES and depression in late-adulthood (i.e., among those aged 50 and above), using 21,989 respondents from 14 European countries contained in the Survey of Health Ageing and Retirement in Europe (SHARE). Importantly, SHARE provides us with contemporaneous as well as life-history data of the respondents. This allows us to construct an indicator of childhood SES and

relate it to mental health outcomes (i.e., late-adulthood depression). Moreover, we can consider whether this relationship prevails even after taking into account a respondent's contemporaneous socioeconomic condition. Given the substantial gender gap in depression and the various hypothesised explanations for this (Rudenstine, 2013; Van de Velde, Bracke, & Levecque, 2010), we pay particular attention to gender-specific estimates of the association between childhood SES and depression in late-adulthood.

The life-course perspective (Ben-Shlomo & Kuh, 2002; Kuh & Ben Shlomo, 2004) starts from the premise that the impact of early life conditions on health later in life depends on the interaction of the individual with the environment. The life-course perspective is best understood as a family of perspectives. Indeed, Pudrovska & Anikputa (2014), classify four dominant perspectives – the critical period model, the accumulation of risks model, the pathway model and the social mobility model. While they go on to discuss the complexity of the various models, they also highlight that distinguishing between potentially competing models statistically is both practically difficult and perhaps even unnecessary. The life-course framework has been applied to a host of mental health problems by Koenen, Rudenstine, Susser, & Galea (2013), who provide an anthology of variants of the life-course perspective to understand the development of mental health problems. The aetiology of depression, specifically, is held not to be monocausal, and various conceptual frameworks have been proposed by which to characterise its incidence across the life course, and frameworks outlined in Rudenstine (2013) emphasise a role for the impact of early life circumstances and events. These frameworks variously propose that, in line with the critical period model, adverse stresses at various stages of life, particularly in sensitive periods such as early childhood, can alter developmental processes or form an early stage of cumulative damage.

Furthermore, in line with the pathways model, adverse economic conditions early in life set in motion lifetime trajectories of disadvantages. For example, children exposed to adverse socioeconomic conditions might be confronted with poor diets, smoking, worse educational and job opportunities, and all these factors in turn will have a negative impact on mental health in late adulthood. Within this context, contemporaneous socioeconomic conditions can act as an important mediator because of the influence that adverse early-life conditions have on intermediate outcomes such as educational outcomes and labour market attachment. Given that men and women may react differently to their (socioeconomic) environment (Cleary (1987) and Van de Velde et al. (2010)), the life-course framework further anticipates that the influence of childhood socioeconomic deprivation on late-adulthood mental health outcomes may differ across genders. While not equivalent, the life-cycle perspective, often employed by economists, shares many features with the life-course perspective. Smith (2015), for instance, highlights the many ways in which economic adversity in childhood leads to detrimental health outcomes later in life and suggests that intermediate outcomes such as worse educational attainment, which leads to a lower late-adulthood SES, may act as pathways from early-life conditions to health outcomes later in life. In passing, however, he also mentions the limited attention that has been given to mental health problems in this stream of the literature.

Methods

Data Source

SHARE consists of a longitudinal survey, collected every two years, which includes data on socioeconomic, lifestyle, and health-related information for individuals aged over 50, and their spouses. The study design and sampling methods, both in general and for the specific waves here

employed, are detailed elsewhere (Börsch-Supan, 2017a, 2017b, Börsch-Supan et al., 2008, 2013; Börsch-Supan & Schröder, 2011). These data are collected contemporaneously, with the exception of the third wave, SHARELIFE, which comprises data based on retrospective recall of previous circumstances. SHARE has been extensively employed in the existing literature in order to investigate links between depression and various other outcomes and factors: these include participation in productive activities (Choi, Stewart, & Dewey, 2013) social participation (Croezen, Avendano, Burdorf, & van Lenthe, 2015), parental mental health status (Angelini, Klijs, Smidt, & Mierau, 2016), and teenage motherhood (Angelini & Mierau, 2017). In our analysis, we make use of two waves of this dataset: the retrospective third wave – SHARELIFE – collected in 2008/9, and the second wave of contemporaneous data, collected in 2006/7. Consequently, all of our contemporaneous data is taken from the contemporaneous second wave of SHARE data, with data regarding the individual's childhood circumstances taken from SHARELIFE. We employ data from these waves of SHARE from 14 continental European countries: Sweden, Denmark, Germany, Netherlands, Belgium, France, Switzerland, Austria, Spain, Greece, Poland, Czechia and Ireland[1].

Variable Construction

Our dependent variable of main interest consists of the EURO-D score for depressive symptoms. The EURO-D score (Prince, Reischies, et al., 1999) is provided as part of our SHARE dataset and is constructed from the sum of individual responses to 12 questions regarding the individual's recent mood, where a cut-off of four or more adverse answers to such questions is used as a clinically-verified measure of depression (Prince, Beekman, et al., 1999).

[1] Israel is not included in SHARELIFE, nor were waves 1 and 2 contemporaneously collected with those from continental European countries. We therefore exclude it from our sample.

For our key independent variable of interest, we construct a series of dummy variables indicating the decile of childhood SES at age 10. In constructing this metric, we follow the method first employed in Mazzonna (2011), validated in Havari & Mazzonna (2015) and subsequently used in Angelini & Mierau (2014). This measure consists of a principal components score, created from a combination of measures of childhood SES, at age 10, included in SHARELIFE: the number of rooms in the house (excluding kitchen, bathrooms and hallways), the number of facilities in the house (fixed bath, cold running water supply, hot running water supply, inside toilet, central heating), the number of books kept in the home (none or very few – 0 to 10 books [coded 1], enough to fill one shelf – 11 to 25 books [2], enough to fill one bookcase – 26 to 100 books [3], enough to fill two bookcases – 101 to 200 books [4], enough to fill two or more bookcases – more than 200 books [5]) and the occupation of the main breadwinner, according to International Standard Classification of Occupation (ISCO) skills levels. The ISCO categorization consists of elementary occupations (grouped together with those where there was 'no main breadwinner' [coded 4]), 'skilled' occupations (service, shop or market sales worker, skilled agricultural or fishery worker, craft or related trades worker, and plant/machine operator or assembler [3]), 'associate' occupations (technician or associate professional, clerk [2]), and 'managerial' occupations (legislator, senior official or manager, professional [1]).[2] Table A1 in the Appendix provides the results of our principal component analysis, with component 1 alone used to construct the score used in our index of childhood SES. While the other components also have some loading, only the first component satisfies the Kaiser Rule that only components with eigenvalue greater than 1 should be included. As mentioned above, we operationalise the index by considering dummies for each decile of the SES index.

[2] We exclude the 368 members of the armed forces included in SHARE.

Contemporaneous SES, a potential mediator of the association between childhood SES and late-adulthood depression, is measured as log equivalised annual household income, where equivalisation is conducted by dividing gross household income by the square root of household size, as per the current method employed by recent OECD publications (Organisation for Economic Co-operation and Development, 2011, 2013). As income is frequently missing in SHARE, two variations of imputed income are provided in SHARE: one which aggregates imputed values from individual components of household income, and another which imputes total household income singly. While we present results using the former only, our findings are robust to the alternative use of the latter.

In addition to our core independent variables – childhood and contemporaneous SES – we control for cohort effects through the inclusion of five-year cohort dummies, adjust all models for gender and use country dummies to control for unobserved cross-country heterogeneity such as differences in levels of development and socio-economic inequality that prevail in each country included in SHARE. While the resulting specification is very parsimonious, we assess the sensitivity of our findings by including a battery of additional childhood characteristics in the Sensitivity section below.

Analytical Strategy

Our analytical strategy is aimed at estimating the association between childhood SES and depression in late-adulthood, taking into account the role of contemporaneous SES. To this end, we follow (Baron & Kenny, 1986) in estimating three separate linear equations by means of ordinary least squares. In the first step, we regress late-adulthood depression on childhood SES and the control variables outlined above. Then, in the second step, we regress contemporaneous

SES on the same set of variables as in the first step. Finally, in step three we add contemporaneous SES as an additional independent variable to the regression equation estimated in the first step. Essentially, this approach allows us to assess whether the association between childhood SES and late-adulthood is mediated fully by contemporaneous SES or if, even after for allowing for contemporaneous SES, childhood SES still affects late-adulthood depression. Importantly, for contemporaneous SES to be consider a mediator, in the second step it should be significantly associated with childhood SES. To assess gender-specific associations between childhood SES and health later in life we estimate our models by gender and also perform Chow test of gender differences. We report raw estimates as well as their standard errors. All analyses were performed using STATA 14.

Results

Sample Description

25,652 individuals appear in both SHARE wave 2, and the retrospective SHARELIFE wave, wave 3. After excluding individuals with item missing response, our final sample consists of 21,989 individuals. Comparing the full sample with the estimation sample reveals that in terms of childhood SES and health outcomes there is little difference between our final subsample used for estimation and the full sample of individuals included in both waves. We also assess the role of the deletion of the list-wise deletion when we re-estimate our model using full information maximum likelihood below. The properties of our estimation sample are presented in Table 1. In addition to sample averages we also split the sample by gender to highlight potential gender differences between health dimensions. Depression, as measured by EURO-D score, is significantly worse for women than for men – the difference being statistically significant at the 1% level when considering Student's t-tests of equality of means. Focusing on the constituent parts

of the childhood SES index reveals that, as would be expected, no important differences are observed between men and women.

[TABLE 1 ABOUT HERE]

Associations Between Childhood Socioeconomic Status and Late-Adulthood Depression

Table 2 presents our main estimation results. In order to provide a meaningful interpretation of the association between childhood SES and late-adulthood depression, we use the middle decile of the index as reference category. The interpretation is hence straightforward, with positive estimates indicating worse depressive symptoms.

In the first column we present the results of regressing late-adulthood depression on childhood SES and a set of control variables. There we note a gradient that is particularly steep for individuals from the lower deciles of the childhood SES distribution. Indeed, individuals from the three lowest deciles all display an elevated level of depressive symptoms compared to those in the middle decile, while of the individuals in the higher deciles only the those in the highest decile display a reduced level of depressive symptoms. In the second column, we then replace the dependent variable, regressing instead contemporaneous SES (as measured by the log of equivalised household income) on childhood SES and the control variables. There we observe a clear gradient over the whole distribution of childhood SES, in the sense that the higher the decile of childhood SES, the higher contemporaneous SES. Although perhaps superfluous, an F-test indicates that the childhood SES deciles are jointly significant in the specification of the second step ($F=11.84$, $p<0.0001$). Finally, in the third column we include contemporaneous SES as an additional dependent variable in the otherwise unchanged specification of step 1. From there we may conclude that, even after controlling for contemporaneous SES, low childhood SES is significantly

associated with elevated depressive symptoms in late-adulthood. In fact, the point estimates of childhood SES change only very marginally after the inclusion of contemporaneous SES in the model.

[TABLE 2 ABOUT HERE]

Gender-Specific Associations

Moving forward we focus on gender differences in the associations between childhood SES and late-adulthood depression. As already highlighted in Table 1 containing the descriptive statistics, women exhibit substantially worse depressive symptoms. This need not, however, imply that the association between childhood SES and late-adulthood depression is gender specific. Hence, we proceed by performing a Chow-test on the associations found in column 3 of Table 1. Essentially, the Chow-test re-estimates the association but interacts the Male dummy with the childhood SES deciles and then tests for the joint significance of the interaction terms. The ensuing Chow-test strongly suggests a gender-specific association ($F=5.78$, $p<0.0001$). We develop the gender-specific associations further in columns 4 and 5 of Table 2, in which we re-estimate the specification of column 3 by gender. This analysis reveals that the gradient for women is substantially steeper than the gradient for men. As before, we also observe that the association for is particularly strong for men as well as women with below median childhood SES.

Sensitivity Analysis

The above results reveal a positive association between childhood SES and depressive symptoms in late adulthood, which remains present after allowing for contemporaneous SES and is observed to be stronger for individuals with particularly low SES. Focusing on gender-specific associations

reveals that the association is especially strong for women. In this section, we explore the sensitivity of these results for a variety of considerations.

Additional Childhood Characteristics For sake of clarity we have used a parsimonious model, which includes controls only for gender, country of residence and the cohort in which an individual was born. However, a host of other childhood factors contained in the SHARELIFE survey have been associated with depression later in life. To this end, we add parental presence (separately for adopted or natural mother and father) in the childhood home at the age of ten, self-perceived and self-recalled ability at age ten in mathematics and literacy compared to the average, childhood health and child-reported parental alcohol abuse. Childhood and early adulthood cognitive ability has been found to be correlated with an elevated risk of depressive episodes and other mood disorders, and the severity thereof, at various stages later in life (Hung et al., 2016; Weeks et al., 2014; Zammit et al., 2004). While the relationship between parental presence and depression is more scantly-researched, a UK government report found an increased likelihood of developing an emotional disorder among children and young people in families with one parent (Parry-Langdon, 2008), and the divorce of parents in childhood has been shown to be associated with an elevated risk of depression and other mood disorders (Chun, Jang, Choi, Shin, & Park, 2016; Gilman et al., 2003). Evidence of links between parental alcohol abuse and depression have been noted since at least Rolf, Johnson, Israel, Baldwin, & Chandra (1988), with many – though not all – studies also producing evidence suggestive of such a link (Harter, 2000). While the descriptive statistics of these additional controls are already contained in Table 1, in column 2 (column 1 repeats the benchmark specification of column 3 in Table 2) of Table A2 of the Appendix we display the estimation results after inclusion of the additional controls. For this robustness check, it suffices

to say that the central conclusions of our main analysis are unaffected following the inclusion of the additional control variables.

Additional Adulthood Characteristics Within our parsimonious model, contemporaneous SES acts as a composite mediator of a host of different pathways that potentially account for the association between childhood SES and late-adulthood depression. The richness of the SHARE data, however, allow us to consider variety of such intermediate factors directly. To this end, we add educational outcomes, late-adulthood general health and marital status as additional control variables – factors often associated with adverse mental health outcomes (see, for instance, Koenen et al. (2013)). Educational attainment is classified as low, medium or high based on the International Standard Classification of Education (ISCED), general health is assessed using a five-point scale ranging from poor to excellent and relationship status covers a host of different living conditions. The descriptive statistics of the additional variables are contained in Table 1. In column 3 of Table A2 we add the additional adulthood controls to our model. The results highlight that also after the inclusion of the additional characteristics childhood socioeconomic remains negatively associated with late-adulthood depression.

Age Effects A significant literature has been devoted to generating an understanding of the role of age in the onset, prevalence and course of mental health problems and depression in particular (Keyes, Legrand, Iacono, & McGue, 2008). However, as aptly demonstrated by Suzuki (2012), this endeavour is plagued by the usual caveats surrounding age-period-cohort effects (Bell & Jones, 2013). Essentially, because any dual combination of age, period and cohort is perfectly collinear to the third factor, identifying either of three effects independently is impossible without resorting to additional, untestable, assumptions. While various suggestions have been made to go some way towards resolution of this problem (Yang & Land, 2006), none has done so without

attracting significant criticism (Bell, 2014). It is for this reason that we have been agnostic in our analysis as to what is precisely captured by our cohort dummies – which we could have equally well called age dummies. Nevertheless, as the life-course pattern of depression is generally believed be quite a different life-course pattern than that of physical health – with physical health deteriorating exponentially with age, and depression exhibiting a hump-shaped or wave-form pattern over the life-course – we also consider the sensitivity of our results to the inclusion of age and age squared instead of the cohort dummies. These results are contained in column 4 of Table A2. While our conclusions are unaffected, we observe that depression is stable or even declining from 50 to about 60 and then increases monotonically.

Country Groups The pan-European approach of SHARE allows us to include respondents from 14 European countries. While the ensuing sample is very substantial, we cannot perform a high-power analysis on a country-by-country basis due to a lack of sufficient observations in each country. To obtain an idea of the role of sub-samples we can, however, focus on sub-samples of country groups. In particular, we rely on the classification of Inglehart & Welzel (2010) who distinguish between Protestant Europe (Denmark, Germany, the Netherlands, Sweden and Switzerland) and Catholic Europe (Austria, Belgium, France, Greece, Spain, Italy and Ireland)[3] as a general split between dominant cultural traits. The results from this endeavour are presented in Table A3, where we observe that our model conclusions also hold for both country groups.

Miscellaneous First, as mentioned above, SHARE deals with missing observation of contemporaneous income in two different ways. While for various specifications above we have

[3]The original Inglehart & Welzel (2010) classification also contains Ex-communist countries as a category but, as we only have two of them, we do not have sufficient observations for a meaningful (i.e., powered) analysis.

relied on imputed values from individual components of household income, in column 4 of Table A2 we instead use singly imputed household income. This has no material impact on our results. Second, aside from household income, we have dealt with missing observations by means of list-wise deletion on respondents who failed to report one of the variables required for our analysis. Instead, in column 6 of Table A2 we estimate our main model using full information maximum likelihood (FIML), which allows us to use all available observations (i.e., 25,652 as mentioned above). Using this approach does not affect the conclusions of our analysis. Finally, in column 7 of Table A2, we allow for all above described sensitivity analyses in one specification. That is, we include all additional controls, use age and age squared, focus on the alternatively imputed household income and estimate by FIML. This exercise does not affect our results.

Discussion

In concert, the above analysis and its sensitivity considerations have revealed that low childhood SES displays a positive association with late-adulthood depression in the sense that lower childhood SES is associated with the presence of more depressive symptoms. Importantly, this association prevails even after taking into account contemporaneous SES as well as a host of other childhood and late-adulthood characteristics. Allowing the association to differ by gender implies that depression is especially associated to childhood SES for women.

Our results stand out from earlier analysis in multiple ways. First of all, in contrast to the extant contributions of, inter alia, Power et al. (2007), Gilman et al. (2002) and Gilman et al. (2003), we look at the association of childhood SES and depression at much later stages. Luo & Waite (2005) and Tani et al. (2016) focus on a similar question, yet do so for the United States and Japan, respectively, with both finding a link between worse childhood SES and higher rates of late

adulthood depression. Second, to the best of our knowledge, none of the earlier contributions has focused on the gender-specific nature of the association between childhood SES and depression in late-adulthood. By contrast, the related literature on the socioeconomic gradient of health has paid close attention to gender-specific gradients, generally finding that it is weaker for women than for men (see, for instance, Backholer et al., (2016) & Thurston, Kubzansky, Kawachi, & Berkman (2005)) for cardiovascular disease – the staple disease of the socioeconomic gradient literature). Our analysis shows that for depression the relationship is seen to be stronger for women than for men.

Beyond the mental health domain, our analysis contributes to the understanding of the association between conditions early in life and health outcomes later in life. Indeed, our results indicate that early-life socioeconomic conditions have an association with late-adulthood depression independently of other childhood and late-adulthood characteristics. Such a finding is suggestive of the so-called critical period model. However, as the magnitude of the association declines upon the inclusion of late-adulthood socioeconomic outcomes our results also point toward the relevance of the pathways model. Naturally, in practice these, and other, life-course models are not mutually exclusive and, therefore, discriminating between them may not statistically feasible or indeed desirable (see, Pudrovska & Anikputa (2014)). Future work should, however, be aimed at further elucidating the various mechanisms linking early-life conditions to outcomes later in life.

Our analysis also has some limitations, which provide areas for future research. First of all, while our analysis focuses on the association between childhood SES and late-adulthood depression, isolating the causal impact is important. After all, if childhood SES and late-adulthood depression are driven by a third (unobserved) factor, potential interventions should be aimed primarily at that

third factor – if possible. Second, given the delay between childhood and late-adulthood, it is important to generate a better understanding of the mechanisms linking the two. Importantly, understanding such mechanisms provides potential allays for interventions aimed at mitigating the health consequences of growing up in a low childhood SES environment. Third, given that we focus on a sample of individuals aged 50 and over, we are confronted with the potential consequences of selective survival. That is, if depression is associated with early mortality, we may observe a lower number of individuals with depressive symptoms because a share of them will not have become sufficiently old so as to become part of the sample. However, given the fact that we find a negative association between early-life deprivation and late-adulthood depression we expect that, if selective mortality is present, our results are actually a lower bound of the true association. Fourth, the delay between childhood events and the SHARE survey may cause problems in recalling the exact nature of the childhood circumstances. To ameliorate such problems SHARELIFE (the retrospective wave) relied on so-called Event History Calendars to get a good as possible picture of childhood circumstances. The validity of this approach has been substantiated within the context of SHARE by (Smith, 2009) and (Havari & Mazzonna, 2015) who show respondents remember their childhood socioeconomic and health status well.

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TABLE 1

Descriptive Statistics (N = 21,989)

Name	Mean All	St. Dev. All	Mean Men	Mean Women	
Individual Characteristics			(N=9,769)	(N=12,220)	
Male	0.44	0.49	N/A	N/A	
Age	66.09	9.53	66.33	65.90	***
Health Status					
Depression (EURO-D)	2.18	2.15	1.68	2.29	***
Childhood SES					
Number of Rooms	3.68	1.79	3.70	3.67	
Number of Facilities	2.26	1.48	2.26	2.27	
Number of Books (1 = few to 5 = >200 books)	2.11	1.20	2.09	2.12	*
Occupation of Main Breadwinner (ranked)	2.91	0.79	2.90	2.91	
Childhood Characteristics					
Math Performance (1 = low to 5 = high)	3.29	0.89	3.37	3.22	***
Language Performance (1 = low to 5 = high)	3.32	0.87	3.22	3.40	***
Self-Reported Health (1 = poor to 5 = excellent)	3.96	1.00	4.03	3.92	***
Parent Drinks	0.08	0.27	0.08	0.08	
Biological Father Present	0.91	0.29	0.91	0.91	
Biological Mother Present	0.96	0.19	0.97	0.96	
Stepfather Present	0.02	0.14	0.02	0.02	
Stepmother Present	0.02	0.12	0.01	0.02	
Adulthood Characteristics					
Equivalised Household Income (Log)	9.40	2.16	9.45	9.36	***
Self-Reported Health (1 = poor to 5 = excellent)	3.00	1.08	2.94	3.05	***
Educational Attainment (1 = low to 3 = high)	2.66	1.49	2.82	2.53	***
Married and living together with spouse	0.73	0.45	0.81	0.66	***
Registered partnership	0.01	0.11	0.01	0.01	**
Married, living separated from spouse	0.01	0.12	0.01	0.01	
Never married	0.05	0.21	0.05	0.04	***
Divorced	0.06	0.24	0.05	0.07	***
Widowed	0.14	0.34	0.06	0.20	***

Note: */**/*** indicate significant differences at the 10%/5%/1% level based on Student's t-tests of group mean comparisons.

TABLE 2

Association Between Childhood SES and Late-Adulthood Depression

	Ordinary Least Squares				
	Full Sample			Men	Women
Dependent Variable:	Depression	Log Income	Depression	Depression	
	(1)	(2)	(3)	(4)	(5)
Male	-0.895***	0.0586***	-0.892***	N/A	N/A
	(0.0276)	(0.0159)	(0.0276)		
Equivalised Household Income (Log)	N/A	N/A	-0.0524***	-0.0407**	-0.0628***
			(0.0135)	(0.0190)	(0.0195)
1st Decile of Childhood SES	0.371***	-0.117***	0.365***	0.225***	0.471***
	(0.0630)	(0.0343)	(0.0630)	(0.0839)	(0.0913)
2nd Decile of Childhood SES	0.255***	0.0747*	0.251***	0.133	0.341***
	(0.0631)	(0.0381)	(0.0630)	(0.0828)	(0.0923)
3rd Decile of Childhood SES	0.206***	-0.0296	0.205***	0.190**	0.212**
	(0.0615)	(0.0345)	(0.0615)	(0.0818)	(0.0891)
4th Decile of Childhood SES	0.0310	-0.00232	0.0309	0.0843	-0.0107
	(0.0610)	(0.0337)	(0.0610)	(0.0812)	(0.0883)
5th Decile of Childhood SES	Reference			Reference	
6th Decile of Childhood SES	-0.0421	0.0336	-0.0403	-0.0362	-0.0566
	(0.0604)	(0.0334)	(0.0604)	(0.0802)	(0.0877)
7th Decile of Childhood SES	-0.0862	0.0894***	-0.0815	-0.132	-0.0507
	(0.0608)	(0.0334)	(0.0608)	(0.0809)	(0.0880)
8th Decile of Childhood SES	-0.0975	0.126***	-0.0909	-0.130	-0.0654
	(0.0616)	(0.0374)	(0.0616)	(0.0832)	(0.0883)
9th Decile of Childhood SES	-0.113*	0.190***	-0.103*	-0.0757	-0.129
	(0.0618)	(0.0342)	(0.0618)	(0.0827)	(0.0892)
10th Decile of Childhood SES	-0.165***	0.282***	-0.150**	-0.0939	-0.205**
	(0.0620)	(0.0353)	(0.0621)	(0.0826)	(0.0900)
Cohort Effects	YES	YES	YES	YES	YES
Country Fixed Effects	YES	YES	YES	YES	YES
Observations	21,989	21,989	21,989	9,769	12,220

Notes: Constant not reported. */**/*** indicate statistical significance at the 10%/5%/1% level, standard errors between brackets. N/A is not applicable.