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All in the Family: The Impact of Caring for Grandchildren on Grandparents' Health

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Objectives. The purpose of this study was to examine the effects of caring for grandchildren on health behaviors and mental and physical health among older adults.

Methods. Using a sample of 12,872 grandparents aged 50 through 80 from the Health and Retirement Study, we examined the relationship between stability and change in various types of grandchild care and subsequent health, controlling for covariates and earlier health.

Results. We found no evidence to suggest that caring for grandchildren has dramatic and widespread negative effects on grandparents' health and health behavior. We found limited evidence that grandmothers caring for grandchildren in skipped-generation households are more likely to experience negative changes in health behavior, depression, and self-rated health. We also found some evidence of benefits to grandmothers who babysit.

Discussion. Our findings suggest that the health disadvantages found previously among grandparent caregivers arise from grandparents' prior characteristics, not as a consequence of providing care. Health declines as a consequence of grandchild care appear to be the exception rather than the rule. These findings are important given continuing reliance on grandparents for day care and increasing reliance on grandparents for custodial care. However, the findings should be tempered by the recognition that for a minority of grandparents, coresidential grandchild care may compromise health.

IN the United States, family assistance typically flows down the generations, especially from parents to adult children (Eggebeen & Hogan, 1990; Rossi & Rossi, 1990; Soldo & Hill, 1993). An important type of assistance involves caring for the next generation. Although the fraction of children cared for by grandparents has declined as formal child care has expanded, grandparents remain an important source of child care for a sizeable fraction of working parents (Bowers & Myers, 1999; Fuller-Thomson & Minkler, 2001; Hofferth, 1996). At the same time, the proportion of grandparents providing coresidential care for grandchildren has increased (Lugaila, 1998). Some grandparents assume responsibility for raising a grandchild when the parents are unavailable due to substance abuse, illness, or incarceration (Goodman & Silverstein, 2002; Kelley, Yorker, & Whitley, 1997). Other grandparents share responsibility for grandchildren in response to their adult child's financial need, divorce, or work commitment (Musil & Ahmad, 2002).

Grandparents caring for grandchildren provide a critical service for both the children and the children's parents. Like other care work, this service has public, as well as private, benefits; relying on grandparents to care for or raise their grandchildren conserves public resources and sidesteps debates over public responsibility. However, as grandchild care has become more visible, concerns have arisen that these benefits may come at the cost of grandparents' well-being (e.g., Minkler, 1999). The impact of caring for grandchildren on grandparents' health is a particular focus of concern.

These concerns stem from the recognition that caring for grandchildren adds a considerable demand to a grandparent's life. A large literature suggests that the exertion and stress associated with fulfilling these demands will exact a health toll (Grinstead, Leder, Jensen, & Bond, 2003). The day-to-day care of children, especially very young children, is physically taxing and can involve loss of sleep and exposure to infections (Jendrek, 1993). These physical demands may increase if grandchild care coincides with the onset of physical aging. Time pressures and added emotion and work may lead to feelings of stress and overload (Jendrek, 1993). Furthermore, grandchild care, particularly custodial care, is nonnormative. Perceiving caregiving as "off time" and sacrificial may lead grandparents to feel isolated and resentful (Minkler, Fuller-Thomson, Miller, & Driver, 1997). Lack of institutional recognition and support can make daily life more difficult and increase stress (Minkler, 1999).

In addition to these direct effects, grandchild care affects health indirectly through associated changes in lifestyle, relationships, and social roles (Szinovacz, DeViney, & Atkinson, 1999). Caring for grandchildren reduces time for self-care, such as exercising and going to the doctor (Roe, Minkler, Saunders, & Thomson, 1996), and time for engaging in hobbies and socializing (Pruchno, 1999). The stress of caregiving may cause or exacerbate poor health behaviors, such as smoking (Burton, 1992; Waldrop & Weber, 2001). Caring for a grandchild may strain relationships with a spouse or partner, with the child's parent, or with other children or grandchildren (Bowers & Myers, 1999; Weber & Waldrop, 2000). Caregiving grandparents may reduce hours of paid employment, which may lead to financial distress (Minkler & Roe, 1996).

Although the demands of grandchild care are real, whether they trigger health change likely depends on the characteristics and context of the caregiving situation (cf. Minkler et al., 1997; Szinovacz et al., 1999). First, the nature of demands varies across caregiving arrangements. For example, custodial care is generally more demanding than babysitting, and very young children, teenagers, and children with health or behavior problems are more demanding than grade school children with few problems (Bowers & Myers, 1999; Giarrusso, Feng, Wang, & Silverstein, 1996; Sands & Goldberg-Glen, 2000). If grandchild care is the result of problems in the adult child's life, the grandparent may associate it with feelings of loss, pain, and guilt over perceived failures as a parent (Minkler et al., 1997), and conflict with this child may increase stress (Waldrop & Weber, 2001). Combining caregiving with other roles, such as paid employment, may increase time pressure and exhaustion (Pruchno, 1999). The extent to which a grandparent actually perceives grandchild care as demanding will depend on the meaning the elder attaches to grandparent and caregiving roles and to family connections (Pruchno & McKenney, 2002). Finally, the consideration of grandchild care as nonnormative may vary by race/ethnicity and social class (Goodman & Silverstein, 2002).

Second, grandchild care also brings benefits, which in a given situation may mitigate or even outweigh caregiving demands. Caregiving is positively affirming, so grandparents may find caring for a grandchild rewarding (Pruchno & McKenney, 2002). Caregiving grandparents report feeling closer to their grandchildren and enjoying time spent with them (Pruchno, 1999). Caring for a grandchild may lead to a more active lifestyle, healthier meals, or a reduction in smoking. Some grandparents feel that caring for their grandchildren makes them healthier and more active (Waldrop & Weber, 2001).

Third, whether grandchild care affects health depends on the balance between the demands of caregiving and the resources available to the grandparent (Hughes & Waite, 2002). All else being equal, a financially secure, healthy grandmother is better able to meet the demands of grandchild care than an impoverished grandmother with mobility limitations from diabetes. Married grandparents bring the resources of two people to bear on the situation. Social support is an important resource for caregiving grandparents (Grinstead et al., 2003), and caregiving grandparents may experience increases in social support as they mobilize resources to cope (Szinovacz et al., 1999). However, as kin caregivers, grandparent caregivers receive fewer institutionally based supports than non-kin caregivers (Grinstead et al., 2003); this deficit may cause grandparents, especially those who lack other resources, to feel overwhelmed by the demands of grandchild care.

The balance between caregiving demands and available resources is unclear a priori. However, a growing literature suggests that for many people, the net health effects of grandchild care are negative. Grandparents raising grandchildren are more likely to report activity limitations than other grandparents (Fuller-Thomson & Minkler, 2000; Minkler & Fuller-Thomson, 1999). These grandparents also rate their health more negatively, report more health problems, and are less satisfied with their health (Giarrusso et al., 1996; Minkler & Fuller-Thomson, 1999; Musil & Ahmad, 2002; Solomon & Marx, 1999; Waldrop & Weber, 2001). Co-resident grandparent caregivers report poorer physical health than noncaregivers, and caregiving grandmothers experience increased risks of coronary heart disease compared to women who are not caregivers (Lee, Colditz, Berkman, & Kawachi, 2003; Strawbridge, Walhagen, Shema, & Kaplan, 1997).

A number of studies have shown higher depressive symptoms among both custodial (Minkler et al., 1997) and coparenting (Musil, 1998; Musil & Ahmad, 2002) grandparents than among nonresidential grandparents (Caputo, 2001; Fuller-Thomson & Minkler, 2000) and other noncaregivers (Strawbridge et al., 1997). Szinovacz and colleagues (1999) found increases in depression among grandmothers whose grandchild moved in, particularly when neither of the child's parents moved in. The continued presence of a grandchild did not increase depression unless the child's parent also lived in the household. Similarly, a recent longitudinal study found an elevated risk of depression among coresident grandparent caregivers (Blustein, Chan, & Guanais, 2004).

However, the research designs used in most studies limit experts' ability to make causal connections between caring for grandchildren and grandparents' health (Strawbridge et al., 1997). Most studies assessed the cross-sectional relationship between grandchild care and grandparents' health; some of these studies were also unable to control for important covariates. Thus, the relationships found may reflect initially poorer health among grandparents who provide care to grandchildren, characteristics that place these grandparents at greater risk of health decline, a causal effect of caregiving on health, or some combination.

In addition, many studies used nonrepresentative samples. Some, though not all, of these samples consisted of grandparents at the most demanding end of the caregiving spectrum, such as grandparents raising children whose parents are addicted to drugs or grandparents living in poverty. Thus, whether the relationships observed are generalizeable to the entire population of caregiving grandparents is unclear. Even in more general studies, the comparison group is often not ideal. Some studies have compared coresidential grandparents to grandparents without coresident grandchildren. But grandparents who do not live with grandchildren may provide babysitting, blurring the comparison. Studies that have found weak or nonexistent relationships between grandchild care and grandparents' health (see Grinstead et al., 2003) increase uncertainty about the link between grandchild care and grandparents' health.

Finally, the three longitudinal studies that employed nationally representative data all examined mental health (Blustein et al., 2004; Minkler et al., 1997; Szinovacz et al., 1999). However, physical health is equally important, especially for persons on the threshold of old age. In addition, as described previously, the time burdens associated with childcare may limit time for self-care and lead to shifts in health behavior.

In this article we provide a context for the cross-sectional and focused studies referenced previously. We assess the longitudinal relationship between various types of grandchild care and multiple dimensions of grandparents' health in a nationally representative sample. We assess 2-year changes in health and health behavior by comparing the health of different types of

grandparent caregivers to that of grandparents who do not provide care, controlling for initial health and health behavior and important covariates. Because researchers know less about the relationship between grandparents' health and nonresidential grandchild care, we examine the health effects of various levels of babysitting explicitly. We examine the effects of starting care, continuing care, and stopping care separately; previous research has shown differences in health between grandparents initiating and continuing care (Szinovacz et al., 1999). Most existing research focuses on grandmothers; however, we examine grandchild care and health among grandmothers and grandfathers.

We designed our analysis to address two questions. First, is caring for grandchildren associated with grandparents' subsequent health, net of grandparents' characteristics and prior health? The situations precipitating care for grandchildren among grandparents are likely related to characteristics themselves associated with poorer health and greater likelihood of health decline (Strawbridge et al., 1997). Thus, we expected grandchild care to be associated with poorer subsequent health in bivariate models but expected these associations to attenuate or disappear in multivariate models that included grandparents' characteristics and prior heath. Second, are any remaining relationships between grandchild care and grandparents' health generalized, or are they observed only among certain types of caregivers? In the preceding paragraphs we emphasized how context and circumstances are likely to shape the experience and consequences of caregiving. Thus, we did not expect to observe widespread health decline in our representative sample of grandparent caregivers. To the extent that we might observe deleterious health effects, we expected them to be most pronounced in the most demanding caregiving situation—skipped-generation households. We also expected that caregiving would have stronger health effects for grandmothers than for grandfathers, given typical gender differences in other household responsibilities and the types of care provided by mothers and fathers.

Methods

Data

Our data came from Waves 4, 5, and 6 (1998–2002) of the Health and Retirement Study (HRS), a nationally representative longitudinal study of persons older than age 50. The HRS comprises four birth cohorts who entered the study in different calendar years; in 2002, it contained 18,167 respondents. Once they have entered the study, respondents are interviewed every 2 years.

The sample for each cohort derives from the same stratified, multistage area probability design that oversamples Blacks, Hispanics, and Floridians. Initial cohort response rates ranged from 70% to more than 80%; reinterview rates for all cohorts at each wave have been between 92% and 95% (Institute for Social Research, 2004). We used data from age-eligible members of all four cohorts. Together, they formed a nationally representative sample of the U.S. population aged 50 and older in 1998, the first year in which they were all interviewed.

Our analytic sample contained 14,752 White, Black and Hispanic grandparents born between 1918 and 1947. Of these, 1,880 (13%) provided no data about grandchild care; thus, our final sample size was 12,872. Models allowing for sample selection bias due to missing data showed similar results to those presented here. The large sample size is a key strength of our study because caring for grandchildren coresidentially is still relatively rare (Pebley & Rudkin, 1999).

A limitation of our sample is that it does not represent grandparents younger than age 50. According to Census 2000, 28% of coresident grandparents are younger than age 50 (Simmons & Dye, 2003). The proportion of grandparents providing babysitting who are younger than age 50 is unknown. The reader should keep this limitation in mind. However, any health effects of grandchild care are likely to be most evident in the 50s and 60s, a key turning point in health and aging.

Measure of Grandchild Care

In each wave, interviewers asked HRS respondents whether they had spent 100 hr or more taking care of grandchildren in the previous 2 years. If respondents answered yes, the interviewer asked how many hours they had spent on grandchild care. Respondents also listed the people living in their household and their relationship to each person. Using this information, we identified grandchild care status for each respondent at each interview. We distinguished three kinds of care: (a) personally caring for at least one nonresident grandchild for 100 hr or more in the past 2 years (i.e., approximately 50 hr per year of babysitting), (b) living with at least one adult child and one or more grandchildren (multigenerational household), and (c) living with one or more grandchildren with no adult child present (skipped-generation household). We further distinguished nonresidential caregivers by hours of care per year (i.e., 50–99 hr, 100–199 hr, 200–499 hr, and 500 hr or more), because prior research suggests that only high levels of babysitting affect grandparents' health (Minkler & Fuller-Thomson, 2001). Note that we considered grandparents who provided fewer than 50 hr of care per year to be noncaregivers. Although we do not expect such low levels of care to affect health, the reader should bear this limitation in mind.

Table 1 shows the weighted proportion of respondents providing each type of grandchild care in 1998, the first year we observed respondents. In all, 59% of grandmothers and 65% of grandfathers had provided no care (i.e., fewer than 50 hr per year) for grandchildren over the preceding 2 years. Another 29% of grandmothers and 22% of grandfathers had provided at least 50 hr of care per year for grandchildren they did not live with. About half of these caregivers had provided between 50 and 199 hr of care; however, nearly 7% of grandmothers and 3% of grandfathers had provided 500 hr or more of care per year. We found that 7% of grandmothers and 5% of grandfathers lived with grandchildren. Most of these households contained three generations—the grandparent, an adult child, and at least one grandchild. Less than 3% of grandparents lived with grandchildren in skipped-generation households.

We observed most respondents three times at 2-year intervals. Thus, they contributed two intervals of observation (i.e., 1998–2000, 2000–2002). In Table 2, we treat these intervals as the unit of observation and examine the weighted distribution of 2-year stability and change in grandchild care. In more than half of the intervals, grandparents provided no care for grandchildren; they were not caregiving at either the

Table 1. Measures of Care for Grandchildren, Health Measures, and Covariates for Grandparents Aged 50–80, 1998 Health and Retirement Study ($N = 12,872$)

	Women ($n = 7,416$)		Men ($n = 5,456$)	
Characteristic	*M* or %	*SD*	*M* or %	*SD*
Grandchild care status				
Not a grandparent in 1998[a]	4.6		7.6	
Grandparent, not providing care[b]	59.1		65.3	
Grandparent, providing care	29.4		22.1	
50–99 hr per year	6.8		7.6	
100–199 hr per year	10.2		7.7	
200–499 hr per year	5.6		3.9	
500+ hr per year	6.7		2.9	
Multigenerational household	5.3		3.9	
Skipped-generation household	1.7		1.2	
Measures of health and health behavior				
Smoker	17.4		19.1	
Problem drinker	9.5		10.9	
Exercises vigorously ($\geq$ 3 times per week)	42.8		53.3	
Obese	24.9		24.8	
Number of depressive symptoms (0–8)	1.67	1.98	1.2	1.71
Self-rated health (1–5)	3.19	1.14	3.2	1.14
Number of chronic conditions (0–6)	0.96	1.02	1.0	1.00
Number of functional limitations (0–12)	2.62	3.01	1.7	2.50
Covariates				
Black	10.0		7.9	
Hispanic	6.6		6.6	
Age	63.63	8.50	63.3	8.26
Married	62.6		84.7	
Number of children younger than 18 in household	0.04	0.24	0.1	0.40
Years of education	12.10	2.84	12.4	3.25
Household income ($1,000)	47.05	77.15	64.7	169.76
Household net worth ($1,000)	318.52	1,194.87	373.7	1,337.54
Working part time	10.6		9.6	
Not working	62.1		47.1	

Notes: Data are weighted to represent the U.S. population. Respondents not interviewed in 1998 are excluded. *SD* = standard deviation.
[a]These respondents had become grandparents by the 2002 interview.
[b]"No care" includes grandparents who spent fewer than 50 hr per year personally caring for grandchildren.

beginning or the end of the 2-year interval. About 10% of grandmothers and grandfathers began providing some kind of care across the 2-year intervals; most provided babysitting. Another 21% of grandmothers and 14% of grandfathers continued to provide some kind of care (again, primarily babysitting), and 12% of grandmothers and 11% of grandfathers ended their caregiving responsibilities. About 1% of grandparents provided more care (i.e., moved from babysitting to a multigenerational or skipped-generation household, or from a multigenerational to skipped-generation household); similarly, about 1% reduced their caregiving (i.e., moved from a skipped-generation to a multigenerational household or babysitting, or from a multigenerational household to babysitting).

Table 2. Stability and Change in Grandchild Care Over 2-Year Intervals for Grandparents Aged 50–80, 1998–2002 Health and Retirement Study

Grandchild Care Status[a]	Women	Men
No care at either wave	53.7	60.7
Started babysitting	9.0	9.8
Continued babysitting	17.0	11.6
Stopped babysitting	11.4	10.9
Started multigenerational household	0.6	0.8
Continued multigenerational household	3.6	2.4
Stopped multigenerational household	0.8	0.8
Started skipped-generation household	0.2	0.2
Continued skipped-generation household	0.9	0.6
Stopped skipped-generation household	0.3	0.3
Provided more care	1.3	1.0
Provided less care	1.2	1.0

Notes: Figures are weighted percentages. Based on pooled 2-year interval data, 13,876 intervals for women and 10,012 for men.
[a]Includes people who became grandparents during the interval.

Health Measures

Smoking.—We measured whether respondents were current smokers. Models using the number of cigarettes as the outcome, with nonsmokers coded as 0, showed substantively similar results to those presented here. Table 1 shows the distribution of all health measures.

Problem drinking.—We tested several measures of alcohol use: drinks per day (0, 1–2, 3–4, and 5 or more), drinks per week (0–42), and problem drinking (5 or more drinks per week for women and 13 or more drinks per week for men). The

results for these measures were nearly identical; we present results for problem drinking.

Exercise.—This variable indicates whether the respondent had participated in vigorous physical activity or exercise (e.g., sports, heavy housework, or a job that involved physical labor) three times per week or more on average over the previous 12 months.

Obesity.—We tested both a continuous measure (body mass index, equal to weight in kilograms divided by height in meters squared) and a dichotomous measure of obesity (body mass index $\geq$ 30). Again, results were very similar; we present results for the dichotomous measure.

Depressive symptoms.—Each wave of the HRS includes a short version of the Center for Epidemiologic Studies–Depression scale designed for telephone interviews with older respondents (Turvey, Wallace, & Herzog, 1999). Each item asks whether the person had experienced a specific symptom in the past week. Number of depressive symptoms was a count of affirmative responses, with two items tapping positive affect reverse coded; it ranged from 0 to 8.

Self-rated health.—Interviewers asked each respondent to rate his or her health on a five-point scale from poor to excellent, providing a subjective assessment of the respondent's health status.

Chronic conditions.—In each wave, researchers asked respondents if a doctor had ever told them that they had diabetes, heart disease, lung disease, cancer, hypertension, or a stroke. Number of chronic conditions was the total number of conditions reported; it ranged from 0 to 6.

Functional limitations.—We calculated number of functional limitations by summing responses to 12 items assessing whether the respondent had difficulty with specific forms of ambulation (e.g., walking a block and climbing a flight of stairs) or muscle movements (e.g., moving a large chair or picking up a dime). It ranged from 0 to 12.

Covariates

We controlled for age (in years), gender, race/ethnicity (White, Black, and Hispanic), education (in years), log of household income, and log of net worth. We also controlled for the respondent's contemporaneous roles—marital status; number of children younger than 18 in the household (besides any grandchildren); and whether the respondent was working full time, working part time, or not working. Most nonworking men were retired (82.1%); among women, 50.9% were retired, and 34.8% were homemakers. Less than 2% of nonworking grandparents were unemployed.

Models and Methods

The unit of observation in our analysis was the 2-year interval between pairs of interviews. We regressed each health measure at Time 2 (i.e., the interview ending the interval) on our 12-category measure of stability and change in grandchild care over the interval for men and women separately. Model I contained only our measure of grandchild care. Model II added demographic characteristics, contemporaneous roles, and the year in which the interval started. Model III added the corresponding health behavior or health outcome measured at Time 1 (i.e., the interview beginning the interval). We estimated a comparable series of models using a measure of grandchild care by dividing babysitters by the number of hours of care per year (50–200, 200–499, and 500 or more) and divided the "more care" and "less care" categories into more/less babysitting and more/less other care. The results of these models were consistent with our overall conclusion; we note the few differences between these results and those we present.

Because each respondent may have contributed two intervals to the data set, the observations are not independent and standard regression techniques are inappropriate. We thus estimated our models using generalized estimating equations, which (a) adjust the standard errors of the parameter estimates to account for nonindependence by using the observed correlational structure of the data and (b) are appropriate for transition data (Diggle, Heagerty, Liang, & Zeger, 2002; Liang & Zeger, 1986).

Although the models for each health outcome contained the same variables, the functional form varied by the metric of the outcome. For depression, self-rated health, chronic conditions, and functional limitations, we used ordinary least squares regression. We tested a negative binomial specification for depressive symptoms, chronic conditions, and functional limitations; we also tested an ordered logit specification for self-rated health. The results were substantively the same to those we present. Smoking, problem drinking, exercise, and obesity (body mass index $\geq$ 30) are dichotomous, so we used a logistic regression specification. We present models that employ sampling weights; the substantive conclusions from unweighted models were the same.

Results

Tables 3 and 4 display coefficients from Models I, II, and III for each health outcome and health behavior for women. Table 3 shows consistent support for our expectations. For every health outcome, Model I shows differentials between grandmothers who provide various types of care and grandmothers who do not provide care. These differences attenuate or disappear with the introduction of covariates and Time 1 health in Models II and III, respectively. Although the pattern is somewhat less consistent in Table 4, in general, differences in health behavior by type of grandchild care observed in Model I attenuate or disappear in Models II and III. Analogous sets of models dividing babysitters by hours of care provided (not shown) showed the same pattern for both health and health behavior.

We also found support for our expectation that any net association between grandchild care and subsequent health would be evident among grandmothers living in skipped-generation households. Four of the eight significant coefficients in Model III were for grandmothers living in skipped-generation households. Grandmothers whose grandchildren move in showed declines in self-rated health, but those who continued with this arrangement saw a modest improvement, suggesting the negative effect of starting this kind of

Table 3. Coefficients From Regressions of Health Measures on Grandchild Care Status and Change, Covariates, and Prior Health, 1998–2002 Health and Retirement Study, Women

	Depressive Symptoms			Self-Rated Health			Chronic Conditions			Functional Limitations		
Variable	I	II	III	I	II	III	I	II	III	I	II	III
Grandchild care status												
Grandparent, no care[a]	—	—	—	—	—	—	—	—	—	—	—	—
Started babysitting	−0.14*	−0.10	−0.04	0.16**	0.08**	0.06*	−0.11**	−0.01	−0.01	−0.39**	−0.20*	−0.10
Continued babysitting	−0.22**	−0.13*	−0.08	0.24**	0.12**	0.05*	−0.17**	−0.04	−0.01	−0.49**	−0.24**	−0.08
Stopped babysitting	−0.07	−0.04	0.03	0.10**	0.05	0.01	−0.07**	0.00	0.01	−0.21*	−0.09	−0.04
Started multigenerational household	0.43*	0.16	0.02	−0.01	0.07	0.09	−0.09	0.00	−0.02	0.10	0.17	0.09
Continued multigenerational household	0.54**	0.13	0.07	−0.27**	−0.06	0.00	−0.09	−0.06	0.00	0.69**	0.41	0.15
Stopped multigenerational household	0.41	0.10	−0.09	−0.27**	−0.12	−0.07	−0.06	−0.06	0.04	1.10**	0.94**	0.48
Started skipped-generation household	1.47**	1.16**	0.62	−0.81**	−0.65**	−0.45**	0.29*	0.32*	0.18	0.67*	0.25	−0.27
Continued skipped-generation household	0.77**	0.30	0.03	−0.14	0.11	0.12*	0.07	0.09	0.01	0.75*	0.34	−0.05
Stopped skipped-generation household	0.74*	0.44	−0.08	−0.27**	−0.12	0.05	0.27**	0.26**	0.24**	0.92*	0.64	0.34
Provided more care	0.37*	0.11	0.08	−0.07	0.05	0.00	−0.07	−0.01	0.04	0.40	0.19	0.17
Provided less care	0.11	−0.08	0.08	−0.04	0.03	−0.07	−0.12*	−0.05	−0.05	0.20	0.17	−0.05
Covariates												
Black[b]		0.09	−0.10		−0.28**	−0.07**		0.29**	0.00		0.28	−0.10
Hispanic[b]		0.14	−0.06		−0.18**	−0.06*		−0.20**	−0.01		−0.19	−0.08
Age		−0.01**	−0.01**		0.00**	0.00*		0.02**	0.00**		0.03**	0.01**
Married[c]		−0.19**	−0.03		0.06*	0.04*		−0.08**	−0.03*		−0.15	−0.01
Number of children younger than 18 in household		−0.13	−0.06		0.02	0.01		−0.02	0.03		−0.19	−0.03
Education		−0.12**	−0.04**		0.08**	0.02**		−0.05**	0.00		−0.17**	−0.02*
Household income (log)		−0.07**	−0.06**		0.05**	0.02**		−0.01	−0.01		−0.09**	−0.03
Household net worth (log)		−0.06**	−0.03**		0.04**	0.01**		−0.02**	0.00		−0.11**	−0.04**
Working part time[d]		0.09	0.05		−0.09*	−0.03		−0.01	−0.01		0.08	0.00
Not working[d]		0.38**	0.18**		−0.31**	−0.10**		0.09**	0.02		0.73**	0.13*
Interval began in 2000[e]		0.03	0.01		−0.06**	−0.10**		0.11**	0.04**		0.19**	0.07
Health measures												
Depressive symptoms			0.61**									
Self-rated health						0.72**						
Chronic conditions									0.93**			
Functional limitations												0.84**
Constant	1.70**	5.35**	2.48**	3.15**	1.78**	0.55**	1.20**	0.35*	0.12	3.04**	5.04**	1.07**
Observations	13,036	13,036	13,036	13,756	13,756	13,756	13,724	13,724	13,724	8,850	8,850	8,850
Unique identifiers	7,077	7,077	7,077	7,384	7,384	7,384	7,374	7,374	7,374	5,287	5,287	5,287
Chi square	74.04	623.00	4,893.03	133.00	1,765.20	18,785.90	71.41	1,265.78	46,021.47	73.98	643.89	17,498.81
Degrees of freedom	11	22	23	11	22	23	11	22	23	11	22	23

Notes: Ordinary least squares regression models. Unit of analysis is 2-year interval between interviews. Models estimated with generalized estimating equations procedures; analyses performed using sampling weights.

[a]"No care" includes grandparents who personally spent less than 50 hr per year caring for grandchildren.

[b]Reference category is non-Hispanic White.

[c]Reference category is not married.

[d]Reference category is working full time.

[e]Reference category is interval begun in 1998.

*$p < .05$; **$p < .01$.

Table 4. Coefficients From Regressions of Health Behavior on Grandchild Care Status and Change, Covariates, and Prior Health, 1998–2002 Health and Retirement Study, Women

	Smoking			Problem Drinking			Exercise			Obesity		
Variable	I	II	III	I	II	III	I	II	III	I	II	III
Grandchild care status												
Grandparent, no care[a]	—	—	—	—	—	—	—	—	—	—	—	—
Started babysitting	0.04	−0.10	0.00	−0.10	−0.16	−0.07	0.29**	0.17*	0.16	0.15**	0.07	0.02
Continued babysitting	0.07	−0.10	−0.15	0.03	−0.10	0.05	0.42**	0.26**	0.16*	0.21**	0.11	0.08
Stopped babysitting	0.11	0.02	0.24	−0.09	−0.15	−0.04	0.18**	0.09	−0.02	0.16**	0.09	0.10
Started multigenerational household	0.39**	0.18	−0.23	−1.52**	−1.39**	−1.84	0.18	0.20	0.08	0.70**	0.49*	1.42**
Continued multigenerational household	0.34*	0.03	−0.12	−1.02**	−0.67*	0.06	−0.31*	−0.18	−0.22	0.74**	0.41**	0.43*
Stopped multigenerational household	0.55**	0.36	0.63	−0.77	−0.49	−0.46	0.04	0.18	0.10	0.44**	0.22	−0.27
Started skipped-generation household	−0.44	−0.62	−1.04	−0.37	0.16	0.32	−0.24	−0.07	−0.22	0.61	0.37	1.37
Continued skipped-generation household	0.47*	0.20	0.66*	−0.89	−0.35	0.47	−0.66**	−0.48*	−0.41	0.72**	0.34	0.50
Stopped skipped-generation household	−0.06	−0.14	−0.16	−0.55	−0.24	0.02	−0.15	0.02	−0.06	0.22	0.01	0.11
Provided more care	0.45**	0.22	0.90	−1.08**	−1.05*	−1.36	−0.17	−0.14	−0.22	0.57**	0.30**	0.27
Provided less care	0.47**	0.27	0.52	−1.85*	−1.80	−0.71	−0.25	−0.23	−0.23	0.55**	0.32*	0.00
Covariates												
Black[b]		−0.46**	−0.34		−0.93**	−0.37		−0.05	0.02		0.65**	0.10
Hispanic[b]		−1.14**	−0.38		−0.52	−0.40		0.11	0.13		−0.03	−0.17
Age		−0.07**	−0.03**		−0.01	0.00		−0.01**	−0.01**		−0.04**	−0.04**
Married[c]		−0.46**	−0.04		0.14	0.05		0.10	0.07		−0.09	−0.15
Number of children younger than 18 in household		−0.15	0.11		−0.31	−0.24		0.12	0.12		0.06	−0.13
Education		−0.10**	−0.04		0.17**	0.07**		0.06**	0.05**		−0.05**	−0.01
Household income (log)		−0.02	0.03		0.13*	0.15		0.04	0.04		−0.01	0.01
Household net worth (log)		−0.04**	−0.04		0.06*	0.02		0.07**	0.06**		−0.01	−0.01
Working part time[d]		−0.07	−0.19		0.00	0.14		0.19*	0.20*		0.16*	0.01
Not working[d]		−0.03	−0.01		−0.04	0.10		−0.10	−0.05		0.19**	0.07
Interval began in 2000[e]		−0.02	0.12		0.12**	0.66**		−0.11**	−0.08		0.11**	0.20
Health behavior												
Smoking			6.17**									
Problem drinking						4.77**						
Exercise									1.97**			
Obesity												5.45**
Constant	−1.80**	4.85**	−1.98*	−2.28**	−6.12**	−6.46**	−0.56**	−1.64**	−2.33**	−1.20**	2.39**	−0.75
Observations	13,763	13,763	13,763	13,724	13,724	13,724	13,752	13,752	13,752	13,706	13,706	13,706
Unique identifiers	7,388	7,388	7,388	7,376	7,376	7,376	7,385	7,385	7,385	7,369	7,369	7,369
Chi square	33.72	320.01	3,035.37	54.25	209.30	2,347.29	86.54	352.33	2,024.49	74.59	340.51	4,163.83
Degrees of freedom	11	22	23	11	22	23	11	22	23	11	22	23

Notes: Logistic regression models. Unit of analysis is 2-year interval between interviews. Models estimated with generalized estimating equations procedures; analyses performed using sampling weights.

[a]"No care" includes grandparents who personally spent less than 50 hr per year caring for grandchildren.

[b]Reference category is non-Hispanic White.

[c]Reference category is not married.

[d]Reference category is working full time.

[e]Reference category is interval begun in 1998.

*$p < .05$; **$p < .01$.

caregiving disappears as the arrangement continues. Grandmothers whose grandchildren move out developed more functional limitations. Grandmothers who began custodial care showed large increases in depression and obesity, and grandmothers who continued custodial care showed large declines in exercise, although all of these relationships were only marginally significant ($p < .10$).

Tables 3 and 4 also provide unexpected evidence that babysitting grandchildren improves health. Grandmothers who started babysitting grandchildren or who continued to provide this care reported better self-rated health than grandmothers who provided no care 2 years later. In models separating babysitters by hours of care (not shown), we found that grandmothers who began providing 200 to 500 hr of care per year were more likely to exercise and reported fewer functional limitations, and grandmothers who continued this level of care reported a decline in depressive symptoms. Grandmothers who continued to provide fewer than 200 hr of care or who increased their hours of care were also more likely to exercise than grandmothers who provided no care.

Tables 5 and 6 present coefficients from Models I, II, and III for each health outcome and health behavior for men. Overall, for both health and health behavior, we saw fewer differentials between grandfather caregivers and grandfathers who did not provide care in Model I than we did for grandmothers. However, again, the differences that did emerge nearly all disappeared or attenuated in Models II and III. The remaining associations between grandchild care and health were few and scattered and did not form a consistent pattern.

Even in the large HRS sample, some categories of grandchild care contained few respondents, which may have reduced our ability to detect changes in health and health behavior. Analysis of the confidence intervals surrounding the nonsignificant coefficients showed that, for most coefficients, our null results did not reflect insufficient power. However, we found that some of the nonsignificant confidence intervals in the health behavior models contained substantively important values. These were concentrated in the skipped-generation, more care, and less care categories and were typically of medium effect size (Cohen, 1992), except for those in the problem drinking models, which were large. We thus caution that the reader should consider the health behavior results for these categories to be tentative.

The coefficients and significance tests in Tables 3 through 6 compare grandparents providing each type of care to grandparents providing no care. We also compared grandparents who started, continued, or stopped providing each kind of care to grandparents who started, continued, or stopped providing the other two kinds of care. The few significant coefficients among grandmothers reflected the results described previously. We saw no significant differences among grandfathers.

Discussion

We found no evidence that caring for grandchildren has dramatic and widespread negative effects on grandparents' health and health behavior. Our results provided some support for our expectation that grandmothers caring for grandchildren in skipped-generation households would experience health declines. We saw scattered evidence that grandmothers who babysit grandchildren experience health benefits.

Our findings suggest that many of the health deficits found by earlier studies among coresidential grandparent caregivers reflect these grandparents' characteristics and prior health, not the consequences of caregiving. In bivariate models, grandparents providing coresidential care showed poorer health and health behavior. Controlling for sociodemographic characteristics, contemporaneous roles, and prior health status attenuated these differences. Although such grandparents are at an initial health disadvantage, caring for grandchildren does not seem to make them worse.

These results also suggest that health declines are not an inevitable consequence of grandchild care. Many studies that have found deteriorating health among caregiving grandparents focused on custodial grandparents in highly stressful circumstances. Because we detected few health effects in our nationally representative data, it seems that these experiences are in the minority. Our findings are consistent with the idea that the effects of grandchild care on grandparents' health are contingent on the context and circumstances of that care. For most grandparents, the demands of grandchild care appear to be balanced by the benefits of caregiving and available resources. Only when demands are heavy and resources scarce will grandchild care itself lead to health declines. The health deteriorations we observed among grandmothers beginning skipped-generation households support this interpretation. These results also dovetail with findings from the three longitudinal, nationally representative studies of the effects of grandchild care on mental health (Blustein et al., 2004; Minkler et al., 1997; Szinovacz et al., 1999).

Our findings are informative about the causes of health change in mid and later life. Although social relationships are beneficial for health, family relationships, especially those involving caregiving, may not always be salubrious (Hughes & Waite, 2002). Child welfare agencies increasingly rely on family members, especially grandparents, to care for children when birth parents are unable to do so (Grinstead et al., 2003), and Table 1 shows that a relatively large proportion of grandparents provide babysitting to their grandchildren (see also Fuller-Thomson & Minkler, 2001). Against this backdrop, our finding that grandchild care does not necessarily lead to health declines is noteworthy.

However, we temper this population-level view with the recognition that for a minority of grandparents, caring for a grandchild in a coresidential situation may compromise health. Moreover, these grandparents may begin caregiving in poorer health than other grandparents. Both issues raise concerns about not only grandparents' well-being, but the quality of child care and grandparents' ability to maintain it. The lower profile of these situations in nationally representative data does not mean experts should be sanguine about the health of older adults caring for grandchildren. Instead, our findings should stimulate research and policy to identify and assist those most at risk.

Although our study has many advantages over previous studies, it also has limitations. First, more than one fourth of grandparents who live with grandchildren are younger than the HRS respondents. The HRS age restriction introduces an ambiguous bias. Younger grandparents are at a lower risk than their older counterparts for health problems; however, we suspect that they are also more likely to be disadvantaged,

Table 5. Coefficients From Regressions of Health Measures on Grandchild Care Status and Change, Covariates, and Prior Health, 1998–2002 Health and Retirement Study, Men

	Depressive Symptoms			Self-Rated Health			Chronic Conditions			Functional Limitations		
Variable	I	II	III	I	II	III	I	II	III	I	II	III
Grandchild care status												
Grandparent, no care[a]	—	—	—	—	—	—	—	—	—	—	—	—
Started babysitting	−0.05	0.03	0.04	0.16**	0.07	0.02	−0.08**	0.00	0.02	−0.11	0.04	0.02
Continued babysitting	−0.03	0.09	0.10*	0.11**	0.02	−0.01	−0.07*	0.01	0.02	−0.03	0.07	0.10
Stopped babysitting	−0.02	0.06	0.10	0.08*	0.03	0.01	−0.05*	−0.01	0.00	0.02	0.09	−0.01
Started multigenerational household	0.15	−0.01	−0.05	−0.16	−0.12	0.09	0.01	0.10	0.02	0.33	0.41	−0.11
Continued multigenerational household	0.42**	0.26	0.20	−0.12	−0.02	0.01	0.01	0.09	0.03	0.50	0.44	0.39*
Stopped multigenerational household	0.45	0.27	0.26	−0.21*	−0.10	−0.05	0.06	0.10	0.02	0.49	0.41	−0.18
Started skipped-generation household	0.63	0.51	0.72	−0.31	−0.27	−0.02	0.12	0.24	0.07	1.34	1.37	0.66
Continued skipped-generation household	0.28	0.23	−0.07	−0.22	−0.11	−0.05	−0.05	0.02	−0.05	1.09**	0.91*	0.24
Stopped skipped-generation household	0.41	0.32	0.12	−0.32*	−0.21	−0.14	0.16	0.15	0.13	0.30	0.17	−0.61
Provided more care	−0.02	−0.08	−0.22	−0.17	−0.12	0.01	0.07	0.14	0.00	0.47	0.46	0.21
Provided less care	0.31	0.34	0.23	−0.11	−0.15	−0.14	0.00	0.10	0.08	0.59*	0.71**	0.27
Covariates												
Black[b]		0.08	0.00		−0.14**	−0.03		0.09	0.02		0.05	0.00
Hispanic[b]		0.08	−0.08		−0.02	−0.04		−0.26**	−0.08**		−0.84**	−0.16
Age		−0.01	0.00		−0.01**	0.00**		0.03**	0.00**		0.01	0.02**
Married[c]		−0.42**	−0.13*		0.05	0.05		−0.05	0.00		0.03	0.00
Number of children younger than 18 in household		0.11	0.01		0.01	−0.03		0.01	0.00		−0.04	0.05
Education		−0.08**	−0.04**		0.07**	0.02**		−0.02**	−0.01*		−0.13**	−0.02*
Household income (log)		−0.04	−0.01		0.02*	0.00		−0.01	0.01		−0.10**	−0.01
Household net worth (log)		−0.05**	−0.02*		0.03**	0.01*		−0.01**	0.00		−0.10**	−0.02*
Working part time[d]		−0.02	−0.02		−0.12**	−0.03		0.09*	0.05*		0.26**	−0.02
Not working[d]		0.22**	0.05		−0.33**	−0.11**		0.16**	0.03*		0.82**	0.09
Interval began in 2000[e]		−0.05	−0.06		−0.06**	−0.09**		0.12**	0.04**		0.22**	0.05
Health measures												
Depressive symptoms			0.59**									
Self-rated health						0.67**						
Chronic conditions									0.93**			
Functional limitations												0.82**
Constant	1.18**	3.80**	1.27**	3.19**	2.43**	0.97**	1.28**	−0.09	−0.08	1.99**	4.52**	−0.10
Observations	8,241	8,241	8,241	9,982	9,982	9,982	9,964	9,964	9,964	7,734	7,734	7,734
Unique identifiers	4,616	4,616	4,616	5,448	5,448	5,448	5,441	5,441	5,441	4,496	4,496	4,496
Chi square	16.20	361.52	2,028.32	34.82	940.82	9,017.61	20.82	825.34	31,656.63	19.87	502.61	7,263.41
Degrees of freedom	11	22	23	11	22	23	11	22	23	11	22	23

Notes: Ordinary least squares regression models. Unit of analysis is 2-year interval between interviews. Models estimated with generalized estimating equations procedures; analyses performed using sampling weights.

[a]"No care" includes grandparents who personally spent less than 50 hr per year caring for grandchildren.

[b]Reference category is non-Hispanic White.

[c]Reference category is not married.

[d]Reference category is working full time.

[e]Reference category is interval begun in 1998.

*$p < .05$; **$p < .01$.

Table 6. Coefficients From Regressions of Health Behaviors on Grandchild Care Status and Change, Covariates, and Prior Health, 1998–2002 Health and Retirement Study, Men

	Smoking			Problem Drinking			Exercise			Obesity		
Variable	I	II	III	I	II	III	I	II	III	I	II	III
Grandchild care status												
Grandparent, no care[a]	—	—	—	—	—	—	—	—	—	—	—	—
Started babysitting	−0.10	−0.18*	0.01	−0.24	−0.29*	−0.20	0.29**	0.18*	0.20*	0.17*	0.08	0.06
Continued babysitting	−0.14	−0.19*	−0.07	−0.18	−0.22	0.04	0.23**	0.12	0.06	0.30**	0.20*	0.17
Stopped babysitting	−0.02	−0.06	−0.01	0.06	0.03	0.28	0.11	0.04	0.00	0.08	0.01	−0.01
Started multigenerational household	0.07	−0.11	−0.32	0.16	0.35	0.20	0.34	0.40	0.75*	0.13	0.02	−0.91
Continued multigenerational household	0.43*	0.23	0.28	−0.30	−0.22	−0.13	−0.07	0.00	0.04	0.20	0.07	0.23
Stopped multigenerational household	−0.11	−0.24	−0.71	−0.30	−0.21	−0.90	0.00	0.10	−0.05	−0.10	−0.19	−0.41
Started skipped-generation household	0.01	−0.28	1.02	0.32	0.49	1.23	0.00	0.02	0.33	−0.80	−0.95	0.10
Continued skipped-generation household	0.15	−0.04	0.75	−0.59	−0.47	0.01	−0.27	−0.23	0.03	−0.03	−0.19	−0.08
Stopped skipped-generation household	0.15	0.07	0.42	−0.73	−0.63	−0.50	−0.73	−0.67	−0.61	0.46	0.38	0.50
Provided more care	0.16	0.02	0.54	0.31	0.33	0.44	−0.16	−0.17	−0.16	0.11	−0.05	−0.83
Provided less care	0.17	0.04	0.45	−0.22	−0.22	0.27	−0.29	−0.40	−0.52	0.14	0.00	0.21
Covariates												
Black[b]		0.15	−0.23		−0.67**	−0.22		−0.06	0.00		−0.01	0.00
Hispanic[b]		−0.33*	−0.06		0.09	0.05		0.03	−0.03		−0.26	−0.15
Age		−0.07**	−0.04**		−0.02*	−0.02*		−0.01**	−0.01*		−0.05**	−0.04**
Married[c]		−0.34**	−0.11		−0.19	−0.31		0.17*	0.11		0.33**	0.08
Number of children younger than 18 in household		0.02	−0.10		−0.40*	−0.31		−0.02	−0.01		0.00	−0.09
Education		−0.09**	−0.02		0.05**	0.05*		0.03**	0.02*		−0.04**	−0.02
Household income (log)		−0.01	0.01		−0.01	−0.05		0.04	0.03		0.02	0.01
Household net worth (log)		−0.02*	−0.02		0.02	0.04		0.06**	0.05**		−0.02	−0.02
Working part time[d]		−0.01	0.26		−0.07	−0.02		0.02	0.07		0.25**	0.29
Not working[d]		0.15*	0.31		−0.12	0.04		−0.31**	−0.22**		0.11	−0.05
Interval began in 2000[e]		0.01	0.32		0.13*	0.57**		−0.06	−0.01		0.10**	0.13
Health behavior												
Smoking			6.09**									
Problem drinking						4.34**						
Exercise									2.13**			
Obesity												5.18**
Constant	−1.59**	4.66**	−1.29	−2.22**	−1.87**	−2.71**	−0.07*	−0.87*	−1.68**	−1.14**	2.43**	−0.43
Observations	9,985	9,985	9,985	9,907	9,907	9,907	9,983	9,983	9,983	9,980	9,980	9,980
Unique identifiers	5,449	5,449	5,449	5,420	5,420	5,420	5,450	5,450	5,450	5,448	5,448	5,448
Chi square	16.73	235.14	2203.31	13.80	67.16	1690.02	29.46	224.41	1672.34	24.26	167.12	2909.22
Degrees of freedom	11	22	23	11	22	23	11	22	23	11	22	23

Notes: Logistic regression models. Unit of analysis is 2-year interval between interviews. Models estimated with generalized estimating equations procedures; analyses performed using sampling weights.

[a]"No care" includes grandparents who personally spent less than 50 hr per year caring for grandchildren.

[b]Reference category is non-Hispanic White.

[c]Reference category is not married.

[d]Reference category is working full time.

[e]Reference category is interval begun in 1998.

*$p < .05$; **$p < .01$.

exacerbating the demands of grandchild care, and more likely to have responsibilities (e.g., paid work) conflicting with grandchild care.

Second, our measure of grandchild care was imperfect and may have rendered health effects of grandchild care more difficult to detect. The time referents for the babysitting and coresidential categories were not precisely aligned; the babysitting category referred to 2-year periods and the coresidential category was derived from cross-sectional snapshots. We do not know if the hours of babysitting were bunched together or spread out over the interval, we were unable to control for the duration of care, and our no-caregiving category included grandparents providing very low levels of care. Our use of household structure as a proxy for caregiving may have inadvertently included situations in which grandchildren were actually caring for a frail grandparent and, more generally, did not take into account the potential advantages of multigenerational households. We were also unable (a) to determine whether the adult child in a multigenerational household was the grandchild's parent and (b) to control for the age of the grandchild.

Third, even in the large HRS sample, the small number of caregivers in some categories reduced our ability to detect modest changes in health behavior. As we noted, readers must interpret the null results for these behaviors cautionsly.

Despite these limitations, our results provide a broad perspective on the impact of grandchild care on grandparents' health. In the introduction to this article, we argued that negative health effects of grandchild care are contingent on the context and circumstances of caregiving, the benefits of caregiving, and the balance between caregiving demands and available resources. Our results suggest substantial heterogeneity on these dimensions and the need to understand their patterning and health effects.

One priority is to examine the factors that place grandparents at risk for grandchild care. Our analyses showed that many of the health disadvantages among caregiving grandparents predate the onset of care. Rather than explaining away a social problem, these results indicate the need to examine the larger social processes creating and sustaining disadvantage. As Minkler and Fuller-Thomson (2005) argued, grandchild care is the outcome of intersecting systems of racial, class, and gender stratification. Similarly, Strawbridge and colleagues (1997) pointed out that grandchild care is not an isolated event, but one event in the grandparent's unfolding life course.

A second priority is to investigate how contexts and resources moderate the relationship between grandchild care and health. In our analysis, we were able to examine differences only by type and level of grandchild care and by gender. Race/ethnicity is a potentially powerful moderator. Blacks and Hispanics are more likely to live in extended-family households than non-Hispanic Whites. Although the literature debates whether these differences reflect distinct cultures, economic need, or higher likelihoods that family members require assistance, in such contexts coresidential grandchild care may have different meanings and thus different health consequences. Race/ethnicity overlaps with a second key moderator, socioeconomic status. Minorities, especially Blacks, are more likely than Whites to be impoverished and to live in distressed communities, with correspondingly fewer resources and more difficult environments for raising children. As argued previously, the circumstances surrounding the onset of care and the age and needs of the child are likely to significantly affect the likelihood of health change.

Such research will ultimately require new data collection. Although targeted samples of caregiving grandparents provide valuable insights, only nationally representative data can be used to systematically compare grandparents in different situations. Currently, large national data sets such as the HRS do not collect detailed information about caregiving, and the low prevalence of some situations means that they are represented by few respondents. These limitations suggest the need for a representative study of grandparents that oversamples grandparent caregivers and collects detailed information about caregiving. Such data will enable the next generation of researchers on grandparent caregivers to identify grandparents at greatest risk.

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