

# Receiving Instrumental Support in Late Parent-Child Relationships and Parental Depression

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**Objectives.** This study investigates the role of gender, functional limitations, and social interaction in the association between instrumental support from adult children and parental depression. We apply self-determination theory to hypothesize about the role of physical needs and social resources on parental depression in a European context.

**Method.** A sample of 6,268 parents older than 65 who have nonresident children from the first wave of Survey of Health, Ageing and Retirement in Europe (2004) is analyzed. We estimate logistic regression models to test for the association between instrumental support and depression. Physical needs, gender, and social interaction are used as moderators.

**Results.** Net of core factors that contribute to depression, including previous history of depression, there is a U-shaped pattern between receiving instrumental support and depression that persists across country regimes. For respondents with medium physical limitations, too little or too frequent support from children is associated with higher depression. For respondents with severe limitations, receiving at least some support is better than receiving none at all. The receipt of too frequent support from children increases the level of depression more for women than men. All interaction effects are comparable across country regimes.

**Discussion.** Heterogeneity in physical needs and resources of older individuals must be taken into account when assessing the effects of instrumental support on mental health.

**Key Words:** Aging—Depression—Instrumental support—Intergenerational solidarity—Mental health.

DEPRESSION is a major public health problem throughout the world and the most frequent cause of emotional suffering in later life, which significantly decreases the quality of life of older adults (Blazer, 2003). Social support from family members, and especially children, is pivotal for mental health and well-being (e.g., Bengtson, Bilbarz, & Roberts, 2002). Although previous studies have found both positive (Antonucci & Jackson, 1987; Dalgard, Bjørk, & Tambs, 1995; Oxman, Berkman, Kasl, Freeman, & Barrett, 1992) and negative relationships with depressive mood (Berkman, Glass, Brissette, & Seeman, 2000; Oxman & Hull, 2001), there is still a lack of understanding on how specific types of social support relate to parental depression. For example, research has found that receiving instrumental support can have negative association with parents' mental health (e.g., Grundy, 2010; Gur-Yaish, Zisberg, Sinoff, & Shadmi, 2013; Zunzunegui, Béland, & Otero, 2001) or no association at all (Fiori & Denckla, 2012; Silverstein & Bengtson, 1994).

Previous findings that link depressive mood of older parents and receiving social support rely on several explanations. The most prominent explanation contends that parents hold expectations for receiving support from their children, and depressive mood might appear as a result of situations where the expectations of parents are not met

by their adult children (Lee, Netzer, & Coward, 1995). An alternative explanation places emphasis on the quantum of social support and also includes instrumental support. Silverstein, Chen, and Heller (1996) show that excessive support is associated with higher levels of depressive mood. However, when different measures of support are combined such as instrumental and emotional support, a difficulty arises in distinguishing between not receiving enough support (or the expected type of support) or receiving too much support as a cause of parental depression (Dalgard et al., 2006; Panzarella, Alloy, & Whitehouse, 2006; Silverstein et al., 1996; Wolff & Agree, 2004). In addition, previous research rarely distinguishes between perceived support that has a positive association with mental health and actual received support that is either unrelated or positively related to depression (Kaul & Lakey, 2003; Reinhardt, Boerner, & Horowitz, 2006).

Other findings for the effects of family support exchange on depressive mood have included the interplay between physical, social, and economic resources of the parents. Mutran and Reitzes (1984) found that widowed parents have less negative feelings about receiving support from children. With regards to gender, Fiori and Denckla (2012) observed that women who received emotional support were less depressed compared with women who did not receive

such support, but no association was found for men or for instrumental support and depression.

In the European context, there is a wide variation in the volume and way in which adult children support their parents. Previous comparisons of European countries (Norway, Germany, England, and Spain) indicated that the welfare state has not replaced the family in elder care, but has helped the generations establish more independent relationships (Daatland & Herlofson, 2003; Daatland & Lowenstein, 2005). Researchers argue in favor of a system of task specialization, which makes a clear distinction between different types of support. Here, formal caregivers take on demanding care tasks such as personal care, allowing adult children to focus on practical help (instrumental support) such as household chores (Broek et al., 2014; Igel, Brandt, Haberkern, & Szydlik, 2009; Litwak, Silverstein, Bengtson, & Hirst, 2003). The prevalence of instrumental support from family members is actually higher in the Nordic countries, but its intensity is rather low compared with the Southern European countries (e.g., Bonsang, 2007; Ogg & Renaut, 2006). Each country has its own specific cultural norms, and the volume of support for older adults is higher in countries with well-developed social services compared with countries where the family has to fend for itself to a greater extent (Brandt, Haberkern, & Szydlik, 2009; Motel-Klingebiel, Tesch-Roemer, & Von Kondratowitz, 2005).

Given both the current and expected increases of the proportion of older individuals in the general population, the prevalence of providing instrumental support to older individuals will likely increase in conjunction with higher needs, dependency, and burden. In this study, we focus specifically on instrumental support in order to better understand how support from adult children is associated with the depressive mood of older parents. There are three main reasons why we focus on adult children as providers of parental instrumental support. First, next to spouses, adult children are the major source of instrumental support for older people in Europe, providing help in daily activities or more infrequently, in finances (Albertini, Kohli, & Vogel, 2007; Komter & Vollebergh, 2002; Spitze & Logan, 1990). Second, adult children provide the bulk of practical help, for example, household chores like home repairs, transportation, shopping, as well as help with financial and legal matters. Third, support from other sources might have different associations with mental health as the literature on intergenerational solidarity suggests that the receipt of instrumental support from children is tied to filial norms of solidarity (Bengtson & Roberts, 1991).

Despite individual characteristics that may account for differences in depression, country-specific family norms and practices might also significantly contribute to the relationship between instrumental support and depression. Support can also have different consequences for men and women, as previous research points out that women are not only more likely to receive instrumental support but

also older women fare worse than older men with regards to mental health. We aim to contribute to the literature on instrumental support and mental health by answering four questions: (a) How is a different intensity of instrumental support from adult children associated with parental depressive mood? (b) Is the relation between intensity of instrumental support and depressive mood different for mothers and fathers? (c) Do parents with different physical needs and social resources experience instrumental support differently with regards to depressive mood? (d) To what extent is the mechanism that links varying intensity of instrumental support to parental depression dependent on the different family contexts in Europe? We review the literature on instrumental support and depression and drawing from self-determination theory (Deci, 1980; Deci & Ryan, 1985, 2000, 2011), we argue that differences in physical needs and social resources condition the relation between instrumental support (defined as home repairs, transportation, shopping, household chores as well as help with financial and legal matters) and depressive mood.

#### *Self-Determination Theory: Receiving Instrumental Support and Mental Health*

Autonomy and competence, together with relatedness, constitute three primary psychological needs that are essential for ongoing psychological growth, integrity, and well-being (Deci, 1980; Deci & Ryan, 1985, 2000). Autonomy refers to being the perceived source of one's own behavior, whereas competence indicates feeling effective in one's ongoing interactions with the social environment and experiencing opportunities to exercise and express one's capacities (Deci & Ryan, 1985, 2011). Relatedness captures the interaction to other individuals, the ability to feel connected and experience caring from and for others (Deci & Ryan, 2011). At an older age when the need for assistance is most likely to accelerate, older individuals may become increasingly reluctant to request or accept instrumental support from their children, preferring to remain autonomous for as long as possible (Blieszner & Mancini, 1987; Cohler, 1983). The relationship between receiving instrumental help and decline in mental health is derived from the loss of autonomy, as well as a sense of competence that older individuals experience when they receive instrumental support (Krause, 1997; Solky-Butzel & Ryan, 1997). Recent research confirms that depressive mood is associated with receiving instrumental support (Grundy, 2010; Gur-Yaish et al., 2013; Zunzunegui et al., 2001). Parents tend to minimize the amount of instrumental support they receive from their children in order to preserve a self-concept of functional competence and avoid the stigma of being a "burden" (Bengtson & Black, 1973; Silverstein et al., 1996). We therefore hypothesize that parents who receive frequent instrumental support from adult children will be more depressed than parents who do not receive instrumental

support, or who receive only some sporadic instrumental support (Hypothesis 1).

### *Depression and Instrumental Support in a European Context*

There is a considerable variation in the frequency of instrumental support from adult children in European countries, where both the needs of the parents and the opportunities of the children as well as family structures influence the frequency of instrumental support. Receiving instrumental support takes place under differing contextual conditions such as the social, economic, and tax system, the welfare state, the labor and housing market as well as the specific rules and norms that govern family interaction (Lowenstein & Daatland, 2006). Esping-Andersen (1999) proposes a typology of welfare regimes that corresponds to national markets, institutions, and values related to family solidarity (Reher, 1998). Working with further developments based on this typology, European countries are classified into four clusters: countries with a “familistic” or traditional family structure (the Southern European countries of Italy, Spain, and Greece), the Social Democratic regimes (Scandinavian countries of Sweden and Denmark), and we divide the original classification of Continental European or “conservative” family regimes into two subcategories. This includes the “hybrid” or semiconservative countries (Belgium, France, and the Netherlands) and the conservative regimes (Austria and Germany).

Self-determination theory argues that autonomy, competence, and relatedness are universal needs and thus, regardless of the social context, the inability to fulfill these needs will produce similar outcomes in the sense of loss of well-being and deterioration of mental health. Because they are characterized as universal needs, we hypothesize that the relationship between receiving frequent instrumental support from adult children and depression will not depend on the differences in the European contexts (Hypothesis 2).

### *Physical Needs and Depression*

Instrumental support is most likely to be provided to parents when they need support due to declining health and physical disability (Grundy, 2005; Kalmijn & Saraceno, 2008), although Knijn and Liefbroer (2006) found that the exchange of instrumental support is only weakly related to parental health and physical limitations. Bad physical health and physical limitations are the greatest predictors of depressive mood (Ormel, Rijdsdijk, Sullivan, van Sonderen, & Kempen, 2002; Pagan-Rodriguez, 2010) and deterioration in health has been consistently linked to a loss of autonomy in older people (Cohen, 1988; Fine & Glendinning, 2005). A previous investigation about the possible interplay between instrumental support from family or friends and physical limitations found no interaction between them in the effect on depressive mood, although both

were separately associated with depressive mood (Bozo, Toksabay, & Kürüm, 2009). Conversely, investigating older individuals in a hospital setting showed that instrumental support was positively related to the level of depressive symptoms for respondents who functioned more independently before the hospitalization (Gur-Yaish et al., 2013).

We identify a decline in health and increased physical disabilities as conditions under which instrumental support from an adult child may be interpreted as an expected and legitimate violation of autonomy that fosters competence, instead of undermining it. Under stressful conditions of experiencing a decline in health and the increased physical inability to independently satisfy personal needs such as acquiring groceries, preparing food, cleaning the household and similar chores, instrumental support from children can be a beneficial resource in maintaining competence. Alternatively, a parent who is not threatened by increasing physical needs may derive few benefits from such assistance. In such cases, over-responsive and overprotective support might do more damage than good, inducing a depressive mood in individuals who unnecessarily receive instrumental support. We expect this buffering effect to appear as individuals with high physical needs may associate illness or other functional problems with dependency, but associate support with regaining a sense of competence. Therefore, we expect that physical needs moderate the relation between receiving instrumental support and depressive mood. We hypothesize that instrumental support is less strongly associated with depression for parents with worse physical health (greater physical needs) than for those with better health (Hypothesis 3).

### *Gender and Instrumental Support*

Women are on average more depressed than men, for various reasons related to, but not limited to, exposure to stressful events, differences to stress responses and biological vulnerabilities (for reviews, see Kessler, 2003; Nolen-Hoeksema, 2001). This association persists in later life, with older women being more depressed than older men (Barry, Allore, Guo, Bruce, & Gill, 2008). Women are more likely to give and receive emotional support than men (Liebler & Sandefur, 2002) and to mobilize various types of social support in times of stress (Walen & Lachman, 2000). Because of women’s kin-keeping roles, it is likely that their physical and psychological needs are more visible to their children than those of men, resulting in women receiving more overall support from adult children (de Jong Gierveld & Dykstra, 2002; Silverstein, Parrott, & Bengtson, 1995).

Household labor is unequally divided between older spouses and relates differently to gender roles (Hank & Jürges, 2007; Knijn & Liefbroer, 2006). Instrumental support from children mostly supplements or replaces tasks done by mothers, which may result in instrumental support being more related to women’s depression. Thus, receiving instrumental support from adult children might evoke

stronger feelings of loss of autonomy and competence for women than for men. This is so because being able to do household tasks is a stronger part of women's (especially older women's) self-esteem and well-being than for men (especially older men). Due to the specific nature of household tasks that take up time and physical resources, we expect that women may suffer more from a depressive mood as they become unable to independently perform household tasks. Building on this, we hypothesize that receiving instrumental support will be less strongly associated with depressive mood for men than for women (Hypothesis 4).

#### *Social Interaction With Adult Children and Depressive Mood*

According to Deci and Ryan (2000), psychological health requires satisfaction of all three needs, one or two are not enough. Thus, in addition to physical needs, social resources that include high-quality relationships with significant others foster or hinder the fulfillment of the psychological need for relatedness. Social interaction contributes positively to the mental health of older adults (Antonucci, 2001; Koropecjy-Cox, 2002) and studies confirm that older parents with more frequent social contact suffer less from depressive mood (DuPertuis, Aldwin, & Bosse, 2001; Prince, Harwood, Thomas & Mann, 1998). This has been confirmed for social interaction with children, where few contacts with children are associated with an increased number of depression symptoms (Buber & Engelhardt, 2008).

Contact with children might entail emotional support that, in addition to instrumental support, may have a buffering effect that weakens the negative effects of receiving instrumental support. We expect that individuals who have more frequent interaction with children will benefit from their attention and affection. In addition to this, we expect that frequent contact with children can buffer the negative effects of experiencing a loss of autonomy and competence for parents who receive instrumental support. We therefore hypothesize that parents, who have more frequent contact with children while they receive instrumental support from them, will be less depressed compared with parents who receive instrumental support but have less frequent contact with their children (Hypothesis 5).

We acknowledge that a wide array of factors known to contribute to depression should not be left out while considering the hypothesized relations. Thus, for substantial and methodological details about the possible confounders that we take into account in our analysis, we refer to the Control Variables in the [Supplementary Material](#).

## **METHOD**

### *Data and Sample*

We address our research question using data from the first wave (release 2.5.0) of the Survey of Health, Ageing and

Retirement in Europe (SHARE) collected in 2004 (Börsch-Supan & Jürges, 2005). This study was conducted in 11 European countries and is representative for individuals aged 50 and older, with an average response rate of 55%. Our analysis includes data from Austria, Belgium, Denmark, France, Germany, Greece, Italy, The Netherlands, Spain, and Sweden. Switzerland was excluded from the analysis because of the differences in sampling strategy with respect to the other countries and a below average response rate of 35%. In addition, we excluded Israel as it does not relate to the European welfare regimes. Our analytical sample is comprised of individuals 65 years and older who have at least one adult child older than 18 years who lives outside the parental home.

Although coresident children can be a source of instrumental support, numerous studies argue that coresidence between older parents and adult children is influenced more by the children's economic needs than the parents' declining health and need for support (Aquilino, 1990; Isengard & Szydlik, 2012; Ward, Logan, & Spitze, 1992). Hence, the assumption that all coresident children provide instrumental support may be exaggerated and conceal other factors that are a product of the relation between a parent and a coresident child. Studies of intergenerational transfers found that middle-aged parents give significant financial transfers to children, whereas adult children tend to provide care for their parents later in life (Albertini et al., 2007). Children of middle-aged parents are usually young and still in education and do not provide care and support to their parents. We focus, therefore, on parents older than 65 years who are eligible to be in need of support. Initially, the sample contained 26,880 individuals out of which we selected 10,197 individuals older than 65 years. Selecting parents with at least one nonresident child older than 18 years left us with 8,250 respondents out of which we selected all family respondents who have answered questions about family contacts and support. This yielded an analytical sample of 6,268 respondents (23.31% of total sample), where 2,720 were fathers and 3,548 were mothers.

### *Measures*

*Dependent variable.*—Depressive mood is operationalized using the EURO-D scale, which was constructed by harmonizing five depression measures into a 12-item scale including depression, pessimism, suicidality (wishing death), guilt, sleep, interest, irritability, appetite, fatigue, concentration, enjoyment, and tearfulness. With regards to validity, the scale was shown to correlate well with other well-known health measures (Prince et al., 1999). We used a dichotomized EURO-D measure, defined as a EURO-D score of 4 or greater, a convention used by other studies utilizing the EURO-D scale (Alavinia & Burdorf, 2008; Ladin & Reinhold, 2013). In the current sample, EURO-D was internally consistent for all countries with a Cronbach's alpha of 0.72 for the pooled sample, ranging from 0.64 (in Denmark) to 0.79 (in Spain). In addition, there is evidence

for strong between-country measurement invariance with respect to the EURO-D measure revealing a consistent two-factor structure with the exception of Switzerland, which is excluded from this analysis (Ploubidis & Grundy, 2009).

*Independent variables.*—SHARE respondents could name multiple sources of instrumental support for them or their partner in the last year and they reported the relationship to each helper. Instrumental support included practical household help like home repairs, gardening, transportation, shopping, and household chores, or help with paperwork such as filling out forms, settling financial or legal matters. Personal caregiving was excluded because it was impossible to determine which of the parents were receiving care. In addition, parents could state how often they receive such support, namely sporadically (almost every month or less often), weekly (almost every week) or daily (almost every day). *Receipt of instrumental support* is considered when the parent receives support from at least one grown nonresident child older than 18 years, and it could be either sporadically, weekly, or daily. As a measure of *physical need*, we use the limitations with activities of daily living (ADL). The list of ADL includes bathing, dressing, toileting, transferring, continence, and eating and ranges from 0 to 6. Consistent with previous studies this measure captures the decline in physical health more reliably than self-assessed physical health (Mendes de Leon, Seeman, Baker, Richardson, & Tinetti, 1996; Lee, 2000). We divided parents into four categories depending on the number of limitations they have in order to capture the differences in physical need: (a) no limitations with daily living, (b) mild limitations (1–2 limitations), (c) medium limitations (3–4 limitations), or (d) severe limitations (5–6 limitations).

Social interaction with children was measured as contact with any child that can be personal, by phone, or e-mail. We grouped the contact with children into three categories: (a) daily contact referring to the contact every day or several times a week, (b) once a week, which we later refer to as weekly contact, and (c) less than once a week, which we term less than weekly contact. *Gender* is coded 1 for women and 0 for men. As justified previously, countries were grouped in four *welfare regimes*: (a) familialistic (Italy, Spain, and Greece), (b) hybrid (Belgium, France, and the Netherlands), (c) conservative (Austria and Germany), and (d) social democratic (Sweden and Denmark). For more details about all control variables, please refer to coding of Control Variables in the [Supplementary Material](#).

### Statistical Analysis

Multivariate logistic regression models estimated the relation between instrumental support and depressive mood controlling for: age, family members the respondent lives with, education, employment, subjective appraisal of economic situation, occurrence of stressful events in the last 2 years pertaining to death of spouse or divorce, number

of children, volunteering activity, and previous history of depressive mood. We also took into account additional factors that might influence the opportunity of parents to receive instrumental support, such as if a grown child lives within 5 km of geographical proximity, if the parent provides financial or instrumental support to the children, and whether in addition to instrumental support from a child the parent receives support from another source.

We anticipated that the effects of the relationship would persist across countries and therefore we included country regimes in the models. We estimated a main effect model (Model 1) where we tested the association between instrumental support and depressive mood. Subsequently, we addressed all hypotheses by estimating moderation effects between instrumental support and each moderator in separate nested models (Models 2–5). [Table 2](#) shows the results of multivariate logistic regression and reports the coefficients only for the variables of interest (control variables are not shown, please consult [Supplementary Table 3](#) for a complete listing of results for all coefficients). Marginal effects with 95% confidence intervals were computed for the significant interaction effects (details about how marginal effects are calculated are shown in section on Marginal effects in the [Supplementary Material](#), for coefficients refer to [Supplementary Tables 4, 5 and 6](#)). For ease of interpretation, we plotted the graphs presented in [Figures 1 and 2](#). Standard errors are represented in the figures by the error bars associated with each column. We performed likelihood ratio tests in order to test whether the added interaction terms resulted in a statistically significant improvement in the model-fit.

### RESULTS

[Table 1](#) shows descriptive results (row percentages) for the analytical sample for all variables stratified by depressive mood. We observe significant differences for some of the variables between the depressed and nondepressed parents, such as living situation, ADL status, education, experiencing stressful event in last 2 years, previous history of depressive

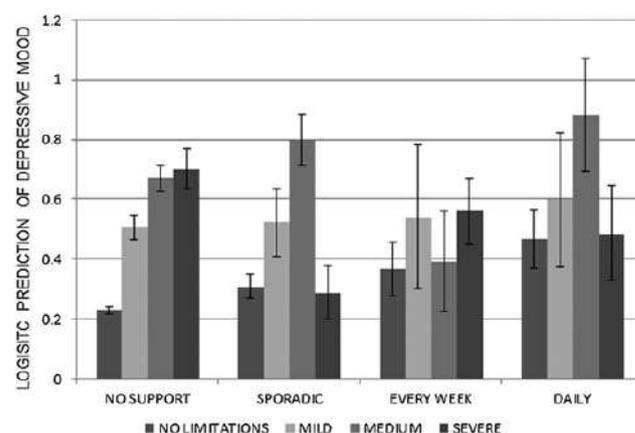


Figure 1. Effects of activities of daily living and instrumental support on depressive mood.

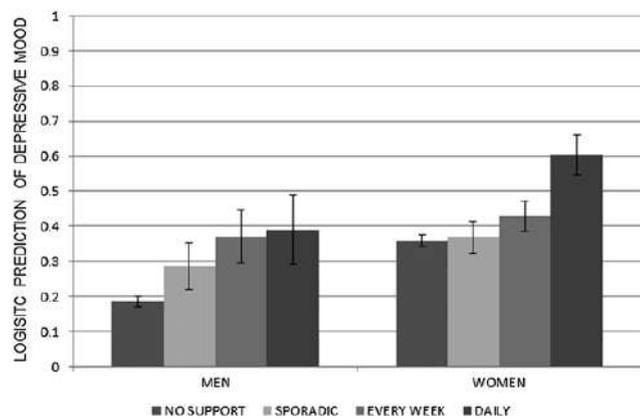


Figure 2. Effects of gender and instrumental support on depressive mood.

mood, and receiving instrumental support. Around one third of the sample meets the EURO-D criteria for depressive mood. Mothers are slightly overrepresented, and they are more likely to be depressed than fathers. Most respondents live alone or with a spouse, and two thirds have regular contact with children on a daily basis or several times a week. Around 24% of parents suffered from depressive mood earlier in their life, with the majority of parents having no or mild limitations with daily living activities. Around 24% of parents receive instrumental support from a child, of which 8.38% of parents receive instrumental support sporadically, almost 9.06% every week and 5.33% on a daily basis.

**Multivariate Results**

Model 1 in Table 2 examines the main effect hypothesis where we anticipated that more frequent instrumental support would be positively associated with depressive mood. Instrumental support is indeed associated with an increase in the odds of depressive mood,  $\exp (.278) = 1.32$ , confidence interval (CI) [1.07, 1.64] for sporadic support;  $\exp (.146) = 1.15$ , CI [0.93, 1.43] for support received every week, and  $\exp (.404) = 1.49$ , CI [1.14, 1.95] for support received daily. The results suggest a nonlinear trend of the relationship between instrumental support and depressive mood, showing U-shaped differences in depression levels between individuals receiving sporadic, weekly or daily support.

Model 2 tested the moderation effect expected in Hypothesis 2 that there will be no significant difference between regimes with respect to the relationship between instrumental support and depression. The interaction terms in Model 2 show that there is no significant association between instrumental support and country regime, as all of the coefficients remain insignificant ( $\chi^2 (9) = 11.04$ ,  $p = .28$ ). We proceeded to test Hypothesis 3 stating that the (depressive) effect of instrumental support is less when parents have more severe physical limitations. A likelihood ratio test showed that the added interaction term significantly improves the model-fit ( $\chi^2 (9) = 39.00$ ,  $p < .000$ ). We interpret the results from the computed marginal effects

Table 1. Sample Characteristics of Parents Older Than 65 With At Least One Nonresident Adult Child<sup>a</sup>

|                                               | Depressed | Not depressed | n     | p Value <sup>b</sup> |
|-----------------------------------------------|-----------|---------------|-------|----------------------|
|                                               | 30.86     | 69.14         | 6,268 |                      |
| Gender                                        |           |               |       |                      |
| Women                                         | 61.41     | 38.59         | 3,548 | .000                 |
| Men                                           | 20.77     | 79.23         | 2,720 | .000                 |
| ADL <sup>a</sup>                              |           |               |       |                      |
| No limitations                                | 25.51     | 74.49         | 5,151 | .000                 |
| Mild limitations                              | 52.48     | 47.52         | 808   | .005                 |
| Medium limitations                            | 67.47     | 32.53         | 166   | .000                 |
| Severe limitations                            | 58.74     | 41.26         | 143   | .000                 |
| Living situation                              |           |               |       |                      |
| Lives alone                                   | 36.71     | 63.29         | 2,615 | .000                 |
| Lives with partner                            | 23.17     | 76.83         | 2,944 | .000                 |
| Lives with a child                            | 50.53     | 49.47         | 378   | .680                 |
| Lives with partner and child                  | 30.51     | 69.49         | 331   | .000                 |
| Contact with child                            |           |               |       |                      |
| Daily or several times a week                 | 30.68     | 69.32         | 3,944 | .000                 |
| Once a week                                   | 28.79     | 71.21         | 1,278 | .000                 |
| Less than once a week                         | 34.03     | 65.97         | 1,046 | .000                 |
| Education                                     |           |               |       |                      |
| No education                                  | 48.09     | 51.91         | 653   | .050                 |
| Primary                                       | 35.12     | 64.88         | 2,537 | .000                 |
| Lower secondary                               | 27.65     | 72.35         | 1,009 | .000                 |
| Upper secondary                               | 22.74     | 77.26         | 1,350 | .000                 |
| Tertiary                                      | 19.89     | 80.11         | 719   | .000                 |
| Employment                                    |           |               |       |                      |
| In work                                       | 9.43      | 90.57         | 53    | .000                 |
| Inactive                                      | 31.04     | 68.96         | 6,215 | .000                 |
| Making ends meet difficult                    |           |               |       |                      |
| Yes                                           | 40.41     | 59.59         | 2,455 | .000                 |
| No                                            | 24.70     | 75.30         | 3,813 | .000                 |
| Age                                           |           |               |       |                      |
| 65–69                                         | 23.38     | 76.62         | 1,262 | .000                 |
| 70–75                                         | 28.55     | 71.45         | 2,207 | .000                 |
| 76–80                                         | 32.22     | 67.78         | 1,443 | .000                 |
| 81+                                           | 40.12     | 59.88         | 1,356 | .000                 |
| Welfare regimes                               |           |               |       |                      |
| Familialistic (Italy, Spain, and Greece)      | 39.77     | 60.23         | 1,906 | .000                 |
| Hybrid (Belgium, France, and the Netherlands) | 30.30     | 69.70         | 2,129 | .000                 |
| Conservative (Austria and Germany)            | 25.91     | 74.09         | 1,096 | .000                 |
| Social democratic (Sweden and Denmark)        | 21.72     | 78.28         | 1,137 | .000                 |
| Stressful event in last 2 years               |           |               |       |                      |
| Yes                                           | 47.04     | 52.96         | 355   | .025                 |
| No                                            | 29.88     | 70.12         | 5,913 | .000                 |
| History of depressive mood                    |           |               |       |                      |
| Yes                                           | 48.03     | 51.97         | 1,495 | .002                 |
| No                                            | 25.48     | 74.52         | 4,773 | .000                 |
| Volunteering activity                         |           |               |       |                      |
| Yes                                           | 23.19     | 76.81         | 2,656 | .000                 |
| No                                            | 36.49     | 63.51         | 3,612 | .000                 |
| Number of children <sup>c</sup>               |           |               |       |                      |
| 1                                             | 30.63     | 69.37         | 1,244 | .000                 |
| 2                                             | 29.14     | 70.86         | 2,368 | .000                 |
| 3+                                            | 32.49     | 67.51         | 2,656 | .000                 |

(Table 1 continues)

Table 1 (continued)

|                                 | Not       |           | <i>n</i> | <i>p</i> Value <sup>b</sup> |
|---------------------------------|-----------|-----------|----------|-----------------------------|
|                                 | Depressed | depressed |          |                             |
|                                 | 30.86     | 69.14     | 6,268    |                             |
| Child lives < 5 km              |           |           |          |                             |
| Yes                             | 32.76     | 67.24     | 4,151    | .000                        |
| No                              | 27.11     | 72.89     | 2,117    | .000                        |
| Financial support to child      |           |           |          |                             |
| Yes                             | 26.54     | 73.46     | 893      | .000                        |
| No                              | 31.57     | 68.43     | 5,375    | .000                        |
| Instrumental support to child   |           |           |          |                             |
| Yes                             | 21.37     | 78.63     | 496      | .000                        |
| No                              | 31.67     | 68.33     | 5,772    | .000                        |
| Instrumental support from other |           |           |          |                             |
| No support                      | 29.02     | 70.98     | 5,292    | .000                        |
| Sporadic                        | 28.57     | 71.43     | 399      | .000                        |
| Every week                      | 47.04     | 52.96     | 423      | .014                        |
| Daily                           | 55.19     | 44.81     | 154      | .009                        |
| Instrumental support from child |           |           |          |                             |
| No support                      | 27.56     | 72.44     | 4,841    | .000                        |
| Sporadic                        | 34.48     | 65.52     | 525      | .000                        |
| Every week                      | 41.37     | 58.63     | 568      | .000                        |
| Daily                           | 55.09     | 44.91     | 334      | .001                        |
| <i>N</i>                        | 1,934     | 4,334     | 6,268    |                             |

Notes. ADL = activities of daily living;

<sup>a</sup>Row percentages shown for dummy and categorical variables.

<sup>b</sup>One-sample test of proportion testing the equality of row percentage proportions (Ha:  $p_1 \neq p_2$ ); *p* value reported.

<sup>c</sup>Number of children is a continuous variable.

with 95% CI in Figure 1. Parents with severe limitations who receive either sporadic or daily (frequent) support tend to be less depressed than parents with same level of limitations who receive no support (an inversed U-shaped association;  $\exp(-2.263) = 0.10$ , CI [0.03, 0.40];  $\exp(-1.884) = 0.15$ , CI [0.06, 0.40]). The opposite trend for parents with medium physical limitations appears, however, where parents who receive sporadic or daily support tend to be more depressed than those receiving weekly support ( $\exp(0.801) = 2.21$ , CI [0.08, 0.56]). Both of these results are in line with our expectations that receiving higher levels of support increases depression compared with receiving too little support. The expectation that receiving daily support will increase levels of depression holds for the groups with medium (weekly vs. daily support) and severe limitations (sporadic vs. weekly support), although receiving no support at all when suffering from severe limitations is the most detrimental. (To see the patterns across country regimes, refer to Supplementary Figure 1a–d.)

In Model 4, we tested Hypothesis 4, which proposed that receiving instrumental support is less strongly associated with depressive mood for women than for men. After noting the significant improvement of the model-fit ( $\chi^2(3) = 8.19$ ,  $p < .005$ ), the results show that women who receive weekly support face lower odds of a depressive mood than men who do not receive support ( $\exp(-.529) = 0.59$ , CI [0.38, 0.92]). Figure 2 (marginal effects with 95% CI) reveals that the effects of instrumental support vary for men and women. Namely for men,

receiving any support regardless of the intensity is related to higher depressive mood compared with men who do not receive support. For women, however, only daily support is associated with a higher depressive mood (to see how the pattern persists across country regimes, refer to Supplementary Figure 2a–d). Although the difference between women receiving no support and daily support is greater than the difference for men, confirming our hypothesis, the results might suggest that even for men there might be a loss of autonomy when receiving instrumental support from children.

In Model 5, we tested Hypothesis 5 where we added an interaction term between instrumental support and social interaction with children. The likelihood ratio test for the added interaction did not yield a significant improvement of the model-fit ( $\chi^2(5) = 7.29$ ,  $p = .19$ ), implying that there is no significant difference between parents who receive different levels of instrumental support and have different levels of frequency of contact with their children. Parents receiving sporadic instrumental support who contact their children once a week,  $\exp(-.358) = 0.70$ , CI [0.41, 1.20], or less than once a week,  $\exp(-.741) = 0.48$ , CI [0.26, 0.87], do not face different odds of being depressed compared with parents who have daily contact.

The effects of covariates in Models 2–5 were generally similar to those in Model 1, where the coefficients for main variable of interest—instrumental support from children and the interactions with functional limitations—grew in each subsequent model (please refer to Supplementary Table 3).

## DISCUSSION

As the majority of the European population continues to age and experience a deterioration of good physical health, more people will be at-risk at some time in their lives of experiencing depression or mental problems. This poses challenges when it comes to reconciling the need for instrumental support on one hand and the possible effects on mental health on the other.

Previous studies mainly used deficit models concerned with how physical impairment increases levels of depression (e.g., Ormel et al. 2002). Our study departs from this tradition and instead focuses on the social deficits that affect depression due to the fact that it may increase levels of dependency. We used self-determination theory to argue that individual characteristics such as physical needs and social resources (social interaction), relate to psychological needs for autonomy, competence, and relatedness that are essential for optimal mental health (Deci & Ryan, 2000). The positive association between physical impairment and depression may be buffered by receiving support from adult children, and more specifically practical household help that excludes personal care.

We examined the largely healthy older parents as indicated by the fact that about 24% received instrumental support. In addition, caregiving is uncommon (an estimated one out of five parents who received instrumental support also receive care). The variability in our sample with respect to

Table 2. Logistic Regression of the Association Between Depressive Mood and Instrumental Support From Adult Children

|                                                         | Model 1              | Model 2              | Model 3              | Model 4              | Model 5              |
|---------------------------------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|                                                         | OR [95% CI]          |
| Gender (ref. men)                                       |                      |                      |                      |                      |                      |
| Women                                                   | 1.82*** [1.59, 2.09] | 1.82*** [1.58, 2.09] | 1.81*** [1.57, 2.08] | 1.94*** [1.66, 2.27] | 1.95*** [1.67, 2.28] |
| ADL (no limitations)                                    |                      |                      |                      |                      |                      |
| Mild limitations                                        | 2.42*** [2.04, 2.86] | 2.42*** [2.05, 2.87] | 2.66*** [2.17, 3.26] | 2.66*** [2.17, 3.27] | 2.66*** [2.17, 3.27] |
| Medium limitations                                      | 3.69*** [2.57, 5.29] | 3.75*** [2.61, 5.39] | 4.37*** [2.72, 7.03] | 4.39*** [2.73, 7.06] | 4.37*** [2.71, 7.03] |
| Severe limitations                                      | 2.18*** [1.50, 3.17] | 2.22*** [1.52, 3.24] | 4.90*** [2.83, 8.48] | 4.90*** [2.83, 8.48] | 4.86*** [2.80, 8.42] |
| Living situation (ref. lives alone)                     |                      |                      |                      |                      |                      |
| Lives with partner                                      | 1.03 [0.89, 1.20]    | 1.09 [0.93, 1.28]    | 1.01 [0.87, 1.18]    | 1.00 [0.86, 1.17]    | 1.01 [0.86, 1.17]    |
| Lives with a child                                      | 1.47** [1.14, 1.88]  | 1.41** [1.19, 1.68]  | 1.43** [1.11, 1.84]  | 1.41** [1.10, 1.82]  | 1.41** [1.09, 1.81]  |
| Lives with partner and child                            | 1.08 [0.80, 1.46]    | 1.09 [0.93, 1.28]    | 1.05 [0.78, 1.42]    | 1.05 [0.78, 1.43]    | 1.05 [0.77, 1.42]    |
| Contact with child (ref. daily or several times a week) |                      |                      |                      |                      |                      |
| Once a week                                             | 1.09 [0.93, 1.28]    | 1.09 [0.93, 1.28]    | 1.09 [0.93, 1.29]    | 1.09 [0.93, 1.28]    | 1.16 [0.96, 1.39]    |
| Less than once a week                                   | 1.40*** [1.18, 1.67] | 1.41*** [1.19, 1.68] | 1.40*** [1.17, 1.66] | 1.39*** [1.17, 1.66] | 1.48*** [1.22, 1.79] |
| Country regime (ref. familialistic)                     |                      |                      |                      |                      |                      |
| Hybrid                                                  | 0.81* [0.69, 0.96]   | 0.82* [0.68, 0.98]   | 0.82* [0.68, 0.98]   | 0.82* [0.68, 0.99]   | 0.81* [0.67, 0.97]   |
| Conservative                                            | 0.71** [0.58, 0.88]  | 0.66*** [0.52, 0.85] | 0.65*** [0.51, 0.83] | 0.65*** [0.51, 0.83] | 0.64*** [0.50, 0.82] |
| Social democratic                                       | 0.56*** [0.46, 0.69] | 0.53*** [0.42, 0.68] | 0.53*** [0.42, 0.67] | 0.53*** [0.42, 0.67] | 0.52*** [0.41, 0.66] |
| Instrumental support from child (ref: no support)       |                      |                      |                      |                      |                      |
| Sporadic                                                | 1.32* [1.07, 1.64]   | 1.13 [0.75, 1.72]    | 1.21 [0.79, 1.85]    | 1.63 [0.97, 2.76]    | 1.77* [1.04, 3.00]   |
| Every week                                              | 1.15 [0.93, 1.43]    | 1.15 [0.77, 1.71]    | 1.30 [0.87, 1.96]    | 1.92* [1.14, 3.23]   | 1.92* [1.13, 3.28]   |
| Daily                                                   | 1.49** [1.14, 1.95]  | 1.36 [0.93, 2.00]    | 1.80** [1.16, 2.80]  | 1.69 [0.93, 3.07]    | 1.72 [0.94, 3.13]    |
| Instrumental support *Country regime                    |                      |                      |                      |                      |                      |
| Sporadic * Hybrid                                       |                      | 1.23 [0.71, 2.14]    | 1.20 [0.69, 2.10]    | 1.24 [0.71, 2.15]    | 1.45 [0.82, 2.55]    |
| Sporadic * Conservative                                 |                      | 0.88 [0.45, 1.73]    | 0.86 [0.44, 1.70]    | 0.86 [0.44, 1.70]    | 1.01 [0.51, 2.01]    |
| Sporadic * Social democratic                            |                      | 1.51 [0.84, 2.71]    | 1.55 [0.86, 2.79]    | 1.58 [0.88, 2.84]    | 1.77 [0.98, 3.21]    |
| Every week * Hybrid                                     |                      | 0.79 [0.47, 1.33]    | 0.83 [0.50, 1.39]    | 0.86 [0.52, 1.44]    | 0.87 [0.52, 1.45]    |
| Every week * Conservative                               |                      | 1.49 [0.85, 2.62]    | 1.49 [0.85, 2.59]    | 1.48 [0.85, 2.58]    | 1.50 [0.86, 2.63]    |
| Every week * Social democratic                          |                      | 0.97 [0.51, 1.82]    | 1.08 [0.58, 2.04]    | 1.12 [0.60, 2.10]    | 1.14 [0.60, 2.14]    |
| Daily * Hybrid                                          |                      | 1.09 [0.61, 1.93]    | 1.04 [0.58, 1.86]    | 1.04 [0.58, 1.86]    | 1.06 [0.59, 1.90]    |
| Daily * Conservative                                    |                      | 1.48 [0.72, 3.05]    | 1.41 [0.69, 2.89]    | 1.38 [0.67, 2.85]    | 1.40 [0.68, 2.90]    |
| Daily * Social democratic                               |                      | 0.91 [0.32, 2.56]    | 0.90 [0.32, 2.57]    | 0.89 [0.31, 2.56]    | 0.91 [0.32, 2.61]    |
| Instrumental support *ADL                               |                      |                      |                      |                      |                      |
| Sporadic * Mild limitations                             |                      |                      | 0.87 [0.48, 1.57]    | 0.86 [0.48, 1.54]    | 0.90 [0.50, 1.61]    |
| Sporadic * Medium limitations                           |                      |                      | 2.23 [0.41, 12.24]   | 2.05 [0.38, 11.18]   | 2.16 [0.40, 11.57]   |
| Sporadic * Severe limitations                           |                      |                      | 0.10** [0.03, 0.40]  | 0.11** [0.03, 0.43]  | 0.13** [0.03, 0.50]  |
| Every week * Mild limitations                           |                      |                      | 0.76 [0.47, 1.24]    | 0.74 [0.46, 1.21]    | 0.75 [0.46, 1.22]    |
| Every week * Medium limitations                         |                      |                      | 0.21** [0.08, 0.56]  | 0.21** [0.08, 0.54]  | 0.21** [0.08, 0.55]  |
| Every week * Severe limitations                         |                      |                      | 0.35 [0.12, 1.02]    | 0.34* [0.12, 1.00]   | 0.33* [0.12, 0.97]   |
| Daily * Mild limitations                                |                      |                      | 0.58 [0.33, 1.03]    | 0.57 [0.32, 1.02]    | 0.57 [0.32, 1.02]    |
| Daily * Medium limitations                              |                      |                      | 1.54 [0.46, 5.13]    | 1.51 [0.45, 5.06]    | 1.52 [0.45, 5.11]    |
| Daily * Severe limitations                              |                      |                      | 0.15*** [0.06, 0.40] | 0.15*** [0.06, 0.41] | 0.16*** [0.06, 0.41] |
| Instrumental support * Gender                           |                      |                      |                      |                      |                      |
| Sporadic * Women                                        |                      |                      |                      | 0.64 [0.41, 1.03]    | 0.64 [0.41, 1.02]    |
| Every week * Women                                      |                      |                      |                      | 0.59* [0.38, 0.92]   | 0.60* [0.38, 0.94]   |
| Daily * Women                                           |                      |                      |                      | 1.08 [0.61, 1.92]    | 1.08 [0.60, 1.93]    |
| Instrumental support * Contact with child               |                      |                      |                      |                      |                      |
| Sporadic * Once a week                                  |                      |                      |                      |                      | 0.70 [0.41, 1.20]    |
| Sporadic * Less than once a week                        |                      |                      |                      |                      | 0.48* [0.26, 0.87]   |
| Every week * Once a week                                |                      |                      |                      |                      | 0.88 [0.54, 1.42]    |
| Every week * Less than once a week                      |                      |                      |                      |                      | 1.15 [0.63, 2.08]    |
| Daily * Once a week                                     |                      |                      |                      |                      | 0.94 [0.44, 2.01]    |

Notes. ADL = activities of daily living; CI = confidence interval; OR = odds ratio. Exponentiated coefficients; 95% CIs in brackets. SHARE release 2.5.1. Own calculations; unweighted. Models restricted to respondents 65 and older who have at least one child ( $N = 6,268$ ) controlling for age, living situation, education, employment, making ends meet, self-rated physical health, stressful events, number of children, volunteering activity, history of depressive mood, child lives within 5 km, financial and instrumental support to child, instrumental support from other source.

\*Number of daily activities the respondent has difficulty with.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

health and social relationships demonstrates how the differential resources that parents possess impact how they experience support. The results show that for parents who

are severely physically impaired, those who receive at least some or a lot of instrumental support are less likely to be depressed than parents who receive no support. This reveals

a complex relationship, meaning that the volume of support plays a crucial role in the association between support and mental health. Compared with previous studies that use broader measures of social support, our findings confirm that instrumental support on its own not only could be “too much of a good thing” (Silverstein et al., 1996), but also that nothing is as detrimental as receiving no support at all when an individual is severely physically impaired. Similarly, our findings are consistent with previous research that instrumental support on its own (when it is not combined with other types of support) is negatively associated with mental health in Europe (Zunzunegui et al., 2001). However, in circumstances when there is a greater need for support (for people in bad health), caution should be exercised when examining only the negative effects of instrumental support on mental health.

It is not surprising that the relationship between varying intensity of instrumental support and depression remains stable across different European contexts. This suggests that although intergenerational transfers are dependent on country-specific norms and policies that govern intergenerational solidarity, the relationship between receiving too much or too little instrumental support and depression is comparable across different contexts. Although the country differences are important for mental health, the results show that individual characteristics still explain most of the variance in depressive mood.

As one of the goals is to explain the role of instrumental support in the commonly found gender difference in depression, we found that the frequency of support plays a crucial role. Results show that for men even receiving sporadic support is enough to cause deterioration of mental health (probably related to some experience of loss of autonomy). For women though, it seems that there is a higher threshold where only frequent instrumental support is associated with higher depressive mood. Overall, instrumental support accounts for more of the difference in the depressive mood for women. This finding is in line with the effects of ambivalence (conflicting emotions) on mental health in older parents toward adult children, where effects have been found for women but not for men (Pillemer & Suito, 2002; Willson, Shuey, & Elder, 2003).

Contrary to our expectations, social interaction with children seems to have no or an insignificant buffering effect to receiving instrumental support, although independently infrequent contact with children is associated with depressive mood (Buber & Engelhardt, 2008). Because the correlation between contact with children and instrumental support from children is weak in our study ( $\varphi_c = 0.0634$ ), it demonstrates that one is not a proxy of the other. It is thus possible that social interaction with one's spouse or other significant individuals from the personal networks of older parents contributes more than the social interaction from children. This is in line with self-determination theory that posits that intrinsic goals (related to community

and close relationships) as opposed to extrinsic ones contribute more to well-being. Previous research points out the importance of spouse and friends over adult children for well-being and quality of life of older adults (for review, see George, 2010). It remains to be investigated in what ways the interaction with friends and significant others can buffer the negative association between instrumental support from children and bad mental health. Our results should be interpreted with caution, as they do not necessarily show the limited power of social interaction, but perhaps the need for social contact beyond exclusively with adult children. Another possible explanation about the lack of a buffering effect of social interaction may be attributed to methodological reasons, as it is possible that perceived emotional support which differs from frequency of contact may have a significant buffering effect on receiving instrumental support.

An important limitation of the study is the cross-sectional design, which does not allow us to discern the causal relationship between instrumental support and depression. However, we have included an indicator of previous history of depressive mood to reduce the bias of overestimating the association between instrumental support and depressive mood. In addition, descriptive results show that most of the depressed parents do not receive instrumental support from children (but they may receive instrumental support from other sources). Notably, physical impairment is more strongly related to depressive mood than receipt of instrumental support, and from a theoretical viewpoint, lack of support may contribute to the incidence of depression only in cases where support is needed. The interaction effect between instrumental support and physical impairment suggests that instrumental support has an effect on depressed mood in addition to physical impairment, and the effect of physical impairment on depressed mood is relatively large. This is to be expected in addition to the fact that depression usually coincides with severe physical impairment. High-quality longitudinal data on the detailed forms of intergenerational support would be necessary to isolate the role that various types of support play in mental health.

In order to reduce bias in all models, we included a variety of factors known to influence depressive mood and the likelihood of receipt of instrumental support. Although our study took into account physical health and we found that it does moderate the relation between instrumental support and depressive mood, it is still possible that it may also mediate their relation (Jahn & Cukrowicz, 2012). In summary, this study highlights that heterogeneity in older parents with regards to their physical needs produces different and nuanced associations between instrumental support and mental health.

#### SUPPLEMENTARY MATERIAL

Supplementary material can be found at: <http://psychogerontology.oxfordjournals.org/>

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## REFERENCES

- Alavinia, S. M., & Burdorf, A. (2008). Unemployment and retirement and ill-health: A cross-sectional analysis across European countries. *International Archives of Occupational and Environmental Health*, 82, 39–45. doi:10.1007/s00420-008-0304-6
- Albertini, M., Kohli, M., & Vogel, C. (2007). Intergenerational transfers of time and money in European families: Common patterns — different regimes? *Journal of European Social Policy*, 17, 319–334. doi:10.1177/0958928707081068
- Antonucci, T. C. (2001). Social relations. In J. E. Birren & K. W. Schaie (Eds.), *Handbook of the psychology of aging* (Vol. 3, pp. 53–77). London, UK: Gulf Professional Publishing.
- Antonucci, T. C., & Jackson, J. S. (1987). Social support, interpersonal efficacy, and health: A life course perspective. In L. L. Carstensen & B. A. Edelstein (Eds.), *Handbook of clinical gerontology* (pp. 291–311). New York: Pergamon Press.
- Aquilino, W. S. (1990). The likelihood of parent-adult child coresidence: Effects of family structure and parental characteristics. *Journal of Marriage and the Family*, 52, 405–419. doi:10.2307/353035
- Barry, L. C., Allore, H. G., Guo, Z., Bruce, M. L., & Gill, T. M. (2008). Higher burden of depression among older women: The effect of onset, persistence, and mortality over time. *Archives of General Psychiatry*, 65, 172–178. doi:10.1001/archgenpsychiatry.2007.17
- Bengtson, V. L., Bilbarz, J. T., & Roberts, R. (2002). *How families still matter: A longitudinal study of youth in two generations*. Cambridge: Cambridge University Press.
- Bengtson, V. L., & Black, K. D. (1973). Intergenerational relations and continuities in socialization. *Life-Span Development Psychology: Personality and Socialization*, 207–234.
- Bengtson, V. L., & Roberts, R. E. L. (1991). Intergenerational solidarity in aging families: An example of formal theory construction. *Journal of Marriage and Family*, 53, 856–870. doi:10.2307/352993
- Berkman, L. F., Glass, T., Brissette, I., & Seeman, T. E. (2000). From social integration to health: Durkheim in the new millennium. *Social Science and Medicine* (1982), 51, 843–857. doi:10.1016/S0277-9536(00)00065-4
- Blazer, D. G. (2003). Depression in late life: Review and commentary. *The Journals of Gerontology, Series A: Biological Sciences and Medical Sciences*, 58, 249–265. doi:10.1093/gerona/58.3.M249
- Blieszner, R., & Mancini, J. A. (1987). Enduring ties: Older adults' parental role and responsibilities. *Family Relations*, 36, 176–180. doi:10.2307/2807972
- Bonsang, E. (2007). How do middle-aged children allocate time and money transfers to their older parents in Europe? *Empirica*, 34, 171–188. doi:10.1007/s10663-007-9034-3
- Börsch-Supan, A., & Jürges, H. (Eds.). (2005). *The survey of health, ageing and retirement in Europe – methodology*. Mannheim, Germany: MEA.
- Bozo, O., Toksabay, N. E., & Kürüm, O. (2009). Activities of daily living, depression, and social support among elderly Turkish people. *The Journal of Psychology*, 143, 193–205. doi:10.3200/JRLP.143.2.193-206
- Brandt, M., Haberkern, K., & Szydlik, M. (2009). Intergenerational help and care in Europe. *European Sociological Review*, 25(5), 585–601. doi:10.1093/esr/jcn076
- Broek, T., Dykstra, P., & Schenk, N. (2014, January). The task specialization model revisited: Home care, residential care and intergenerational care and help in Europe. Paper presented at the First Consortium Meeting of Families And Societas, Tallinn, Estonia.
- Buber, I., & Engelhardt, H. (2008). *Children's impact on the mental health of their older mothers and fathers: Findings from the survey of health, ageing and retirement in Europe*. *European Journal of Ageing*, 5, 31–45. doi: 10.1007/s10433-008-0074-8
- Cohen, E. S. (1988). The elderly mystique: Constraints on the autonomy of the elderly with disabilities. *The Gerontologist*, 28, 24–31. doi:10.1093/geront/28.Supp1.24
- Cohler, B. J. (1983). Autonomy and interdependence in the family of adulthood: A psychological perspective. *The Gerontologist*, 23, 33–39. doi:10.1093/geront/23.1.33
- Daatland, S. O., & Herlofson, K. (2003). 'Lost solidarity' or 'changed solidarity': A comparative European view of normative family solidarity. *Ageing and Society*, 23, 537–560. doi:10.1007/s10433-005-0001-1
- Daatland, S. O., & Lowenstein, A. (2005). Intergenerational solidarity and the family-welfare state balance. *European Journal of Ageing*, 2, 174–182.
- Dalgard, O. S., Bjørk, S., & Tambs, K. (1995). Social support, negative life events and mental health. *British Journal of Psychiatry*, 166, 29–34. doi:10.1192/bjp.166.1.29
- Dalgard, O. S., Dowrick, C., Lehtinen, V., Vazquez-Barquero, J. L., Casey, P., Wilkinson, G., . . . Dunn, G. (2006). Negative life events, social support and gender difference in depression: A multinational community survey with data from the ODIN study. *Social Psychiatry and Psychiatric Epidemiology*, 41, 444–451. doi:10.1007/s00127-006-0051-5
- de Jong Gierveld, J., & Dykstra, P. (2002). *The long-term rewards of parenting: Older adults' marital history and the likelihood of receiving support from adult children*. New York: Springer.
- Deci, E. L. (1980). *The psychology of self-determination*. Lexington, MA: Heath.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum Press.
- Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11, 227–268. doi:10.1207/S15327965PLI1104\_01
- Deci, E. L., & Ryan, R. M. (2011). Levels of analysis, regnant causes of behavior and well-being: The role of psychological needs. *Psychological Inquiry*, 22, 17–22. doi:10.1080/1047840X.2011.545978 ER
- DuPertuis, L. L., Aldwin, C. M., & Bosse, R. (2001). Does the source of support matter for different health outcomes? Findings from the

- Normative Aging Study. *Journal of Aging and Health*, 13, 494–510. doi:10.1177/089826430101300403
- Esping-Andersen, G. (1999). *Social foundations of postindustrial economies*. Oxford: Oxford University Press.
- Fine, M., & Glendinning, C. (2005). Dependence, independence or interdependence? Revisiting the concepts of care and dependency. *Ageing and Society*, 25, 601–622. doi:10.1017/S0144686X05003600
- Fiori, K. L., & Denckla, C. A. (2012). Social support and mental health in middle-aged men and women: A multidimensional approach. *Journal of Aging and Health*, 24, 407–438. doi:10.1177/0898264311425087
- George, L. K. (2010). Still happy after all these years: Research frontiers on subjective well-being in later life. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 65, 331–339.
- Grundy, E. (2005). Reciprocity in relationships: Socio-economic and health influences on intergenerational exchanges between third age parents and their adult children in Great Britain. *The British Journal of Sociology*, 56, 233–255. doi:10.1111/j.1468-4446.2005.00057.x
- Grundy, E. (2010). Ageing in advanced industrial states. In S. Tuljapurkar, N. Ogawa, & A. H. Gauthier (Eds.), *Family support for older people: Determinants and consequences*. (Vol. 8, pp. 197–222) Amsterdam, Netherlands: Springer.
- Gur-Yaish, N., Zisberg, A., Sinoff, G., & Shadmi, E. (2013). Effects of instrumental and psychological support on levels of depressive symptoms for hospitalized older adults. *Aging and Mental Health*, 17, 646–653. doi:10.1080/13607863.2012.758234
- Hank, K., & Jürges, H. (2007). Gender and the division of household labor in older couples: A European perspective. *Journal of Family Issues*, 28, 399–421. doi:10.1177/0192513X06296427
- Igel, C., Brandt, M., Haberkern, K., & Szydlik, M. (2009). Specialization between family and state intergenerational time transfers in Western Europe. *Journal of Comparative Family Studies*, 40, 203–226.
- Isengard, B., & Szydlik, M. (2012). Living apart (or) together? Coresidence of elderly parents and their adult children in Europe. *Research on Aging*, 34, 449–474. doi:10.1177/0164027511428455
- Jahn, D. R., & Cukrowicz, K. C. (2012). Self-rated health as a moderator of the relation between functional impairment and depressive symptoms in older adults. *Aging and Mental Health*, 16, 281–287. doi:10.1080/13607863.2011.598847
- Kalmijn, M., & Saraceno, C. (2008). A comparative perspective on intergenerational support. *European Societies*, 10, 479–508. doi:10.1080/14616690701744364
- Kaul, M., & Lakey, B. (2003). Where is the support in perceived support? The role of generic relationship satisfaction and enacted support in perceived support's relation to low distress. *Journal of Social and Clinical Psychology*, 22, 59–78. doi:10.1521/jscp.22.1.59.22761
- Kessler, C. R. (2003). Epidemiology of women and depression. *Journal of Affective Disorders*, 74, 5–13. doi:10.1016/S0165-0327(02)00426-3
- Knijn, T. C. M., & Liefbroer, A. C. (2006). More kin than kind: Instrumental support in families. In P. A. Dykstra, M. Kalmijn, T. C. M. Knijn, A. E. Komter, A. C. Liefbroer, & C. H. Mulder (Eds.), *Family solidarity in the Netherlands*, (pp.89–105). Amsterdam, The Netherlands: Dutch University Press.
- Komter, A. E., & Vollebergh, W. A. M. (2002). Solidarity in Dutch families family ties under strain? *Journal of Family Issues*, 23, 171–188.
- Koropecy-Cox, T. (2002). Beyond parental status: Psychological well-being in middle and old age. *Journal of Marriage and Family*, 64, 957–971. doi:10.1111/j.1741-3737.2002.00957.x
- Krause, N. (1997). Social support and feelings of personal control in later life. In G. R. Pierce, B. Lakey, I. G. Sarason, & B. R. Sarason (Eds.), *Sourcebook of social support* (pp. 335–368). New York: Plenum Press.
- Ladin, K., & Reinhold, S. (2013). Mental health of aging immigrants and native-born men across 11 European countries. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 68, 298–309. doi:10.1093/geronb/gbs163
- Lee, G. R., Netzer, J. K., & Coward, R. T. (1995). Depression among older parents: The role of intergenerational exchange. *Journal of Marriage and Family*, 57, 823–833. doi:10.2307/353935
- Lee, Y. (2000). The predictive value of self assessed general, physical, and mental health on functional decline and mortality in older adults. *Journal of Epidemiology and Community Health*, 54, 123–129. doi:10.1136/jech.54.2.123
- Liebler, C. A., & Sandefur, G. D. (2002). Gender differences in the exchange of social support with friends, neighbors, and co-workers at midlife. *Social Science Research*, 31, 364–391. doi:10.1016/S0049-089X(02)00006-6
- Litwak, E., Silverstein, M., Bengtson, V. L., & Hirst, Y. W. (2003). Theories about families, organizations, and social supports. In V. L. Bengtson & A. Lowenstein (Eds.), *Global aging and challenges to families* (pp. 27–53). Hawthorne: Aldine de Gruyter.
- Lowenstein, A., & Daatland, S. O. (2006). Filial norms and family support in a comparative cross-national context: Evidence from the OASIS study. *Ageing and Society*, 26, 203–224. doi:10.1017/S0144686X05004502
- Mendes de Leon, C. F., Seeman, T. E., Baker, D. I., Richardson, E. D., & Tinetti, M. E. (1996). Self-efficacy, physical decline, and change in functioning in community-living elders: A prospective study. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 51, S183–S190. doi:10.1093/geronb/51B.4.S183
- Motel-Klingebiel, A., Tesch-Roemer, C., & Von Kondratowitz, H. J. (2005). Welfare states do not crowd out the family: Evidence for mixed responsibility from comparative analyses. *Ageing and Society*, 25, 863–882. doi:10.1017/S0144686X05003971
- Mutran, E., & Reitzes, D. C. (1984). Intergenerational support activities and well-being among the elderly: A convergence of exchange and symbolic interaction perspectives. *American Sociological Review*, 49, 117–130.
- Nolen-Hoeksema, S. (2001). Gender differences in depression. *Current Directions in Psychological Science*, 10, 173–176. doi:10.1111/1467-8721.00142
- Ogg, J., & Renaut, S. (2006). The support of parents in old age by those born during 1945–1954: A European perspective. *Ageing and Society*, 26, 723–744. doi:10.1017/S0144686X06004922
- Ormel, J., Rijdsdijk, F. V., Sullivan, M., van Sonderen, E., & Kempen, G. I. (2002). Temporal and reciprocal relationship between IADL/ADL disability and depressive symptoms in late life. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 57, P338–P347. doi:10.1093/geronb/57.4.P338
- Oxman, T. E., Berkman, L. F., Kasl, S., Freeman, D. H. Jr., & Barrett, J. (1992). Social support and depressive symptoms in the elderly. *American Journal of Epidemiology*, 135, 356–368.
- Oxman, T. E., & Hull, J. G. (2001). Social support and treatment response in older depressed primary care patients. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 56, 35–45. doi:10.1093/geronb/56.1.P35
- Pagan-Rodriguez, R. (2010). Onset of disability and life satisfaction: Evidence from the German socio-economic panel. *European Journal of Health Economics*, 11, 471–485. doi:10.1007/s10198-009-0184-z
- Panzarella, C., Alloy, L., & Whitehouse, W. (2006). Expanded hopelessness theory of depression: On the mechanisms by which social support protects against depression. *Cognitive Therapy and Research*, 30, 307–333. doi:10.1007/s10608-006-9048-3
- Pillemer, K., & Suito, J. J. (2002). Explaining mothers' ambivalence toward their adult children. *Journal of Marriage and Family*, 64, 602–613. doi:10.1111/j.1741-3737.2002.00602.x
- Ploubidis, G. B., & Grundy, E. (2009). Later-life mental health in Europe: A country-level comparison. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 64, 666–676. doi:10.1093/geronb/gbp026
- Prince, M. J., Harwood, R. H., Thomas, A., & Mann, A. H. (1998). A prospective population-based cohort study of the effects of disablement

- and social milieu on the onset and maintenance of late-life depression. The Gospel Oak Project VII. *Psychological Medicine*, 28, 337–350.
- Prince, M. J., Reischies, F., Beekman, A. T., Fuhrer, R., Jonker, C., Kivela, S. L., . . . Copeland, J. R. (1999). Development of the EURO-D scale—a European Union initiative to compare symptoms of depression in 14 European centres. *British Journal of Psychiatry*, 174, 330–338. doi:10.1192/bjp.174.4.330
- Reher, D. S. (1998). Family ties in Western Europe: Persistent contrasts. *Population and Development Review*, 24, 203–234. doi:10.2307/2807972
- Reinhardt, J. P., Boerner, K., & Horowitz, A. (2006). Good to have but not to use: Differential impact of perceived and received support on well-being. *Journal of Social and Personal Relationships*, 23, 117–129. doi:10.1177/0265407506060182
- Silverstein, M., & Bengtson, V. L. (1994). Does intergenerational social support influence the psychological well-being of older parents? The contingencies of declining health and widowhood. *Social Science and Medicine* (1982), 38, 943–957. doi:10.1016/0277-9536(94)90427-8
- Silverstein, M., Chen, X., & Heller, K. (1996). Too much of a good thing? Intergenerational social support and the psychological well-being of older parents. *Journal of Marriage and Family*, 58, 970–982. doi:10.2307/353984
- Silverstein, M., Parrott, T. M., & Bengtson, V. L. (1995). Factors that predispose middle-aged sons and daughters to provide social support to older parents. *Journal of Marriage and the Family*, 57, 465–475. doi:10.2307/353699
- Solky-Butzel, J., & Ryan, R. (1997). The dynamics of volitional reliance: A motivational perspective on dependence, independence, and social support. In G. R. Pierce, B. Lakey, I. G. Sarason, & B. R. Sarason (Eds.), *Sourcebook of social support and personality*, (pp. 49–67) New York, NY: Plenum.
- Spitze, G., & Logan, J. (1990). Sons, daughters, and intergenerational social support. *Journal of Marriage and Family*, 52, 420–430. doi:10.2307/353036
- Walen, H. R., & Lachman, M. E. (2000). Social support and strain from partner, family, and friends: Costs and benefits for men and women in adulthood. *Journal of Social and Personal Relationships*, 17, 5–30. doi:10.1177/0265407500171001
- Ward, R., Logan, J., & Spitze, G. (1992). The influence of parent and child needs on coresidence in middle and later life. *Journal of Marriage and the Family*, 54, 209–221. doi:10.2307/353288
- Willson, A. E., Shuey, K. M., & Elder, G. H. (2003). Ambivalence in the relationship of adult children to aging parents and in-laws. *Journal of Marriage and Family*, 65, 1055–1072. doi:10.1111/j.1741-3737.2003.01055.x
- Wolff, J. L., & Agree, E. M. (2004). Depression among recipients of informal care: The effects of reciprocity, respect, and adequacy of support. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 59, S173–S180. doi:10.1093/geronb/59.3.S173
- Zunzunegui, M. V., Béland, F., & Otero, A. (2001). Support from children, living arrangements, self-rated health and depressive symptoms of older people in Spain. *International Journal of Epidemiology*, 30, 1090–1099. doi:10.1093/ije/30.5.1090