

THE ASSOCIATION BETWEEN FAMILY STRUCTURE, HISTORY AND ONSET OF CARE AT OLDER AGES IN ENGLAND

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INTRODUCTION

Our aim is to investigate the association between family structure, history and first use of care (formal and informal) at older ages in England. Population ageing, and in particular the increase in the numbers and proportion of the oldest old, have led to a growing interest in factors associated with transitions to care. To date, while research has noted the family's importance with respect to transitions to formal care (for example, parents report a lower risk of entry to institutions) (Aykan 2003; Cagney, 1999; Cagney, 2005; Freedman 1996; Hallberg & Lagergren 2009); little work has examined transitions to informal care (and much of this work has largely considered limited family characteristics such as the availability of a spouse) (Geerlings et al. 2005). As much of the care received by frail older people is provided by family members, it is surprising how little we know about the relationship between family characteristics and the assumption of care at older ages. Moreover, it is not common for analyses to treat informal and formal care as a type of competing risk; most researchers choose to study each type of care use separately.

Moreover, understanding the role that life events play (for example, the role of family histories such as the timing of parenthood) in transitions to care at older ages is critical. Most studies which have examined the impact of earlier life events on later life outcomes have primarily focused on health; few have examined their impact on other well-being outcomes such as the use of care and support (Glaser et al. 2006). Finally, a better understanding of family factors associated with care transitions is important given substantial reforms to long-term care policies in many European countries. These reforms have largely sought to reduce access to

home care services (e.g. community nursing, home help and meals) by targeting services to the most disabled older individuals (OECD 2005). The underlying assumption is that families will be willing and able to take on the care of frail older relatives.

BACKGROUND

Given concerns that the demand for care is likely to increase due to rises in the numbers of the oldest-old and changes in many countries' long-term care policies (Pickard et al. 2000), it is surprising that little research has investigated the association between family structure and histories (e.g. partnership status, availability of children, the timing of parenthood, etc.), other key factors (e.g. changes in physical and mental health), and onset of care.

Thus far, a number of cross-sectional studies have examined the relationship between family structure and receipt of care (informal and formal); however, most have included limited family measures, e.g. marital status or living arrangements (but often not children) (Barrett & Lynch 1999; Branch et al. 1983; Chappell 1985; Choi 1994; Larsson & Silverstein 2004; Logan & Spitze 1994; Shea et al. 2003; Soldo 1985; Soldo, Wolf & Agree 1990, Stoddart & Sharp 2002; Tennstedt et al. 1993; Wallace et al. 1998). For example, results from cross-sectional analyses of the relationship between marital status and public home care are mixed: some studies report that the widowed and/or divorced are more likely to use such services (Barrett & Lynch 1999, Chappell 1985, Stoddart & Sharp 2002, Wallace et al. 1998), whereas others show no association with marital status (or living with a spouse) (Bowling, Farquhar & Browne 1991, Logan & Spitze 1994, Morgan 1980). Similarly, the evidence for the association between children and public home care is also mixed: no relationship observed in some studies (Choi 1994), whereas in others children were associated with reduced use (Barrett & Lynch 1999, Soldo 1985, Soldo, Wolf & Agree 1990). With respect to informal care, studies generally show greater receipt of informal care among the previously married and among those with children (Larsson & Silverstein 2004; Shea et al. 2003).

In Britain, although a few cross-sectional analyses have examined factors associated with public home care (Arber, Gilbert & Evandrou 1988, Boniface & Denham 1997, Bowling, Farquhar & Browne 1991, Davey & Pastios 1999, Stoddart & Sharp 2002), few have considered family characteristics other than marital status or living arrangements (Bowling, Farquhar & Browne 1991, Glaser et al. 2006, Tomassini, Glaser & Stuchbury 2007). Bowling et al. (1991) investigated the use of district nursing, home help and meals on wheels in three samples of older people living in London and found no significant relationship with number of living children, with one exception: children significantly reduced the use of public home care among

those aged 85 and over in Hackney. In a study using the longitudinal British Household Panel Study on the number of living children showed no significant association with first use of domiciliary care services among those aged 70 and over (Glaser et al. 2006). Tomassini and colleagues (2007), in a comparative study of Britain and Italy, found number of children to have no significant association with public home care (Tomassini, Glaser & Stuchbury 2007). In contrast, number of children showed a significant association with receiving help (including care) from adult children (Glaser et al. 2006; Tomassini, Glaser & Stuchbury 2007).

As suggested by several authors the use of care may be best understood by focusing on transitions in care (Cagney & Agree 1999, 2005; Freedman 1996; Geerlings et al 2005). Such analyses require longitudinal data to investigate the relationship between key factors (such as family and health characteristics) and changes in the care circumstances of older people. These studies have primarily focused on factors related to first use or onset of care as a point of initiation into long-term care. To date, most of these studies have shown that family members (in particular, spouses and daughters) significantly reduce the risk of institutionalisation (Freedman 1996). Less research has examined the relationship between family structure and the onset of family and public home care (Aykan 2003; Cagney & Agree 1999, 2005; Geerlings et al. 2005). For example, Geerlings and colleagues investigated the effect of not having a spouse and losing a spouse (their study did not include children) on informal care and found a negative impact with not having a partner (whereas losing a partner was associated with higher odds of onset of public home care use) (Geerlings et al. 2005). With respect to the influence of children on public home care over time the results are mixed: Aykan (2003) showed no impact of childlessness on the use of home health care use, whereas Cagney and Agree (1999) reported that disabled older individuals with more than one daughter were at greater risk of first home health care use. Therefore it remains unclear whether partnership status (and changes in partnership status) and the existence of children are associated with changes in the use of family and public home care at older ages. To our knowledge only two studies have examined the association between life-course factors related to family histories and the onset of care at older ages, and both studies have focused only on formal care use (Cagney & Agree 1999; 2005).

CONCEPTUAL FRAMEWORK

The life-course perspective is a way of explaining age-related transitions and life course trajectories (Bengtson et al. 1997) and is thus ideally suited, as suggested by Cagney & Agree, (1999, 2005) to explain the importance of family trajectories for first use of care. This framework recognises the importance of different life experiences in determining later life outcomes. For example, as suggested by Cagney & Agree (1999), early parenthood is likely to

be associated with a series of factors (e.g. higher levels of co-residence) related to a greater willingness among family members to provide care. The timing of a divorce or separation is also likely to be associated with later life care as previous studies have shown a negative association between the early experience of divorce and transfers from adult children (Furstenberg et al. 1995). Researchers have begun to explore the association between family histories (e.g. parenthood histories) and well-being in later life but most studies have focused on one outcome: health. For example, researchers have investigated various dimensions of people's childbearing histories and their relationship to health outcomes in mid and later life including the number of children, timing of first and last birth, spacing of birth intervals, and whether people were married at their first birth. For example, for women, timing of childbearing, in addition to number of children, has been linked to health outcomes at older ages (Grundy and Holt 2000, Grundy and Tomassini 2005, Grundy and Kravdal 2008). Studies have also reported associations between early childbearing (before age 20), mortality (Henretta 2007, Grundy and Tomassini 2005, Grundy and Kravdal 2008), physical (for example heart disease, lung disease, cancer) (Grundy and Holt 2000, Grundy and Tomassini 2005, Henretta 2007) and mental health in either mid or later life.

However, there has been less investigation of the relationship between experiences across the life course and other later life outcomes such as care and support. An exception to the lack of research in this area is the growing body of evidence in the United States and The Netherlands that partnership disruptions over the life course, particularly divorce, have deleterious consequences for care and support at older ages (Furstenberg et al. 1995, Kalmijn 2007, Pezzin, Pollak & Schone 2008). The existence of stepchildren is also a factor, for older parents are less likely to receive assistance from stepchildren than biological children (Pezzin, Pollak & Schone 2008).

DATA AND METHODS

DATA

Employing data from the English Longitudinal Study of Ageing (ELSA) we investigated the relationship between family structure and onset of care. ELSA is based on a nationally representative sample of 12,000 people aged 50 and over (and their younger partners) in private households in England. The sample was drawn from the Health Survey for England in 1998, 1999 and 2001. The original response rate from the HSE was 67 to 70 per cent (Taylor et al. 2007). No direct contact was made with respondents in the HSE who refused to be re-contacted. Individual response at wave 1 in ELSA was about 64 per cent of sample (Taylor et al.

2007). ELSA includes detailed measures of health, economic and social circumstances, as well as information on living kin and receipt of help. In addition, family histories were collected as part of the Life Course Interview in wave 3. Furthermore, ELSA tracks the mortality of survey participants (the survey is matched to the National Death Index containing information on the date of death). Our analyses use the first three waves of ELSA and information on deaths.

ANALYSIS

In the first part of the study, we looked at baseline characteristics of all respondents in the sample. In order to investigate the determinants of transitions to care (i.e. onset of care across the three waves), our first analysis was restricted to those aged 50 or older who were not receiving care in wave 1, and who had valid responses for at least two waves. Subjects left our sample either (a) when they first displayed the characteristic of interest (i.e. care receipt), (b) when they failed to have a valid response in the characteristics of interest, or (c) when they were censored (i.e. reached the end of our study period or had died). For our final analysis we restrict our sample to parents still present at wave 3.

DEPENDENT VARIABLES

Receipt of Care. ELSA respondents were asked a series of questions about whether they had any difficulties doing a series of ADLs and/or IADLs (excluding those difficulties expected to last less than three months); mobility difficulties were also included. If respondents answered yes to any of the ADLs, IADLs and/or the questions on mobility difficulties they were then asked if they received help from anyone, and if yes, they were asked to identify who (respondents were told to include their partner and anyone else in the household). Those who answered that a family member, friend or neighbour provided assistance were considered to have received informal help. Those who identified that they received help from a privately paid employee or a social or health service worker were considered to have received formal help. Thus at each wave we distinguished three states regarding use of care: no care receipt (reference category 0); onset of informal care (category 1); and onset of formal care (category 2) (those who had died between waves were censored).

TIME VARYING INDEPENDENT VARIABLES

Time-varying covariates included an indicator reflecting the loss of a partner, age, and health status, as previous studies have shown all of these factors to have a direct bearing on care. An indicator capturing the absence of a partner at each wave was created from information on marital status. Age was measured as a continuous variable. A series of health measures captured various health states at each wave. First, a binary variable was created capturing whether respondents reported at least one of the following doctor diagnosed chronic

conditions: coronary heart disease, stroke, diabetes, arthritis, high blood pressure, cancer and pulmonary disease). Second, ELSA collected information on depressive symptoms using the eight-item Center for Epidemiological Studies-Depression (CES-D) scale. Depression scores were dichotomised using a cut-off of ≥ 3 following standard practice. Finally, a dichotomised measure of self-rated general health captured those reporting poor health (the reference category being those reporting all other health states).

TIME CONSTANT INDEPENDENT VARIABLES

Time constant covariates were created to capture family characteristics and histories as well as socio-economic controls.

Family structure and histories. ELSA contains detailed information about the existence of living kin. From the household roster at wave 1 we created a measure of the total number of living children (including biological, step and adopted children). We also created an indicator identifying whether children were step or adopted. From the demographics section of the interview schedule we identified whether respondents had grandchildren and siblings at baseline.

Further, we also consider family histories as parenthood and partnership information was collected in the Life History Interview in wave 3 (these measures were only included in the last analysis restricted to parents still present at wave 3). Partnership history data in ELSA includes the start and end of up to 10 unions, whether unions were legal or cohabiting, reasons for relationship breakdown and dates. The fertility histories in ELSA contain birth dates of natural, step and adopted children. From this information we created indicators reflecting the experience and timing of family events, i.e. the experience and timing of divorce (whether a divorce occurred before or after age 45), and whether a first birth occurred at age 18 or under.

Other covariates included gender, educational attainment, social class, housing tenure and wealth. These characteristics have all been identified as key determinants in previous studies of late-life care. As the family characteristics described above, these characteristics were also held constant as there was likely to be little or no variation in them over the period considered. The reference group for sex was male. Individuals with no educational qualifications were distinguished from those with higher levels. We allocated individuals into social class categories according to the National Statistics Socio-economic Classification (NS-SEC) of occupations. The classification we used is based on four social class groupings, two non-manual (managerial and professional, and intermediate occupations), one manual group (routine occupations) and an other category. Respondents in the manual group were distinguished from those in the non-manual reference group (those in the final other category were grouped with manual occupations). A bivariate variable represented housing tenure was also used (1=social

sector tenants and other renters; 0=those who owned their own homes outright or with a mortgage). A series of ELSA-derived summary financial variables have been created by the Institute for Fiscal Studies, including the measure of overall net non-pension wealth quintiles used here (derived at the ‘benefit unit level’ that is at the level of a couple or single person with any dependent children). Each quintile represents 20% or one fifth of all benefit units in ELSA. We dichotomised this wealth variable by distinguishing those who reported being in the lowest quintile (i.e. the poorest) versus all other quintiles.

ANALYTICAL STRATEGY

We used a discrete-time multinomial logistic regression model with time dependent covariates to model changes in care received across the waves among those who reported care receipt at some point after the first wave (e.g. onset of informal and formal care vs. continuing to receive no care). The aim was to study change in the dependent variable in relation to family history and characteristics as well as changes in the time-varying independent variables (i.e. health in particular). In order to more accurately to capture any such relationships, the sample was restricted to subjects with valid responses over at least two waves. Although it is recognised that informal and formal care are not mutually exclusive categories, as the majority of respondents reported only one carer it was felt that this analytical strategy would best capture changes in use of care.

First, we modelled the odds of onset of care among respondents aged 50 and over for those who did not report receiving care at baseline. Thus this analysis was restricted to respondents who were: (a) aged 50 or over at baseline and core sample members; and (b) had valid information on care for at least 2 waves. Second, we modelled the odds of onset of care among parents aged 50 or over at baseline among those who did not report receiving care at baseline. In contrast to the former analysis, this latter analysis was further restricted to those who were still present at wave 3.

RESULTS

Table 1 shows the sample’s baseline characteristics at wave 1. Among those aged 50 and over at baseline 77 per cent were not receiving care, 20 per cent received informal care and only 3 per cent were in receipt of public or private care (with most receiving public care). Close to 70 per cent of respondents reported that they had one or more chronic diseases. Sixty-eight per cent were living with a partner, the mean number of children was 2.26 and 11 per cent had step or adopted children. Moreover, 68 per cent reported having at least one grandchild, and 78 per cent had a least one sibling. With respect to the timing of marital disruptions and parenthood

histories, 21 per cent had ever experienced a divorce (with 6 per cent over the age of 45) and 3 per cent had a first birth at age 18 or under.

Table 2 shows results from the discrete-time multinomial logistic regression models with three different response outcomes among those who were not receiving care at baseline and who had valid information for at least two waves, first report of (a) informal care and (b) formal care (with those who continued to receive no care or who had died to be censored). Measures of education and housing tenure were initially included in the analyses but are not presented in Tables 2 and 3 as they showed no significant association with onset of care. Preliminary results show (Table 2) family characteristics (e.g. number of children, loss of partner and having a grandchild) to have a significant association with care transitions (even when health and socio-economic characteristics are taken into account). For example, those with more children reported higher odds of the onset of informal care, and those with grandchildren reported higher odds of onset of formal care. Loss of a partner was also significantly associated with onset of both formal and informal care. As expected, changes in health showed a significant association with care transitions. For example, respondents with chronic disease, depression, and poor self-reported health reported significantly higher odds of the onset of care receipt.

Table 3 presents similar analyses restricted to parents still present at wave 3 (when the life history information was collected). In this latter analysis we included two additional measures capturing family histories: the experience of a divorce before or after age 45 and/or a first birth at age 18 or under. Those respondents who experienced a divorce after age 45 reported lower odds of the onset of informal care. The timing of first birth shows a significant association with onset of informal care (previous studies have shown a significant association between timing of parenthood and first use of home care).

DISCUSSION

In summary, family characteristics (e.g. number of children and loss of partner) showed a significant association with the onset of care even when health and socio-economic factors were taken into account. Socio-economic characteristics were associated with the onset of informal care, supporting earlier findings. As expected, health status and changes in health status, showed the strongest association with care transitions.

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Table 1. Wave 1 Characteristics 50+ (N=11,392)

Variables	%	Variables	%
Sex		Partnership status	
Female	54	Living with partner	68
Education		Mean number of children	
No qualifications	44		2.26
NS-SEC*		Has step or adopted child	
Managerial	28	Yes	11
Intermediate	23	Has grandchildren	
Manual	46	Yes	64
Housing Tenure		Has sibling	
Own outright	55	Yes	78
Mortgage	25	Ever divorced*	
Rent	21	<45	15
Chronic Diseases		Timing of 1st birth*	
1+	68	≥45	6
Depression		Use of care	
Yes	23	≤ 18	3
Self-rated health		Use of care	
Excellent/very good/good	73	No care	77
Fair	19	Informal care	20
Poor/very bad/bad	8	Formal care	3

Note: *Sample restricted to those present at wave 3.

Table 2. Results from discrete-event history analysis for onset of care with age, loss of partner, and health as time-varying covariates among those aged 50 and over at intake

	Odds Ratios	
	Informal care	Formal care
<i>Time-varying covariates</i>		
Age	1.04**	1.12**
Loss of partner	1.30**	4.62**
Self-rated health		
Poor or fair self-rated health	4.71**	7.70*
Chronic conditions (1+)	2.18**	2.47**
Chronic depression (≥3)	1.78**	2.38**
<i>Time-constant covariates</i>		
Female	1.58**	1.64**
Number of living children	1.06*	0.94
Has step/adopted children	1.00	1.12
Has grandchildren	1.15	1.68*
Has at least one sibling	1.02	1.07
Social class		
Manual	1.16*	0.94
Wealth		
Lowest quintile	1.09**	0.60*

Source: From authors' calculations of BHPS. *Note:* Model sample size = 18116, *p<0.05, ** p<0.01

Table 3. Results from discrete-event history analysis for onset of care with age, loss of partner, and health as time-varying covariates among parents aged 50 and over and present in wave 3

	Odds Ratios	
	Informal care	Formal care
<i>Time-varying covariates</i>		
Age	1.04**	1.11**
Loss of partner	1.25**	3.95**
Self-rated health	4.99**	9.50**
Poor or fair self-rated health		
Chronic conditions (1+)	2.29**	3.25**
Chronic depression (≥ 3)	1.67**	2.12**
<i>Time-constant covariates</i>		
Female	1.57**	1.93*
Number of living children	1.00	0.93
Has step/adopted children	1.19	1.49
Has grandchildren	1.49	1.95
Has at least one sibling	1.95	1.31
Ever divorced		
<45	0.82	1.31
≥ 45	0.54**	0.32
First birth ≤ 18	1.45**	0.48
Social class		
Manual	1.18*	0.67
Wealth		
Lowest quintile	1.13	0.50

Source: From authors' calculations of BHPS. Note: Model sample size = 11782, *p<0.05, ** p<0.01