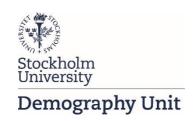


Filial care in Sweden:

Does childhood family dissolution and parents' present living arrangements matter for adult children's support?

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Linda Kridahl

Stockholm University Demography Unit, Stockholm University

Ann-Zofie Duvander

Stockholm University Demography Unit, Stockholm University

Abstract:

The study examines adult children's propensity to provide personal care to older parents in Sweden by gender of adult child, parental breakup in childhood and parent's living arrangements. Data are from the Swedish Generations and Gender Survey from 2012/2013. OLS regression analyses examined personal care separately for mother and fathers. Adult daughters are more likely than sons to provide personal care to older mothers and fathers. Parental breakup in childhood does not lead to differences in personal care. The only exception being that daughters who experience breakup provide more care for their mothers. Children, especially daughters, help lone parents more often than other parents, but children's care provision does not differ for parents living with the other parent and re-partnered parents. Gender of adult child and parent's living arrangements operate in slightly different ways regarding care provided for mothers and fathers, and living arrangements represent a central predictor for whether children provide filial care. Particularly, the dominant kinship pattern is care provided from daughters to mother and through the mother's line and to parents in vulnerable situations. The study discusses the results in relation to intergenerational solidarity theory, matrilineal care system and policy outlooks.

Keywords: Informal care, gender, parental breakup, parental partnership, single living, Nordic welfare state

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Introduction

In most populations, the parent-child relationship is enduring over the life course, but dependencies and the strength of the relationship vary among individuals and across time. The life course perspective connects the relationship between adult children and their parents to what happened during childhood and as well as the current situation of the person needing help. In this study, we asked whether parental breakup during childhood shapes adult children's caregiving of older parents and whether parents' present living arrangement influence caregiving when parents are in a vulnerable situation. We additionally ask whether adult daughters and sons behave similarly. These questions are posed in Sweden, where eldercare is not primarily a family responsibility (Jegermalm, Hermansen, & Fladmoe, 2019) and where gender egalitarian ideas are widespread.

Consistent with the decrease in the availability of eldercare since the 1980s in Sweden (Szebehely & Meagher, 2018), informal caregiving has increased among both women and men (Jegermalm & Grassman, 2012; Szebehely, Ulmanen, & Sand, 2014). A consistent finding across contexts is that adult children, particularly daughters, provide help to their parents (Brandt, Haberkern, & Szydlik, 2009; Dwyer & Coward, 1991; Mureşan, 2017). The vast majority of Swedish studies, however, have examined care without distinguishing who receives the care (see e.g. Jegermalm, 2006; Szebehely & Ulmanen, 2012). We extend the earlier literature by considering both the provider and the receiver in adult child-parental relationships.

There is a lack of empirical findings on the circumstances in which adult children care for older parents that where life-changing events such as childhood family dissolution is considered. This study focuses on adult children's personal care (i.e., regular day-to-day activities) for older parents based on three predictors: gender of child, experience of parental breakup in childhood and parent's living arrangements in late life. By using the population-representative Swedish Generations and Gender Survey (GGS) from 2012/2013, the study illuminates the contemporary situation in a Nordic welfare context. Sweden has one of the world's oldest populations, but public spending on eldercare has not increased in proportion to increases in the aging population (Szebehely & Meagher, 2018). Hence, the role of intergenerational caregiving is likely to become increasingly important (Jegermalm et al., 2019). However, adult children's potential caregiving may be influenced by earlier life events, such as childhood parental breakup, which may indicate a more distant relationship to parents (Coleman, Ganong, & Cable, 1997; Silverstein & Bengtson, 1997; Webster & Herzog, 1995). Sweden has had high divorce rates since the 1970s (Eurostat, 2019), making it an interesting case study. A few earlier studies investigated the same question with mixed results (e.g., Kaljmin 2013; Muresan, 2017). The long-term high divorce rate in Sweden makes expectations in both directions possible; the negative effects of parental breakup on filial care may be both more and less pronounced. The Swedish GGS includes parental breakup in childhood and caregiving for mothers and fathers separately; hence, we can examine the gendered consequences of parental breakup. The study also focuses on parents' current living arrangements, as they indicate both constraints and the availability of support. We are particularly interested in parents who live alone because they are often in a more vulnerable situation, but we are also interested in re-partnered parents, which may indicate changed ties and solidarity between adult children and parents.

Previous research on care for older parents

Adult individuals of all ages engage in informal care, but increasing age leads to greater likelihood of providing care (Brandt et al., 2009). Whether and how much an individual provides care may depend on the family situation. However, the results are mixed across countries. For instance, in a cross-national European study, Brandt et al. (2009) found that partnered individuals provide less care while a Canadian study found that men's involvement in care did not differ by marital status (Campbell & Martin-Matthews, 2003). Swedish studies appear to indicate that married individuals engage most in caregiving (Jegermalm, 2006; Jegermalm & Grassman, 2012).

The adult child's education level can further influence parent-care involvement, although, the findings have been mixed, often by type of care. For instance, Muresan (2017) found that middle- and high-educated children are more likely to provide financial and emotional support for parents but not instrumental support. Bonsang (2007) did not find higher education to influence number of hours of time assistance to parents in cross-national study. A Swedish study found no differences by education levels between groups of caregivers and non-caregivers (Jegermalm & Grassman, 2012).

Additionally, some studies have found that having gainful employment and working longer hours are associated with providing less help to parents (Doty, Jackson, & Crown, 1998; Jegermalm & Grassman, 2012), while some studies have found no effect (Brandt et al., 2009). Jegermalm and Grassman (2012) found a decreasing gap over time between those who were gainfully employed and those who were not in Sweden. Moreover, having other obligations, such as taking care of dependent children, may negatively influence caregiving for older parents (Brandt et al., 2009; Sarkisian & Gerstel, 2004). Previous research has indicated that having siblings eases the burden of filial care (Gerstel & Gallagher, 2001), and a greater number of siblings decreases the likelihood of caregiving (Brandt et al., 2009; Grundy & Read, 2012; Jegermalm & Sundström, 2015). Other factors that positively influence adult children's care for parents are geographical closeness (Mureşan, 2017), good subjective relationship quality (Ganong & Coleman, 2006), and good health of the caregiver (Bonsang, 2007). In sum, the literature on adult children's caregiving for older parents indicated that the child's demographic characteristics, socioeconomic resources, and time availability affect filial care.

Theoretical framework

Intergenerational solidarity theory suggests that the child-parent relationship is embedded in past and present family structures (Bengtson, Giarrusso, Mabry, & Silverstein, 2002; Bengtson & Oyama, 2010). The theory consists of six analytical dimensions of intergenerational solidarity: affection, association, consensus, norms, function, and structure. Affectual solidarity reflects the sentiments held towards family members, and consensual solidarity is the degree of agreement in, for instance, opinions and attitudes between generations. Associational solidarity is the frequency and type of contact between generations. Normative solidarity is the strength of commitment to perform familial roles and meet familial obligations. Family members, such as adult children, represent a latent resource for an older parent, which can be activated in times of need as functional solidarity, often through exchanges of different types of support. Whether an older parent needs and receives support from a child is linked to structural solidarity, e.g., proximity to family members, size of family and health of family members. The theory acknowledges both positive aspects, such as feelings of affection and closeness between family generations, and negative aspects, such as conflicts, as severe conflict may greatly weaken bonds and in the worst case terminate the relationship. For instance, what occurs early in life may have significant effects on later life family solidarity. However, the theory underscores the relatively static role of structures and behavioral expectations, as it is challenging to break out of role expectations and responsibilities. Normative, functional and structural solidarity are part of the study's framework.

Intergenerational solidarity theory does not include a gender dimension; however, that does not mean that gender roles and norms are absent. Both theoretical and empirical studies using the theory have suggested that there is a gender difference in the bonds and solidarity between parents and children. Although findings vary by type of care, a common finding is that daughters provide care for family members more often than sons (Bonsang, 2007; Kalmijn, 2007). The gender difference is often explained by gender-specific employment patterns and family responsibilities (Chesley & Poppie, 2009). We expect gender differences to be relatively small in Sweden, as both women and men engage in paid labor throughout the life course, which previous studies have shown reduces the gender gap in the provision of help to parents (Sarkisian & Gerstel, 2004). However, Swedish descriptive findings have found that compared to men, women provide more informal care and are more engaged in personal care (Jegermalm, 2006; Jegermalm, Malmberg, & Sundström, 2014; Szebehely et al., 2014). Based on these findings, the study's first hypothesis is that *adult daughters are more likely to provide personal care for older parents than adult sons* (Hypothesis 1).

Solidarity theory would predict that divorce and remarriage weakens support to parents, particular fathers. Indeed, empirical studies have found divorce and remarriage to have negative long-term effects on the child-parent relationship and produce weaker feelings of solidarity, even in peaceful separations

(Kalmijn, 2013; Kaufman & Uhlenberg, 1998; Webster & Herzog, 1995). Children may be faced with loyalty conflicts, which may make them draw closer to one parent, often the mother (Amato & Afifi, 2006). Consequently, growing up with divorced parents may negatively influence intergenerational functional solidarity, especially for fathers (Kalmijn, 2007, 2015; Mureşan, 2017). Although Sweden has had high divorce rates over time (OECD, 2019) and a high prevalence of informal care (Szebehely et al., 2014), the consequences of parental breakup in childhood on care for older parents are unknown. Following the theoretical and empirical findings, we expect that *adult children who did not experience* parental breakup in childhood are more likely to provide personal care to older parents than adult children who experienced parental breakup in childhood (Hypothesis 2).

Moreover, as daughters seems to have stronger feelings of filial responsibility and exhibit more supportive behavior than sons (Silverstein, Gans, & Yang, 2006), they may be keener to conform to the role of caregiver even after experiencing parental breakup in childhood. Hence, we expect that *compared* to adult sons who experienced parent breakup, adult daughters who experienced parental breakup in childhood are more likely to provide personal care to older parents (Hypothesis 3).

Structural solidarity would predict that parents with different living arrangements would be associated with different care needs as well as children would have different obligations and opportunities to provide care to the parent. Being in a coresidential union has often been portrayed as protective factor for various negative outcomes. Studies have consistently found older lone individuals to be more vulnerable than partnered individuals, e.g., fewer socioeconomic resources and higher morbidity and mortality (Burstrom et al., 2010; Weitoft, Burström, & Rosén, 2004). An older lone parent may expect and need more support from an adult child than a partnered parent, which previous international studies have found (Ikkink, van Tilburg, & Knipscheer, 1999; Kalmijn, 2007). Thus, we expect that *adult children are more likely to provide personal care to older parents who live alone than to older partnered parents* (Hypothesis 4). Structural solidarity indicate that the vulnerable situation of lone parents will lead both daughters and sons are likely to provide care. Hence, we expect that *there is no gender difference among adult children in providing personal care to older lone mothers and fathers* (Hypothesis 5).

Moreover, structural solidarity may also predict different types of partnerships to be associated with different needs and levels of closeness to the parent. For instance, previous research has found adult children with a re-partnered parents to provide less support to the parent compared to adult children with intact nuclear family (Ganong & Coleman, 2006; Kalmijn, 2007, 2013). Accordingly, we expect that adult children are less likely to provide personal care to older re-partnered parents than to parents who live with the other parent (Hypothesis 6).

Previous international studies have shown that adult children, particularly daughters, provide more support to older mothers than older fathers (Brandt et al., 2009; Kalmijn, 2007; Mureşan, 2017; Silverstein & Bengtson, 1997; Silverstein et al., 2006), also in Sweden (Jegermalm, 2006). However, other factors such as age, living alone and a greater need for care may be confounding factors here. Nonetheless, as maternal bonds are often stronger than paternal bonds and may become stronger after a parental divorce (Kalmijn, 2007; Kaufman & Uhlenberg, 1998; Silverstein & Bengtson, 1997), we find it vital to examine the consequences of parental breakup and parents' living arrangements on caregiving for mothers and fathers separately.

Data and methods

The study uses the Swedish GGS for 2012/2013 (Thomson, Andersson, Dahlberg, & Tollebrant, 2015). The sample is representative of the Swedish population aged 18-79 years. In total, 9688 individuals participated in the survey, corresponding to a response rate of 54 percent. The questionnaire includes questions on personal care to parents, relationship histories, labor market attachment, socioeconomic status, health and wellbeing, and childhood events. As the study focuses on children's personal care for older parents, we selected respondents who were of the ages most likely to provide filial care, i.e., 37-77 years at interview. The effective subsamples consist of 3571 respondents with a mother alive and 2466 individuals with a father alive. This design means that a respondent can be in both subsamples if both parents are alive.

Dependent variable

The study employs multivariate OLS regression analyses in which the dependent dichotomous variables are personal care for mother or father separately. The respondents were asked whether they regularly provided personal care, e.g., eating, getting up, dressing, bathing, or using the toilet. In total, 5 percent of daughters and 3 percent of sons reported providing personal care to the mother, and 4 percent of daughters and 2 percent of sons reported providing personal care to the father (Table 1). The forthcoming models are stratified by parent's gender, enabling us to easily distinguish gender differences.

Table 1. Prevalence of adult children's personal care provided to mothers and fathers

	•	Sex of adult child						
		Daug	ghter	So	n			
		n	%	n	%			
Personal care to mother	Yes No	101 1744	5 95	52 1674	3 97			
Personal care to father	Total Yes	1845 44	100	1726 21	100			
	No	1235	96	1166	98			
	Total	1279	100	1187	100			

Fewer adult children reported providing personal care to parents in the Swedish GGS, compared with other Swedish studies (Jegermalm et al., 2014; Szebehely et al., 2014). The reasons for the differences are most likely the operationalization of personal care and that other studies have used select samples. To validate our data and findings, we estimate the prevalence of caring for parents in Sweden by using another high-quality and frequently used data source, the Survey of Health and Ageing in Europe (SHARE). The fourth wave of SHARE for Sweden from 2011/2012 is highly comparable to the Swedish GGS, as the questions on personal care are very similar. In a subsample of the same ages (1492 individuals), 6 percent reported regularly providing care to a mother, and 2 percent to a father. These numbers are in line with those of the Swedish GGS. Muresan (2017) also used the GGS to conduct a cross-national study (not including Sweden) and found that similar shares reported providing personal care to their parents in Norway and Germany, while the results were slightly higher in eight other European countries.

Independent variables

Gender of the adult child, parental breakup in childhood and parent's present living arrangements are our central independent variables. For parental breakup, we follow Muresan (2017) definition of parental breakup occurring before age 15. We distinguish between four types of parental living arrangements: 1) parent lives with the other parent, 2) parent lives with a partner who is not the other parent, 3) parent lives alone and 4) other living arrangements (e.g. relatives, residential home or the adult child). In many other countries, it would be relevant to include coresidence with children as a separate category, but only approximately two percent of adult children coreside with parents in Sweden (Larsson, 2007). "Other living arrangements" are included in the analyses but are not the focus of the study and thus excluded from the presentation of the results. Table 2 displays the descriptive statistics of parental breakup and parents' present living arrangements and descriptive tables of adult children's personal care for older parents by parental breakup and parents' present living arrangements are presented in the Appendix (Tables A1 and A2).

The analyses additionally include characteristics of the adult child that are likely to influence filial care, namely, age, activity status, education level, partner status, child living in the household, number of siblings, distance to parents and health status. Table 2 displays the descriptive statistics for these variables. Age is categorized in the descriptive statistics but continuous in the analytical models because age is expected to have a linear relationship to filial care. Activity status is categorized into 1) employed, 2) unemployed, 3) retired, and 4) other. The last category includes parental leave, sick leave, and studying. The variable children living in the household is a dichotomous variable that measures potentially conflicting multigenerational responsibilities. In contrast, having siblings may ease the burden of taking care of aging parents. Number of siblings is categorized into 1) no siblings alive or ever 2) one sibling, 3) two siblings and 4) three or more siblings. Distance to parents is assessed in terms of time in hours to mother and father (separately) and included as a continuous measure, as distance is expected to have a linear relationship to filial care (displayed as a categorical variable to show the distribution in Table 2). Regarding respondent's health status, we employ the question: *How is your health in general? Would you say it is very good, good, fair, poor or very poor?* The variable is categorized into 1) very good or good, 2) fair and 3) poor or very poor.

Table 2. Descriptive statis	atistics of the two samples in which the respondents had a mother or father a Respondents Respondents								
		nother	•	father					
			ve		ve				
		n	%	n	%				
Sex of adult child	Women	1845	52	1279	52				
Sex of adult clind	Men	1726	48	1187	48				
Parental breakup in	Yes	553	15	391	16				
childhood	No	3018	85	2075	84				
Parent's present living	Live with other parent	1236	35	1236	50				
arrangements	Live with a partner who is not other parent	394	11	416	17				
	Live alone	1387	39	417	17				
	Other living arrangements	554	15	397	16				
Age of adult child	Under 30	502	14	441	18				
	40-49	1558	44	1239	50				
	50-60	1001	28	616	25				
	Older than 60	510	14	70	7				
Adult child's activity status	Employed	3008	84	2170	88				
	Unemployed	77	2	46	2				
	Retired	277	8	98	4				
	Other	209	6	152	6				
Adult child's education level	Primary or secondary	2243	63	1502	61				
	Tertiary	1328	37	964	39				
Adult child's partner status	Married	1979	56	1365	55				
	Cohabiting	797	22	595	24				
	Living-apart-together	252	7	159	6				
	Divorced, currently single	235	6	140	7				
	No information on relationship	308	9	207	8				
Adult child has children	Yes	2195	62	1710	69				
living in household	No	1376	38	756	31				
Adult child's number	No siblings alive or ever	270	8	183	7				
of siblings	One sibling alive	1317	37	947	38				
	Two siblings alive	1036	29	749	30				
	More than two siblings alive	948	26	587	24				
Time distance to parent	Up to 1 hour	2101	59	1331	54				
	1 hour	336	9	223	9				
	2-3 hours	291	8	241	9				
	4-9 hours	319	9	236	10				
	10 or more (incl. abroad)	524	15	435	17				
Adult child's general health	Very good or good	2928	82	2087	85				
	Fair	527	15	316	13				
	Poor or very poor	116	3	63	3				
Total number of individuals		3571	100	2466	100				

Results

Table 3 displays the results from stepwise multivariate OLS regression models in which the outcomes are whether (yes/no) the adult child regularly provides personal care to an older mother and an older father. Models labeled "a" refer to the outcome of personal care provided to mothers, and models labeled "b" refer to personal care provided to fathers. In all models, we control for the characteristics of the adult child. Bivariate models for all covariates in Table 3 are displayed in Table A3 in the Appendix. Overall, the bivariate models show similar results as the multivariate models with a few exceptions mentioned below.

First, we test whether adult daughters and sons differ in the likelihood of providing personal care to mothers and fathers. Throughout Models 1-3, we find that the results confirm the hypothesis, namely, adult daughters are more likely than sons to provide personal care to both mothers and fathers (Hypothesis 1).

In Models 1a-b, we find that those who experienced parental breakup in childhood do not provide less or more personal care. We thus do not confirm the hypothesis that caregiving to parents in late life is influenced by parental breakup in childhood. The same result is found in the bivariate models (Table A3 in Appendix).

We further hypothesized that adult daughters who experienced parental breakup in childhood are more likely than adult sons to provide personal care to parents. In order to test this, we generate an interaction term between gender and parental breakup in childhood. The results are displayed in Table 4 (in models otherwise identical to 1a-1b). We find that compared to sons who experienced a breakup, daughters who experienced a breakup tend to more often provide care to mothers. This result is significant only at the 5 percent level, however. Regarding care for fathers, the interaction term test by gender is of similar size but nonsignificant, which may partly be due to the limited sample size.

In a next step, we examine whether adult children are more likely to provide personal care to older parents who live alone than to parents who live with a partner. We assess this hypothesis by comparing care for 1) lone mother/father versus mother/father who lives with the other parent and 2) lone mother/father versus re-partnered mother/father. The results are displayed in Models 2a-b in Table 3 and in Table A4 in the Appendix. We find that children more often provide personal care to a lone mother than to a mother who lives with the father. When changing the reference category to "live with a partner who is not the other parent", we do not find that children are more likely to provide care to lone mothers than to re-partnered mothers (results displayed in Table A4 in Appendix). Moreover, we find no differences in the care provided to fathers when comparing lone fathers with fathers who live

with the mother. However, adult children with a lone father are more likely to provide care to him compared to re-partnered fathers. In sum, we find that children provide care for lone mothers more often than for mothers living with the father and more care for lone fathers compared to re-partnered fathers. We conclude that parents living alone may trigger latent solidarity and generate incentives for more provision of care. In addition, in vulnerable situations, care often follows the mother; re-partnered mothers receive the same care as lone mothers, and re-partnered fathers may receive help from the new partner's family. This indicate that matrilineal family system is still of important in Sweden.

Additionally, we did not expect to find gender differences for adult children in providing personal care to older parents when the parent lives alone. We conducted two separate interaction terms between gender of child and mother's/father's living arrangements in models otherwise identical to 3a-3b (one model for each sample). Selected results from the interactions are displayed in Table 5, where the reference category is "adult sons and parent lives alone" (in both models). We do not find statistically significant gender differences in providing care to lone fathers, but contrary to expectations, the result shows that adult daughters with lone mothers are statistically more likely to provide personal care compared to adult sons with lone mothers. We conclude that the daughter-mother relationship is more close than the son-mother relationship.

Finally, we expected that adult children are less likely to provide personal care to older re-partnered parents than to parents who live with the other parent. Models 2a-b in Table 3 offer no support for the notion that care provision differs for parents living with the other parent and re-partnered parents for either mothers or fathers. However, in the bivariate model, adult children seem to be somewhat less likely to provide care to re-partnered fathers than lone fathers, potentially because re-partnered fathers receive help from the partner or the partner's family. The association disappears when controlling for age of adult child. In addition, we find that the variable parent's living arrangements contributes the most to overall variance throughout the models.

Table 3. Stepwise multivariate OLS regression models of child's personal care to parents, separate models by sex of parent (reference category in parentheses)

Table 3. Stepwise multivar	iate OLS regression models of child's									Child's personal care to			
		Child's personal care to Mother (1a) Father (1b)			Child's personal care to							to er (3b)	
		Coef. P				Mother (2a) Coef. p		Father (2b) Coef. p		Mother (3a) Coef. p		Coef.	` '
		Coei.	Г	Coei.	p	Coei.	p	Coei.	p	Coei.	p	Coei.	p
Sex of adult child (Men)	Women	0.024	0.000	0.015	0.023	0.024	0.000	0.015	0.019	0.024	0.000	0.015	0.018
Parental breakup in childhood (No)	Yes	0.002	0.812	-0.012	0.204					-0.001	0.995	-0.006	0.547
Parent's present living arrangements	Live alone					0.022	0.009	0.012	0.178	0.022	0.011	0.014	0.142
(Live with other parent)	Live with partner who is not other parent Other living arrangements					0.008 0.105	0.512 0.000	-0.014 0.051	0.138 0.000	0.008 0.105	0.551 0.000	-0.011 0.052	0.320 0.000
Age of adult child	Continuous	0.004	0.000	0.001	0.001	0.002	0.000	0.001	0.011	0.003	0.000	0.001	0.016
Time distance to parent	Continuous	0.003	0.086	0.003	0.033	-0.004	0.027	-0.001	0.525	-0.004	0.027	-0.001	0.556
Adult child's activity status	Unemployed	0.042	0.066	0.038	0.112	0.037	0.105	0.033	0.163	0.037	0.105	0.034	0.154
(Employed)	Retired Other	-0.032 0.004	0.035 0.807	-0.009 -0.003	0.611 0.825	-0.038 0.005	0.011 0.751	-0.014 -0.005	0.463 0.715	-0.038 0.004	0.012 0.752	-0.013 -0.005	0.467 0.719
	Other	0.004	0.807	-0.003	0.823	0.003	0.731	-0.003	0.713	0.004	0.732	-0.003	0.719
Adult child's education level (Primary or secondary)	Tertiary	0.009	0.213	0.004	0.575	0.013	0.072	0.007	0.291	0.013	0.072	0.007	0.307
Adult child's partner status	Cohabiting	0.001	0.986	0.008	0.915	-0.004	0.956	-0.006	0.932	-0.001	0.956	-0.001	0.931
(Married)	Living-apart-together	0.024	0.071	0.026	0.056	0.022	0.098	0.023	0.091	0.022	0.098	0.023	0.090
	Divorced, currently single	0.009	0.459	-0.004	0.771	-0.006	0.613	-0.007	0.559	0.006	0.613	-0.007	0.567
	No information on relationship	-0.002	0.859	0.032	0.027	-0.004	0.973	0.032	0.025	-0.001	0.973	0.032	0.024
Children living in household (No)	Yes	0.003	0.716	-0.005	0.567	0.004	0.642	-0.004	0.640	0.004	0.642	-0.004	0.631
Number of siblings	No siblings alive or ever	0.004	0.736	-0.001	0.978	0.002	0.911	-0.001	0.999	0.002	0.911	0.001	0.989
(One sibling alive)	Two siblings alive	-0.008	0.310	-0.004	0.609	-0.008	0.308	-0.004	0.597	-0.008	0.308	-0.004	0.605
	More than two siblings alive	-0.001	0.935	-0.003	0.720	-0.006	0.484	-0.004	0.613	-0.006	0.486	-0.004	0.651
Adult child's general health	Fair	-0.002	0.806	0.004	0.651	-0.001	0.896	0.005	0.601	-0.001	0.896	0.005	0.594
(Very good or good)	Poor or very poor	0.009	0.609	-0.029	0.171	0.009	0.624	-0.028	0.179	0.009	0.624	-0.028	0.175
\mathbb{R}^2		0.027			0.021	0.065		0.044		0.065		0.032	
Total number of individuals (n)		3571			2466	3571		2466		3571		2466	

Table 4. Multivariate OLS regression models of child's personal care to parents, interaction between sex of adult child and parental breakup in childhood, separate models by sex of parent

	Child's personal care to							
	Mot	Mother Father						
	Coef.	P	Coef.	p				
Adult daughter x parental breakup in childhood Reference category: Adult son x parental breakup in childhood	0.029	0.089	0.021	0.190				
Adult daughter x no parental breakup in childhood Reference category: Adult son x no parental breakup in childhood	0.0024	0.001	0.142	0.044				
Adult daughter x parental breakup in childhood Reference category: Adult daughter x no parental breakup in childhood	0.002	0.861	-0.003	0.813				
Total number of individuals	3571		2466					

Note: Models controlled for all variables included in Table 3.

Table 5. Multivariate OLS regression models of child's personal care to parents, interaction between sex of child and parents who live alone in old age, separate models by sex of parent

	Child's personal care to								
	Mo	other	Fa	ather					
	Coef.	p	Coef.	p					
Adult daughter x parent lives alone	0.027	0.010	0.014	0.382					
Reference category:									
Adult son x parent lives alone									
Total number of individuals	3571		2466						

Note: Models controlled for all variables included in Table 3.

Discussion

This study investigated adult children's propensity to regularly provide personal care for older parents in relation to earlier life events and current situations. The gender of children and parents were here of particular interest. We applied intergenerational solidarity theory and argued that the strength of feelings of obligation influence whether adult children care for aging parents. We also argued that parental breakup in childhood may weaken later life functional solidarity. Additionally, parent's present living arrangements can affect filial care.

In line with previous research, we found that compared to sons, daughters more often provide care to mothers and fathers. The gender difference was not large, perhaps because Sweden aims to be a gender

egalitarian society with relatively generous provision of public eldercare. In contrast to expectation, parental breakup in childhood did not negatively influence care provision. We consider two explanation to that parental breakup does not matter for care. First, conflict and solidarity can coexist, and as conflicts resolve, the relationship improves (Bengtson et al., 2002). Second, it is possible that the negative effects of breakup on family ties weaken over time as divorce becomes more common (Glaser, Tomassini, & Stuchbury, 2008). Notably, we found that adult daughters who experienced a parental breakup, compared to their male counterparts, tend to more often provide care to mothers in late life, but there was no gender difference in the care provided to fathers. After a breakup, it is likely a daughter engages more in their mother's life than sons do. Daughters and sons may have similar strong (or weak) bonds to fathers after a breakup. Previous international research has found that care is predominately provided by women for women across generations and we find a similar pattern for Sweden.

While childhood parental breakup is not of great importance for caregiving, parent's living arrangements in late life show the opposite. We found that adult children more often provide care to lone mothers than to mothers living with fathers. Drawing on intergenerational solidarity theory, a potential explanation is that lone mothers are in a more vulnerable situation and married mothers may be better off in terms social and economic resources. We also found that adult children provide the same amount of care to lone fathers and fathers who live with their mother. Seemingly, lone fathers are not perceived as more vulnerable than their married counterparts, but lone mothers are. The motivation to help, or, perhaps more accurately, not to help fathers is most likely different here. A spouse is often the primary caregiver, thus, one explanation of this finding is that lone fathers receive as little help as their married counterparts who ultimately receive help from the adult child's mother. Matrilineal solidarity may help to explain why lone mothers potentially receive more care than lone fathers. Compared to lone fathers, lone mother may also be older and frailer, and thus, in greater needs. Women, in general, may also be more willing and have greater skills to communicate how they are doing and what help they need (Ek, 2015; Weisman & Teitelbaum, 1989).

In addition, re-partnering could potentially reduce parents' need for support from children, but a new partner does not seem to benefit the mother as we found that re-partnered mothers received as much help as lone mothers. In line with findings by Kaljmin (2007), we found that re-partnered fathers receive less care than lone fathers. Hence, for fathers, it seems that new family formation is a barrier to potential care from the children. Our findings also show that matrilineal care structures are the strongest, implying that care to re-partnered fathers may instead be provided by the new partner's family. The findings are partly in agreement with conclusions drawn by Silverstein and Bengtson's (1997), who found that children feel more obligated to care for divorced/separated/widowed mothers and that children have a more detached relationship with divorced/separated/widowed fathers.

Moreover, we found that daughters and sons are equally likely to provide care for lone fathers, although their motivation to do it may be different. Daughters may do it because of the socialization of gender norms and expectations, whereas sons, being less socialized to provide family care, may do it because of necessity or lack of other options. We also found that compared to adult sons, adult daughters are more likely to provide personal care to lone mothers. Throughout the study, we found daughters to be most supportive of their mothers (i.e., after a parental breakup and when living alone).

Aligning with our argument about matrilineal care structures, we found that children are equally likely to provide help to mothers living with father as to re-partnered mothers. We also find the same results among fathers but the care reasons may differ. A potential explanation for why children give the same help to fathers living with mother and re-partnered fathers is that in the first case the mother takes care of the father and in the second, new partner takes care of father, i.e., the primary support is given by the female partner. Another potential explanation is that care is provided where it is needed. If a new partner was leading to a more distanced relationship earlier in life, it may be overcome at old age (Silverstein & Bengtson, 1997). However, this does not mean that re-partnered parents and intact nuclear partnerships have the same type of relationship to their children, that their needs covered or that they have the same type of needs. There is much need for more studies on these specific intergenerational relationships here.

In line with many other studies on parent-child bonds (e.g. Furstenberg, Hoffman, & Shrestha, 1995; Larsson & Silverstein, 2004), our study shows the importance of matrilineal care structures, i.e. the dominant kinship pattern is care provided through the mother's line and from daughters to mothers. Conclusively, the intergenerational solidarity theory would benefit from integrating gender and lineage as analytical dimensions, which would help to increase the understanding of solidarity within the growing complexity of family ties. For instance, changes in parents' living arrangements reflect shifting values and norms, which affect opportunities for intergenerational exchanges of personal care and other forms of support.

In conclusion, parents' living arrangements represent a central predictor for whether children provide filial care, and late life living arrangements often reflect living standards and health status. The demographic changes with increasing divorce rates (also in late life), remarriage and single-living individuals will change the older individuals' living arrangements as younger generations enter old age, making it important to further investigate this topic. The questions of whether and how children engage in care for parents with different living arrangements are crucial for understanding the potential support deficits that older individuals are likely to face. These deficits may create inequalities in old age, as some may have access to more care than others, even if they have similar needs.

Although the study indicates that some parents are in a greater need of care than other we do not see that the solution is to encourage or compel children to increase caregiving. Eldercare in Sweden is part of the municipalities' responsibility, and solutions should therefore be rest on them. Providing filial care may have negative consequences for adult children. For instance, frequent and time-consuming caregiving may hinder full labor market participation and participation in other activities, such as leisure (Berecki-Gisolf, Lucke, Hockey, & Dobson, 2008; Lilly, Laporte, & Coyte, 2007; Szebehely et al., 2014). Parental care has also been shown to have an adverse influence on adult children's wellbeing (Borg & Hallberg, 2006; Pinquart & Sörensen, 2006). Moreover, in countries with generous welfare support, such as Sweden, older individuals predominately prefer to receive formal care (Eurobarometer, 2007), and if the child is expected or forced to provide care, it is likely the relationship quality will suffer. If care is sufficiently provided by the municipality, then the child-parent relationship can focus on the provision of emotional support, joy and love. The negative aspects may become even stronger, as life expectancy has increased considerably, thereby extending the period of filial responsibility for adult children. Obviously, this development may also be seen in a positive light, as lives are longer, and intergenerational relationships have longer lifespans.

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Appendix

Table A1. Adult children's personal care to older parents by parental breakup in childhood (%)

	Person to moth	al care ner (%)	Personal care to father (%)		
Parental breakup in childhood	No	Yes	No	Yes	
No	95.6	4.4	97.2	2.8	
Yes	96.2	3.8	98.5	1.5	
Total n	3418	153	2401	65	

Table A2. Share of adult children's personal care to mother and father respectively by the parent's

living arrangements in old-age

	<u>Pe</u>	ersonal care	<u>ner</u>	Personal care to father					
	No	Commont	T-4-1	Share givning support	No	Carrier out	Ta4a1	Share givning support	
Danant's massant living amon soments	support	Support	Total	(row	support	Support	Total	(row	
Parent's present living arrangements	(n)	(n)	(n)	%)	(n)	(n)	(n)	%)	
Parent live with other parent Parent live with partner who is not	1120	16	1136	1.4%	1214	22	1236	1.8%	
other parent	387	7	394	1.8%	415	1	416	0.2%	
Parent live alone	1325	62	1387	4.5%	403	14	417	3.4%	
Parent has other living arrangements	486	68	554	12.2%	369	27	397	6.8%	
Total	3418	153	3571	4.3%	2401	65	2466	2.6%	

Table A3. Bivariate OLS regression models of personal care to mothers and fathers.

	ession models of personal care to modicis a		dren's pe	ersonal care to Father		
		Coef.	p	Coef.	p	
Sex of the adult child (Men)	Women	0.024	0.000	0.017	0.010	
Parental breakup in childhood (No)	Yes	-0.008	0.355	-0.001	0.906	
Parent's present living	Live alone	0.032	0.000	0.016	0.080	
arrangements	Live with partner who is not other parent	0.005	0.675	-0.015	0.088	
(Live with other parent)	Other living arrangements	0.109	0.000	0.005	0.000	
Age of adult child	Continuous	0.003	0.000	0.002	0.000	
Time distance to parent	Continuous	0.004	0.008	0.002	0.079	
Adult child's activity status	Unemployed	0.052	0.026	0.041	0.091	
(Employed)	Retired	0.033	0.009	0.026	0.114	
	Other	0.004	0.773	-0.005	0.702	
Adult child's education level (Primary or secondary)	Tertiary	0.007	0.383	0.005	0.505	
Adult child's partner status	Cohabiting	-0.011	0.192	-0.003	0.667	
(Married)	Living-apart-together	0.025	0.065	0.027	0.045	
	Divorced, currently single	0.003	0.808	-0.004	0.730	
	No information on relationship	0.013	0.357	0.041	0.004	
Children living in household (No)	Yes	-0.028	0.000	-0.019	0.006	
Number of siblings	No siblings alive or ever	-0.012	0.364	-0.005	0.680	
(One sibling alive)	Two siblings alive	-0.021	0.133	-0.008	0.508	
-	More than two siblings alive	-0.008	0.563	-0.007	0.594	
Adult child's general health	Fair	0.006	0.524	0.009	0.356	
(Very good or good)	Poor or very poor	0.019	0.321	-0.026	0.207	
Total number of individuals (n)		3571		2466		

Note: reference category in parentheses.

Table A4. Multivariate OLS regression models of child's personal care to parents by parent's living arrangements, separate models by sex of parent

		Child's personal care to			Child's personal care to				Child's personal care to			to	
		Mother		Father		Mother		Father		Mother		Father	
		Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p	Coef.	p
Parent's present living arrangements	Live with the other parent Live alone Live with partner who is not other parent Other living arrangements	Ref 0.022 0.008 0.105	0.009 0.512 0.000	Ref 0.012 -0.014 0.051	0.178 0.138 0.000	-0.008 0.014 Ref 0.097	0.512 0.229 0.000	0.014 0.026 Ref 0.065	0.138 0.020 0.000	-0.022 Ref -0.014 0.083	0.009 0.229 0.000	-0.012 Ref -0.026 0.038	0.178 0.020 0.002
Total number of indivi	duals (n)	3571		2466		3571		2466		3571		2466	

Note: Models controlled for all variables included in Table 3.

