Original Article

Number of Children, Partnership Status, and Later-life Depression in Eastern and Western Europe

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Abstract

Objectives: To investigate associations between number of children and partnership with depressive symptoms among older Europeans and assess whether associations are greater in Eastern than Western countries. We further analyze whether associations are mediated by provision and receipt of emotional and financial support.
Methods: Using cross-sectional data for five Eastern (Bulgaria, Czech Republic, Georgia, Romania, and Russia) and four Western European countries (Belgium, France, Norway, and Sweden) (n = 15,352), we investigated variation in depressive symptoms using linear regression. We fitted conditional change score models for depressive symptoms using longitudinal data for four countries (Bulgaria, Czech Republic, Georgia, and France) (n = 3,978).
Results: Unpartnered women and men had more depressive symptoms than the partnered. In Eastern, but not Western, European countries childlessness and having one compared with two children were associated with more depressive symptoms. Formal tests indicated that partnership and number of children were more strongly associated with depressive symptoms in Eastern than Western Europe.
Discussion: Availability of close family is more strongly associated with older people's depressive symptoms in Eastern than Western Europe. The collapse of previous state supports and greater economic stress in Eastern Europe may mean that having a partner and children has a greater psychological impact than in Western countries.

Keywords: Depression—Generations and Gender surveys (GGS)—Intergenerational relationships—Long-standing illness—Partnership status—Support exchanges

Depressive disorders are common in older age groups and an important public health problem (Castro-Costa et al., 2007). Risk factors include poor physical health, socio-economic strain, social support deficits and exposures to recent and cumulated disadvantages and stresses (Fiske, Wetherell, & Gatz, 2009; Schaan, 2014). All these domains interact with family life courses and social theorists from Durkheim onwards have suggested that partnership and parenthood promote social integration, buffer stress, and protect against depression (Berkman, Glass, Brissette, & Seeman, 2000). Later-life challenges, including deterioration in health and reduced financial

security, suggest that having close family may be particularly important for the mental health of older people (Taylor & Lynch, 2004).

In Eastern European countries, number of children may be especially important. The prevalence of widowhood is high compared with other European regions due to high mortality and large gender differences in death rates; this may mean children are particularly important as a source of support. Additionally, the profound changes that followed the break-up of the Soviet Union are likely to have increased the need for practical and emotional support from family members. Soviet and Eastern European countries

previously had relatively generous and near universal pensions but these were substantially eroded in value during the 1990s (Laczko, 1994). In Russia, for example, pensions fell to less than 30% of average wages and were often paid late leading to widespread impoverishment among older people (Buckley & Donahue, 2000). Access to health care may also have been reduced as a result of increased privatization and escalating out-of-pocket payments (Jensen & Richter, 2004) and there is a continuing low emphasis on community forms of long-term care in Eastern compared to other European countries (Damiani et al., 2011). Such changes in the state supports available to older people, and greater uncertainty and upheaval, may have made support from children even more important in the post-Soviet era both as a source of practical assistance and as a buffer to stress. For current cohorts of older people who formed their families—and expectations about later life—before these changes, those with no or few children may face a potential lack of support and a greater disjuncture between actual and anticipated circumstances; which itself is associated with depression (Brandtstadter, Wentura, & Greve, 1993). Moreover, although proportions childless have historically been lower in Eastern than Western Europe, so too have been average family sizes with more one child families. This pattern of family building, coupled with higher risks of mortality, and very high levels of emigration among younger people, may mean that older people lack an available living child possibly prompting regrets about their past family building. For all these reasons, we hypothesize that associations between availability of close family (partner and children) and depressive symptoms among older people may be greater in Eastern than Western Europe.

We use data from the Generations and Gender Surveys (GGS) on adults aged 65–80 in five Eastern and four Western European countries to analyze how number of living children and partnership are associated with depressive symptoms and, for a subset of countries with longitudinal data, change in depressive symptoms. We also examine whether there are East–West differences in these associations.

We take account of factors potentially associated both with family patterns and risks of depression, including childhood circumstances, experience of death of a child, and current physical health and financial stress.

Parenthood, Partnership, and Later-Life Depression: Hypothesized Linkages

Current and life course experiences related to parenthood and partnership may be associated with risks of later-life depression in several ways. Having children may convey purpose and attachment and provide opportunities for social participation and emotional exchanges both during childrearing and later-life stages (Offer & Schneider, 2007). Although childless older people, particularly women, may develop strong links with friends and other relatives, previous European studies indicate that parents, and parents of larger families, have a higher chance of frequent face-to-face contact than those with no or few children (Grundy & Read, 2012; Tomassini et al., 2004). Higher levels of face-to-face contact are, in turn, associated with lower risks of depression (Teo et al., 2015). Children and spouses are a potential source of social support which is hypothesized to buffer stress and protect against depression (Berkman et al., 2000). Unravelling the direction of associations between social support and depression is difficult but a recent systematic review found that most studies reported protective effects of emotional and instrumental support, especially in the face of stresses (Santini, Koyanagi, Tyrovolas, Mason, & Haro, 2015). Spouses and children may also provide social control of unhealthy behaviors, such as high alcohol consumption, which are associated with greater risks of depression in later life (Kendig, Dykstra, van Gaalen, & Melkas, 2007). However, parenthood also involves stresses, such as constrained opportunities to pursue other roles and considerable financial costs; such cumulated stresses may have negative implications for later-life mental health, particularly for parents of large families or those under strained economic conditions (Grundy & Read, 2015; Kravdal, Grundy, & Skirbekk, 2015).

Previous Research

This theoretical and empirical literature would suggest that older people who are unpartnered and those with no or few children would have higher risks of depressive symptoms in later life. Consistent with this, an extensive literature indicates that having a partner is associated with lower risks of depression at older ages and loss of a partner with increased risks (Kamiya, Doyle, Henretta, & Timonen, 2013; Mair, 2013; Schaan, 2013). Research on associations between number of children and later-life depression is sparser and less conclusive. A recent Korean study reported a *U*-shaped association between number of children and depressive symptoms with higher risks for the childless and those with five or more children (Kim, Lee, Shin, Choi, & Park, 2015). Results from United States and European studies provide mixed results. Some find associations between childlessness and depressive symptoms in older men but not women (Buber & Engelhardt, 2008; Huijts, Kraaykamp, & Subramanian, 2013) or women but not men (Koropeckyj-Cox, 1998); others associations for neither (Hank, 2010; Kendig et al., 2007; Mair, 2013), or only some sub-groups, such as divorced and widowed men (Zhang & Hayward, 2001). One analysis of the U.S. Health and Retirement Survey found *lower* probabilities of depressive symptoms among biologically childless women in all marital status groups (Bures, Koropeckyj-Cox, & Loree, 2009). Gibney, Delaney, Codd and Fahey (2017), using data from the Surveys of Health and Retirement in Europe (SHARE), similarly reported a negative association between childlessness and depressive symptoms among 55–75-year-olds. However, another study based on SHARE data which considered number of children, rather than simply comparing

the childless and parents, found that parents of two children reported lower levels of depressive mood than the childless but there were no significant differences between the childless and parents of only one or more than two children (Hank & Wagner, 2013). Recent analyses of Norwegian register data found that parents aged 45–68 with two or more children were less likely to have prescribed antidepressant medication than either the childless or parents of only one child (Kravdal et al., 2015). Other studies have reported adverse effects of high parity (three or more than three children) among women (Kruk & Reinhold, 2014), men (Buber & Engelhardt, 2008) or both (Kim et al., 2015).

These variations in results may partly reflect differences in whether studies only compare the childless with parents or also consider number of children; age groups studied; methodological approaches; and extent of control for potential confounding or mediating variables. Contextual influences may also be important (Berkman et al., 2000; Mair, 2013). Both the prevalence of later-life depression and risk factors for depression show some variation between European countries and regions (Crimmins, Kim, & Solé-Auró, 2011; Ploubidis & Grundy, 2009) and some studies suggest differences between Mediterranean and Northern and Western European countries in associations between social support and depressive symptoms (Litwin, 2010; Mair, 2013).

Linkages between the presence of children and the mental well-being of older people in Europe have mostly been studied in Western and Southern Europe (Litwin, 2010). However, some studies have used the GGS—as we do—to consider differences between Eastern and Western Europe in associations between family ties and indicators of mental well-being. Moor and Komter (2012) examined such associations among adults of all ages in four Eastern and three Western countries. They found that parents of older children (12+) had lower risks of depressive symptoms than the childless. Having a partner was protective, more so in Eastern than Western countries. It is unclear whether associations applied similarly to young, mid-life and older adults. Our study extends this work to focus on older adults and to examine longitudinal associations.

We adopt a cross-national perspective to examine and compare links between partnership status and number of children and depressive symptoms among people aged 65–80 in five Eastern and four Western European countries. Childhood circumstances and education are associated both with partnership and parenthood trajectories and with risks of later-life depression (Grundy & Foverskov, 2016; Kamiya et al., 2013; Schaan, 2014), so we include indicators of these earlier circumstances in all models. We additionally control for current financial circumstances and physical health status which are also associated both with depressive symptoms and with parenthood and partnership (Fiske et al., 2009; Grundy & Read, 2015; Nicholson et al., 2008; Ploubidis & Grundy, 2009; Zeng et al., 2017). We further take account of whether respondents had experienced the death of a child as this is associated both with

number of living children and with later-life depression (Grundy & Holt, 2000). We conduct formal tests of the possible mediating influence of provision and receipt of emotional and financial support and test East–West differences by fitting pooled models with interaction terms.

Data and Methods

Data

We use harmonized data from Wave 1 and Wave 2 of the GGS, a cross-national panel survey of nationally representative samples of respondents aged 18–80 (Vikat et al., 2007). We used Wave 1 data from five Eastern (Bulgaria, Czech Republic, Georgia, Romania, Russia) and four Western European countries (Belgium, France, Norway, Sweden), excluding eight other countries that lacked information on variables used in the analysis or excluded older people.

For our selected countries, Wave 1 data were collected between 2002 and 2013. Response rates ranged from 42% in Belgium to 84% in Romania (Fokkema, Kveder, Hiekel, Emery, & Liefbroer, 2016). To adjust for potential non-response bias, we applied the supplied country-specific weights to our multivariable analyses; these adjust for age and sex (although in some countries, factors such as region and marital status are included). A recent validation study found that these weights were effective in making the data more representative in terms of age, sex, household structure and region (Fokkema et al., 2016). Information on 9,502 women and 7,639 men aged 65–80 was available; of these 8,643 women and 6,709 men had complete data on all variables of interest.

Longitudinal analyses were restricted to a subsample of respondents from three Eastern (Bulgaria, Czech Republic, Georgia) and one Western country (France) which collected information on financial support and emotional support and depressive symptoms in Wave 2. For all countries, the interval between Wave 1 and Wave 2 data collection was 3 years. Attrition ranged from 17% in Georgia to 69% in the Czech Republic. The supplied standardized weights for Wave 2 were used to reduce attrition bias. For the four countries in our longitudinal analyses, follow-up observations were available for 2,389 men and 1,837 women who were aged 65–80 at baseline. After list-wise deletion of observations with missing values on variables of interest, a longitudinal sample of 2,295 women and 1,683 men remained.

Measures

Outcome Variable

Depression was measured using the 7-item depressed affect subscale of the 20-item Center for Epidemiologic Studies Depression (CES-D) scale (Radloff, 1977). The CES-D scale has been validated for use among older populations (Lewinsohn, Seeley, Roberts, & Allen, 1997) and this subscale has been used in previous studies. Hansen and Slagsvold (2011) argue it is a good indicator of depressive

symptomatology because of its high internal consistency and very high correlation with total CES-D scores. For each of the seven items on the depressed affect CES-D subscale, e.g. "I felt sad", respondents were asked how frequently they had experienced it during the week prior to interview. Each item used a 0–3 response scale ranging from seldom or never to most or all of the time. Item scores were summed to give an overall score ranging from 0–21. Reliability analysis indicated that the internal consistency of the summed scale was high (Cronbach's α = 0.88).

Children and Partnership

Previous studies indicate that the association between number of children and depression may be non-linear with higher risks both for the childless and parents of only one child and for parents of large families (Kravdal et al., 2015). We therefore treated number of living children as a categorical variable, with categories of 0, 1, 2, 3, and 4+ children. The decision to use the 4+ category, rather than a higher cutpoint, was partly pragmatic (only 4% of the sample had 5+ children), and also followed approaches from previous studies (Buber & Engelhardt, 2008; Kravdal et al., 2015). Partnership status was dichotomized into living with a spouse or partner (hereafter referred to as partnered) or not. For the longitudinal analyses, we created a dummy variable for partner loss indicating partnered at baseline but not at follow-up.

Receipt and Provision of Support

Receipt and provision of emotional support were captured with the questions "Over the last 12 months, have you talked to anyone about your personal experiences and feelings?" and "Over the last 12 months, has anyone talked to you about his/her personal experiences and feelings?" Provision and receipt of financial support was measured by a question asking whether the respondent or their spouse had received/given "for one time, occasionally, or regularly money, assets or goods of substantive value". Our support measures do not pertain specifically to support to and from partners and children, but rather to support received from and provided to anyone. This is a conscious decision as we are interested in the possible influence of number of children on depressive symptoms, and its possible mediation by differences in levels of overall support. As discussed earlier, one hypothesized benefit of having (more) children is the greater potential availability of support. However, older people with few or no children may develop alternative sources of support from other relatives or friends. We therefore investigate whether associations between number of children (and partnership) and depressive symptoms are mediated by provision and receipt of emotional and financial support, regardless of the source of support.

Other Co-Variates

We additionally included age (in single years) and the previously mentioned variables known to be associated with

later-life depression and with family building. Age was centered, so that a value of 0 corresponded with being 70 years old. Parental presence in the childhood home was measured with the dichotomous question "Did you live most of your childhood up to the age of 15 with both of your own biological parents?" Education was coded in accordance with the International Standard Classification of Education (ISCED-97). We distinguished three levels: low (ISCED 0–2; pre-primary to lower secondary education); medium (ISCED 3–4; upper secondary to post-secondary non-tertiary education) and high (ISCED 5–6; tertiary education). We included a dummy variable indicating whether or not respondents had a deceased child. Perceived financial strain was captured with the question "Thinking of your household's total monthly income, is your household able to make ends meet?" We dichotomized responses into has any difficulty making ends meet (respondents reporting "with some difficulty", "with difficulty", or "with great difficulty") and does not have difficulty (those reporting "fairly easy", "easily", or "very easy"). The Romanian questionnaire additionally included the response "neither with difficulty nor easily", which we coded as not having difficulty. Health status indicators comprised self-reported long-standing illness and need for regular help with personal care, such as eating, getting up, dressing, bathing, or using the toilet. For the longitudinal analyses, we added variables indicating the onset of, respectively: difficulty making ends meet; long-standing illness; and need for help with personal care. These variables were coded 1 when respondents reported having the respective problem at follow-up but not at baseline.

Methods

We estimated a series of ordinary least squares linear regression models with country fixed effects for our cross-sectional analyses. We chose a fixed effects approach over the commonly used random effects approach because estimates of the variance components are unreliable in the latter when the number of countries is small (Bryan & Jenkins, 2016). Models were estimated with robust standard errors to correct for potential heteroscedasticity. The distribution of our dependent variable was highly skewed. However, the distribution of the residuals of our models—to which the normality assumption underlying ordinary least squares regression pertains—approximated a normal distribution.

In the longitudinal analyses, we used ordinary least squares linear regression to estimate conditional change score models. We predicted depressive symptoms at follow-up, controlling for depressive symptoms at baseline as well as for the control variables described above. In a second model, we added the support variables measured at follow-up.

We conducted separate analyses for men and women because of known gender differences in levels of depressive symptoms and their antecedents (Crimmins et al., 2011),

and estimated models for Eastern and Western European countries separately. We subsequently estimated a pooled model with a range of interaction terms allowing the effects of every independent variable to vary by region. This approach, which produces coefficient estimates and standard errors that are exactly similar to those of the separate analyses by region, allowed us to formally test whether coefficient estimates differed significantly between Eastern and Western Europeans.

We conducted formal tests of mediation using Karlson, Holm, and Breen's (KHB) decomposition method (Kohler, Karlson, & Holm, 2011) to see whether associations were mediated by provision or receipt of emotional or financial support.

The results presented are based on complete case analyses. We also used multiple imputation to check for possible bias arising from missing covariate values, under the missing at random (MAR) assumption, meaning that all variables that may plausibly be responsible for the missing data mechanism are complete and are included in the model as explanatory variables or intermediate outcomes. We applied Rubin's rules (Little & Rubin, 1989) to combine the findings from the analyses on 20 imputed data sets into a single set of results which are presented in Supplementary Appendix A (cross-sectional models) and Supplementary Appendix B (longitudinal models). These do not differ substantially from the complete case analyses.

Results

Descriptive Statistics

Table 1 presents descriptive results for the cross-sectional and longitudinal samples. Consistent with previous research, the prevalence of depressive symptoms was higher in Eastern than Western Europe and higher among women than men. As would be expected given known patterns of fertility and mortality in relevant cohorts (Grundy & Foverskov, 2016; Murphy, 2011), more women in the West were partnered and both childlessness and high parity were more common in the West than the East. This variable refers to living, rather than ever-born, children and more of those in the East than the West had lost a child, again as would be expected given much higher levels of infant, child, and premature adult mortality in Eastern Europe in relevant time periods (Murphy, 2011). More women reported the death of a child than men; this may be because their children would on average have been born earlier than those of male respondents (because of gender differences in fertility timing), but some underreporting by men is also a possibility. Historic differences in mortality are further reflected in the lower proportions of those in the East who had lived with both parents for most of their childhood. Current circumstances in the East were also worse than in the West, with much higher proportions, particularly of women, reporting difficulties making ends meet, long-standing illness, and needs for help with personal care. Women reported more receipt and provision of emotional support than men, particularly in Western Europe. Respondents in Western European countries reported less receipt but more provision of financial support than their counterparts in the East.

Cross-Sectional Results

Table 2 presents results from ordinary least squares regression models of depressive symptoms for men and women respectively. Model 1 includes all the variables of interest except for the indicators of receipt and provision of emotional and financial support, which were added in Model 2.

Women

Results from Model 1 show that in the Eastern country group childless women and women with one child had significantly more depressive symptoms than mothers of two; the difference between childless women and women with one child was also significant (Δb: 1.10, 95% CI: 0.70–1.10). Women with four or more children had fewer depressive symptoms than mothers of two or three children (Δb: 0.71, 95% CI: 0.25–1.16). In Western Europe the effect of childlessness (Δb: –0.98, 95% CI: –1.60 to –0.36) was weaker and not statistically significant. In both Eastern and Western groupings, partnered women had markedly fewer depressive symptoms than the unpartnered. Analyses of pooled data in which every covariate was interacted with an East–West dummy indicated that the difference between partnered and unpartnered women was significantly more pronounced in the East than the West (Δb: –1.02, 95% CI: –1.40 to 0.63). Having experienced the death of a child, current difficulties in making ends meet, long-standing illness and needs for personal care were all also associated with more depressive symptoms, with the latter association being stronger in Eastern than in Western Europe (Δb: 2.02, 95% CI: 0.64–3.41). In the East, women with intermediate or high levels of education had fewer depressive symptoms than their lower educated counterparts. Whether or not respondents had lived with both parents in childhood was not significantly associated with depressive symptoms in either East or West.

Differences between Model 1 and Model 2, which included the support variables, were very slight. It is, therefore, not surprising that mediation analysis using the KHB-procedure yielded no significant results, although there were some associations between support indicators and depressive symptoms. For women in both East and West, receipt of emotional support was positively, and provision of emotional support negatively, associated with depressive symptoms.

Men

Results for men were remarkably similar to the results for women, except that there was no protective effect of large family size in the East and no effects of having a deceased

Table 1. Distribution of Samples by Variables Included in the Analyses, Percentages (With the Exception of Depressive Symptoms and Age)

	Cross-sectional sample				Longitudinal sample			
	Women		Men		Women		Men	
	East	West	East	West	BG/CZ/GE	FR	BG/CZ/GE	FR
Mean depressive symptoms T1	4.7	2.9	2.8	1.5	4.5	3.8	2.8	1.1
(standard deviation)	(4.8)	(4.1)	(3.7)	(2.8)	(4.6)	(5.6)	(3.9)	(2.3)
Mean depressive symptoms T2					5.3	3.8	3.2	1.4
(standard deviation)					(5.2)	(5.5)	(4.2)	(3.0)
Number of children[a]								
0 children	12.1	14.1	9.9	15.6	10.9	12.9	8.4	9.5
1 child	29.5	17.8	23.2	15.4	26.0	20.1	20.5	17.5
2 children	38.6	32.3	43.1	34.3	42.9	24.4	47.5	34.8
3 children	12.2	21.4	15.6	21.5	12.6	21.7	17.3	20.7
4+ children	7.6	14.4	8.3	13.1	7.6	20.9	6.4	17.4
Lives with partner/spouse[a]	44.0	56.1	83.1	79.0	43.5	52.3	83.5	79.0
Partner loss					7.4	6.0	6.2	3.1
Mean age[a]	70.9	71.3	71.1	71.1	70.5	71.2	70.6	71.1
(standard deviation)	(4.4)	(4.6)	(4.4)	(4.6)	(4.0)	(4.9)	(4.1)	(4.6)
Lived with both parents in childhood[a]	81.7	89.0	82.4	89.5	83.9	81.1	83.5	83.9
Educational attainment[a]								
Low (ISCED 0–2)	56.9	50.4	47.7	41.2	51.2	72.0	43.3	51.7
Intermediate (ISCED 3–4)	30.4	33.0	35.3	39.0	37.3	19.8	37.4	33.0
High (ISCED 5–6)	12.8	16.7	17.0	19.7	11.4	8.2	19.4	15.2
Deceased offspring[a]	11.6	8.1	8.5	5.3	10.6	11.2	8.1	9.5
Difficulties making ends meet[a]	85.3	25.2	80.6	18.9	91.5	31.6	89.5	23.5
Onset of financial difficulty					5.3	15.0	5.9	11.5
Long-standing illness[a]	61.3	46.1	49.1	41.7	60.3	49.6	47.1	53.9
Onset of long-standing illness					22.3	14.3	23.9	16.2
Needs help with personal care[a]	6.1	2.6	6.7	2.1	5.4	3.0	6.6	1.5
Onset of need for personal care					6.6	3.9	4.9	2.1
Received emotional support[b]	55.7	59.8	51.8	45.7	64.8	55.5	60.4	32.5
Provided emotional support[b]	54.4	63.8	50.9	47.5	58.8	64.0	56.8	46.2
Received financial support[b]	7.0	4.6	6.0	4.3	8.3	3.1	6.7	1.6
Provided financial support[b]	5.3	14.9	5.6	16.9	4.3	16.1	4.4	15.6
Country								
Bulgaria	24.9		28.0		46.0		50.2	
Czech Republic	14.5		11.8		15.5		10.2	
Georgia	18.4		20.4		38.5		39.6	
Romania	21.6		23.9					
Russia	20.6		15.9					
Belgium		18.8		20.5				
France		28.8		24.8		100.0		100.0
Norway		26.9		28.0				
Sweden		25.4		26.7				
Observations	5,615	3,028	3,781	2,928	1,706	589	1,238	445

Note: Generations and Gender Survey; Weighted.
[a]Values for the longitudinal sample refer to scores observed at baseline (T1); [b]Values for the longitudinal sample refer to scores observed at follow-up (T2).

child. The effects of being partnered (Δb: −0.73, 95% CI: −1.19 to −0.28) and of being childless (Δb: 1.14, 95% CI: 0.58–1.70) or having one child as opposed to two (Δb: 0.44, 95% CI: 0.02–0.87) were significantly stronger for Eastern than for Western European men. This was also the case for the effects of intermediate (Δb: −0.39, 95% CI: −0.75 to −0.06) and high (Δb: −0.86, 95% CI: −1.26 to −0.46), as opposed to low, educational attainment; long-standing illness (Δb: 0.32, 95% CI: 0.02–0.62); and need for help with personal care (Δb: 2.48, 95% CI: 1.27–3.68).

The inclusion of support variables in Model 2 did not yield substantial changes in the coefficient estimates of

Table 2. Coefficient Estimates From Cross-sectional Ordinary Least Squares Regression Models for Depressive Symptoms

	Women				Men			
	East		West		East		West	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Number of children (ref.: 2)								
0 children	**1.46***	**1.43***	**0.47**	**0.53***	**1.27***	**1.26***	**0.13**	**0.17**
1 child	0.33*	0.33*	0.37	0.39	**0.48***	**0.48***	**0.04**	**0.05**
3 children	–0.09	–0.08	0.08	0.10	0.03	0.03	–0.14	–0.13
4+ children	**–0.80***	**–0.80***	**0.15**	**0.16**	–0.06	–0.06	0.11	0.11
Lives with partner	**–1.73***	**–1.73***	**–0.71***	**–0.69***	**–2.15***	**–2.13***	**–1.42***	**–1.40***
Age (centered on 70)	0.02	0.01	0.03	0.03	0.01	0.01	0.03*	0.03**
Lived with both parents in childhood	–0.30	–0.29	–0.22	–0.22	0.05	0.04	–0.25	–0.26
Education (ref.: ISCED 0–2)								
ISCED 3–4	**–0.74***	**–0.72***	**–0.33**	**–0.36***	**–0.54***	**–0.54***	**–0.15**	**–0.17**
ISCED 5–6	**–1.12***	**–1.06***	**–0.15**	**–0.25**	**–0.92***	**–0.90***	**–0.06**	**–0.12**
Deceased offspring	1.14***	1.12***	0.88**	0.89**	0.33	0.34	–0.03	–0.04
Difficulty making ends meet	1.51***	1.53***	1.36***	1.37***	0.70***	0.67***	0.87***	0.89***
Long–standing illness	1.11***	1.11***	0.80***	0.73***	0.84***	0.83***	0.52***	0.49***
Needs help with personal care	**3.47***	**3.42***	**1.45***	**1.40***	**3.88***	**3.83***	**1.41****	**1.40****
Received emotional support		0.93***		0.96***		0.47*		0.60***
Provided emotional support		–1.03***		–0.55**		–0.46*		–0.29*
Received financial support		0.03		–0.02		0.20		0.14
Provided financial support		0.33		0.38		–0.36*		**0.26**
Observations	5,615	5,615	3,028	3,028	3,781	3,781	2,928	2,928
R^2	0.62	0.62	0.41	0.42	0.52	0.52	0.33	0.34

Notes: Generations and Gender Surveys, Wave 1; Weighted; Robust standard errors; Adjusted for country level fixed effects; Coefficient estimates that differ significantly ($p < .05$) between Eastern European and Western European countries are in bold; Tests of East–West differences in coefficient estimates were conducted by estimating pooled models in which all covariates were interacted with an East–West dummy.
$*p < .05$, $**p < .01$, $***p < .001$.

partnership, number of children or other variables and results of mediation analyses using the KHB procedure were not significant. As for women, receipt of emotional support was positively, and provision of emotional support negatively, associated with depressive symptoms for men, both in Eastern and Western Europe. In the East, but not the West, having provided financial support was associated with fewer depressive symptoms.

Predicted Probabilities

East–West differences in the links between partnership status, number of children and depressive symptoms are illustrated in Figure 1 which shows the predicted average number of depressive symptoms by partnership status and number of children for women and men in the Eastern and the Western European group of countries. Calculations were based on fully adjusted models (Model 2) with other predictor variables fixed at their means for the respective gender and region category (see Table 1). The figure clearly illustrates that East–West differences in number of depressive symptoms were most pronounced for women, as well as for men, when they were unpartnered and childless.

Longitudinal Results

Table 3 shows results of the conditional change score models of depressive symptoms. Model 1 shows the effects of number of children and partnership status on change in number of depressive systems, adjusted for the covariates previously described. The indicators of receipt and provision of emotional and financial support at follow-up were added in Model 2.

Women

Consistent with the cross-sectional analyses, Model 1 indicates that in the group of three Eastern countries (Bulgaria, Czech Republic, Georgia) childless women had a greater increase in depressive symptoms than women with two children. In France, women with only one child had a stronger increase in depressive symptoms than mothers of two. Having a partner at baseline was protective against increases in depressive symptoms for both women in the Eastern countries and women in France. Loss of a partner was associated with a strong increase in depressive symptoms for Eastern European women. For French women, the effect of partner loss was not significant. No significant

East–West differences in coefficient estimates were found but power to detect these was weaker than in the cross-sectional analyses due to smaller sample size.
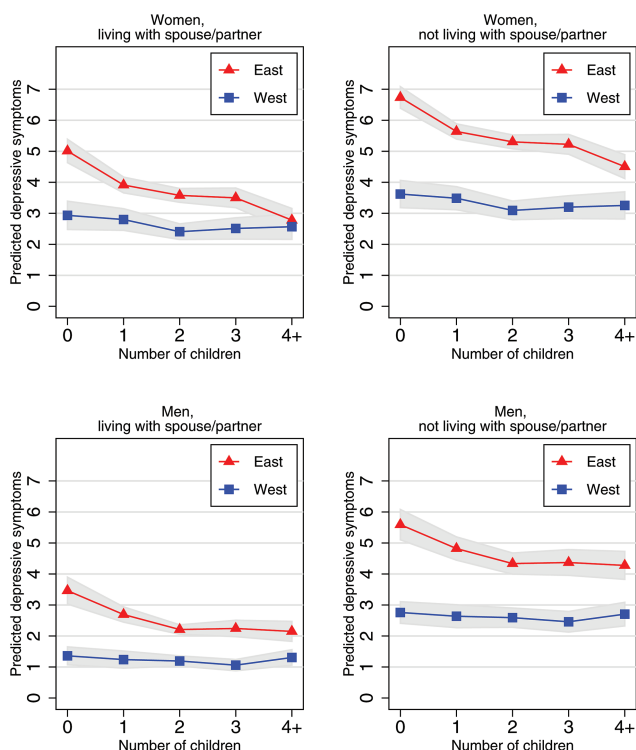

Figure 1. Predicted depressive symtoms by partnership status, number of children, and European country grouping.

In Model 2, we added variables capturing receipt and provision of emotional and financial support at follow-up, and found no significant effects on change in depressive symptoms. The coefficient estimates of partnership status and number of children did not change substantially between Model 1 and Model 2 and KHB mediation analyses yielded no significant results.

Men

The first longitudinal model for men shows a positive, yet non-significant, effect of childlessness on change in depressive symptoms for men in the East and a negative, but non-significant effect for men in France. The difference between these two non-significant effects was statistically significant (Δb: 1.34, 95% CI: 0.20–2.47), implying that the link between childlessness and change in depressive symptoms was more favourable for French men than for men in the Eastern European countries. For both groups of men, being partnered at baseline appeared protective against an increase in depressive symptoms, and loss of a partner between baseline and follow-up was associated with a marked increase in depressive symptoms.

The addition of support variables at follow-up in Model 2 showed that receipt of emotional support and provision of financial support were associated with fewer reported depressive symptoms at follow-up for men in the three Eastern European countries. For French men, no such effects were found. As in the models for women, the coefficient

Table 3. Coefficient Estimates From Ordinary Least Squares Regression Models for Change in Depressive Symptoms

	Women				Men			
	Bulgaria/Czech Republic/Georgia		France		Bulgaria/Czech Republic/Georgia		France	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Number of children (T1) (ref.: 2)								
0 children	1.08**	1.01**	0.67	0.59	**0.73**	**0.73**	**−0.60**	**−0.61**
1 child	0.35	0.29	1.32*	1.29*	0.28	0.26	−0.32	−0.33
3 children	0.00	−0.00	0.45	0.44	0.15	0.17	−0.41	−0.38
4+ children	−0.59	−0.65	−0.31	−0.30	−0.13	−0.16	0.02	−0.02
Lives with partner (T1)	−1.05***	−0.99***	−1.27**	−1.13**	−1.65***	−1.50***	−0.81*	−0.79*
Partner loss between T1 and T2	2.51***	2.49***	1.17	0.94	2.69***	2.51***	3.24**	3.04**
Received emotional support (T2)		−0.26		0.54		**−0.81***		**0.63**
Provided emotional support (T2)		0.13		0.19		0.02		−0.00
Received financial support (T2)		−0.73		−0.07		**−0.41**		**1.04**
Provided financial support (T2)		−0.86		−0.18		−0.70*		−0.11
Observations	1,706	1,706	589	589	1,238	1,238	445	445
R^2	0.65	0.65	0.61	0.61	0.55	0.55	0.51	0.52

Notes: Generations and Gender Surveys, Wave 1; Weighted; Robust standard errors; Adjusted for age (T1), having lived with both parents in childhood, educational attainment (T1), having experienced death of child (T1), financial difficulty (T1), onset of financial difficulty between T1 and T2, long-standing illness (T1), onset of long-standing illness between T1 and T2, personal care needs (T1), onset of personal care needs between T1 and T2, and country level fixed effects; Coefficient estimates that differ significantly ($p < .05$) between Eastern European and Western European countries are in bold; Tests of East–West differences in coefficient estimates were conducted by estimating pooled models in which all covariates were interacted with an East–West dummy.
*$p < .05$, **$p < .01$, ***$p < .001$.

estimates of partnership status and number of children did not change substantially when the support variables were added and KHB analyses showed no significant mediation.

Discussion

We analyzed associations between depressive symptoms and number of living children and partnership status among older people in selected Eastern and Western European countries. We hypothesized that number of living children and partnership status would be more strongly associated with depressive symptoms in the East than the West because of the greater importance of having close kin for emotional and economic support due to lower and reduced levels of other supports and socio-economic disruption in the former state socialist regimes. These hypotheses were largely supported by our results. The impact on depressive symptoms of childlessness and, for men, of having one child as opposed to two was greater in the Eastern European countries we considered than in the Western, as was the protective effect of having a partner.

Our second research question focused on the role of emotional and financial support. We hypothesized that benefits of close family ties, in terms of lower risks of depression, would be mediated by provision and receipt of emotional and financial support. However, we found no evidence to support this hypothesis. Providing emotional support was associated with fewer depressive symptoms but receipt of emotional support, often considered a protective factor, was positively associated with depressive symptoms. Possibly this is because receipt of such support is a marker of need, i.e. friends and relatives respond to an older person in perceived vulnerability by providing more help. Moreover, although receipt of social support, including emotional support, is widely considered to be beneficial for mental health, the previous literature presents a somewhat mixed picture and it is recognized that social support that is considered excessive or unhelpful may increase feelings of worthlessness and risks of depression (Fiske et al., 2009; Silverstein, Chen, & Heller, 1996). A further caveat is that our measure of social support is somewhat broad and non-specific and this may have limited our ability to detect effects.

In terms of other findings, consistent with the previous literature, we found that perceived financial strain and poorer physical health were positively associated with depressive symptoms and higher levels of education were protective. Especially for men, associations between health status and depression were stronger in the East than the West. Presence of both parents in childhood was not significant, possibly because effects may be mediated by other socio-economic conditions (for example education and current financial strain) (Nicholson et al., 2008).

Our study has several limitations. We rely on self-reported indicators, some of them retrospective, and a shortened version of the CES-D as an indicator of depressive symptoms, although previous studies suggest this is valid and we found that the scale we used had high internal consistency. Potential bias arising from non-response and missing data is a further limitation. We partially addressed the former using weighting and effects of the latter were tested using multiple imputation. The results of weighted versus unweighted or imputed versus non-imputed data were not substantively different. As an additional sensitivity check we reran the analyses on a sample in which countries with low Wave 1 response rates (Belgium, Czech Republic, Russia) and high attrition (Czech Republic) were excluded. Results (available on request) did not differ substantively from the results presented in Tables 2 and 3. Differential timing of surveys, with some Wave 1 surveys fielded before and some after the Great Recession of 2008, means that East–West coefficient differences might also partly reflect period differences. As a sensitivity check, we reran the cross-sectional analyses on a sample in which post-2008 observations were dropped. Again, results (available on request), were substantially similar to those reported here. Although these sensitivity tests provide some reassurance that our results were not unduly influenced by missing data and differences in the timing of surveys, no adjustment or imputation method can wholly account for these potential sources of bias and replication of our analyses using alternative sources of data would provide a valuable check.

In our analyses the effects of number of children were constrained to be similar for partnered and unpartnered older people. However, children may be a more important source of support for older persons lacking a partner. We therefore re-estimated our cross-sectional models with interaction terms that allowed the effects of number of children to differ between the partnered and unpartnered. Results of these analyses are presented in Appendix C and show no significant interactive effects.

This study contributes to the literature on family course influences on later-life depression and the relevance of contextual influences, the latter highlighted as an important and neglected factor in much of the literature (Berkman et al., 2000). We add to the small literature on Eastern European countries which are of particular interest due to the high prevalence of social and economic disadvantage and poor physical and mental health. Overall, our findings indicate the importance of family related factors for later-life mental health both as a bulwark against other disadvantages and as a contributor to country level differences. Our findings also have implications for public policy. The upheavals caused by the collapse of the Soviet Union represent an extreme form of policy change which had serious implications for some older people. However, many European—and non-European—countries have been affected by the economic downturn since 2008 and many governments have responded to the challenges posed by an unfavorable economic climate and population ageing with policies designed to increase the role of the family, and decrease the role of the state, in the support of older people

([Greve, 2017](#)). It should be recognized that older people with scant family networks may need some protection from negative effects of such policies and further research in this area is needed, especially as family sizes of future cohorts of older people will be smaller in many countries than they are today. A further important area for further research, and for consideration by policy makers, is the impact on younger people of curtailment of state supports for older people.

Supplementary Material

Supplementary material are available at *The Journals of Gerontology Series B: Psychological and Social Sciences* online.

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Conflict of Interest

All authors declare there are no conflicts of interest.

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