

Daughters and daughters-in-law of presently unmarried elders were studied longitudinally, and the data were analyzed to determine how two transitions in caregiving status affected the women of the younger generation. One transition compared noncaregivers who had become caregivers 1 year later ("caregiving entrants,"  $n = 33$ ) with continuing noncaregivers ( $n = 56$ ) and with veteran continuing caregivers ( $n = 78$ ) over the same period. The second transition followed Time 1 new caregivers as they became "new veteran" caregivers ( $n = 69$ ), comparing them with "old veteran" caregivers ( $n = 189$ ) over the same year. The transition to caregiving was marked by a decrease in the care receiver's competence and an increase in the amount of care received, but caregiving entrants' quality of life did not change significantly over 1 year, as compared with either continuing noncaregivers or veteran caregivers. Although longitudinal study shows little positive evidence for the wear-and-tear model of caregiving, methodological improvements are needed before discarding the hypothesis that caregiving erodes mental health.

Key Words: Caregiving, Career, Burden, Depression, Transition to caregiving

## Two Transitions in Daughters' Caregiving Careers

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The last major critical review of stress among caregivers of people with dementia concluded that "the evidence linking psychiatric health effects and dementia caregiving is robust" (Schulz, O'Brien, Bookwala, & Fleissner, 1995, p. 787). The overwhelming weight of the findings surveyed in Schultz and colleagues' (1995) review unquestionably supported this conclusion. However, almost half the 41 studies reviewed studied only caregivers and 22% were cross sectional with a comparison group. Of the 20% that were longitudinal, only one reported use of a comparison group of noncaregivers. The strongest evidence for negative psychological effects of caregiving came either from the comparisons of caregiver-only data on standard measures with established norms or from the cross-sectional comparisons of caregiving and noncaregiving people. Among the small number of longitudinal time comparisons within groups of caregivers, change in measures of psychological distress was frequently not observed. The problems with conclusions based on such study designs are obvious. Caregiving groups are very likely to differ in many unknown

ways from the standardization groups on which norms are based. Even after a great deal of research, it is uncertain what selective biases are introduced by the types of recruitment and volunteering on which caregiving research is necessarily based.

Among all studies reviewed by Schulz and colleagues (1995), none were prospective, that is, none were able to study caregivers before and after they began to provide care. Definitive support for the deleterious effect of caregiving is possible only with the prospective study of a representative probability sample of noncaregivers, following them over time until enough have entered caregiver status to afford comparison with those who had not entered that status.

### *The Caregiving Career*

In addition to the essential ambiguity of the evidence on the stressful effects of caregiving, the absence of multiwave prospective studies focused on care of elders has meant a dearth of knowledge regarding the dynamics of caregiving and the processes by which caregiving is recognized as a need, begun, practiced, and abandoned.

The caregiving career was conceptualized by Aneshensel, Pearlin, Mullan, Zarit, and Whitlatch (1995) in terms of stages of preparation for, acquisition, caregiving role enactment, and role disengagement. Our view is consistent with that of Aneshensel and colleagues (1995). A full model, however, would have to account simultaneously for changes in the care receiver, the caregiver, and the social and physical environment in which care is delivered. Care itself represents a continuum ranging from normal social exchanges between fully independent people

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through various mixes of assistance and on through environmentally changed locales for caregiving, from help between independent households, sometimes shared households, to high support contexts, such as planned housing and nursing homes. The “career” itself is characterized by both behaviors and subjective phenomena. As noted by Aneshensel and colleagues, from the caregiver’s point of view, there is a phase beyond the death of the care receiver, what might be thought of as the assimilation of past caregiving following the death of the care receiver.

Progression across temporal spans and the covariations among environment, care receiver, and caregiver are neither invariant with respect to the family position of the caregiver (i.e., gender or spousal vs. younger generation) across families nor orderly within families. Therefore, rather than testing a firmly specified model of caregiving dynamics, this article addresses the points at which a daughter (or daughter-in-law) begins as a noncaregiver, a new caregiver, and a veteran caregiver. The longitudinal structure of the research then affords the analysis of transitions for some participants and comparisons among continuing noncaregivers, caregiving entrants, old veteran caregivers, and new veteran caregivers.

### *Theoretical Background for the Research*

Overall models of well-being (Lawton, Winter, Kleban, & Ruckdeschel, 1999) and of caregiving outcomes (Lawton, Moss, Kleban, Glicksman, & Rovine, 1991) have been described and will be presented here only in the detail required to provide statements of the hypotheses to be tested. Most caregiving research is based on variations of Lazarus and Folkman’s (1984) theory of stress and coping. Ours is similarly based (Lawton et al., 1991, Figure 1, p. P183), with the stressor being represented as objectively as possible in terms of care receiver characteristics that have some potential demand characteristic with respect to caregiver outcomes, such as physical, cognitive, or behavioral symptoms. Outcomes of the stressor are arrayed on a continuum of psychological proximity to the stressor. The outcome most proximate to demand on the caregiver is actual time spent in caregiving activity. This caregiving behavior is then processed by the caregiver in a set of cognitions regarding the meaning and quality of the caregiving. We named these dimensions *caregiving appraisal*. They were designated as subjective burden, caregiving satisfaction, caregiving impact, caregiving demands, and caregiving mastery (Lawton, Kleban, Moss, Rovine, & Glicksman, 1989). Finally, the most distal outcomes for the caregiver are in the general mental health and physical health realms. That is, the disabilities of the care receiver, the amount of caregiving, and caregiving appraisal lead to general health outcomes not in the caregiving realm (George & Gwyther, 1986). As a set, these three classes of outcomes cumulate over time, resulting in different facets of overall quality of life as viewed by Lawton (1991).

The present article does not test a structural model of caregiving stress but, rather, presents tests of specific

hypotheses embedded within the model, hypotheses designed to test alternative outcomes of caregiving stress. The “wear-and-tear hypothesis” suggests that the demands of caregiving cumulate, resulting in widespread and continuing erosion of the caregiver’s resources and well-being (Townsend, Noelker, Deimling, & Bass, 1989). The contrasting “adaptation hypothesis” suggests that caregiving demands are strongest when caregiving begins but subjective stress may level off or diminish over time because of a variety of processes within the caregiver’s life, such as learning how to perform the new caregiving tasks or establishing new adaptation levels for one’s own behaviors and psychological states (Helson, 1964), or because of possible changes in the course of the demands associated with the illness.

Because of the nature of dementing illness, an inexorable decline is hypothesized over time in the competences of the care receiver, together with corresponding increases in the amount of care received. The wear-and-tear hypothesis would also predict a steady decline over time in the quality of caregiving appraisal and the mental and physical health of the caregiver. In contrast, the adaptation hypothesis would predict the greatest decline in caregiver well-being early in the caregiving career, followed by a leveling off or improvement as the caregiver adapts to the demands of providing care.

Over and above these theoretically based expectations, the major purpose of this study was to test the hypothesis that becoming a caregiver was associated with negative changes in the caregiver’s physical and mental health. Although the scale of the study is modest, its design enabled two transitions to be documented: from noncaregiving to caregiving (“caregiving entrants”) and from being a “new” caregiver to a “veteran” caregiver (“new veteran” caregiver).

## **Methods**

### *Participants*

All participants were volunteers, recruited by media announcements (29% of the completed interviews), mailings (31%), targeted recruitment through social agencies (10%), and a variety of other sources (30%). The recruitment occurred over about 4 years (1990–1994). Figure 1 indicates that at the time of baseline interview (Time 1), recruits were classified as noncaregivers, new caregivers, or veteran caregivers. Two basic recruitment announcements called for (a) women (either daughters or daughters-in-law, hereafter referred to for convenience as “daughters”) who were giving care to an older, not married parent or (b) women with a not presently married parent aged over 65 who would like to participate in a research project (i.e., no mention of caregiving). Distinguishing caregiving from noncaregiving was not a straightforward task. Because self-characterization was occasionally markedly dissonant with other information, the definition of caregiving used in the National Long Term Care Survey (Stone, Cafferata, & Sangl, 1987) was used: assistance given for any phys-

ical activities of daily living (PADL) or two or more instrumental activities of daily living (IADL). As of Time 1, *noncaregivers* ( $n = 135$ ) were women who reported giving their parent no assistance with any PADL and assistance with no or only one IADL. *New caregivers* ( $n = 96$ ) were women who reported that they had been giving care by the activities of daily living (ADL) criteria to a parent for at least 2 months but less than 12 months. *Veteran caregivers* ( $n = 403$ ) were women who had been providing help with any PADLs and/or two or more IADLs for 12 months or more. It should be noted that the use of PADLs or IADLs as the criterion for caregiving activity allowed inclusion of families caring for elders with a variety of physical, cognitive, or psychological disabilities, as long as they were functionally disabled.

### Measures

We were guided in our choice of measures by the model of caregiving dynamics described earlier (Lawton et al., 1991). In addition to background characteristics of both caregiver and care receiver, measures were used which represented the stressor (impairments of the care receiver), the amount of caregiving (a "transactional" construct, i.e., it is a disability from the point of view of the care receiver and a stressor from the point of view of the caregiver), and the quality of life indicators (i.e., caregiving appraisal and caregiver physical and mental health).

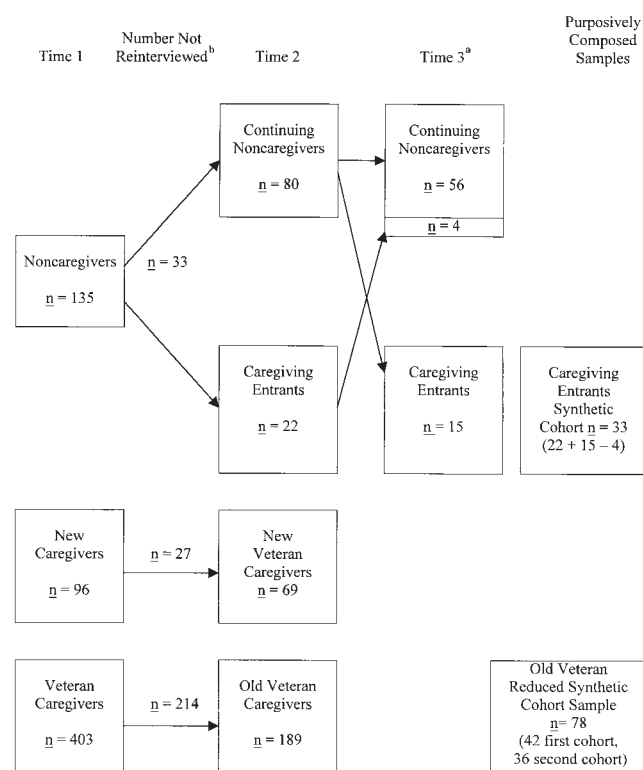


Figure 1. Subsample Constitution Over Three Assessment Times. <sup>a</sup>Time 3  $n$ s show only these used to compose synthetic cohorts. <sup>b</sup>Includes deaths, institutional admissions, refusals, and unlocatable and administratively omitted participants.

**Characteristics of the Care Receiver.**—A revision and amplification of the caregiver-reported Memory and Behavior Problems Checklist (Zarit, Reever, & Bach-Peterson, 1980) was used in Lawton and colleagues (1991) and revised again for the present research to include more physical health problems. Exploratory factor analysis of 20 items identified three item clusters (rated for frequency over past month, from 5 = every day to 1 = never): physical health problems (4 items: has pain, falls, has breathing difficulty, or has swallowing problems;  $\alpha = .86$ ), behavior problems (4 items: yells, is uncooperative, has a temper, and exhibits embarrassing behavior;  $\alpha = .80$ ), and cognitive problems (7 items: hallucinations, forgetting name, forgetting recent events, forgetting date, forgetting other people, repetitious verbalizations, expressive difficulty,  $\alpha = .85$ ). The four physical health problem behaviors were combined with the 26-item Health Conditions Index from the Philadelphia Geriatric Center Multilevel Assessment Instrument (MAI; Lawton, Moss, Fulcomer, & Kleban, 1982), which yields a count of conditions (modeled after a similar list in the National Health Interview Survey; National Center for Health Statistics, 1993). Care receiver health was also represented by the Physical Self-Maintenance Scale (PSMS; 7 self-care items; Lawton & Brody, 1969;  $\alpha = .94$ ), and the IADL Scale (8 higher level daily tasks; Lawton & Brody, 1969;  $\alpha = .95$ ). Each of these items measured whether the elder performed each task without help, with some help, or was completely unable to perform the task, "in general." These indicators of health represented at the same time both measures of competence of the care receiver and a set of proxy measures of objective caregiving demand or potential stress on the caregiver.

**Amount of Care Given.**—An indicator of the time devoted to care of the elder was developed by asking systematically, for each of the 15 PSMS and IADL questions, how many hours the primary caregiver, secondary informal caregivers, and formal sources of help devoted to each task during an average week during the past month. These estimates were summed across tasks and converted into hours per year (logarithmic transformations were used in the analyses). Two other indicators of care given were the caregiver's reports of the care receiver's number of days in (a) a hospital and (b) a rehabilitation or nursing facility during the past year (also log transformed).

**Caregiving appraisal** was the term applied by Lawton and colleagues (1989) to a set of 25 statements rated on 5-point scales expressing the primary caregiver's evaluations and attitudes toward caregiving. The statements included many previously used items (e.g., from the Burden Scale of Zarit et al., 1980) as well as new items constructed to represent positive aspects of caregiving. Some items were added, and others revised for the present study. The Revised Caregiving Appraisal Scale is shown in the Appendix. The earlier study (Lawton et al., 1989) and the present one produced confirmed factors named Caregiving Burden (9 items;  $\alpha = .89$ ), Caregiving Satisfaction (6

items;  $\alpha = .87$ ), Caregiving Mastery (4 items;  $\alpha = .73$ ), Caregiving Demand (3 items;  $\alpha = .79$ ), and Environmental Impact (3 items;  $\alpha = .78$ ). Because of the importance of the quality of the relationship between the caregiver and the care receiver (Lawrence, Tennstedt, & Assman, 1998), an adaptation of a similar measure used by Bengtson and Mangen (1988) was constructed (4 items: overall quality, closeness, compatibility, and ease of talking;  $\alpha = .86$ ) and called the "care receiver relationship." The appraisal questions were asked of all respondents. For noncaregivers, these questions were introduced by explaining to the respondent that even though their parent did not *require* care, adult children often exchange help with their parents. They were asked to respond in a way that expressed their feelings about any help they give their parent.

*Caregiver health*, both physical and mental, was represented by a set of traditional indicators. The MAI Health Conditions Index (Lawton et al., 1982) used for the care receiver was also used as one indicator of the caregiver's health. Another was the MAI 3-item Self-Rated Health Index ( $\alpha = .64$ ). Three measures of mental health were used: the 7-item Mastery Scale (Pearlin & Schooler, 1978;  $\alpha = .73$ ), the Bradburn (1969) Positive Affect Scale (5 items,  $\alpha = .70$ ), and the Center for Epidemiological Studies Depression Scale (CES-D, 20 items;  $\alpha = .90$ ; Radloff, 1977). In summary, the care receiver characteristics (including the transactional term, amount of caregiving) represented the stressor, whereas the caregiver characteristics (caregiving appraisal) and physical and mental health together represented quality-of-life caregiver outcomes.

### *The Structure of the Longitudinal Studies*

There were three parts to the study: (a) the transition to caregiving study, (b) the adaptation study, and (c) the transition to veteran caregiving study. The analytic groups are defined on the basis of both their Time 1 status and their transitional statuses, as depicted in Figure 1.

*Transition to Caregiving.*—This analysis of the effect of entry into the caregiving role contrasted noncaregivers who became caregivers (caregiving entrants) with respondents who remained noncaregivers on all three occasions (continuing noncaregivers,  $n = 56$ , Figure 1). From Time 1 to Time 2, 22 noncaregivers became classified as caregivers by the PSMS or IADL criterion. Between Time 2 and Time 3, another 15 noncaregivers met this criterion, whereas 4 Time 2 caregivers reverted to noncaregiving status; thus, a net of 33 became caregivers over the 2-year period. Because the numbers were so small, a synthetic cohort ( $n = 33$ ) was created to capture 1-year change from the last noncaregiving status to the first caregiving status interview (caregiving entrants synthetic cohort, Figure 1), that is, a time-dependent definition of the transition. The comparison group of continuing noncaregivers was composed of the remaining 56 participants. The Time 3 entries in Figure 1 are

shown only to indicate the synthetic cohort group composition.

*Adaptation Study.*—The same synthetic cohort of caregiving entrants ( $n = 33$ ) was compared with old veteran caregivers (i.e., those Time 1 caregivers who continued to provide care) to test whether the beginning of caregiving was associated with greater changes over 1 year than those associated with caregiving as a continuous role. Because there was an excess of this latter group ( $n = 189$ ), its size was reduced 60% to 78 by random selection to diminish statistical problems related to size disparity. This 78-participant old-veteran caregiver Sample 1 was also composed from the two synthetic time cohorts in the same proportion as were the caregiving entrants ( $n = 42$  and 36, respectively).

*Transition to Veteran Caregiver.*—When do caregiving entrants (up to 12 months of caregiving) become veteran caregivers? There is no clear demarcation, of course. Because the first occasion new caregivers had been giving care from 2 to 12 months, the definition of new veteran status 11 or 12 months later was a period of 14 to 24 months of caregiving. Our test of relative change during the transition to veteran status first used the 69 new caregivers of Time 1 who were reinterviewed at Time 2 and thus had reached that 14 to 24 months of caregiving service, thus being referred to as new veterans. Because the size disparity between the two groups was less, they were compared with all 189 old veteran caregivers of Time 1 who were still caregivers and still living in the community when they were reinterviewed at Time 2 (see Figure 1).

### *Characteristics of Participant Groups*

The number of participants used in the analysis excludes those who completed only the baseline assessment. The total number from each of the Time 1 groups not reinterviewed at Time 2 is shown in Figure 1. Attrition was accounted for by 39 deaths, 34 nursing home admissions, 54 refusals or otherwise uncompleted interviews, and 61 participants who were randomly omitted for reinterview because research resources were strained at the time. Time 1 factors associated with attrition were tested by one-way analyses of variance (ANOVA) with Duncan pairwise tests across four categories: reinterviewed, death, nursing home, and "other" reasons. Although the data are not presented here (table available from the authors), there was an expected general pattern whereby the families with the most symptomatic elders (cognitive and physical health problems and more days in the hospital) and the most stressed caregiving daughters (caregiver illness, caregiving burden, and depression) were less likely to have been reinterviewed. In light of the probable trajectory of decline of those who would die or enter a nursing home, such Time 1 differences are predictable and of little interest. Of greater relevance to longitudinal study would be systematic differences between those

who were reinterviewed and those in the other category. The systematic attrition for reasons other than death or nursing home admission of the more vulnerable might be relevant to the precision of the tests of transition and adaptation. Out of 24 background, care receiver, and caregiver characteristics, only 2 displayed such a pairwise difference. Dropouts in the

other category were significantly more depressed (CES-D  $M = 13.11$ ) than were the reinterviewed (CES-D  $M = 10.48$ ) and were also poorer in self-rated health than the reinterviewed.

The Time 1 differences among groups are also noteworthy. Table 1 shows the results of one-way ANOVAs with pairwise Duncan tests across four

**Table 1. Time 1 Characteristics of Care Receivers and Noncaregivers, New Caregivers, and Veteran Caregivers**

Characteristic	Favorable Direction	Time 1: Noncaregivers				<i>F</i>	chi-square <sup>c</sup>
		Continuous Noncaregivers	Caregiving Entrants <sup>a</sup> After Time 1	New Caregivers <sup>b</sup>	Veteran Caregivers		
<i>N</i>		56	33	69	189		
Care receiver							
Mean age (SD)		73.0 <sub>(6.16)</sub>	77.9 <sub>(7.77)</sub>	80.0 <sub>(7.82)</sub>	82.4 <sub>(7.52)</sub>	24.01***	
Gender (% female)		91.1	84.8	91.3	86.3		2.06(3)***
Lives with caregiver (%)		30.4	39.4	87.0	75.7	64.32***	
Caregivers							
Mean age (SD)		43.0 <sub>(7.75)</sub>	48.9 <sub>(8.43)</sub>	49.5 <sub>(10.64)</sub>	53.1 <sub>(9.65)</sub>	16.9***	
Mean education (SD)		15.5 <sub>(2.60)</sub>	14.2 <sub>(2.44)</sub>	14.6 <sub>(2.76)</sub>	14.1 <sub>(2.67)</sub>	4.1**	
Race (% non-White)		7.2	9.1	13.0	18.5		5.73(3)
Daughters-in-law (%)		12.5	9.1	27.6	9.0		15.75(3)**
Marital status (%)							8.95(9)
Married		67.9	57.6	65.2	57.2		
Divorced/separated		16.0	27.3	15.9	16.9		
Widowed		7.1	9.1	4.3	12.2		
Never married		8.9	6.1	14.5	13.8		
Employed (%)		96.4	72.7	66.7	64.6	22.03***	
Religion (%)							10.82(9)
Catholic		32.1	27.3	36.2	36.0		
Protestant		30.4	39.4	44.9	38.6		
Jewish		32.1	30.3	11.6	21.2		
Other/none		5.4	3.0	7.2	4.2		
Care receiver competence							
Cognitive problems	Low	8.68 <sub>a</sub>	9.56 <sub>a</sub>	16.53 <sub>b</sub>	15.99 <sub>b</sub>	25.61***	
Physical problems	Low	4.27 <sub>a</sub>	5.97 <sub>b</sub>	8.43 <sub>c</sub>	8.44 <sub>c</sub>	23.38***	
Behavior problems	Low	5.93 <sub>a</sub>	5.42 <sub>a</sub>	7.19 <sub>a,c</sub>	7.27 <sub>c</sub>	4.11**	
Instrumental activities	High	23.70 <sub>a</sub>	23.33 <sub>a</sub>	14.23 <sub>b</sub>	14.32 <sub>b</sub>	129.77***	
Physical self-maintenance	High	21.00 <sub>a</sub>	21.00 <sub>a</sub>	17.82 <sub>b</sub>	17.37 <sub>b</sub>	19.22***	
Help given							
(Log) Hours, primary caregiver		0.58 <sub>a</sub>	1.29 <sub>b</sub>	2.66 <sub>c</sub>	2.79 <sub>c</sub>	95.14***	
(Log) Hours, other informal		0.83 <sub>a</sub>	1.57 <sub>b</sub>	2.95 <sub>c</sub>	3.12 <sub>c</sub>	97.07***	
(Log) Hours, formal care		0.27 <sub>a</sub>	0.27 <sub>a</sub>	0.84 <sub>b</sub>	1.04 <sub>b</sub>	8.54***	
(Log) Hospital days		0.21 <sub>a</sub>	0.30 <sub>a</sub>	2.14 <sub>b</sub>	0.77 <sub>b</sub>	32.64***	
(Log) Nursing home/rehab days		0.00 <sub>a</sub>	0.00 <sub>a</sub>	0.81 <sub>b</sub>	0.22 <sub>a</sub>	11.16***	
Caregiving appraisal							
Caregiving burden	Low	14.99 <sub>a</sub>	17.99 <sub>a</sub>	24.19 <sub>b</sub>	21.94 <sub>c</sub>	13.97***	
Caregiving satisfaction	High	21.29 <sub>a</sub>	22.81 <sub>a</sub>	20.08 <sub>b</sub>	20.43 <sub>c</sub>	1.83	
Caregiving mastery	High	23.09	23.92	24.46	24.31	1.27	
Care demands	Low	7.18	7.87	7.18	7.31	0.30	
Caregiving impact	Low	4.97	6.80 <sub>b</sub>	7.67 <sub>b</sub>	6.91 <sub>b</sub>	5.43***	
Care receiver relationship	High	11.64 <sub>a</sub>	12.00 <sub>b</sub>	11.09 <sub>b</sub>	11.46 <sub>b</sub>	0.76	
Caregiver health							
Mastery	High	28.66 <sub>a</sub>	27.67 <sub>a,b</sub>	25.26 <sub>b,c</sub>	25.41 <sub>c</sub>	5.99***	
Depression	Low	7.77 <sub>a</sub>	9.43 <sub>a</sub>	13.36 <sub>b</sub>	10.48 <sub>c</sub>	3.74**	
Positive affect	High	4.33 <sub>a</sub>	4.52 <sub>a</sub>	3.55 <sub>b</sub>	3.85 <sub>b</sub>	6.44***	
Self-rated health	High	8.36 <sub>a</sub>	7.91 <sub>a</sub>	7.62 <sub>b</sub>	7.61 <sub>b</sub>	4.58**	
Health conditions	Low	1.04	1.64	1.46	1.64	1.83	

Note: Pairs of means with differing subscripts within a row differ at  $p < .05$  or better, Duncan test.

<sup>a</sup>Synthetic cohorts of original noncaregivers who became caregivers across three cumulated assessment occasions.

<sup>b</sup>Giving care for 13 months or less at Time 1.

<sup>c</sup>The number in parentheses is *df*.

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

groups: noncaregivers, who are divided into those who would be continuing noncaregivers and those who would be caregiving entrants; new caregivers; and veteran caregivers. Although the groups are in roughly similar ranges for most characteristics, the noncaregivers were younger, had younger parents, and were less likely to live with the parent, and the continuing noncaregivers were more likely to be employed. The new caregivers were most likely to be daughters-in-law. In virtually every instance, the original noncaregivers reported greater competence and less receipt of care by care receivers and more positive caregiving appraisal and better physical and mental health than new or veteran caregivers. There were few differences between new caregivers and veteran caregivers. However, those that did occur were consistent with the adaptation hypothesis: New caregivers reported greater caregiving burden and depression than did veteran caregivers. Caregiving entrants differed systematically from continuing noncaregivers: having older parents, being older themselves, and being less likely to be currently employed. Even before their period of caregiving began, the caregiving entrants were providing slightly more hours of care and appraised their caregiving as having a greater impact on their lives than those who would be continuing noncaregivers.

### Procedure

Almost all interviews were conducted by intensively trained college graduate or graduate student interviewers in the caregiver's home. The measures described above were embedded in a longer structured interview schedule lasting from 75 to 90 min, which also covered a number of aspects of caregiving history, intrafamilial attitudes, social relationships, and activities not analyzed in the present article. Time 2 interviews were performed 12 months following baseline, and Time 3 interviews were performed 24 months after baseline.

With the various groups having been composed to form the contrasts, specific longitudinal hypotheses were tested as operationalized by the measured described earlier. In the *transition to caregiving study*, the care receivers' symptoms, negative behaviors, and amounts of help received will increase. Caregiving entrants' quality of life will decrease (increase in negative types of caregiving appraisal and decrease in the measures of physical and mental health) compared with continuing noncaregivers. In the *adaptation study*, the adaptation hypothesis would predict either (a) greater proportionate decline in quality of life for caregiving entrants over 1 year compared with veteran caregivers (i.e., significantly more negative caregiving appraisals and significantly greater decrease in physical and mental health). In the *transition to veteran caregiving study*, the adaptation hypothesis would predict that the new veteran caregiver phase would reflect a period of either stability or possibly improvement in quality of life of the caregiver because of the process of learning, the chang-

ing frame of reference for distress, or the reversal of some acute health problems of the care receiver.

### Analytic Approach

The analytic scheme for the differential change analyses was to perform multivariate analyses of variance (MANOVA) on related sets of dependent variables (the dependent variables within sets expected to be correlated with one another). In each case, the MANOVA were one-way (two groups) repeated measure (Time 1 vs. Time 2) analyses, in which the critical test of differential change was the Group  $\times$  Time interaction. The dependent variables were grouped as care receiver competence, amount of help received (caregiving hours and days of hospital and nursing home stay), and the two quality-of-life sets, caregiving appraisal and caregiver health, with each of these categories representing the major elements of the caregiving dynamics model described in Lawton and colleagues (1991). Protection against Type I error is afforded by limiting univariate interpretations to sets whose multivariate interaction statistic was significant.

### Results

#### Transition to Caregiving

Table 2 shows the MANOVA and univariate statistics comparing two groups of noncaregiving families: caregiving entrants ( $n = 33$ , formed by synthetic cohort) and continuous noncaregivers who remained noncaregivers over three occasions ( $n = 56$ ). The critical tests of change associated with becoming a caregiver is the interaction, although main effects for group and time are also shown. The multivariate  $F$  statistics are always shown, but in the interest of reducing the clutter, univariate data are displayed only when the multivariate test for the interaction term was significant.

After the elder moved into care receiver status, every indicator of competence and help received changed significantly, displaying greater impairment for the caregiving entrants' parents, as compared with elders who had not moved into care receiver status. All interactions were significant. In contrast, there was no differential effect of caregiving entry on either caregiving appraisal or caregiver health; none of these interactions were significant.

#### The Adaptation Study

Table 3 shows the MANOVAs and univariate results comparing 1-year changes for 33 caregiving entrants compared with the 78 reduced-sample veteran caregivers. The salient effects for the interaction are shown in the rightmost column of Table 3. Although the multivariate  $F$  statistic was significant in the care receiver competence domain, univariate effects of entry into caregiving were not evident for cognitive problems, behavior problems, or physical self-maintenance. Although the absolute levels of competence of the newly recruited care receivers were better than

**Table 2. MANOVA Comparing 1-Year Change for Caregiving Entrants (*n* = 33) With Continuing Noncaregivers (*n* = 56)**

	T1	T2	Univariate Tests <i>F</i> (1,83)		
			Group	Time	Time × Group
Care receiver competence					
Cognitive problems					
Continuing noncaregivers	8.48	8.47	15.83***	9.28**	9.46**
Caregiving entrants	9.73	11.62			
Physical problems					
Continuing noncaregivers	4.06	4.18	17.26***	7.74**	5.04*
Caregiving entrants	6.15	7.33			
Behavioral problems					
Continuing noncaregivers	5.64	5.29	1.70	1.20	5.62*
Caregiving entrants	5.76	6.73			
Instrumental Activities					
Continuing noncaregivers	23.78	23.73	85.77***	64.20***	59.97***
Caregiving entrants	23.36	20.36			
Multivariate statistics (Wilks's lambda)			.480	.571	.564
<i>F</i> (4,80)			22.80***	15.77***	16.25***
Amount of help given to care receiver					
(Log) Hours of care (Caregiver)					
Continuing noncaregivers	0.55	0.59	42.66***	9.51**	6.53**
Caregiving entrants	1.30	1.79			
(Log) Informal hours of care					
Continuing noncaregivers	0.24	0.23	15.23***	18.50***	19.60***
Caregiving entrants	0.23	1.16			
(Log) Formal hours of care					
Continuing noncaregivers	0.34	0.23	0.07	1.19	5.16*
Caregiving entrants	0.17	0.48			
(Log) Days in hospital					
Continuing noncaregivers	0.27	0.20	10.15**	4.37*	6.28**
Caregiving entrants	0.35	1.00			
Multivariate statistics (Wilks's lambda)			.604	.764	.769
<i>F</i> (4,80)			13.75***	6.50***	6.31***
Caregiving appraisal (multivariate)					
<i>F</i> (6,58)			2.80*	2.35	0.98
Caregiving health (multivariate)					
<i>F</i> (5,79)			1.51	0.45	0.92

Note: T1 = Time 1; T2 = Time 2.

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

those of the veteran continuous care receiving group, the latter group remained relatively stable compared with the caregiving entrants. These newly recruited care receivers displayed significantly greater increases during the transition year in physical problems and greater decline in instrumental activities compared with similar 1-year changes in the veteran care receivers. A clear accompanying relative increase was seen both in help given by the primary caregiver and other informal caregivers among caregiving entrants and in number hospital days. It should also be noted that the increase in informal help was not matched by a significant change in hours of formal help. In contrast with the major documented relative declines in the care receiver, no differential changes were observed in either the caregiving appraisal or caregiver health domains.

#### *Transition to Veteran Caregiving*

The numbers of participants were not high enough to perform the transition to caregiving and the adaptation study analyses while controlling for differences

in background variables. For the transition to veteran caregiving study, this was less of a problem, given the *ns* of 69 new veterans and the full group of 189 old veterans. Therefore, covariates were introduced into these analyses: care receiver age, race, living arrangement, and caregiver age. There were some systematic main effects of covariates. In general, African American caregivers were in poorer physical health, provided more hours of care, and reported that their parent was more impaired in ADL tasks. Despite the greater impairment, they were more positive in their appraisals of several caregiving dimensions. Caregivers who lived separately from care receivers cared for less-impaired parents and expressed more positive caregiving appraisals. On the one hand, there were no significant interactions between occasion or group membership on any of the dependent variables. On the other hand, there were no significant interactions between any of the covariates either.

Table 4 shows the multivariate analyses of covariance testing relative change between new veterans and old veterans. Movement into new veteran status was characterized by stability in the care receiver's

Table 3. MANOVA Comparing 1-Year Change for Caregiving Entrants ( $n = 33$ ) With Veteran Caregivers ( $n = 78$ )

	T1	T2	Univariate Tests $F(1,105)$		
			Group	Time	Time $\times$ Group
Care receiver competence					
Cognitive problems					
Veterans	16.23	17.47	20.54***	12.96***	0.57
Entrants	9.73	11.62			
Physical problems			1.75	2.17	8.27**
Veterans	7.90	7.52			
Entrants	6.15	7.33			
Behavioral problems			2.21	5.44*	0.84
Veterans	7.04	7.46			
Entrants	5.76	6.73			
Instrumental activities			116.18***	46.17***	21.43***
Veterans	13.87	13.31			
Entrants	23.36	20.36			
Physical self-maintenance			28.75***	4.05*	0.43
Veterans	16.83	16.35			
Entrants	21.00	20.76			
Multivariate statistics (Wilks's lambda)			.380	.751	.677
$F(5,101)$			34.27***	6.96***	10.00***
Amount of help given to care receiver					
(Log) Hours of care (Caregivers)			47.26***	9.42**	6.48**
Veterans	2.70	2.75			
Entrants	1.30	1.79			
(Log) Informal hours care			13.83***	9.99**	30.80***
Veterans	1.64	1.38			
Entrants	0.23	1.16			
(Log) Formal hours care			11.98***	2.01	2.09
Veterans	1.11	1.11			
Entrants	0.17	0.48			
(Log) Days in hospital			0.12	2.51	4.42*
Veterans	0.78	0.69			
Entrants	0.35	0.99			
(Log) Days in nursing home or rehab			4.45*	0.75	0.75
Veterans	0.31	0.12			
Entrants	0.00	0.00			
Multivariate statistics (Wilks's lambda)			.63	.85	.74
$F(5,101)$			12.38***	3.84**	7.34***
Caregiving appraisal (multivariate)					
$F(6,92)$			4.83***	3.13**	1.88
Caregiver health (multivariate)					
$F(5,101)$			0.31	1.44	0.57

Note: T1 = Time 1; T2 = Time 2.

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

competence (nonsignificant overall multivariate  $F$ ). In the analyses of amount of help given, with a significant multivariate interaction, differential change was observed only in the sharp decrease in the number of hospital days and nursing home days among new veterans, as compared with old veterans. The multivariate interactions for caregiving appraisal and caregiver health were not significant. Despite the nonsignificant  $F$  statistic for the appraisal set, there was one change worthy of note for possible future attempt at replication: caregiving burden lessened significantly for new veterans (from 24.00 at Time 1 to 22.03 at Time 2) compared with no change among old veterans (from 21.91 to 22.33; interaction  $F = 7.34$ ).

## Discussion

The largest picture of the results documented two cycles of change in the care receivers and the daughter caregivers: (a) first, a decline in health and an increase in help given as markers of elders' moves into care receiving status and (b) a second stabilizing phase, which for some elders marked the easing of what had been an acute care need at the beginning of caregiving (e.g., a sudden stroke, which could occasion a precipitous increase in caregiving demand followed by a decrease in caregiving demand during rehabilitation). The transition to caregiving analysis showed that in contrast to the decline in care receiver competence, indicators of caregiving entrants'



Table 4. One-Year Change for New Veterans ( $n = 69$ ) and Old Veterans ( $n = 189$ )

	Means		Univariate Tests $F(1,252)$		
	T1	T2	Group	Time	Time $\times$ Group
Care receiver competence					
Multivariate Statistics (Wilks's lambda)			.992	.998	.967
$F(5,248)$			0.41	0.09	1.68
Amount of help given to care receiver					
(Log) Hours of care (Caregivers)			1.42	1.46	0.38
New veterans	2.65	2.72			
Old veterans	2.77	2.80			
(Log) Informal hours of care			1.53	2.65	1.30
New veterans	2.95	3.05			
Old veterans	3.11	3.11			
(Log) Formal hours of care			0.65	0.07	0.02
New veterans	0.78	0.96			
Old veterans	1.06	1.19			
(Log) Days in hospital			9.06**	1.18	43.88***
New veterans	2.16	0.78			
Old veterans	0.72	1.06			
(Log) Days in nursing home or rehab			10.60***	1.67	6.04*
New veterans	0.83	0.40			
Old veterans	0.21	0.24			
Multivariate statistics (Wilks's lambda)			.854	.982	.820
$F(5,238)$			4.32***	0.88	10.46***
Caregiving appraisal $F(1,240)$					
Multivariate statistics (Wilks's lambda)			.975	.987	.962
$F(6,235)$			1.01	0.52	
Caregiver health					
Multivariate Statistics (Wilks's lambda)			.979	.960	.994
$F(5,247)$			1.07	2.03	0.28

Note: T1 = Time 1; T2 = Time 2.

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

appraisals, physical health, and mental health displayed very few selective changes as they made the transition from noncaregiving to caregiving, when compared with continuing noncaregivers. The adaptation study compared changes in caregiving entrants with changes in veteran caregivers. The major change in the care receiver that caused the beginning of caregiving appeared to have no impact on caregiver entrant quality of life as compared with a similar period of time in the veteran continuing caregiver. Thus, stability of caregiver quality of life characterized both groups, although veteran caregivers were more burdened overall.

Another phase of caregiving was characterized as the transition to veteran caregiving (the 12 months following the end of what we defined as the new caregiver period). The adaptation hypothesis suggested that there might be a measurable return to a more positive state as new caregivers became veterans. No overall trend of this type was measurable, although a single appraisal domain, caregiving burden, diminished selectively as new caregivers became practiced caregivers and in some cases provided care for less acutely needy parents. Because the appraisal set as a whole did not display a significant effect, this single result is of interest primarily as a possible effect for future study.

Viewed longitudinally, caregiver stability of quality of life in the face of more evident decline in the

care receiver was thus the rule. Such stability in indicators of general mental health is also consistent with other data from this project not presented here, which showed very little change in caregiver well-being over 2 years among 142 caregivers whose parent remained in the community over time. Several other investigators have also noted the relative absence of decline in caregiver well-being over time (Aneshensel et al., 1995; Deimling, 1992; Grafström & Winblad, 1995; Kiecolt-Glaser, Dura, Speicher, Trask, & Glaser, 1991, who compared caregivers to noncaregivers; Mohide et al., 1990; Pruchno, Kleban, Michaels, & Dempsey, 1990; Townsend et al., 1989; Vitaliano, Russo, Young, Teri, & Maiuro, 1991).

#### *Is It Possible That Caregiving Has No Overall Negative Effect on Well-Being?*

One cannot help but be impressed by the regularity of findings of reduced psychological well-being in caregivers when compared to noncaregivers (Schulz et al., 1995). Our own data in cross-sectional comparison displayed such differences very clearly for caregiving burden and all three mental health indicators (Table 2). The major disparity between cross-sectional and longitudinal findings, however, forces us to look even more closely at three old issues.

The first possibility is that our longitudinal research methods have not been sensitive enough to

capture the kinds of changes that show up cross sectionally. Factors such as constant measurement error or self-consistency selectively handicap longitudinal measurement. Although some studies (e.g., the caregivers-only study of Aneshensel et al., 1995) have used very large numbers of respondents, many longitudinal studies, such as the present one and the few others that used a noncaregiver comparison group, often were done with small sample sizes. To date, research prospectively assessing caregiving is very rare.

A second related issue is possible criterion-related attrition (Mihulic & Crimmins, 1997). There are three influences that may reduce the measurable impact of caregiving on outcome. The first is that the Time 1 non-caregiver may have included some families whose elder was already on a trajectory downward toward both death and institutionalization. Second, it is understandable that daughters whose parents were to die or move to a nursing home might be more depressed because of the elder's evident decline, even though they do not meet the ADL caregiving criterion. Third, in the general area of mental health research, depression is known to be a risk factor for dropping out at a later wave. As the attrition analysis showed, the reinterviewed sample was less depressed than all dropout groups. Thus, our longitudinal sample represents a "survivor" group and possibly a more hardy one with some depression-prone people already removed. It may also be that 1 year (the time period on which our assessment of caregiving entry was based) may still be too short a time over which decreases in quality of life might accumulate enough to become measurable.

The third possibility is that most evidence showing negative effects of caregiving is an artifact of self-selection among study volunteers. The rationale for this possibility has been mentioned repeatedly: The strained caregiver is most likely to wish to share that experience with a researcher. Such selection would call into question the validity of the caregiving stress hypothesis. The only possible resolution of this ambiguity will require the prospective study of a representative population sample of at-risk elders and their potential caregivers, accessed either by sampling the elder or the potential caregiver. Longitudinal assessment over at least 4 years would be desirable.

### *Wear and Tear Versus Adaptation*

None of the findings from the present study are consistent with a strong overall cumulative effect of caregiving stress on mental health. Specifically, in neither the transition to caregiving nor the transition to veteran caregiving studies was there change over the span of a year in any of the measures of veteran caregivers' quality of life (see Tables 3 and 4). The absence of a negative effect of beginning caregiving is also consistent with the adaptation hypothesis. These findings demonstrate the ability of this group of caregiving entrants to retain a stable pattern of quality of life while dealing with increased stressor levels. What happens in the transition to veteran caregiving period (a period of total length of caregiving actually

ranging from 14 to 24 months) was also characterized, on the whole, by stability and thus inconsistency with the wear-and-tear hypothesis. The suggestive finding that burden decreased as new caregivers became veterans, however, was consistent with the adaptation hypothesis. That evidence is isolated, however, and requires replication.

### *Some Further Thoughts on Caregiving Burden*

Although burden has been typically viewed as a negative well-being indicator, it may be that burden also represents an adaptive mechanism for compartmentalizing stress. That is, experienced burden is domain specific, comparable to the many domain-specific aspects of quality of life studied by Campbell, Converse, and Rodgers (1976). In our caregiving dynamics model (Lawton et al., 1991), we see burden as contributing to negative quality of life, to be sure. In that study we found a direct effect and also a mediating effect through which other aspects of caregiving, such as amount of caregiving, exerted their effect on negative quality of life. But the important fact is that burden is not the same as poor mental health. Its imperfect relationship with mental health shows that it is possible to feel very burdened but not necessarily depressed. Thus, wear and tear may be evidenced in one outcome (burden) but not in depression. These findings affirm our conviction that all caregiving research should include both the domain-specific outcome (burden) and general-mental-health outcome in their design. In this respect, we differ emphatically from the position that only mental health indicators free of caregiving content should be used to study mental health and caregiving, because of the danger of confounding stressor and outcome (George & Gwyther, 1986).

Our measure of burden was clearly designed for the study of caregiving, and some of the items include the use of that term. The dividing line between normal support and caregiving may well be clearer to the researcher than to adult daughters, however. No noncaregiver participant voiced any problem in responding to these items, and missing data were no more frequent among noncaregivers. Although we acknowledge that these measures could be improved, we see no source of bias that might blur the distinctions among differing levels of burden as a function of the help given to a parent.

In conclusion, this research definitively documented the resilience of many daughter caregivers in maintaining health and psychological well-being in the face of major caregiving demands. It is important to recognize also that these conclusions apply only to daughters (and daughters-in-law). Different conclusions might well be forthcoming in the analysis of the dynamics of change in caregiving as practiced by people in other relationships to the care receiver. The results also highlighted both the disparity between cross-sectional documentation of the major strain experienced by current caregivers and the sparseness of such evidence from longitudinal studies. Major design and statistical advances are necessary, however,

before rejecting the caregiving stress hypothesis. Finally, the most likely outcome is that wear and tear will be found to characterize some caregivers some of the time, as will adaptation. Comprehending the dynamics of both processes, being able to predict each, and ultimately being able to intervene where appropriate, are potentially fruitful lines of research.

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**Appendix**  
Revised Caregiving Appraisal Scales

- A. Series...I would like to talk about some feelings you may be having in caring for your (mother, etc.). Please tell me whether you
- 5 = AGREE A LOT
  - 4 = AGREE A LITTLE
  - 3 = NEITHER
  - 2 = DISAGREE A LITTLE
  - 1 = DISAGREE A LOT

- B. Series...Tell me how often you feel each way.
- 5 = NEARLY ALWAYS
  - 4 = QUITE FREQUENTLY
  - 3 = SOMETIMES
  - 2 = RARELY
  - 1 = NEVER

Items followed by (R) are reversed in coding prior to adding to each index.

Caregiving burden (high score is burdened)

- A. I can fit in most of the things I need to do in spite of the time it takes to care for E. (R)
- A. Taking care of E gives me a trapped feeling.
- B. How often do you feel that your health has suffered because of the care you must give E?
- B. How often do you feel that because of the time you spend with E you don't have enough time for yourself?
- B. How often do you feel that your social life has suffered because you are caring for E?
- B. How often do you feel very tired as a result of caring for E?
- B. How often do you feel you will be unable to care for E much longer?
- B. How often do you feel isolated and alone as a result of caring for E?
- B. How often do you feel that you have lost control of your life because of caring for E?

Caregiving satisfaction (high score is satisfied)

- A. I get a sense of satisfaction from helping my E.
- B. How often do you feel that helping E has made you feel closer to him/her?
- B. How often do you feel that you really enjoy being with E?
- B. How often do you feel that taking responsibility for E gives a boost to your self-esteem?
- B. How often do you feel that E's pleasure over some little thing gives you pleasure?
- B. How often do you feel that caring for E gives more meaning to your life?

Caregiving mastery (high score is mastery)

- A. I feel able to handle most problems in care of E.
- A. I am pretty good at figuring out what E needs.
- B. How often do you feel reassured knowing that as long as you are helping E, she/he is getting proper care?
- B. How often do you feel uncertain about what to do about E? (R)
- B. How often do you feel that you should be doing more for E? (R)
- B. How often do you feel that you could do a better job in caring for E? (R)

Caregiving demands (high score is demanding)

- B. How often do you feel that E is too demanding?
- B. How often do you feel that nothing you can do seems to please E?
- B. How often do you feel that E shows real appreciation of what you do for him/her? (R)

Caregiving impact (high score is unfavorable impact)

- B. How often do you feel that caring for E does not allow you as much privacy as you would like?
- B. How often do you feel uncomfortable about having friends over because of E?
- B. How often do you feel that caring for E has interfered with the use of space in your home?

*Note:* E = elder, the care receiver's name, or relationship to caregiver (e.g., "your mother").