

# Co-residence with Children and the Subjective Well-being of Older Widowed People in Europe

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## **Introduction**

Gains in the further life expectancy of older people, and the ageing of European populations, have prompted growing interest in quality of life and subjective well-being at older ages. Increases in longevity and the balance between gains in healthy and unhealthy life have been well-researched, but less attention has been given to other dimensions of the quality of life enjoyed during these additional years. Research on this topic has shown that in addition to health, socio-economic status, and social support are generalised and predominant influences (Bishop, Martin and Poon 2006). Possible effects of older people's living arrangements have been addressed in some studies but most of these have considered only one or a few countries (Garcia *et al.* 2005; Dykstra, Tilburg and Gierveld, 2005; Netveuli *et al.* 2006). Large changes in the living arrangements of older people, particularly unmarried older people, in, and beyond, Europe, (Tomassini *et al.* 2005; UN 2005) suggest that this topic needs more attention as recognised in the Madrid Plan of Action adopted at the 2002 Second World Assembly on Ageing. This called for more research on the advantages and disadvantages of different living arrangements for older people (United Nations, 2002). Europe is characterised by substantial variations in living arrangements, which have been linked to long-term historical influences (Hajnal, 1965; Reher, 1998; Murphy 2008), welfare regimes (Esping-Anderson, 1990) and socio-economic conditions. This diversity presents an opportunity to investigate whether the relationship between living arrangement and subjective well-being is modified by both individual and regional context. The numbers and well-being of the older population are two of the most important aspects of population ageing, but information on the latter aspect, especially in relation to living arrangements for making cross-national comparisons, has been lacking.

In this paper we investigate associations between the living arrangements of older widowed Europeans, the marital status group who are most likely to have children potentially available with whom to co-reside, and their subjective well-being and examine how these associations vary by European region.

### *Living arrangements of older Europeans*

In recent decades older unmarried Europeans have become increasingly likely to live alone and decreasingly likely to live with children or other relatives (Keilman 1986; Grundy 1996; Tomassini *et al.* 2004). With some exceptions, such as an increase in intergenerational co-

residence in the 1990s in some Eastern European countries affected by major economic and political upheaval (Gierveld *et al.* 2001; Bezrukov and Foigt 2002) this trend is evident throughout Europe. Large regional differences nevertheless persist with intergenerational co-residence being much more usual in Southern than Northern countries (Pampel, 1992; Glaser, Tomassini, & Grundy, 2004; Tomassini, *et al* 2004; Attias-Donfut, Ogg, & Wolff, 2005). Expressed attitudes about the best types of living arrangement for older people with particular needs show similar variation. Results from a 2007 Eurobarometer survey, for example, showed that only 4% of respondents in Sweden and the Netherlands, and 7% in Finland and Denmark, judged moving to live with a child the best option for an elderly mother or father who lived alone and could no longer manage without regular help compared with 40% or more in many Southern or Eastern European countries including Poland, Greece, Slovakia and Portugal (European Commission, 2007).

Potential benefits of co-residence (for both older and younger generations) include availability of intra-household emotional and practical support, including help in emergencies, surveillance and social control of health related behaviours, and economic benefits from economies of scale (Ruggles; Rendall and Speare 1995; Lyberaki and Tinios, 2005). Potential disadvantages are reduced autonomy and associated possible reductions in self-esteem, stress attendant on any intra-household conflict and in some cases overcrowding. Much of the more recent gerontological literature has tended to emphasise the positive aspects of residential independence pointing to expressed preferences, at least in North America, for ‘intimacy at a distance’ and increasing tastes for privacy which improvements in income and health have allowed more older people to attain (Rosenmayer; Knipscheer). Numerous studies have also emphasised that living alone, aloneness, loneliness and social isolation are distinct concepts (Gierveld *et al* ; Victor *et al* 2002 ), and shown continuing high levels of contact and mutual support between older people and their families, even if living separately. Older Europeans with children are still highly likely to live in close proximity to them and to engage in frequent visiting and exchanges of help (Albertini, Kohli and Vogler 2007; Daatland and Herlofson 2003) although, as in the case of living arrangements, there are marked variations between European countries in the extent of extra household contacts with relatives (Albertini *et al* 2007; Murphy, 2008; Treas ). Less positively, a number of studies point to disadvantages for some older people living alone. Research in the UK, for example, has found associations between living alone and risks of falls, multiple impairments, poor diet, smoking, and loneliness and social isolation, even after allowance for age, gender,

income and education (Victor et al 2002; Karchica (Illiffe; Barnes, Blom, Cox, & Lessof, 2006).

The balance of positive and negative effects of a particular living arrangement is likely to vary according to individual circumstances such as health and socio-economic status and availability of familial or state provided extra-household supports.. In terms of associations between living arrangements and subjective well-being, the focus of this paper, individual and societal preferences and the broader cultural, economic and socio-political context, are also likely to be important as the literature, reviewed briefly below, shows that social comparisons mediate between objective life circumstances and subjective well-being (Cheng *et al.* 2008).

### **Correlates of subjective well-being among older people**

Health, socio-economic status and social support (particularly reciprocated social support) have been identified in previous studies as predominant influences on older people's subjective well-being (Bishop, Martin and Poon 2006). Women appear to have slightly worse subjective well-being than men (and a higher prevalence of depression), even after controlling for gender differences in widowhood, health and socio-economic status (Pinquart and Sorenson 2001). Associations with age are less clear. Blanchflower and Oswald (2008, 2009) in a large international study concluded that the association between age and psychological well-being was U shaped with a low point in middle age, but their analysis extended only up to the age of 70. Some studies of older people suggest a decline in life satisfaction or quality of life after age 65 or 70 (Mroczek and Spiro 2005; Netveuli et al 2006; Ploubidis and Grundy 2009), others little variation with age once factors such as health, marital status and income are controlled (Larsson 1978). Studies of national differences show that within Europe the populations of the Nordic countries report the highest levels of happiness and those in East European countries the lowest (Lehtinen, Sohlman, & Kovess-Masfety, 2005; Oswald; Ploubidis and Grundy 2009). It has been suggested that welfare state regime and extent of income inequality, as well as differences in material circumstances, may contribute to these variations (Bamba *et al.* 2008).

Less is known about the possible influence of living arrangements on the subjective well-of older people, particularly unmarried older people. Positive associations between living with relatives and satisfaction with life in general or living arrangements in particular have been

reported from studies conducted in Spain and Italy (Tomassini; Garcia, et al 2005; Zunzunegui, Beland, & Otero, 2001). However, a study of people aged 50 and over in England reported that after control for a range of health and social factors, people living alone scored better on a measure of quality of life than those in other living arrangements (Netuveli et al 2006).

These inconsistencies may reflect data and methodological differences between studies, including variations in control for factors such as physical health, financial resources and, marital status, which are closely associated with living arrangement. However, there are also reasons for anticipating differing associations in and between different populations reflecting variations in values and attitudes, as well as personal circumstances and resources.

Congruence between aspirations and achievements, and between actual and desired circumstances, is an important influence on subjective well-being (Brandstater et al 1993; Gustavson & Lee, 2004) and so personal and cultural preferences are likely to mediate the implications of different living arrangements for older people's subjective well-being.

Consistent with this, a study of depression among Hispanic and non-Hispanic older adults in Florida found that living alone was associated with higher levels of depressive symptoms among Hispanic older people, particularly men, but not among non-Hispanic groups. The authors attributed this difference to a greater desire for co-residence with kin among the Hispanic group and consequently more dissatisfaction if this was not realised (Russell and Taylor 2009).

In this study we analyse associations between living arrangements and indicators of subjective well-being among older widowed Europeans. We focus on the widowed because they are the group for whom living with children is most likely to be an option. Never-married people are much less likely to have children at all and divorced people (still a relatively small proportion of older Europeans) are more likely to be estranged from their children (particularly the case for divorced fathers). We confine analysis to the unpartnered widowed population (excluding the widowed who are cohabiting or living in same-sex unions).

### **Aims and Research questions**

We hypothesised that living without children would have negative (or less positive) associations with subjective well-being in populations, such as those of Southern and Eastern

Europe, with more ‘familial’ patterns and attitudes in which older people might regard co-residence positively while in Northern, and to a lesser extent, Western, Europe living alone might be associated with better subjective well-being.

## **METHODS**

### **Data**

We used data from the European Social Survey (ESS), a biennial multi-country cross-sectional survey conducted in 31 European countries in 2012<sup>1</sup>. A strength of the ESS is that there are clear and detailed central survey specifications which all country studies adhere to, and close collaboration on protocols to ensure correct translations to multiple languages (European Social Survey, 2004). We pooled the six rounds of data available at mid-2014. The resulting sample comprised some 20,500 unpartnered widowed people aged sixty-five and over included in any survey round between 2002 and 2012.

### *Country groupings*

Small sample sizes for individual countries meant that it was necessary to group countries for the main analysis. There are a number of different methods of grouping European countries based on welfare state regimes, family related policies, extent of transfers to older people, kin interactions, and cultural, historical and geographical context (Esping-Anderson, 1990; Arts and Gelissen, 2002, Bambra et al, 2009; Millar & Warman, 1996; Reher, 1998; Glaser, Tomassini and Grundy 2004). In general these typologies (for reviews see Arts and Gelissen, 2002 and Murphy 2008) produce fairly similar groupings and mostly identify the Nordic countries as one group and the Mediterranean countries as another. However, the number of groups identified ranges from 3 to 5 and the position of some countries, particularly The Netherlands and the UK, is contested. Moreover few consider Eastern European countries and it remains unclear whether the Balkans fits more naturally with Southern or Eastern Europe, or has a distinctive pattern. Taking account of these previous classifications we grouped countries included in the analysis into five categories. These comprised Northern Europe (Denmark, Finland, Iceland, Norway and Sweden); Western Europe (Austria, Belgium, France, Germany, Ireland, Luxembourg, Netherlands, Switzerland, United Kingdom); Southern Europe (Cyprus, Greece, Italy, Spain, Portugal), the Balkans (Albania,

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<sup>1</sup> Note that the number of countries included in the ESS has increased over the years and includes, for some years, Kosovo and the non-European countries of Turkey & Israel which we excluded from the analysis.

Bulgaria, Croatia, Slovenia) and Eastern Europe (Czech Republic, Estonia, Hungary, Lithuania, Poland, Russia, Slovakia, Ukraine). The Appendix Table shows sample sizes and information on the marital status of older people in each region.

### **Measures**

We used variables from the core parts of the 2002 to 2012 surveys, which were mostly identical in all rounds. Questions and scales have been evaluated for reliability and validity (European Social Survey, 2004). We dichotomised our main explanatory variable, living arrangement of unpartnered widowed people, into those living with or without children. The great majority of those living without children are living alone and preliminary analyses showed that excluding people living with friends and relatives other than children had only trivial effects on results. The analysis sample comprised 20,239 widowed men and women aged 65 or over and not living with a partner, with information on whether they had a child living in the household and who responded to either or both of the questions on happiness or life satisfaction (there were 226 missing cases on happiness and 175 on life satisfaction).

### *Outcome variables*

Indicators of two aspects of subjective well-being, happiness and life satisfaction, were used as outcomes. Life satisfaction measures are theorised to capture cognitive evaluations of one's self and life whereas happiness generally represents the emotional component (Pinquart and Sorensen 2001). The happiness and life satisfaction items were derived from responses to the questions 'taking all things together, how happy would you say you are' and 'all things considered, how satisfied are you with your life nowadays?' For both of these, respondents rated their answer on a scale of zero (extremely dissatisfied / unhappy) to ten (extremely satisfied / happy). These were used as continuous measures in the analysis.

### *Covariates*

Highest educational level, classified using the International Standard Classification of Education (ISCED), was used as an indicator of socio-economic status distinguishing four categories ranging from less than completed lower secondary schooling to completed post-secondary. Most of the latter group had had tertiary level education (ISCED levels 5-6) but we included in this group very small proportions with post-secondary non-tertiary education (ISCED category 4). Those with 'other' type qualifications not classifiable using ISCED (0.4%) were included in the less than lower secondary education category.

Indicators of social ties were based on three measures: frequency of meetings with friends, relatives and colleagues (seven categories ranging from 'never' to 'everyday'); perceived frequency of taking part in social activities relative to others of the same age (five categories ranging from 'much less' to 'much more' than most); and availability or not of a confidant (someone to discuss intimate and personal matters with). We grouped the small proportion replying 'never' to the question on contacts (7% in the whole sample) with those reporting meetings less than once a month. Those reporting that they took part in social activities 'much more than most' people of the same aged (3%) were combined with those replying 'more than most'. We included an indicator of the presence of an illness or disability that hampered daily activities because there is a strong association between physical and mental health and well-being. This distinguished three groups, those not hampered, those hampered to some extent and those hampered a lot. All analyses were undertaken for men and women separately and included age as a continuous variable.

### **Analysis**

We fitted ordinal logit models of variations in happiness and satisfaction with life (11 point scales) by co-residence with a child and other covariates for each region considered and for the total sample. Analyses were carried out separately by region because of the large differences in proportions widowed (and so selection to widowhood) and known gender differences in subjective well-being. ESS sample designs in a number of countries did not give all individuals the same chance of selection into the survey and we used a design weight to adjust for this. In regional analyses, we used a second weight to adjust for country size so that regional and overall results reflect the population sizes of different countries.

## **RESULTS**

### *Descriptive results*

The Appendix Table shows the distribution of the whole ESS sample of people aged 65 and over by gender, marital status and regional grouping. The proportions widowed differ substantially across Europe and by gender. These differences reflect well-documented regional differences in past nuptiality patterns and in the extent of gender differences in mortality, which are particularly high in some Eastern European countries (Grundy 1996; Kinsella and Velkoff 1993).



Figure 1 shows information on living arrangements at country level (although the relatively small sample sizes should be acknowledged). The proportions living alone (Figure 1a) ranged from about 6% in some countries in Southern European and the Balkans to 40% in some of the Nordic countries. The situation in the other areas was generally intermediate, with the main axis of differentiation being North-South rather than East-West as in case of the Hajnal line. The proportion of widowed people living with a child showed a broadly inverse pattern with low values in Nordic countries and high values across Southern Europe and the Balkans, although some of the highest values were found in Eastern countries such as Poland and the Ukraine. Proportions of widowed people living with a child are shown for the regional groupings we use in Table 1. In the Baltics, Southern, and Eastern Europe this proportion was about seven times higher than in Northern Europe and about four times as high as in Western Europe.

Table 1 also gives the distribution by gender and other covariates used in the analysis for each region and for the total sample. The mean age of the total sample was 76, ranging from 75 in the Eastern Europe to 79 in the Nordic region and in all regions, particularly Eastern Europe, was predominantly female. There were regional differences of varying extent in all the variables we consider. Thus, for example, the proportion of older people with less than lower secondary education was over twice as high—and the proportion with upper secondary or higher level education much lower—in the Southern region than elsewhere. Differences between the other areas in levels of education were much smaller, although a higher proportion of the Eastern European sample had post-secondary level education. In the case of health, the main difference was between Eastern Europe and the other areas. In Eastern Europe nearly three quarters of respondents reported that their daily activities were hampered by illness or disability compared with just over a half of those in other regions.

Patterns of social interaction also varied by region. Nearly a third of those in Eastern Europe reported less than monthly social meetings compared with 5% of respondents in the Nordic region and 12% of those in Western Europe. Those in the Nordic countries also included the lowest proportion with very infrequent social meetings, and those in Southern Europe the highest proportion with daily social meetings. Perceptions of social participation levels compared with others of the same age showed a broadly similar pattern except that it was those in Southern Europe who were most likely to consider that they had less social activity –

and least likely to consider they had more – than their peers. The proportion reporting having a confidante was highest in Western Europe and lowest in the Balkans.

Happiness and life satisfaction were highest (best) in the North, followed by the West and South, and lowest in the East and the Balkans. Country level differences in mean scores on these measures are shown in Figures 2a and b. These should be treated with caution as in some cases sample sizes were relatively small, but suggest some *within* region differences, such as the rather poor performance of Portugal compared with other countries in Southern Europe.

### *Results from multivariable analysis*

In Tables 2 we present results from the analysis of the association between living with children and happiness; Table 3 shows results for satisfaction with life and a summary of statistically significant associations for both outcomes is shown in Table 4. Results are presented for an age adjusted model and a fully adjusted model including all covariates. The odds ratios presented indicate the odds of having a higher score on the relevant scale. Higher odds ratios therefore indicate better levels of happiness or satisfaction with life.

### **Happiness and life satisfaction**

Results from the fully adjusted model presented in Table 2 (lower panel) show that widowed women in the Southern and Western regions of Europe were happier if they lived with children than if they lived alone (or with others). For women in the Balkan region, a similar association was found in the age adjusted model (top panel) but this ceased to be statistically significant when the other covariates were added. For the smaller sample of widowed men, living with a child was positively associated with happiness in the Balkans and Southern and Western Europe; in Eastern Europe there was a significant association in the opposite direction – those living with a child were less happy. Living with a child was also positively associated with life satisfaction in Southern Europe for both women and men, and for men in the Balkans (the association for women in the Balkans was in the same direction but not statistically significant).

In terms of associations with other covariates, older age was positively associated with happiness and with life satisfaction for women in all regions, for men the direction of this association was the same but it was only statistically significant in Nordic and Western

Europe in the case of happiness and in Southern Europe in the case of life satisfaction. The association between educational level and happiness was variable and in most cases non-linear. Thus for men in the Nordic and Eastern regions, and women in the Balkans, those with upper secondary education had the highest happiness (relative to people in the lowest educational group). For men in Southern Europe those with lower secondary and post-secondary education appeared happiest, but life satisfaction scores increased essentially linearly with increasing levels of education.

There were also variations between regions in associations between frequency of social meetings and happiness. For women in the Nordic and Western regions those with the most frequent social contacts were happiest and there was a general trend for happiness to increase with frequency of meetings; a similar pattern was evident for associations with life satisfaction. Men in these regions and in Eastern Europe and women in the Balkans tended to report higher levels of happiness if they had more than weekly daily social contacts, but trends were less clear. Similarly in Southern Europe those with meetings once a month a more tended to be happier than those with no or less frequent contacts but there was little evidence of a trend. Having a confidante was significantly positively associated with happiness, and in most cases with life satisfaction, for all groups except men in the Nordic region. In Western Europe, Eastern Europe, the Balkans and the Nordic region those who judged their participation in social activities to be greater than for others of the same age tended to be happier, although not all results were statistically significant. In Southern Europe this was true for women but not men for happiness, although not for life satisfaction. In all regions except the Balkans those with no health limitations due to illness were the happiest, and those limited to some extent were generally happier than those reporting a greater degree of limitation, results were similar for life satisfaction.

#### **4. DISCUSSION**

These analyses of cross sectional data from 31 European countries firstly showed the expected large regional variations in the living arrangements of older Europeans. The proportions of older unpartnered widowed people living with children ranged from about 5% in Northern and 10% in Western Europe to over one third in the other parts of Europe.

In Southern and Western Europe men and women living with a child had higher levels of happiness and in Southern Europe also higher levels of life satisfaction, than those living

alone. However, the magnitude of this effect was relatively small, confirming findings from other cross-national studies not concentrating on older people (Margolis & Myrskylä, 2013). The question remains as to why with very different levels of child co-residence across Europe that are associated with long-standing influences, the effect on well-being of living with a child appear to show much less variation across the Continent and are generally smaller in magnitude than the effect of health status or social contacts. In general, differences by European region were consistent with previous studies in showing the highest levels of well-being among those in Northern countries and lowest among those in the Eastern European countries included in the analysis. In counterpoint to pessimistic views of the effect of individual ageing, older age was associated with higher levels of happiness and life satisfaction. This may partly reflect differences in expectations but other studies have also provided evidence to challenge the common assumption that older age is associated with reduced life satisfaction (Bowling, 2005).

In assessing the importance of these findings, a number of limitations of the data and analyses need to be considered. These include the relatively small sample size which limited the power of the analyses and precluded country level analyses and limitations in the variables available. For example, we had no information on support exchanges within the household, an important limitation as whereas some older adults may be living with children because of their own needs or preferences, in other cases they may be providing support to a child unable to manage independently and this in itself might be a source of stress. More detailed information on kin availability, including number of children, on the composition of social networks, on proximity to and support exchanges with relatives outside the household would have enabled a more detailed analysis of the effects of living arrangement taking fuller account of other forms of interaction. Co-residence may also be a response to economic stress and the implications for well-being for those living together for this reason may be very different from implications for those living together by choice. Additionally, there may be factors not controlled for in these analyses which influence both living arrangement and subjective well-being. Poor relationships with children, for example, are likely to reduce chances of co-residence with them as well as being a source of unhappiness, and certain psychological characteristics may influence both living arrangement and subjective well-being. Much of the literature on happiness, for example, has argued that it is to a large extent a 'trait' rather than a 'state' and so to an extent independent of circumstances, although some recent twin based studies have proved a challenge to this view (Kohler and Billari ). Most

importantly the cross sectional nature of the data meant we were unable to identify pathways to living arrangement at the time of the study and limits the potential for identifying underlying causal pathways.

Nevertheless these findings extend our knowledge, particularly as there are relatively few similar comparative studies which include Eastern European countries, on a topic which is of growing importance given large increases in the numbers of older Europeans and large changes in their living arrangements. The results suggest that in a pressing need to investigate further possible negative implications for well-being of living alone for women in Eastern, Southern and Western regions of Europe using larger longitudinal data sets. More detailed country specific studies are also needed to elucidate associations between living arrangements and well-being, and the factors underlying them.

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Table 1 Distribution of unpartnered widowed people aged 65 and over by region and variables used in the analysis, ESS Rounds 1-6 (2002-2012)

		Nordic	Western Europe	Southern Europe	Balkans	Eastern Europe	Total
<b>Child in household (%)</b>	No	95.1	89.4	63.1	61.3	64.8	74.3
	Yes	4.9	10.6	36.9	38.7	35.2	25.7
<b>Age</b>	<i>Mean</i>	78.4	77.2	77.4	75.0	74.7	76.1
	<i>Std. Dev.</i>	7.2	7.1	7.4	6.5	6.3	6.9
<b>Sex (%)</b>	Male	21.4	22.7	21.0	19.5	17.0	19.8
	Female	78.6	77.3	79.0	80.5	83.0	80.2
<b>Educational level (%)</b>	Less than lower secondary education (ISCED 1)	39.6	37.7	81.9	24.4	30.4	40.8
	Lower secondary education completed (ISCED 2)	24.9	20.8	8.1	37.4	24.6	21.0
	Upper secondary education completed (ISCED 3)	19.6	29.0	5.6	28.7	20.8	21.6
	Post-secondary education completed (ISCED 4-6)	15.9	12.5	4.4	9.5	24.1	16.5
<b>How often socially meets with friends, relatives or colleagues (%)</b>	Less than once a month	5.2	11.9	20.2	23.2	31.4	21.6
	Once a month	6.6	7.4	5.4	9.8	10.0	8.3
	Several times a month	15.6	16.0	12.1	18.3	16.6	15.7
	Once a week	17.8	16.5	14.4	15.6	12.1	14.3
	Several times a week	37.3	33.2	22.6	20.3	18.7	25.2
	Every day	17.5	14.9	25.3	12.9	11.2	14.9
<b>Anyone to discuss intimate and personal matters with (%)</b>	Yes	80.6	82.8	73.7	67.4	76.9	78.6
	No	19.4	17.2	26.3	32.6	23.1	21.4
<b>Take part in social activities compared to others of same age (%)</b>	Much less than most	13.7	16.1	30.6	24.8	24.5	21.9
	Less than most	25.8	26.2	28.4	26.0	20.9	24.3
	About the same	34.1	36.1	33.6	35.2	42.0	38.1
	More than most	26.4	21.6	7.3	14.1	12.6	15.7
	Much more than most	13.7	16.1	30.6	24.8	24.5	21.9
<b>Hampered in daily activities by illness/disability/infirmity</b>	Yes a lot	15.7	17.7	16.5	17.7	26.4	21.3
	Yes to some extent	34.8	35.4	35.9	35.4	48.1	41.0
	No	49.5	47.0	47.5	46.9	25.5	37.8
<b>How happy are you? (scores 0 to 10)</b>	<i>Mean</i>	7.7	6.9	6.0	4.8	5.3	6.1
	<i>Std. Dev.</i>	1.9	2.0	2.2	2.7	2.4	2.4
<b>How satisfied with life as a whole (scores 0 to 10)</b>	<i>Mean</i>	8.0	6.9	6.1	4.5	4.9	5.9
	<i>Std. Dev.</i>	1.9	2.3	2.3	2.7	2.7	2.6
<b>Sample size</b>		1,916	6,355	3,385	1,920	6,663	20,239

Note: Distributions and summary statistics based on weighted values. Sample sizes are unweighted numbers.

Source: ESS Rounds 1-6.

Table 2 Associations between presence of a child in the household, and other covariates, with happiness by gender and region of Europe

	Nordic		Western Europe		Southern Europe		Balkans		Eastern Europe	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
<b>Initial Model</b>										
<i>Child in household (Ref. No)</i>										
Yes	0.931 (-0.19)	0.736 (-0.78)	1.268 (1.24)	1.466*** (6.33)	1.415*** (4.29)	1.471*** (5.35)	1.666*** (3.65)	1.220*** (3.87)	0.713*** (-3.58)	1.068 (1.03)
Age	1.002 (0.61)	1.027*** (7.29)	1.020* (2.13)	1.022** (2.82)	1.039*** (3.41)	1.018*** (6.22)	1.002 (0.08)	1.016 (1.16)	1.023*** (4.14)	1.020 (1.59)
N	400	1495	1465	4868	675	2692	393	1499	1196	5374
<b>Final Model</b>										
<i>Child in household (Ref. No)</i>										
Yes	0.926 (-0.09)	0.978 (-0.08)	1.317** (2.95)	1.765*** (9.69)	1.488*** (4.18)	1.429* (2.57)	2.225*** (6.13)	1.614 (1.93)	0.759* (-2.50)	0.964 (-0.81)
Age	1.024* (2.03)	1.040*** (3.38)	1.025* (2.42)	1.037*** (6.53)	1.029 (1.54)	1.029** (2.67)	1.030 (0.93)	1.038*** (4.42)	1.053*** (8.41)	1.049*** (3.72)
<i>Educational level (ref. Less than lower secondary education (ISCED 1))</i>										
Lower secondary education completed (ISCED 2)	1.013 (0.11)	1.138 (0.49)	1.053 (0.67)	0.870 (-0.53)	3.002*** (5.25)	1.295 (0.68)	1.646 (1.39)	1.624 (1.82)	1.241 (1.49)	1.726*** (7.55)
Upper secondary education completed (ISCED 3)	1.471*** (13.71)	1.043 (0.18)	0.714 (-1.17)	0.753 (-1.11)	2.204* (2.07)	1.081 (0.18)	1.747 (1.08)	1.869*** (5.23)	2.075*** (3.50)	1.474*** (4.07)
Post-secondary education completed (ISCED 4-6)	1.289 (1.16)	0.903 (-0.59)	1.020 (0.13)	0.993 (-0.02)	4.826*** (13.44)	1.791 (1.58)	2.804 (1.82)	1.630 (1.65)	1.397 (1.61)	1.424*** (3.54)
<i>How often socially meet with friends, relatives or colleagues (ref. Less than once a month)</i>										
Once a month	0.610 (-0.63)	2.809* (2.39)	1.364 (1.63)	1.165 (0.52)	2.207 (1.50)	1.158*** (3.59)	1.210 (0.18)	2.165 (1.78)	1.100 (0.23)	1.295* (2.12)
Several times a month	0.990 (-0.02)	3.318*** (3.65)	0.930 (-1.07)	1.577* (1.97)	2.767* (2.21)	1.090 (0.51)	0.714 (-0.77)	1.623 (1.80)	1.269 (1.47)	1.586* (2.51)
Once a week	1.133 (0.24)	3.085* (2.53)	1.309 (1.12)	1.886*** (4.59)	1.312 (0.63)	2.056*** (4.43)	0.773 (-0.42)	1.505** (3.00)	1.353* (2.23)	1.558 (1.91)
Several times a week	1.470 (1.54)	4.339*** (3.98)	1.660*** (8.03)	2.138*** (5.66)	1.511*** (3.49)	1.266 (0.87)	0.674 (-1.76)	2.723*** (3.49)	1.095 (0.29)	1.482*** (4.50)
Every day	2.888* (2.19)	6.198*** (5.03)	2.174* (2.29)	2.200*** (5.44)	1.552*** (4.56)	1.682* (2.09)	1.066 (0.20)	2.367** (2.59)	2.187*** (4.82)	1.497* (2.55)
<i>Anyone to discuss intimate and personal matters with (Ref. Yes)</i>										

No	0.987 (-0.05)	0.535*** (-3.33)	0.527*** (-4.05)	0.775*** (-4.17)	0.410*** (-4.80)	0.611* (-2.07)	0.397** (-3.03)	0.725** (-3.25)	0.560*** (-4.51)	0.656* (-2.36)
<i>Take part in social activities compared to others of same age (Ref. Much less than most)</i>										
Less than most	1.193 (0.33)	1.182 (0.64)	1.090 (1.24)	1.298 (1.80)	0.568 (-1.31)	1.238** (2.89)	2.956** (2.82)	0.944 (-0.39)	1.417 (1.05)	1.076 (0.70)
About the same	1.017 (0.06)	1.317 (0.82)	1.106 (0.61)	1.385** (3.10)	1.051 (0.14)	1.254** (2.73)	1.589 (1.47)	0.960 (-0.13)	1.164 (0.56)	1.397* (2.28)
More than most	1.600 (1.60)	1.626 (1.73)	3.157*** (5.74)	2.029*** (5.37)	0.666 (-1.35)	3.053*** (3.62)	2.774*** (28.53)	1.384 (0.97)	1.570 (1.54)	1.624* (2.15)
<i>Hampered in daily activities by illness/disability/infirmity (Ref. Yes a lot)</i>										
Yes to some extent	2.306*** (6.29)	1.646*** (5.38)	1.815 (1.90)	1.569* (2.35)	1.607 (0.86)	1.513*** (5.74)	1.383 (0.76)	1.314 (1.64)	2.133*** (3.48)	1.791*** (12.02)
No	5.238*** (6.21)	1.894*** (5.64)	2.581** (3.14)	2.599*** (3.80)	2.386 (0.95)	2.333*** (24.34)	0.937 (-0.12)	1.648 (1.69)	3.116*** (7.46)	3.233*** (15.34)
N	311	1201	1204	3998	556	2167	277	1051	797	3596

Notes: Exponentiated coefficients; t statistics in parentheses

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

Source: ESS Rounds 1-6.

Table 3 Associations between presence of a child in the household, and other covariates, with life satisfaction by gender and region of Europe

	Nordic		Western Europe		Southern Europe		Balkans		Eastern Europe	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
<b>Initial Model</b>										
<i>Child in household (Ref. No)</i>										
Yes	0.627 (-1.75)	1.085 (0.31)	1.003 (0.01)	1.039 (0.55)	1.683*** (6.03)	1.386*** (4.80)	1.725*** (4.28)	1.148 (1.18)	0.834 (-1.55)	1.064 (0.73)
Age	0.989* (-2.26)	1.022*** (10.81)	1.018*** (3.70)	1.013 (1.61)	1.052** (2.58)	1.024*** (3.64)	0.997 (-0.29)	1.019 (1.43)	1.017* (2.57)	1.031*** (4.65)
N	406	1504	1467	4856	676	2668	395	1512	1215	5374
<b>Final Model</b>										
<i>Child in household (Ref. No)</i>										
Yes	0.685 (-0.56)	1.465 (1.42)	0.972 (-0.25)	1.300* (2.00)	1.861** (3.16)	1.381*** (4.50)	1.883 (1.60)	1.318** (3.04)	0.901 (-0.34)	0.951 (-0.40)
Age	1.010 (0.61)	1.042*** (3.62)	1.025** (3.18)	1.030*** (6.27)	1.038*** (5.55)	1.034*** (6.77)	1.017 (0.73)	1.037*** (4.83)	1.057*** (13.52)	1.062*** (6.82)
<i>Educational level (ref. Less than lower secondary education (ISCED 1))</i>										
Lower secondary education completed (ISCED 2)	1.288 (1.13)	1.044 (0.26)	1.019 (0.06)	1.121 (0.38)	2.222*** (4.71)	1.457 (0.88)	1.564 (1.51)	1.617*** (6.10)	1.393 (0.88)	1.789*** (6.00)
Upper secondary education completed (ISCED 3)	1.692 (1.90)	0.885 (-0.63)	0.892 (-0.28)	1.252 (1.08)	2.999*** (3.70)	1.516* (2.12)	1.816 (0.85)	1.629*** (5.52)	2.302 (1.93)	1.393** (2.77)
Post-secondary education completed (ISCED 4-6)	1.424 (1.64)	0.997 (-0.01)	1.042 (0.16)	1.393 (0.93)	5.112*** (10.08)	1.095 (0.23)	1.846 (1.05)	1.919* (2.18)	1.178 (0.74)	1.366* (2.39)
<i>How often socially meet with friends, relatives or colleagues (ref. Less than once a month)</i>										
Once a month	0.517 (-1.45)	2.262 (1.66)	0.838 (-0.54)	1.231** (2.73)	1.355 (1.20)	1.033 (0.26)	1.663 (0.53)	2.207*** (3.31)	1.061 (0.13)	1.192* (2.51)
Several times a month	1.095 (0.57)	1.738** (2.87)	1.037 (0.15)	1.648*** (4.81)	0.672 (-1.14)	1.057 (0.26)	1.157 (0.97)	1.731*** (10.51)	1.188* (2.27)	1.148 (0.53)
Once a week	1.224 (0.82)	2.351* (2.31)	1.009 (0.04)	1.702*** (4.50)	1.453 (1.12)	1.806*** (5.87)	1.311 (0.46)	1.446** (3.27)	1.204 (0.52)	1.342** (3.24)
Several times a week	1.651*** (3.79)	2.949*** (3.44)	0.950 (-0.32)	1.937*** (9.04)	1.368* (2.01)	1.106 (0.58)	0.906 (-0.45)	2.324*** (4.14)	1.221 (0.87)	1.210 (0.87)
Every day	2.751** (2.99)	4.062*** (4.80)	1.273 (1.09)	2.187*** (5.95)	1.285 (1.43)	1.350 (1.22)	1.510*** (4.90)	2.434*** (3.91)	1.625 (1.45)	1.037 (0.19)
<i>Anyone to discuss intimate and personal matters with (Ref. Yes)</i>										

No	1.134 (0.83)	0.643*** (-4.24)	0.531*** (-5.21)	0.810 (-1.83)	0.527*** (-4.15)	0.596*** (-3.66)	0.511*** (-3.62)	0.747 (-1.66)	0.627*** (-5.39)	0.708 (-1.87)
<i>Take part in social activities compared to others of same age (Ref. Much less than most)</i>										
Less than most	1.082 (0.22)	1.098 (0.35)	1.331 (1.34)	1.281** (2.88)	0.799** (-2.70)	1.141 (0.57)	2.893*** (5.19)	0.903* (-2.29)	1.807 (1.74)	0.965 (-0.40)
About the same	0.839 (-0.43)	1.155 (0.57)	1.033 (0.09)	1.387*** (3.63)	1.425 (1.47)	1.577*** (7.08)	1.855*** (20.93)	0.762** (-2.98)	1.387 (1.60)	1.325 (1.68)
More than most	1.087 (0.17)	1.790** (3.07)	3.457*** (4.35)	2.080*** (8.30)	1.770** (2.99)	2.919*** (5.74)	3.894*** (8.68)	1.195 (1.13)	1.240 (0.61)	1.588 (1.90)
<i>Hampered in daily activities by illness/disability/infirmity (Ref. Yes a lot)</i>										
Yes to some extent	2.777*** (6.26)	2.144*** (12.02)	1.930*** (6.01)	1.489** (2.70)	1.142 (0.35)	1.784*** (11.07)	1.362 (0.50)	1.152 (1.09)	2.747*** (4.42)	1.966*** (9.47)
No	4.563*** (5.51)	2.802*** (6.89)	3.329*** (3.95)	2.587*** (4.21)	2.518 (1.77)	2.829*** (7.79)	1.081 (0.10)	1.288* (2.35)	3.471*** (5.16)	3.277*** (31.11)
N	314	1209	1204	3994	556	2146	279	1063	805	3606

Notes: Exponentiated coefficients; t statistics in parentheses

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

Source: ESS Rounds 1-6.

Table 4. Summary of associations between happiness and life satisfaction with presence of a child in the household and other covariates, by gender and region of Europe

Final Model	Nordic		Western Europe		Southern Europe		Balkans		Eastern Europe	
	M	F	M	F	M	F	M	F	M	F
<i>Child in household (ref no)</i>										
<b>Yes</b>	Happiness		++	+++	+++	+	+++			-
	Life sat.			+	++	+++		++		
<b>Age</b>	Happiness	+	+++	+	+++		++	+++	+++	+++
	Life sat.		+++		+++	+	+++	+++	+++	+++
<i>Educational level (ref ISCED 1)</i>										
<b>(ISCED 2)</b>	Happiness				+++					+++
	Life sat.				+++			+++		+++
<b>(ISCED 3)</b>	Happiness	+++			+			+++	+++	+++
	Life sat.				+++	+		+++		++
<b>ISCED 4-6)</b>	Happiness				+++					+++
	Life sat.				+++			+		+
<i>How often socially meet with friends, relatives or colleagues (ref. Less than once a month)</i>										
<b>Once a month</b>	Happiness		+				+++			+
	Life sat.				++			+++		+
<b>Several times a month</b>	Happiness		+++	+	+					+
	Life sat.		++		+++			+++	+	
<b>Once a week</b>	Happiness		+		+++		+++	++	+	
	Life sat.		+		+++		+++	++		++
<b>Several times a week</b>	Happiness		+++	+++	+++	+++		+++		+++
	Life sat.	+++	+++		+++	+		+++		
<b>Every day</b>	Happiness	+	+++	+	+++	+++	+	++	+++	+
	Life sat.	++	+++		+++			+++	+++	
<i>Confidante</i>										
<b>Yes</b>	Happiness		+++	+++	+++	+++	+	++	++	+++
	Life sat.		+++	+++		+++	+++	+++		+++
<i>Take part in social activities compared to others of same age (Ref. Much less than most)</i>										
<b>Less than most</b>	Happiness						++	++		
	Life sat.				++	--		+++	-	
<b>About the same</b>	Happiness				++		++			+
	Life sat.				+++		+++	+++	--	
<b>More than most</b>	Happiness			+++	+++		+++	+++		+
	Life sat.		++	+++	+++	++	+++	+++		
<i>Hampered in daily activities by illness/disability/infirmary (Ref. Yes a lot)</i>										
<b>Yes to some extent</b>	Happiness	+++	+++		+		+++		+++	+++
	Life sat.	+++	+++	+++	++		+++		+++	+++
<b>No</b>	Happiness	+++	+++	++	+++		+++		+++	+++
	Life sat.	+++	+++	+++	+++		+++	+	+++	+++

+p&lt;0.05, ++ p&lt;0.01, +++p&lt;0.001 (positive association)

-p&lt;0.05, --p&lt;0.01, ---p&lt;0.001 (negative association)

Appendix Table. Marital status distribution (percent) by regions and gender, people ages 65 and over

	Nordic	Western Europe	Southern Europe	Balkans	Eastern Europe	Total
<b>Male</b>						
Married	70.8	76.6	80.5	80.1	74.0	76.4
Divorced/Sep.	10.5	6.5	1.7	2.4	3.7	5.0
Widowed	11.6	12.2	12.2	15.0	20.4	14.4
Never married	7.1	4.7	5.6	2.6	1.9	4.2
Sample size	3861	9276	4309	2024	5184	24654
<b>Female</b>						
Married	47.1	49.1	53.2	46.9	33.7	44.2
Divorced/Sep.	11.8	7.5	2.6	4.2	6.0	6.3
Widowed	35.0	37.6	39.0	45.7	57.2	44.9
Never married	6.1	5.8	5.2	3.2	3.2	4.7
Sample size	4345	10996	5864	2919	9216	33340

Note: Distributions and summary statistics based on weighted values. Sample sizes are unweighted numbers.

Source: ESS Rounds 1-6.