**Financial Difficulties in Childhood and Adult Depression in Europe**

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**Abstract**

**Background**. Financial difficulties in childhood may be associated with immediate and long-term consequences for mental health. The aim of the current paper is to investigate the association between childhood financial difficulties and adult depression, and assess the relative contribution of financial difficulties in childhood to symptoms of adult depression across different age groups. **Methods.** Using three age cohorts (25-40, 41-59, 60-75) from 19 countries in the European Social Survey Round 7 (N =18 401), multi-level and country-wise OLS regression analyses were used to investigate the association between financial difficulties in childhood and adult depression, while adjusting for age, education, gender, highest education in family, level of family conflict, number of social meetings and marital status. **Results.** Financial difficulties in childhood was found to be influential predictors of depression scores for 25-40 year olds in 10 out of 19 countries in fully adjusted models. In older participants, depression scores were mostly influenced by frequency of social meetings and marital status. There was great variation in the pattern of influential risk factors across countries, and the predicted effect childhood financial difficulties had on adult depression scores. **Conclusion**. Childhood financial difficulties as predictors of depression appear to, by themselves, exert the strongest influence in younger adults. There was, however, large variation between countries in the magnitude of associated risk, and in the pattern of risk factors contributing to adult depression, which underscores the need to account for country-level factors when aiming to gain knowledge about mental health.

Keywords: European Social Survey; childhood financial difficulties; depression

**Introduction**

Lower socioeconomic status in childhood is associated with both immediate and longer-term consequences for mental health 1,2. Living in conditions of poverty or with financial constraints increase the risk of mental health problems in childhood 3, and these problems may persist into adulthood 4.

There are only modest direct effects of financial difficulties in childhood. The association appears to operate indirectly through the adverse influences of financial difficulties on the physical and psychosocial environment surrounding the child. Economists have emphasized constrained opportunities for making material and psychosocial investments that would benefit the child 5; developmental psychologists have focused on increased parent stress, with negative consequences for parent mental health, increased conflictual parent-child relationships and poorer parenting behaviors 6,7. Others have noted that poor children are exposed to multiple factors that may pose risk to their healthy development, and that the accumulation of these factors may interfere with their responses to stress 8.

Depending on their socio-economic position, adults also experience both differential exposure and differential vulnerability to risk factors. Stressors in adulthood associated with lower SES include factors such as low levels of social support 9 and having experienced a divorce or separation 10. Supporting the idea that adults experience differential vulnerability is the finding that higher educated adults living under unfavorable conditions perceive a higher sense of control than adults with lower educational achievements, suggesting that education shields individuals from psychological distress 11.

Research employing a lifecourse aproach has provided ample evidence of the magnitude of inequalities in adult health that are due to environmental exposure in early life 12. However, inequalities in health are socially constructed over time 13 and mental health, like other health conditions, 14 is a result of cumulative effects of adverse living conditions occuring both during childhood and adulthood 15,16. While it has also been suggested that the influence of current economic hardship on depression varies across the life course 17, relatively little is known about how early financial circumstances influence depression over different life periods.

The aim of this study is to test the hypothesis that childhood financial difficulties influence adult depression. Specifically, we used three age cohorts from 19 countries participating in the seventh round of the European Social Survey (ESS) to investigate the association between financial difficulties in childhood and adult depression. We also compare the relative contribution of childhood financial difficulties to other established predictors of depression such as social isolation, and lack of social support 18-20 as measured by marriage status and frequency of social meetings.

**Methods**

## Participants

The current study was based on a sample of 18,401 respondents (47% male) aged 25 to 75 from 19 countries who participated in the 7th round of the ESS (Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Ireland, Lithuania, Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland, Slovenia, United Kingdom). See Eikemo et al. 21 for detailed information about the sample and design of the ESS. Respondents younger than 25 were excluded as they may have still been living with their parents and/or may not have completed their education at the time of the survey. Participants were categorized into three age cohorts, corresponding roughly to young- (25-40 years), middle- (41-59 years), and late adulthood (aged 60 to 75)22.

## Depression

Symptoms of depression were measured by the eight item version of the Center of Epidemiological Studies-Depression (CES-D) scale. The CES-D can be used to indicate various categories of depression using a combination of responses on the 20 items included in the full scale. When constructed as an index ranging from 0 to 60, there is a cut-off for subthreshold depression at 16 (<http://cesd-r.com/cesdr/)>. Respondents were asked to answer how often within the past week they (1) felt depressed, (2) felt everything they did was an effort, (3) had restless sleep, (4) were happy, (5) felt lonely, (6) enjoyed life, (7) felt sad, and (8) could not get going, using the options *“*None or almost none of the time”*, “*Some of the time”*, “*Most of the time”*, “*All or almost all of the time”. Respondents could also answer “Don’t know”. The eight items, of which two were reversed, were summed to form a scale with a range from 1 to 4 corresponding to the response options. To be assigned a mean score, the respondent had to answer at least six items. Zero variance respondents (e.g., those who answered the same score on all items, such as eight 1s despite there being two reversed items), were excluded in order to ensure consistency of the scale 23. Using ESS data, the CES-D eight item version has previously been found to be a valid and reliable measure of depression across age 24, and is measurement invariant across gender and countries 25.

## Financial difficulties in childhood

Financial difficulties in childhood was measured by asking participants how often they and their families experienced severe financial difficulties when the respondent was growing up. Answering categories for both variables were as follows: *“*Always”*, “*Often”*, “*Sometimes”*,* “Hardly ever”*,* “Never” and “Don’t know”*.* The variable was recoded into Never, Hardly ever/Sometimes and Often/Always. The original variables were recoded so that high scores represent more family conflict and more financial difficulties, respectively. In order to establish the validity of the measure of perceived financial difficulties in childhood, we evaluated how it was associated with education levels among parents and paternal and maternal employment status when the respondent was 14. Primary parental education levels (relative to Tertiary) was significantly associated with responding *Often/Always* in terms of having experienced financial difficulties when growing up (OR = 3.7, 95% CI [3.5; 4.0]), as were unemployment (relative to working) among fathers (OR = 1.5, 95% CI [1.4; 1.6]) and mothers (OR = 1.1, 95% CI [1.1; 1.1]). This pattern of associations was observed across all three cohorts for parental education levels and paternal employment status, but maternal unemployment was not a significant predictor of perceived financial difficulties among participants aged 41 and older, which may reflect changes in workforce participation among women.

## Covariates

**Family conflict.** The level of conflict in childhood was measured by asking the respondent to indicate how often there was serious conflict between the people living in their household when they were growing up, using response alternatives: “Always”*,* “Often”*,* “Sometimes”*,* “Hardly ever”*,* “Never” and “Don’t know”. The variable was recoded into Never, Hardly ever/Sometimes and Often/Always.

**Education levels**. Respondents’ highest completed level of education was measured with country specific categorical variables, which were later harmonized between countries resulting in three categories: *Primary* (24%), *Secondary* (53%) and *Tertiary* (23%). A similar procedure was used for the education level of the respondent’s parents, and from this, a joint variable was created, corresponding to the highest parental education level in the family: *Primary* (28.3%), *Secondary* (55.4%) and *Tertiary* (16.3%).

**Marital status and social meetings**. Marital status was operationalized according to whether the respondent was married or in a legally registered union (coded as 1; 55% across countries and cohorts) or not (coded as 0). Frequency of social meeting with friends, relatives or colleagues was used as a proxy for social support, with responses across countries and cohorts ranging from “Never” (1.5%) to “Every day” (13.5%), with the most common response being “Several times a week” (28.5%).

## Statistical analyses

Data was analyzed with multi-level and OLS regressions using R for Mac 26 with the ”lme4” 27 , “rms” 28, “survey” 29,30 and “ggplot2” 31 packages . Weights were applied according to recommendations for ESS datasets (<http://www.europeansocialsurvey.org/docs/methodology/ESS_weighting_data.pdf)>.

In the multi-level analysis, the empty model (not shown) revealed a significant country variance in depression symptoms (1.6, *p* < 0.001) with an Intra Class Correlation of 0.0516 meaning that 5.16% of the variance in depression symptoms is attributable to differences between countries. In order to investigate this country-variability further, separate OLS regression models were fit for each country. First independently, assessing the bivariate associations between depression and childhood financial difficulties. Next, we tested the robustness of our findings by adjusting for several covariates related to depression such as age, gender, family conflict, respondent’s own education level, parental education levels, marital status and level of social support. Results from fully adjusted models are reported graphically as influential variable plots (Figure 1) and predicted depression scores (Figure 2). Full regression tables are available as online supplements.

# Results

Descriptive characteristics of the sample are presented in Table 1.

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Across countries and age cohorts 4.7-36.5% of the sample reported “Often/Always” having financial difficulties in childhood, whereas 9.7-53.0% never experienced this. The weighted grand mean depression score was 1.65 (*SD* = 0.50).

The results of the unadjusted regression analysis predicting depression from childhood financial difficulties are presented in Table 2.

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In unadjusted analyses, having often/always experienced childhood financial difficulties was associated with higher depression symptoms in all countries in the cohort aged 25-40. A similar pattern of results was observed in the cohort aged 41-59, the exception being Finland, where no significant association was observed. In the oldest cohort, aged 60-75, the results were more mixed; significant associations were observed in 14 of the 19 included countries, but not in Belgium, Czech Republic, Finland, Germany nor Poland. Overall, childhood financial difficulties were associated with modest increases in depression symptoms, and did not contribute to a large proportion of explained variance in depression symptoms.

In the fully adjusted models, often/always experiencing financial difficulties in childhood was associated with significantly higher depression symptoms for the youngest adult cohort in Austria, Belgium, Germany, Ireland, Portugal and Switzerland, relative to respondents who never experienced financial difficulties in childhood. In the cohort aged 41-59, a similar association was found in 12 countries, but to a large extent these were different countries from where the association was found in the youngest cohort (i.e., Denmark, Estonia, France, Lithuania, Netherlands, Poland, Slovenia, and Sweden). Among the oldest participants, the association between often/always experiencing financial difficulties and depression was found in France, Ireland, Lithuania, Netherlands, Norway, Slovenia and the United Kingdom. Ireland and Lithuania were the only two countries where financial difficulties in childhood were associated across all three cohorts. The relative contributions (expressed as proportion of overall *R*2) of the predictors in the fully adjusted models are depicted in Figure 1.

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The influence of the predictors on depression was found to vary with countries and age cohorts. In Austria, Estonia, Finland, Germany, Ireland, Lithuania, Norway, Portugal, Spain, Sweden and Switzerland, financial difficulties in childhood emerged as the most influential predictor of depression in the younger cohort. In the cohorts aged 41-59 and 60-75, however, social meetings and marital status stood out as relatively more influential predictors of depression symptoms.

The association between experience of financial difficulties in childhood and predicted adult depression symptoms from the fully adjusted models are illustrated in Figure 2.

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In the youngest cohort, a social gradient emerged, where higher levels of childhood financial difficulties were associated with higher scores of depression symptoms in Austria, Estonia, Finland, Germany, Ireland, Lithuania, Portugal, Spain and Sweden. This gradient emerged less consistently in the older cohorts. Among 41-59 year olds, it was observed in Belgium, Denmark, Estonia, Ireland, Lithuania, Netherlands, Poland, Slovenia, Sweden and Switzerland, whereas for the oldest cohort, it appeared in Belgium, France, Ireland, Lithuania, Netherlands, Norway, Portugal, Slovenia and the United Kingdom. In some countries, curvilinear patterns emerged, where intermediate levels of financial difficulties had greater associated predicted depression scores than higher levels (e.g., Belgium for the oldest cohort, and Switzerland for the youngest cohort).

# Discussion

The aim of the current study was to investigate the association between childhood financial difficulties and adult depression symptoms, using data from 19 countries from the European Social Survey. Furthermore, we wanted to see if associations differed across age cohorts within and between countries. For many of the countries, financial difficulties in childhood were influential predictors of depression scores in the youngest cohort. This association was observed to a lesser extent in older participants, where other factors like frequency of social meetings and marital status also emerged as important predictors. These findings are in line with the *surviving experience hypothesis* 32. This hypothesis posits that the effect of economic hardship on depression decreases with age, as persons gain more resources, develop better support networks, and are more satisfied with their lives 33.

There were differences between the countries regarding whether financial difficulties in childhood were associated with adult depression, and the strength of this association in those countries where it did. This finding underscores the importance of taking country-level factors into account when aiming to gain health knowledge. Previous cross-national comparisons have identified several country-level factors that influence depression, such as the country´s level of economic development 34. In contrast, gross national income or country-level inequality has not found to be associated with depression in adults 34, although inequality (as measured by the Gini coefficient) seems to be a relevant contextual predictor for depression among adolescents 35. The importance of the sociopolitical context in influencing social determinants of health has also been demonstrated in studies of countries’ welfare regimes 36,37. In a previous investigation using data from the ESS, it was found that the link between economic hardship and depression across the life-course was moderated by welfare regime 38. In the current paper, our primary interest was in the childhood conditions as predictors of future health, but it could well be that such conditions are mediated by welfare states and how policies, health services and level of living conditions develop over time.

An important finding that emerged from the analysis of influential risk factors was the great variation between countries and cohorts. It is not uniformly the same factors that appear to contribute to symptoms of depression in different countries and in different age groups. If replicated, this finding could have implications on preventative efforts by suggesting that potential interventions should take into account country-specific risk factors and tailor efforts to specific age-groups.

The large and cross-national sample and the utilization of a validated measure of mental health are among the considerable strengths of the current study. The opportunity to analyze variation in risk factors for depression over time, as well as in multiple countries, are possible only using large high quality cross national surveys like the ESS.

The findings from the current study must be interpreted in light of several limitations, some of which are related to the ESS 21, while others are more specific to the current study. One of these relates to mono-informant bias, which could potentially have inflated the associations under study. Moreover, the operationalization of frequency of experiencing childhood financial difficulties is inherently subjective. The current study is also based on recollections of childhood conditions, which could be biased in favorable or less favorable directions. Finally, the symptoms of depression were measured in face-to-face interviews and had to be experienced in the week leading up to the interview. This mode of data collection may have led to underreporting of symptoms, although the sample means are comparable to previous population based studies of the CES-D 25. Furthermore, the fluctuating nature of depressive symptoms, as well as potential lower participation in the ESS by depressed respondents, may suggest that our estimates of the associations are relatively conservative.

In this study, we have presented analyses on the association between adulthood depression and childhood financial difficulties. Childhood financial difficulties appear to, by themselves, associate most strongly with depression in younger adults. There was, however, large variation between countries in the magnitude of associated risk, and in the pattern of risk factors contributing to adult depression, which underscores the need to account for country-level factors when aiming to gain knowledge about mental health. Future work should therefore be undertaken with a more explicit focus on country-level factors. Further work is also needed to better understand how risk factors interact across time to influence symptoms of depression, for which we would need longitudinal data.

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Figures

**Figure 1.** Contributions of predictors to depression scores from fully adjusted models in three age cohorts from 19 European countries from the European Social Survey.

Caption:

The figure illustrates the proportion of overall *R*2 attributable to each predictor of depression symptoms in each age cohort identified by different panels on the plot. Non-significant predictors are omitted from the figure. The numbers in the top right corner of each plot represents the overall explained variance of the model.

**Figure 2.** Predicted depression scores by financial difficulties in childhood in three age cohorts from 19 European countries from the European Social Survey.

Caption:

The figure illustrates how different levels of experienced financial difficulties are associated with depression symptoms in fully adjusted models. Non-significant associations are omitted. In all models, the levels of covariates were set to their most common (modal) category; Family conflict = Hardly ever/sometimes, Gender = Female, Own education level = Secondary, Marital status = Married/union, Social meetings = Several times a week, Family education level = Secondary. Age was set to the median value within each cohort. No significant associations were found in the Czech Republic.