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The Impact of Late-Life Parental Death on Adult Sibling Relationships

Do Parents' Advance Directives Help or Hurt?

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The authors examined whether the effect of parental death on adults siblings' relationship quality varies on the basis of the presence and perceived effectiveness of a deceased parent's formal preparations for end-of-life care. The authors used data from the Wisconsin Longitudinal Study and focused on the relationship quality of a bereaved adult child and his or her randomly selected sibling. Parental death was associated with a decrease in sibling closeness. The parent's use of advance directives (living will and durable power of attorney for health care) did not have uniformly positive effects on adult siblings' relationship quality. Sibling relationships suffered when the living will was believed to "cause problems," but relationships improved when the deceased parent named someone other than his or her spouse or a child as durable power of attorney for health care. The authors discuss the implications for developing effective end-of-life preparations that benefit both the decedent and surviving kin.

Keywords: *advance directives; bereavement; durable power of attorney for health care; living will; sibling relationships*

Parental death is a potentially distressing turning point for most adults because it severs one of the most enduring and emotionally significant bonds that individuals maintain over the life course (Moss and Moss 1983-1984). For midlife and older adults, the death of aged parents may force survivors to confront their own mortality and to critically reevaluate their lives and their role in their families (Umberson 2003). Deaths of elderly parents today typically occur after long-term illnesses that may require adult children to serve as caregivers (Marks et al. 2008) and to participate in difficult decisions about the prolongation or withholding of life-sustaining treatments.

A vast body of research documents how relationships among midlife and older siblings are affected by their coordination of parental care during the final stages of their parents' lives (Checkovich and Stern 2002; Pillemer and Suito 2006; Wolf, Freedman, and Soldo 1997). When adults perceive that they are providing more frequent or intensive parental care than their siblings are, relationships may grow strained both prior to and after the a parent's death (Hequembourg and Brailer 2005; Pezzin and Schone 1997).

We know of no studies that explored whether adult sibling relationships following parental death are affected by parents' use of specific end-of-life health care preparations. Mounting research documents how aspects of end-of-life care, including the quality of medical care received by the dying patient (Carr 2003; Prigerson et al. 2003), the place of the death (Carr 2003), and the use of palliative care services (Miller, Gozalo, and Mor 2000) affect the psychological adjustment of bereaved older spouses. However, we know of no parallel studies exploring implications for bereaved adult children. We investigated one aspect of the end-of-life context: whether and to what end a deceased parent made formal preparations for end-of-life health care. Specifically, we examined how the use of advance directives (i.e., living wills and durable power of attorney for health care [DPAHC] designations) affects the quality of relationships among decedents' surviving adult children.

We used data from the Wisconsin Longitudinal Study (WLS) to explore whether the *presence* and *perceived effectiveness* of two formal components of an advance directive, a living will and a DPAHC appointment, protect against relationship strain among bereaved adult children. We focused on the deaths of "oldest old" parents, mostly in their 80s, and their surviving adult children, who were mostly in their 60s. Identifying factors that contribute to family strain among bereaved adult children has impor-

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tant implications for understanding the future challenges facing the large baby boom cohort as they manage end-of-life decision making and caregiving for their elderly parents.

Background

End-of-Life Health Care Planning

Caring for an aging parent typically involves providing direct physical and emotional support and also may encompass making health care decisions on the parent's behalf if he or she is incapacitated (Kramer, Boelk, and Auer 2006). More than two thirds of older adults today die of long-term chronic illnesses, that is, conditions that are long lasting, persistent in their symptoms, and generally incurable, such as cancer or congestive heart failure (Federal Interagency Forum on Aging-Related Statistics 2008). In cases where incapacitated terminally ill older adults have not formally stated their preferences for end-of-life medical care, their adult children often must make difficult choices about stopping or prolonging the use of life-sustaining treatments, including ventilators, cardiopulmonary resuscitation, and feeding tubes for artificial nutrition (Field and Cassel 1997). Adult children also may be called on to convey a dying parent's wishes to health care providers, especially when the parent is widowed and cannot turn to a spouse for assistance (Carr and Khodyakov 2007b). A child's successful performance as a parent's health care advocate may be facilitated when the parent has an advance directive.

Advance directives are documents that allow cognitively intact individuals to state their treatment preferences for future medical care, in the event that they become incapacitated and unable to convey their preferences (Temkin-Greener, Gross, and Mukamel 2005). Advance directives have two formal components: a living will and a DPAHC designation (Gerst and Burr 2008). Living wills allow patients to formally state their preferences for those medical treatments they want or do not want to receive at the end of life. DPAHC designations allow patients to appoint others to make medical decisions on their behalf if they cannot make such decisions themselves (Carr and Khodyakov 2007a).

Although advance care planning has been advocated by national associations (American Medical Association, Council on Scientific Affairs 1996) and public policies such as the Patient Self-Determination Act (1990), the actual benefits are widely debated (Briggs 2003; Drought and Koenig 2002;

Fagerlin and Schneider 2004; Perkins 2000). Advocates of living wills argue that these documents are designed to protect the rights of incapacitated individuals, to clarify their preferences for end-of-life care, to protect “surrogate decision makers from legal liability for health care decisions at the end of life” (Hopp 2000:449), and to spare dying persons and their family members from distress and futile treatments during the final days of patients’ lives (Parkman and Calfee 1997, Tilden et al. 2001). However, critics counter that the documents’ content may be unclear, the treatment preferences stated may not be relevant to the patients’ conditions, and physicians may not have access to the documents at critical decision-making moments (Collins, Parks, and Winter 2006; Coppola et al. 2001; Ditto et al. 2001; The SUPPORT Principal Investigators 1995). Family members may not know (or agree with) the documents’ contents, or they may not know how to translate vague preferences into specific treatments (Ditto et al. 2001).

Health care providers urge older adults to appoint DPAHCs in addition to having living wills. The assumption is that older adults will carefully select persons to represent them in the decision-making process and that the individuals chosen to have decision-making power will have in-depth knowledge of the patients’ wishes. However, DPAHC appointments also have well-documented limitations (Lipkin 2006). Legally appointed proxies are granted decision-making authority, yet some may find that their decisions create distress or disagreement among family members (Doukas and Hardwig 2003). Moreover, surrogate decision makers often cannot report accurately dying patients’ treatment preferences (Coppola et al. 2001; Miles, Koeppe, and Weber 1996; Shalowitz, Garrett-Mayer, and Wendler 2006) and may instead assume (incorrectly) that their own preferences are identical to those of the patients (Moorman, Hauser, and Carr 2009).

Despite contentious debates over the efficacy and value of advance care planning for both patients and their loved ones, we know of no studies that have explored whether the presence and perceived effectiveness of such practices protect against sibling relationship strain following parental death. Thus, we explored whether sibling relationship quality is affected by the presence of a living will and DPAHC when a parent dies, whether the effects of such practices vary on the basis of whether the advance care planning was deemed helpful or problematic by one surviving child, and who was appointed as DPAHC.

Sibling Relationships After Parental Death

Our main research objective was to explore whether the implications of parental death for sibling relationships vary on the basis of the nature

of the end-of-life context. Research exploring the effect of parental death on sibling relationships is equivocal (Sanders 2004). Some studies suggest that sibling relationships suffer after the death of a parent. Parents act as kin keepers who unite adult siblings for holidays and family celebrations (Fuller-Thomson 1999-2000). The death of a parent, especially a mother, often "removes an important link between an adult child and other kin" (Rosenthal 1985:970). The death also may reactivate childhood conflicts and rivalry among siblings caused by earlier problematic family relations (Merrill 1996). Finally, differences in grief expression and disagreements about funeral arrangements and distribution of parental property also are associated with increased conflicts among bereaved siblings (Umberson 2003).

Other studies have concluded, conversely, that siblings may grow closer following a parent's death (White and Riedmann 1992). Parents may be the reason why siblings did not have much contact with one another; perceptions of parental favoritism are strongly related to sibling rivalry (Stocker, Lanthier, and Furman 1997). Parental death may eliminate the main source of ongoing tension among siblings. Shared grief among surviving children may foster empathy and communication. Bereaved siblings may restructure family roles and decide collectively who is going to assume the role of kin keeper, especially after their last surviving parent dies. These negotiations may bring siblings closer and help them adjust to their new roles (Umberson 2003).

One possible reason behind the equivocal findings on parental death and sibling relationships is that parental death typically is treated as a monolithic category, with little attention to heterogeneity in the contextual factors surrounding the death. As noted earlier, we focused on one contextual influence: how the presence and perceived effectiveness of parents' advance directives affect perceived closeness among their surviving children. Adult children play an important role in making decisions about their parents' end-of-life care, with most arriving at decisions by consensus or delegating decisions to one or two siblings (Cicirelli 1992). Researchers speculate that siblings may grow closer as they coordinate their parents' care, and this close collaboration helps them overcome problems they may have had with one another in the past (Goetting 1986). We expected that the presence of a living will or DPAHC at a parent's death would further protect against sibling relationship strain after the loss. We also expected that the protective effects of advance care planning would be most substantial when a bereaved child perceives that this planning was effective and helpful. Finally, we explored whether sibling relationship quality is affected by who was appointed as DPAHC.

Other Influences on Parental Advance Care Planning and Sibling Relationships

We considered five other influences that may mediate or confound the statistical association between parental advance care planning and the quality of sibling relationships after parents' deaths. First, we considered characteristics of the sibling relationship prior to parental death. The quality of adult siblings' relationships at midlife is shaped by the quality and frequency of their interactions earlier in the life course (Folwell et al. 1997; Matthews and Rosner 1988). Furthermore, whether one's aged parent engaged in end-of-life planning may reflect long-standing family dynamics. Parents who believe that their adult children have close-knit relationships may feel that the children are capable of negotiating complex medical decisions on their own, without the assistance of formal legal preparations.

Conversely, parents may want to protect and sustain strong sibling relationships by engaging in advance care planning. Parents may go so far as to appoint individuals other than family members to play the role of advocate, in an effort to protect their children from difficult deliberations (Carr and Khodyakov 2007b). Thus, we explored whether the effect of parental advance care planning on sibling relationships persisted when three indicators of sibling relationships prior to loss were considered: perceived closeness, perceived similarity, and the frequency of contact in 1992-1993, 10 years prior to the follow-up interviews.

Second, we considered three additional aspects of parental death: recency, whether the respondent (i.e., surviving child) was the parent's caregiver, and whether the respondent's other parent was alive. The psychological consequences of bereavement attenuate over time as individuals adjust to loss (Bennett 1997; Byrne and Raphael 1997); thus, more recent parental deaths may have a more powerful effect on sibling relations. Furthermore, sibling relationships following parental death may be affected by the division of parental care duties during the final stages of a parent's life. Disputes about parental care may reflect long-standing tensions among siblings (Fuller-Thomson 1999-2000), recent disagreements about the extent to which siblings think that they have met their filial responsibilities (Brody 1990), and feelings of resentment about unequal divisions of labor (Cicirelli 1992).

The presence of a living parent may affect both the decedent's DPAHC choice and the quality of sibling relationships. Married persons overwhelmingly name their spouses as DPAHC, so adult children typically do not play a major role in decision making when a married parent dies (Carr and

Khodyakov 2007b). Furthermore, having one living parent may unify the children, as they coordinate his or her care and rely on the surviving parent to serve as the social and emotional center of the family (Fuller-Thomson 1999-2000; Rosenthal 1985).

Third, we considered structural aspects of the sibling relationship, including the gender configuration of the sibling pair and the number of siblings. Sister-sister pairs report significantly closer relationships over the life course than any other sibling configuration (Lee, Mancini, and Maxwell 1990), and brother-brother pairs are closer than brother-sister pairs (Connidis 2001). Women also are more likely than men to provide care to their aging parents and to coordinate care among siblings (Cicirelli 1995; Hequembourg and Brailer 2005). Furthermore, siblings from larger families tend to exhibit more affection, perceive more support, and report feeling closer to at least one sibling, relative to persons from smaller families (Connidis and Campbell 1995). Family size also is associated with the likelihood that one engages in advance care planning: parents of larger sibships are more likely than those with fewer children to have living wills, whereas parents of smaller families tend to bypass their children as decision-making proxies and turn to other family members (Carr and Khodyakov 2007a, 2007b). Thus, to address the possibility that the relationship between parental advance care planning and sibling relationship quality is confounded by structural aspects of sibling relationships, we controlled for the gender of the primary respondent, the gender of the sibling, and the total number of living siblings.

Fourth, we considered socioeconomic and family characteristics of respondents. Both the nature and the importance of sibling relationships are related to one's socioeconomic status (White and Riedmann 1992), marital status (Goetting 1986), and parental status (Johnson and Catalano 1981). Siblings may reinvest in relationships with one another when a marriage dissolves (Cicirelli 1984), and childless persons tend to be closer with their siblings than are persons with children (Johnson and Catalano 1991). Socioeconomic characteristics may affect whether adult children encourage their parents to engage in advance care planning; for example, higher education is associated with an increased likelihood of having a living will and DPAHC (Carr and Khodyakov 2007a). Adult children who have engaged in their own advance care planning may have encouraged their parents to do the same. Thus, we adjusted for the primary respondent's marital status, parental status, and educational attainment.

Finally, we considered the primary respondent's depressive symptoms in the week prior to interview. Depressed mood produces more negative

evaluations of one's past and present experiences and relationships (Futterman et al. 1990; Hirschfield et al. 1989). Depressive symptoms also may be a consequence of poor sibling relationships. Thus, one's assessment of both the quality of his or her relationships with siblings and the perceived effectiveness of the parent's advance care planning may reflect one's depressed affect.

Methods

Data

We used data from the two most recent waves of the WLS, a random-sample survey of men and women who graduated from Wisconsin high schools in 1957. Participants were first interviewed during their senior year in high school, when they were 17 to 18 years old (in 1957), and then at ages 36 (in 1975), 53 to 54 (in 1992-1993), and 64 to 65 (in 2003-2004). Of the 10,317 original sample members, 9,139 (88.6%) were interviewed in 1975, 8,493 (82.3%) in 1992-1993, and 6,278 (61%) in 2003-2004. As of 2004, 1,297 (12.6%) of the original participants were deceased. In the 1975 interview, respondents provided information on the name, gender, and age of each of their siblings, and one was randomly chosen to be the focus of a series of questions about family relationships that were asked during all subsequent waves of the WLS.

Some strata of the U.S. population are not well represented in the WLS. By design, all sample members graduated from high school; 75% of all Wisconsin youth graduated high school in the late 1950s. Nearly all study participants were White. Despite these limitations, the sample is broadly representative of older White American men and women who have completed at least a high school education. Non-Hispanic Whites who have completed at least a high school education accounted for more than two thirds all American women and men aged 60 to 64 years in 2000 (U.S. Census Bureau 2003).

Analytic Samples

Our first aim was to evaluate the impact of parental death on perceived sibling closeness, as reported by the WLS participants. This analytic sample included 4,413 respondents who met the following criteria: (1) completed telephone interviews and self-administered mail questionnaires in

1992-1993 and in 2003-2004, (2) had at least one living sibling, and (3) answered questions about their relationships with randomly selected siblings in the two most recent survey waves.

Our second aim was to evaluate the effect of the recently deceased parent's advance care planning on his or her surviving children's relationship. Of 4,413 respondents in the analytic sample used to explore our first aim, 2,593 did not experience parental deaths in the 10 years prior to the interviews. A total of 1,820 respondents did experience parental deaths in the past 10 years, yet the WLS obtained detailed data on death context for only a subsample of recently bereaved persons. Persons who experienced both parental and spousal deaths in the 10 years prior to the interviews ($n = 102$) were asked about spousal deaths only. Of those persons who experienced only parental deaths in the past 10 years ($n = 1,718$), a randomly selected 80% subsample was asked questions about the nature of their parents' deaths.¹ If more than one parent died, the questions referred to the most recent parental death. Thus, the second analytic subsample included 1,168 respondents because we focused only on those who had experienced parental deaths in the 10 years prior to the most recent interview and who were in the random sample administered questions about their parents' end-of-life planning.

Dependent Variable

Our outcome was perceived closeness with one's randomly selected sibling in 2003-2004. Closeness was assessed in 1992-1993 and in 2003-2004 with the question "How close do you feel toward [randomly selected sibling]?" Response categories ranged from 1 (*not at all*) to 4 (*very*).

Independent Variables

Our main objective was to assess whether the effect of late-life parental death on adult sibling relationships varies on the basis of the type and perceived effectiveness of end-of-life planning engaged in by the now deceased parent. Parental death was ascertained by obtaining the dates of parental death; we focus here only on those deaths that occurred during the 10 years prior to the 2003-2004 interviews. We created three dummy variables representing the categories: (1) did not experience parental death in past 10 years (the reference category in the first step of our analyses), (2) experienced parental death but did not receive the end-of-life questions, and (3) experienced parental death and did receive the end-of-life questions.

For the random 80% subsample that was asked whether their deceased parents had advance directives, we created a series of dummy variables indicating the presence or absence of a living will and a DPAHC at the time of death. Categories indicated whether a deceased parent (1) had living will and/or DPAHC or (2) did not have living will and/or DPAHC (the reference category). Those who answered affirmatively were asked to assess the perceived effectiveness of their parents' advance directives: "What role did the [living will or DPAHC] play in your parent's last week of life?" Response categories were *it helped a great deal*, *it helped a little*, *it had no effect*, *it caused some problems*, and *it caused major problems*. We created four mutually exclusive indicators revealing the perceived effectiveness of each practice: (1) had no effect, (2) had a positive effect, (3) created problems, and (4) deceased parent did not have a living will or DPAHC (the reference category). Those respondents whose parents had appointed DPAHCs also were asked to name the specific persons appointed. We constructed a series of indicators that detailed whom a deceased parent named as a DPAHC: (1) spouse, (2) child, (3) another person, and (4) no one (the reference category).

Characteristics of relationship with randomly selected sibling. We controlled for three aspects of the respondent's relationship with his or her sibling prior to loss: perceived closeness, perceived similarity, and frequency of contact in 1992-1993. Perceived closeness was measured exactly the same way as our dependent variable. This measure allowed us to capture change in sibling relationships before and after parental death. Perceived similarity was assessed with the question "In terms of a general outlook on life, how similar are you and [randomly selected sibling]?" Response categories ranged from 1 (*not at all*) to 4 (*very*). Frequency of contact was a continuous variable that referred to the number of times a respondent communicated or visited with the randomly selected sibling during the 12 months prior to the 1992-1993 interview.

Characteristics of parental death. We controlled for the number of months that passed between the parental death and the 2003-2004 interview; whether the respondent ever gave care for a period of one month or longer to the parent because of a physical or mental condition, illness, or disability; and whether the respondent's other parent was still alive.

Structural aspects of sibling relations. We controlled for the gender of both the respondent and the randomly selected sibling (1 = female). We also controlled for the total number of living siblings the respondent had.

Demographic characteristics. We considered the respondent's educational attainment, marital status, and parental status. Educational attainment referred to the number of years of schooling the respondent had completed: 12 years (the reference category), 13 to 15 years, and 16 or more years of education. Respondent's marital status in 2003-2004 included currently married or cohabiting (the reference category), never married, and formerly married (i.e., divorced, separated, or widowed). Parental status was a dichotomous indicator reflecting whether the respondent had children.

Depressive symptoms. We evaluated the respondent's depressive symptoms ($\alpha = .83$) in 2003-2004 with a modified version of the 20-item Center for Epidemiologic Studies Depression Scale (see Radloff 1977 for question wordings). Respondents were asked to indicate the number of days in the past week that they experienced each of 20 depressive symptoms; response categories ranged from 0 to 7 days. Responses were averaged and standardized, with higher scores reflecting more frequent symptoms in the week prior to the interview.

In preliminary analyses, we considered other potential covariates, including the respondent's religion, the Big Five indicators of personality (John 1990), and place of residence, as well as characteristics of the deceased parent, including gender, health history, and the respondent's assessments of whether the parent died a painful death. None of these indicators was a statistically significant predictor of sibling relationship quality, nor did their inclusion alter the effects of our key predictor variables. Thus, we did not include these measures in the analyses presented here.

Results

Descriptive Statistics

Table 1 presents descriptive statistics for all measures used in the analysis. Respondents reported high levels of closeness with their randomly selected siblings, and these assessments were virtually the same in 1992-1993 and in 2003-2004. At both time points, roughly 80% said that they were at least somewhat close with their siblings. The mean closeness scores were 3.08 ($SD = 0.84$) in 2003-2004 and 3.07 ($SD = 0.81$) in 1992-1993.

Table 1
Sample Characteristics: Wisconsin
Longitudinal Study, 1957 to 2004

Variable	<i>M (SD) or Proportion</i>	Valid <i>n</i>
Perceived closeness with sibling (2003)	3.08 (.84)	4,413
Not at all close	0.06	
Not very close	0.15	
Somewhat close	0.46	
Very close	0.34	
Parent died, received EOL questions	0.26	4,413
Parent died, did not receive EOL questions	0.15	4,413
Parent did not die in the past 10 years	0.59	4,413
Parental EOL planning		
Deceased parent had a living will (1 = yes)	0.58	1,168
Living will helped	0.44	680
Living will had no effect	0.54	680
Living will caused problems	0.02	680
Deceased parent named a DPAHC (1 = yes)	0.73	1,168
DPAHC helped	0.42	857
DPAHC had no effect	0.55	857
DPAHC caused problems	0.03	857
Named spouse as DPAHC	0.47	857
Named child as DPAHC	0.50	857
Named another person as DPAHC	0.03	857
Preloss relationship with sibling		
Perceived closeness with sibling (1993)	3.07 (.81)	4,413
Not at all close	0.05	
Not very close	0.16	
Somewhat close	0.48	
Very close	0.32	
Perceived similarity with sibling (1993)	2.91 (.80)	4,413
Not at all similar	0.07	
Not very similar	0.17	
Somewhat similar	0.54	
Very similar	0.22	
Frequency of contact (1993)	6.75 (24.07)	4,413
Characteristics of parental death		
Months between interview and death	67.04 (16.32)	4,413
Respondent gave care to deceased parent (1 = yes)	0.15	
One parent is still alive	0.27	
Structural aspects of sibling relations		
Respondent's sex (1 = female)	0.54	4,413
Sibling's sex (1 = female)	0.51	4,413
Number of living siblings	3.40 (2.33)	4,413

(continued)

Table 1 (continued)

Variable	<i>M (SD) or Proportion</i>	Valid <i>n</i>
Demographic characteristics		
Educational attainment		
12 years of education	0.55	4,413
13 to 15 years of education	0.16	4,413
≥16 years of education	0.29	4,413
Marital status		
Currently married	0.80	4,413
Never married	0.04	4,413
Formerly married	0.16	4,413
Has children (1 = yes)	0.93	4,413
Depressive symptoms		
Depressive symptoms (CES-D) (2003)	0.68 (.69)	4,413

Note: EOL = end-of-life; DPAHC = durable power of attorney for health care; CES-D = Center for Epidemiologic Studies Depression Scale.

Just over 40% of the 4,413 sample members experienced parental deaths in the 10 years prior to the interviews. Of those who experienced recent parental deaths and received the end-of-life module ($n = 1,168$), 58% said that their parents had living wills, and three quarters said that their parents named DPAHCs. Of those whose deceased parents had living wills ($n = 680$), 54% reported that the living wills had no effect, 44% reported that they helped, and just 2% believed that they caused problems. Of those whose parents had DPAHCs ($n = 857$), 42% reported that they helped, 55% said that they had no effect, and 3% believed that they caused problems. Half of all respondents reported that their parents had appointed children, 47% reported that their parents had named their spouses, and the remaining 3% reported that their parents had appointed others as DPAHCs.

Most respondents reported that their parents had used both types of formal advance care planning. Nearly three quarters of those respondents whose deceased parents had living wills report that they had also appointed DPAHCs. One quarter reported that their deceased parents had signed living wills only, while 29% said that their parents had appointed DPAHCs only (not shown in Table 1).

Multivariate Analyses

We used ordinary least squares (OLS) regression to evaluate the impact of parental death and end-of-life preparations on respondents' perceived

Table 2
Ordinary Least Squares Regression Predicting the Effect
of a Parental Living Will on Surviving Siblings' Relationship
Quality, Wisconsin Longitudinal Study, 1957 to 2004

Variable	Model 1 (<i>n</i> = 4,413)	Model 2 (<i>n</i> = 1,168)	Model 3 (<i>n</i> = 1,168)
Parent died, received EOL questions	-.065* (.025)		
Parent died, didn't receive EOL questions	.010 (.030)		
Parental EOL planning			
Deceased parent had a living will		-.050 (.041)	
Living will helped			-.007 (.050)
Living will had no effect			-.061 (.046)
Living will caused problems			-.535** (.174)
Preloss relationship with sibling			
Closeness with sibling (1993)	.560*** (.015)	.539*** (.030)	.538*** (.030)
Similarity with sibling (1993)	.104*** (.015)	.129*** (.031)	.128*** (.030)
Frequency of contact (1993)	.000 (.000)	.001 (.001)	.001 (.001)
Characteristics of parental death			
Months between interview and death	-.001* (.001)	-.002* (.001)	-.001* (.001)
Respondent gave care to a parent	-.004 (.048)	-.015 (.050)	-.020 (.050)
One parent is alive	-.038† (.023)	-.103* (.047)	-.111* (.047)
Structural aspects of sibling relations			
Respondent's sex (1 = female)	.072*** (.021)	.135*** (.041)	.141** (.041)
Sibling's sex (1 = female)	.132*** (.020)	.142*** (.039)	.143*** (.039)
Number of living siblings	-.009* (.004)	-.020* (.009)	-.018* (.009)
Demographic characteristics			
13 to 15 years of education	-.016 (.029)	-.059 (.058)	-.063 (.058)
≥16 years of education	-.010 (.023)	-.072 (.045)	-.067 (.045)
Never married	.128† (.072)	.207 (.136)	.200 (.136)
Formerly married	.012 (.028)	-.034 (.060)	-.028 (.060)
Has children (1 = yes)	-.019 (.054)	-.122 (.100)	-.124 (.099)
Depressive symptoms			
Depressive symptoms (2003) (standardized)	-.027** (.010)	-.037† (.021)	-.036† (.021)
Adjusted <i>R</i> ²	.391	.400	.404

Note: EOL = end-of-life. Unstandardized coefficients and standard errors are presented.
 †*p* ≤ .10. **p* ≤ .05. ***p* ≤ .01. ****p* ≤ .001.

closeness to their randomly selected siblings.² Table 2 presents results for parental death alone and for the consequences of parental living wills.

Impact of parental death. To examine the impact of parental death on sibling closeness, we first estimated an unadjusted baseline model (*n* = 4,413).

Parental death negatively influenced perceived sibling closeness ($b = -.069$, $p \leq .05$; not shown in Table 2). This effect remained virtually the same after we controlled for all other independent variables ($b = -.065$, $p \leq .05$), suggesting that parents' deaths reduced perceived closeness between their surviving children, and this effect was not accounted for by demographic characteristics of the siblings, their relationship characteristics before the loss, or family background.

Impact of the living will. To explore whether the presence and perceived effectiveness of the living will and DPAHC affected sibling relationships, we focused next on the subsample of respondents who experienced parental deaths in the past 10 years and who completed the end-of-life module ($n = 1,168$). The presence of a living will did not have a significant effect on sibling relationships ($b = -.050$, ns). However, when the perceived effectiveness of the living will was considered, we observed a decline in the quality of sibling relationships if one believed that the document caused problems ($b = -.535$, $p \leq .001$). This relationship persisted even after all control variables were added into the model.

Impact of the DPAHC. Table 3 presents results for DPAHC appointments. As with a living will, the mere presence of a parental DPAHC did not have a statistically significant effect on sibling relationships ($b = .040$, ns). The perceived effectiveness of a parental DPAHC also did not have a statistically significant impact on sibling relationship quality. By contrast, whom a parent appointed as DPAHC did have a significant effect. In an unadjusted model, we found that the surviving children reported significantly higher quality sibling relationships when the deceased parents had named persons other than their spouses or children as DPAHCs ($b = .500$, $p \leq .01$; not shown in Table 3). This effect remained statistically significant but attenuated after we controlled for demographic characteristics of siblings, their relationships before the loss, and respondents' family backgrounds and personal characteristics ($b = .295$, $p \leq .05$). In supplementary analyses, we added each cluster of control variables independently. We found that relationship quality before the loss accounted for the largest share (35%) of the gross effect of DPAHC appointment on sibling relationships after the loss, suggesting that the appointment of someone outside of the immediate family may be a strategy enacted to protect already high quality relationships among adult children of a dying older person.

Table 3
Ordinary Least Squares Regression Predicting the Effect of a
Parental DPAHC on Surviving Siblings' Relationship Quality,
Wisconsin Longitudinal Study, 1957 to 2004

Variable	Model 1 (<i>n</i> = 1,168)	Model 2 (<i>n</i> = 1,168)	Model 3 (<i>n</i> = 1,168)
Parental end-of-life planning			
Deceased parent had a DPAHC	.040 (.045)		
DPAHC helped		.072 (.053)	
DPAHC had no effect		.018 (.050)	
DPAHC caused problems		.007 (.140)	
Named spouse as DPAHC			.029 (.051)
Named child as DPAHC			.039 (.052)
Named another person as DPAHC			.295* (.148)
Preloss relationship with sibling			
Closeness with sibling (1993)	.540*** (.030)	.541*** (.030)	.540*** (.030)
Similarity with sibling (1993)	.127*** (.031)	.127*** (.031)	.125*** (.031)
Frequency of contact (1993)	.001 (.001)	.001 (.001)	.001 (.001)
Characteristics of parental death			
Months between interview and death	-.001* (.001)	-.001* (.001)	-.001* (.001)
Respondent gave care to a parent	-.026 (.050)	-.027 (.050)	-.026 (.050)
One parent is alive	-.104* (.047)	-.105* (.047)	-.104* (.048)
Structural aspects of sibling relations			
Respondent's sex (1 = female)	.134*** (.041)	.130** (.041)	.133*** (.041)
Sibling's sex (1 = female)	.142*** (.039)	.141*** (.039)	.140*** (.039)
Number of living siblings	-.018* (.009)	-.019* (.009)	-.018* (.009)
Demographic characteristics			
13 to 15 years of education	-.061 (.058)	-.060 (.058)	-.060 (.058)
≥16 years of education	.067 (.045)	-.066 (.045)	-.065 (.045)
Never married	.218 (.136)	.230† (.136)	.233† (.136)
Formerly married	-.029 (.060)	-.030 (.060)	-.028 (.060)
Has children (1 = yes)	-.115 (.100)	-.107 (.100)	-.104 (.100)
Depressive symptoms			
Depressive symptoms (2003) (standardized)	-.038† (.021)	-.037† (.022)	-.040† (.021)
Adjusted <i>R</i> ²	.400	.400	.401

Note: DPAHC = durable power of attorney for health care. Unstandardized coefficients and standard errors are presented.

†*p* ≤ .10. **p* ≤ .05. ***p* ≤ .01. ****p* ≤ .001.

Discussion

Our study documented a modest but statistically significant negative effect of late-life parental death on older adult siblings' perceived relationship closeness. This pattern is consistent with prior studies suggesting that aged parents unite their adult children (Fuller-Thomson 1999-2000; Rosenthal 1985) and that children grow more distant from one another after their families' primary kin keepers die. Parental death also may reactivate negative sibling relationship dynamics that date back to their adolescent and young adult years (Matthews and Rosner 1988). We also found that the presence of a living parent has a modest negative effect on sibling relationships, suggesting that relationships may undergo strain as siblings negotiate care for widowed parents. Siblings may feel resentment toward one another if they perceive that their brothers or sisters have not contributed their fair share to caring for either the deceased or bereaved parent (Cicirelli 1992; Hequembourg and Brailler 2005) or if they disagree about how well they performed their caregiving roles (Brody 1990).

As time elapses after a death, siblings grow less close. This may reflect the fact that adult children come together upon the death of a parent only temporarily: to mourn, to support the surviving parent, and to help with practical matters such as settling the estate (e.g., Umberson 2003). After the initial mourning period passes and most practical matters are resolved, midlife siblings may return to their usual routines and responsibilities, and their relationship may grow more distant.

Upon closer inspection, we found that reactions to late-life parental death varied on the basis of whether and to what end a deceased parent had engaged in end-of-life planning. The majority of the deceased parents did engage in end-of-life health care planning, with a higher proportion appointing DPAHCs (73%) than signing living wills (58%). Slightly fewer than half of WLS respondents thought that their parents' living wills and DPAHC appointments were helpful, and only a very small proportion believed that these preparations caused problems (2% and 3%, respectively). The narrow majority (55%) reported that the practice neither helped nor hurt. These findings reveal the importance and perceived value of engaging in formal end-of-life planning (Hopp 2000; Parkman and Calfee 1997), as only a handful of respondents rated these preparations as problematic.

Nevertheless, we also found that parental advance care planning does not necessarily protect against decrements in sibling relationship quality after parental death. Although end-of-life health care planning may have

positive consequences for older adults, such as providing them with a sense of autonomy and control over their health care should they become incapacitated and ensuring that they receive the treatment that they desire (Ditto et al. 2001; Robertson 1991), it is not uniformly helpful in increasing closeness among their surviving children or in mitigating the negative consequences associated with parental death, as hypothesized by some researchers (Kramer et al. 2006; Tilden et al. 2001). We found that when respondents believed that their parents' living wills created problems, they reported poorer quality relationships with their randomly selected siblings, and this effect persisted even after depressive symptoms and relationship quality before the loss were controlled. Moreover, this relationship was not endogenous, because it did not change after we excluded baseline relationships quality characteristics from the model in preliminary analyses.

Although living wills are intended to ensure that dying patients' health care preferences will be met, patients' children may hold different opinions about the best course of treatment (Kramer et al. 2006), or they may find that the documents do not effectively clarify or translate their parents' needs and preferences during the final days of life (Fagerlin and Schneider 2004). Furthermore, patients' preferences as articulated in living wills often are unstable; they change over time as the patients' circumstances and symptoms change (Collins et al. 2006). As such, adult children may disagree over whether the content of a living will should be heeded or whether the ultimate treatment decision should reflect more recent, though not legally binding, informal conversations with their parents.

Our results depart from prior studies showing that advance directives reduce stress and unhappiness related to decision making in families that withdraw life-sustaining treatments of hospitalized terminally ill relatives (e.g., Tilden et al. 2001). Although living wills may reduce stress in surviving family members, we found that they are not uniformly helpful in increasing closeness among siblings. When a living will is deemed problematic, it is associated with decrements in the quality of sibling relationships. However, it is important to emphasize that only a small minority of respondents (2%) in our sample reported that living wills caused serious problems.

The WLS did not obtain data on why living wills were deemed problematic. However, we conducted exploratory descriptive analyses in an effort to gain some insights into this small ($n = 15$) but important subgroup. Compared with those who viewed living wills as unproblematic, those who deemed them problematic reported more frequent depressive symptoms and lower levels of sibling contact, similarity, and closeness in 1992-1993. They also were less likely to be providing care to their parents at the time of death.

These differences were not statistically significant, likely reflecting the unequal group variances and small cell sizes. However, they do suggest that one's assessment that a living will was problematic may reflect not only the effectiveness of the document but also long-standing family dynamics, including low levels of integration and communication among family members. Health care practitioners working with patients in devising end-of-life care plans may want to consider their families' histories of problem solving and communication when devising models of care.

We also found that neither the presence nor the perceived effectiveness of a DPAHC appointment affected sibling relationship quality. Rather, who was named as DPAHC affected sibling relationships. When a person other than a member of the immediate family is appointed, the quality of sibling relationships increases significantly. We suspect that this may reflect one of two possible scenarios. First, if a person outside of the immediate family makes the critical end-of-life decision, the spouse and children are spared of both the decision and the conflict that may accompany this decisions (Kramer et al. 2006). By relinquishing control, they also may be protected from the emotional duress that often accompanies decision making. Second, if family members disagree about the course of action taken by the DPAHC, they may be unified against a mutual "enemy," thus strengthening the sibling bond. Both of these explanations are speculative, however, and warrant further investigation.

The WLS did not obtain open-ended information on why deceased parents appointed particular individuals as DPAHCs. We again conducted exploratory descriptive analyses in an effort to gain further understanding of this small ($n = 22$) but underresearched subgroup. Compared with persons whose parents chose spouses or children as DPAHCs, those persons whose parents appointed "someone else" reported higher levels of sibling closeness, similarity, and contact at baseline. A higher percentage of them also provided care to their parents prior to death (32% vs. 22%). These findings suggest that particularly close knit families may turn outside of the immediate family when selecting DPAHCs. Such families may turn to more distant, though perhaps more "objective" and less emotionally involved, decision makers. These interpretations, however, warrant additional exploration in future research. The small size of the "appointed other as DPAHC" subgroup may account in part for the lack of statistically significant subgroup differences.

Taken together, our results show that end-of-life planning does not uniformly enhance the quality of sibling relationships following parental death. Our findings are somewhat surprising, because advance care planning

is intended to protect “family members from disagreement about what they *think* the patient wants and ease the decision making burden for family and caregivers” (Parkman and Calfee 1997:50). Our results suggest that practitioners should not simply encourage patients to sign living wills or to automatically appoint close family members as DPAHCs. Rather, they should try to engage family members, broadly defined, in collaborative discussions about patients’ end-of-life care needs to ensure that all involved parties understand and respect the patients’ preferences. Such discussions could involve a review of the content of a living will to help identify aspects of the document that could ultimately create problems. Furthermore, where appropriate, elderly patients may be encouraged to look beyond their children or spouses and to instead select more distant family members or individuals other than family members as DPAHCs. These more distant individuals may take a more objective approach to end-of-life decision making and may be better able to carry out the needs of dying patients in those cases where they have less intense emotional ties to the patients.

Limitations and Future Directions

Our study had several important limitations, each of which raises questions to be addressed in future analyses. First, the WLS obtained only a very general indicator of perceived closeness with a randomly selected sibling. Different findings may emerge if other relationship outcomes are considered, such as warmth, criticism, or the nature of sibling communication and decision making. Moreover, we considered only one sibling’s assessment of his or her relationship with only one randomly selected sibling, rather than multiple reports of assessments across all siblings. The degree to which a parent’s end-of-life care affects sibling relationships may be contingent on the specific role each adult child plays at the end of the parent’s life. Future studies should explore the ways that a decedent’s end-of-life planning and the effectiveness thereof shape both dyadic-level sibling relationships and relationship dynamics among all siblings.

Second, we used quantitative data to evaluate the effect of parents’ deaths and end-of-life care planning activities on perceived closeness among their surviving children. The WLS data allowed us to explore the impact of end-of-life planning while controlling for potentially important confounding variables, yet it did not obtain information on the complex processes surrounding such preparations. A qualitative study may be better suited to exploring the nuances of kinship relationships and how these

relationships shape both advance care planning and family responses to bereavement.

Third, our study focused on parental deaths that occurred very late in the life course; most of the parental deaths considered here occurred when the parents were in their 70s or 80s and the adult children were in their late 50s through mid-60s. Deaths that occur very late in life and that are at least somewhat anticipated tend to yield less intense psychological distress than those deaths that occur prematurely or unexpectedly (e.g., Carr et al. 2001). The relatively weak effects of parental death documented in our study may reflect the fact that parental death is an anticipated life transition for midlife and older adults and thus may not create the severe rifts or distress that may follow deaths occurring earlier in the life course (Umberson 2003).

Finally, the WLS assessed the perceived effectiveness of a parent's living will and DPAHC but did not ascertain the specific reasons behind their effectiveness (or lack thereof). The implications for sibling relationships may vary widely on the basis of whether the problems were created through sibling interactions or for other reasons. For example, a living will could be ineffective in transmitting the patient's wishes to his or her physician yet could also be deemed ineffective if siblings disagree about the content of the document. Furthermore, we could not ascertain who exactly was named as DPAHC (i.e., which sibling) nor why a specific individual was appointed to the role. The implications of parental end-of-life planning for sibling relations may vary on the basis of which sibling was appointed the decision-making proxy.

Despite these limitations, our study has provided an investigation into the ways that late-life parental death and the context of end-of-life decision making affect the quality of sibling relationships among White men and women in their mid-60s. We look forward to seeing future research that explores the extent to which these patterns vary across future cohorts of older adults. The large baby boom cohort is more likely than current cohorts of older adults to have divorced, to have remarried, and to have stepchildren (Hughes and O'Rand 2004). This cohort also is more highly educated than prior cohorts and is believed to be particularly proactive in making health care decisions. Whether, how, and with whom the baby boom cohort prepares for end-of-life and the consequences of these decisions for their children (including stepchildren and half-children) will be of critical interest to scholars, practitioners, and policy makers in coming decades.

Notes

1. Topical modules were administered to randomly selected subsamples to shorten the overall length of the telephone interview.

2. In preliminary analyses, we conducted sensitivity analyses using ordinal regression (with a four-category outcome) and logistic regression models in which the outcomes included either “very close” versus all others or “somewhat or very close” versus all others. We also estimated OLS regression models in which the outcome measure was the two-item scale of perceived closeness and perceived similarity ($\alpha = .76$). The magnitude and significance levels of the coefficients were quite similar across models. Although ordinal regression is the most appropriate model specification given the ordinal measurement of our dependent variable, the use of multiple predictors increases the number of cells with small observed and predicted frequencies, which undermines the models’ goodness of fit (Norusis 2009). For ease of presentation and interpretation, we present results for the OLS regression model in which the single-item perceived closeness measure was the outcome variable. All models are available from the first author.

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