

Risk Factors for Potentially Harmful Informal Caregiver Behavior

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OBJECTIVES: Caring for a sick or disabled relative has been linked to compromised caregiver health, and risk factors for negative caregiver outcomes have been studied extensively, but little attention has been given to care recipient and caregiver health as risk factors for potentially harmful behavior by informal caregivers. This article explores such risk factors.

DESIGN: Structured interviews from baseline assessment of the Family Relationships in Late Life Study.

SETTING: Three U.S. communities.

PARTICIPANTS: Referred, volunteer sample of 265 caregiver/care recipient dyads. Caregivers were primarily responsible for care of an impaired, community-residing family member aged 60 and older and providing help with at least one activity of daily living (ADL) or two instrumental activities of daily living (IADLs).

MEASUREMENTS: Self-reported care recipient demographics, cognitive status, need for care, and self-rated health; self-reported caregiver demographics, cognitive status, amount of care provided, self-rated health, physical symptoms, and depression. Care recipient reports of potentially harmful caregiver behavior, including screaming and yelling, insulting or swearing, threatening to send to a nursing home, and withholding food, were the main outcome variable.

RESULTS: The following were significant risk factors for potentially harmful caregiver behavior: greater care recipient ADL/IADL needs (odds ratio (OR) = 1.12, 95% confidence interval (CI) = 1.03–1.22), spouse caregivers (vs others; OR = 8.00, 95% CI = 1.71–37.47), greater caregiver cognitive impairment (OR = 1.20, 95% CI = 1.04–1.38), more caregiver physical symptoms (OR = 1.07, 95%

CI = 1.01–1.13), and caregivers at risk for clinical depression (OR = 3.47, 95% CI = 1.58–7.62).

CONCLUSION: Potentially harmful caregiver behavior is more likely in spouse caregiving situations and when care recipients have greater needs for care and caregivers are more cognitively impaired, have more physical symptoms, and are at risk for clinical depression. This risk profile is similar to that for negative caregiver outcomes. *J Am Geriatr Soc* 53:255–261, 2005.

Key words: informal caregiving; low-quality care; risk factors; caregiving dyads

A large and expanding literature documents the potentially negative effects of providing informal care to a sick or disabled relative. Caregiving has been related to compromised mental and physical health^{1–4} and to increased risk for mortality.⁵ Risk factors for negative caregiver outcomes have been studied extensively, but little attention has been paid to how decrements in caregiver mental and physical health might undermine the quality of care provided.

The classic caregiver stress framework portrays an image of caregivers who sacrifice their own health to enable disabled relatives to continue to reside in the community. It is easy to imagine how this process could break down, with mentally and physically compromised caregivers eventually providing lower-quality care, perhaps leading over time to abuse or neglect and, ultimately, to negative health outcomes for the care recipient.⁶

The literature on elder abuse and neglect has generally focused on cases serious enough to warrant the attention of formal service agencies,⁷ but little is known about less severe but still compromised quality of care that may serve as a precursor to abuse and that may be amenable to early, preventive intervention efforts. Although quality of care is multidimensional, in this and previous studies,^{8,9} poor-quality care has been defined as caregiver behavior that is potentially harmful to the care recipient psychologically or physically (e.g., screaming and yelling, insulting, swearing, withholding food, threatening with nursing home placement, hitting or slapping, handling roughly in other ways).

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Research focused on risk factors for elder abuse has often relied on caregiver interviews, with many studies examining abuse within the context of dementia caregiving, in which the care recipient's cognitive deficits may make self-report data unreliable.^{10–15} These studies also have tended to rely on data from service-based agencies or clinical practices rather than from the broader community.⁷ The risk factor studies have focused on a variety of care recipient, caregiver, and relationship-level variables as potential predictors of elder abuse, although few studies have examined a broad range of such factors simultaneously.⁷ These studies have identified care recipient factors such as problem behavior, violence/aggression toward the caregiver,^{10–14} and higher levels of physical and cognitive impairment^{11,12} as risk factors for abuse. On the caregiver side, depression,^{10,12,15} anxiety,¹⁴ low self-esteem,¹¹ and substance abuse¹⁰ have been reported as risk factors for abuse, along with higher levels of caregiving involvement in the form of more years of care and more daily hours of care provision.^{12,13} Finally, relationship-level risk factors have included being a spouse,¹¹ coresidence,^{11,15} and a poor pre-morbid caregiver-patient relationship.^{8,10,15} More recently, in analyses of a subset of participants in the Family Relationships in Late Life Project, caregiver cognitive status predicted poorer quality of care.⁹ Caregiver physical health has not been examined as a risk factor for elder mistreatment in previous studies.

This study is unique in its focus on a community-based sample of care recipients and their informal caregivers, none of whom had been involved in officially recognized cases of elder abuse. In addition, data were collected from caregivers and their care recipients, from whom reports of potentially harmful caregiver behavior were obtained. This dyadic-level approach to measurement is less subject to self-report biases that may be present in single-reporter (e.g., caregiver only) studies.

Potentially harmful caregiver behavior may be thought of as an “early warning sign” or precursor to full-blown elder abuse or neglect. A broad, community-based sample of care recipients and their caregivers allowed a dyadic measurement approach (i.e., care recipient and caregiver reports were used), in which recipient, caregiver, and relationship-level variables were explored as risk factors for potentially harmful caregiver behavior. The goal was to examine factors that have been shown to be risk factors for decrements in caregiver mental and physical health—care recipient demographics, cognitive status, needs for care, and general health status; caregiver-care recipient relationship (spouse vs other); caregiver demographics, cognitive status, and amount of help provided—to see whether they were also predictive of low-quality care. Of primary interest was the relationship between caregiver mental and physical health and potentially harmful behavior toward the care recipient. Are caregivers with compromised mental and physical health more likely to provide lower-quality care?

METHODS

Procedure

The analyses presented in this paper are from the first wave of interviews from the Family Relationships in Late Life Project, a multisite longitudinal study of informal care using

data from caregivers and care recipients. Data are presented from 265 caregiver-care recipient dyads. A nonprobability sample was recruited from community sources and medical facilities in areas served by the University of Georgia, the University of Pittsburgh, and the University of Texas Southwestern Medical Center in Dallas. To enroll a broad range of participants, numerous recruitment techniques were used. Sources included formal service networks (hospitals and social service agencies), support groups, snowball referrals, and media (newspaper ads, posters, brochures, and television). Letters describing the study were also mailed to randomly selected voters aged 60 or older. To be eligible for the study, caregivers had to be primarily responsible for the care of a cognitively or physically impaired, community-residing (i.e., not institutionalized) family member aged 60 or older and had to provide unpaid help with at least one basic activity of daily living (ADL) or two instrumental activities of daily living (IADLs). Structured interviews lasting between 1.5 and 2 hours, for which participants were paid \$20, were usually conducted in respondents' homes. To prevent data contamination, two interviewers separately and simultaneously interviewed caregivers and care recipients. The institutional review boards of each university approved the study. The consent form for the study contained a sentence advising participants that suspected cases of abuse would be reported to the proper agencies. No potential participants refused to be interviewed after receiving this information.

Sample

Care recipients were, on average \pm standard deviation, aged 77.4 ± 8.5 , and 58% of the recipients were women. The care recipients were predominantly Caucasian (82%), with 17% African American. Thirty-nine percent of care recipients had attended at least some college, and 30% were high school graduates. Caregivers mean age was 63.2 ± 14.2 , and 77% were female. Similar to care recipients, 80% of caregivers were Caucasian, and 16% were African American. Caregiver education levels were somewhat higher than those of care recipients, with 58% reporting at least some college and 28% having graduated from high school. Caregivers reported having taken care of the care recipient for an average of 6.3 ± 7.4 years. Forty-nine percent of caregivers were spouses, 36% were adult children, and the remaining 15% were other family members or friends.

MEASURES

Cognitive Status

Care recipient and caregiver cognitive status were assessed using the Neurobehavioral Cognitive Status Examination.¹⁶ This measure identifies cognitive functioning in 10 domains—orientation; attention; language comprehension, repetition, and naming; constructions; memory; calculations; and similarity and judgment reasoning. Each dimension is scored using a 4-point index, with 1 = average performance, 2 = mild impairment, 3 = moderate impairment, and 4 = severe impairment. A summative composite score ranging from 10 to 40, with higher scores indicating more cognitive impairment, was used for analysis. Care recipients had a mean score of 18.7 ± 6.6 (median = 17.0),

and caregivers had a mean score of 12.5 ± 2.7 (median = 12.0).

Care Recipient Needs for Care

Care recipients were asked 18 items (e.g., bathing or showering, eating, personal grooming, preparing meals, managing money) adapted from the ADL instrument.¹⁷ They were asked how often, if at all, they needed assistance performing each activity. The response scale was 0 = I never did this, 1 = no help needed, 2 = less than half the time, 3 = about half the time, 4 = more than half the time, and 5 = complete help. A simple count of the number of tasks (out of 18) with which the care recipient reported needing *any* help (i.e., a score of 2 or higher) was used for analysis (mean = 7.6 ± 5.1 , median = 7.0).

Self-Rated Health

Care recipients and caregivers were asked to rate their current overall health on a 5-point scale (1 = poor, 2 = fair, 3 = good, 4 = very good, and 5 = excellent). Forty-four percent of care recipients rated their health as poor or fair, 28% as good, and 28% as very good or excellent. The percentages for caregivers were 22% (poor/fair), 37% (good), and 41% (very good/excellent).

Caregiver Help Provided

Caregivers responded to the same 18 items for which care recipients provided reports of help needed. They were asked how often, if at all, they provided assistance to the care recipient for each activity. The response scale was 0 = Care recipient never did this, 1 = I do not help with this, 2 = I help less than half the time, 3 = I help about half the time, 4 = I help more than half the time, and 5 = Complete help, I do this for him/her all the time. A simple count of the number of tasks (out of 18) with which the caregiver reported providing *any* help (i.e., a score of 2 or higher) was used for analysis (mean = 10.1 ± 4.4 , median = 10.0).

Caregiver Physical Symptoms

Caregivers were asked about 44 physical symptoms they experienced in the previous week (e.g., headaches, vision problems, difficulty breathing, stomach aches, diarrhea, swelling in legs or ankles, skin rashes, fever or chills, difficulty sleeping). The response scale was 0 = no, 1 = yes, mild, 2 = yes, moderate, 3 = yes, severe. A simple count of the number of physical symptoms (out of 44) that the caregiver reported having in the previous week (i.e., a score of 1 or higher) was used for analysis (mean = 9.0 ± 6.6 , median = 8.0).

Caregiver Depression Symptoms

Caregiver symptoms of depression were measured using the Center for Epidemiological Studies Depression scale (CES-D).¹⁸ Twenty items assessing the frequency of depression symptoms during the previous week were rated on a 4-point scale (0 = rarely or none of the time (less than 1 day) to 3 = most or almost all of the time (5–7 days)), and the responses were summed. Cronbach alpha in this sample was 0.91. Individuals with scores of 16 and above are considered to be at risk for clinical depression, and this dichotomized variable (CES-D score <16 vs 16 or higher) was used for analysis. Twenty-seven percent of caregivers met the criteria for risk for clinical depression.

Potentially harmful behavior

This study focused on behavior that is potentially detrimental to the elder's physical and psychological well-being but that may not, for a variety of reasons, be judged as reportable to authorities. Five indicators of psychological mistreatment (screaming and yelling; threatening with nursing home placement; threatening with physical force; threatening to abandon; and verbal abuse, which includes using a harsh tone of voice, insulting, calling names, and swearing) and five indicators of physical mistreatment (withholding food, hitting or slapping, shaking, handling roughly in other ways, feeling afraid that caregiver might hit or try to hurt care recipient) were assessed. These items were adapted from the original Conflict Tactics Scale,¹⁹ and a similar approach was taken to that of a previous study.²⁰ The items were shown to have good predictive validity in these earlier studies and were used successfully with this data set in a prior study.⁸ Because of their sensitive nature, these questions were placed near the end of the structured interviews, with instructions carefully worded to decrease reactance. Specifically, for caregivers, they were introduced as "methods that caregivers sometimes use when elderly people won't follow their doctor's orders or won't do what caregivers feel they should do," and for care recipients, "methods that people use to get others to do what they want them to do." Caregivers and care recipients were asked how often (0 = never, 1 = almost never, 2 = sometimes, 3 = most of the time, 4 = all the time) each caregiver behavior occurred. Cronbach alphas for the 10 items summed as a scale were 0.69 for care recipients and 0.67 caregivers, somewhat low but generally acceptable. Given this and interest in developing a basic risk-factor model for potentially harmful behavior, for these analyses, two categories of potentially harmful behavior were created: (1) responses less than 2 (never or almost never) on all 10 indicators and (2) responses of sometimes or more on at least one indicator. It was reasoned that a potentially harmful behavior occurring sometimes was a more clinically significant threshold than one occurring almost never.

RESULTS

Prevalence of Potentially Harmful Caregiver Behavior

Table 1 presents prevalence data, based on care recipient reports, for each of the 10 forms of potentially harmful behavior examined in the study. The table reports the number (and percentage) of recipients reporting that the caregiver performs the behavior sometimes, most of the time, or all of the time. By far the most prevalent potentially harmful caregiver behavior involved negative verbal interactions like screaming/yelling (22.2%) or using a harsh tone of voice/insulting/calling names/swearing (11.7%). Physical forms of abuse like hitting/slapping, shaking, and handling roughly in other ways were much less prevalent, reported by only about 1% of the care recipients. Nearly 26% of the care recipients reported at least sometimes being subjected to potentially harmful behavior from the caregiver.

Risk Factors for Potentially Harmful Caregiver Behavior

Table 2 presents results from logistic regression models examining the care recipient, relationship level, and caregiver

Table 1. Care Recipient Reports of Potentially Harmful Caregiver Behavior: Description and Prevalence

Caregiver Behavior	n*/N	%
Screamed and yelled at	58/261	22.2
Used harsh tone of voice, insulted, called names, swore at	31/264	11.7
Threatened to send to nursing home	11/264	4.2
Threatened to stop taking care of or abandon	8/263	3.0
Threatened to use physical force	7/265	2.6
Afraid caregiver might hit or try to hurt	3/263	1.1
Withheld food	3/265	1.1
Hit or slapped	3/265	1.1
Shook	2/264	0.8
Handled roughly in other ways	2/264	0.8
Any potentially harmful caregiver behavior	68 [†] /265	25.7

* Number of care recipients reporting that the caregiver exhibits the behavior sometimes, most of the time, or all of the time (versus never or almost never).

[†] Thirty-four reported one behavior; 18, two behaviors; 12, three behaviors; 2, five behaviors; and 2, six behaviors.

variables as predictors of potentially harmful caregiver behavior occurring at least sometimes, as reported by the care recipient. Unadjusted odds ratios, from models with only that predictor included, revealed several statistically signif-

icant relationships at the .05 level. Care recipients with more ADL/IADL needs for care and poorer self-rated health were more likely to report potentially harmful caregiver behaviors. Recipients whose caregiver was their spouse were between three and four times as likely to report such behaviors as those whose caregiver was not the spouse. Several caregiver variables were also related to recipient reports of potentially harmful caregiver behavior. Older caregivers with higher levels of cognitive impairment and who were providing higher levels of care were more likely to have their care recipient report that they engaged in potentially harmful behaviors. In addition, caregivers with poorer self-rated health, those reporting more physical symptoms in the previous week, and those who were at risk for clinical depression were more likely to engage in potentially harmful behaviors according to their care recipients.

The adjusted odds ratios, from a model in which all variables were entered simultaneously, show that variables from all three levels—care recipient, relationship-level, and caregiver—were independent risk factors for the presence of potentially harmful caregiver behavior. The following were significant risk factors: higher levels of care recipient needs for care, spouse (vs other) caregivers, higher levels of caregiver cognitive impairment, more caregiver physical symptoms in the previous week, and a caregiver who was at risk for clinical depression. Care recipient self-rated health, caregiver age, amount of help provided by the caregiver,

Table 2. Association Between Care Recipient and Caregiver Characteristics and Potentially Harmful Caregiver Behavior* Reported by Care Recipients (n = 258)

Variable	Odds Ratio (95% Confidence Interval) P-value	
	Unadjusted	Adjusted [†]
Care recipient		
Age [‡]	0.99 (0.96–1.02)	.47
Sex (1 = male)	1.51 (0.87–2.64)	.14
Education [§]		
<High school graduate	1.20 (0.60–2.41)	.61
Some college	0.88 (0.44–1.74)	.71
Cognitive status	0.98 (0.94–1.02)	.30
ADL/IADL needs [‡]	1.11 (1.05–1.17)	<.001
Self-rated health [‡]	0.76 (0.59–0.98)	.037
Relationship with caregiver (1 = spouse)	3.62 (1.98–6.59)	<.001
Caregiver		
Age [‡]	1.04 (1.02–1.06)	.001
Sex (1 = male)	1.48 (0.79–2.78)	.23
Education [§]		
<High school graduate	0.94 (0.41–2.18)	.89
Some college	0.54 (0.29–1.00)	.05
Cognitive status	1.14 (1.04–1.26)	.007
ADL/IADL help [‡]	1.08 (1.01–1.15)	.03
Self-rated health [‡]	0.74 (0.56–0.97)	.03
Physical symptoms [‡]	1.08 (1.03–1.12)	<.001
Depression symptoms (1 = ≥ 16) [¶]	4.18 (2.31–7.57)	<.001

* Caregiver potentially harmful behavior indexed as at least one of 10 potentially harmful behaviors occurring at least “sometimes” as reported by care recipient.

[†] From a logistic regression with all variables included.

[‡] Entered as a continuous variable.

[§] Reference category is high school graduate.

^{||} According to the Neurobehavioral Cognitive Status Examination.

[¶] According to the Center for Epidemiological Studies Depression Scale.

ADL = activity of daily living; IADL = instrumental activity of daily living.

and caregiver self-rated health were not independent risk factors but were accounted for by other variables in the multivariate model.

Supplemental Analyses

Model Eliminating Care Recipients with High Cognitive Impairment

A portion of the care recipients in this study was moderately to severely impaired in cognitive abilities. This is a concern, given the reliance on care recipient reports of potentially harmful caregiver behavior as the major outcome variable. As noted above, most studies avoid this issue by relying on caregiver reports of their own behavior toward care recipients.⁷ To have further confidence in the results presented here, the logistic regression model was rerun after eliminating care recipients with Neurobehavioral Cognitive Status Examination scores of 25 or higher (i.e., more than one standard deviation above the mean), who represent individuals with more than moderate impairment in various domains. These recipients accounted for approximately 20% of the sample, and removing them left a sample size of 207. Results for this subsample of care recipients revealed that caregiver cognitive status, physical symptoms, and CES-D scores remained significant risk factors, as did care recipient needs for care and spouse (vs nonspouse) caregiver situations. Thus, the original results were completely replicated and do not appear to have been affected by care recipient cognitive impairment.

Caregiver Report Model

As another validation check, a parallel logistic regression model, with caregiver self-reports of potentially harmful behavior toward the care recipient as the outcome variable, was also run. Results again revealed that caregiver physical symptoms and CES-D scores were independent risk factors for potentially harmful caregiver behavior, as was care recipient needs for care, although the caregiver cognitive status and spouse caregiver effects were not significant.

Spouse/Nonspouse Subgroup Models

Given the strong association between care recipient-caregiver relationship and potentially harmful caregiver behavior—those in spousal relationships were at much higher risk than nonspousal pairs—whether the risk factor profile found was limited to spouse caregiver situations was examined. The sample was split into spousal pairs ($n = 127$) and nonspousal pairs ($n = 130$), and the multivariate logistic regression was re-rerun separately in each group. An indicator of whether the care recipient and caregiver lived together in the nonspousal pair subsample model was also included (58% were coresidents, 42% did not live together). In the spousal pair model, all effects previously reported were replicated. Caregiver cognitive status, physical symptoms, and CES-D scores remained significant risk factors, as did care recipient ADL/IADL needs. In contrast, there were no significant risk factors, including coresidence status, in the nonspousal subsample. Thus, the risk factor model found here applied only to spousal caregiver-care recipient pairs.

DISCUSSION

This paper focused on risk factors for potentially harmful behaviors by informal caregivers toward their care recipients. It examined the quality of informal care as a function of a wide range of care recipient, caregiver, and relationship-level factors, using reports from both dyad members. Variables examined as potential risk factors included care recipient demographic factors, cognitive status, level of need for care, and self-rated health; caregiver-care recipient relationship (spouses vs others); and caregiver demographic factors, cognitive status, amount of care provided, self-rated health, physical symptoms, and depression. One research question was whether the risk factors for potentially harmful informal care provision would parallel those for negative caregiver health outcomes in general. Of primary interest was the relationship between caregiver mental and physical health and potentially harmful behavior toward the care recipient. Are caregivers with compromised mental and physical health more likely to provide lower-quality care?

The results suggested that this was the case. Specifically, when caregivers were at risk for clinical depression and reported more physical symptoms in the previous week, care recipients were more likely to report that their caregivers screamed and yelled at them, used a harsh tone of voice, insulted them, called them names, or swore at them. Such behavior was also more likely when the elders had more needs for ADL/IADL assistance and when caregivers were married to their care recipients. In addition, replicating earlier findings,⁹ when caregivers themselves were more cognitively impaired, elders more frequently reported being subjected to potentially harmful behavior. Thus, these results provide a scenario of elderly spousal dyads where the patient has high levels of impairment, the caregiver's cognitive functioning and mental and physical health are compromised, and somewhat abusive verbal interactions are taking place. In fact, the results held only in the subsample of spousal caregiving pairs. This was likely because there were relatively few care recipients from nonspousal pairs who reported potentially harmful caregiver behavior.

The findings highlight the potential for breakdown, under certain conditions, of the typically nurturing caregiving situation that maintains or promotes the well-being of sick or disabled family members. Such breakdowns appear particularly likely when caregivers themselves suffer ill health when taking care of a sick or disabled spouse. The results suggest that the risk profiles for negative long-term caregiver outcomes are similar to those for potentially harmful behavior by informal caregivers.

Clinical Implications

The centrality of the caregiving role in patient diagnosis and disease management has resulted in guidelines and recommendations for working with caregivers of patients, particularly those with dementing illnesses, from the major medical societies, including the American Medical Association,²¹ the American Psychiatric Association,²² and the American Association for Geriatric Psychiatry.²³ For example, the American Medical Association proposes that understanding family caregiver needs and challenges is an essential aspect of caring for older persons and recommends

a physician/caregiver/patient partnership approach in which physicians not only provide information and referral to caregivers, but also monitor caregiver functioning to assure their health and well-being. The findings from this study have the potential to provide useful tools to the clinicians that can help identify caregivers at risk for providing poor-quality care. Depressed older spouses who occupy the caregiving role may be particularly appropriate targets for screening and intervention efforts. Clinicians should focus not only on treating the depression, but also on providing these caregivers with alternatives that might ease the burden of caregiving, such as support group referral or arranging for other family members, friends, or formal service providers to perform respite care. As for evidence regarding formal caregiver interventions, no single intervention has been found that adequately addresses all the issues and concerns that family caregivers confront.²⁴ Rather, interventions that offer diverse combinations of individual or family counseling, case management, skills training, environmental modification, and behavior-management strategies seem to be the most effective at reducing caregiver distress. In addition, higher-intensity interventions (i.e., involving higher frequency and duration) are generally more effective than lower-intensity interventions.²⁴

Such early-intervention efforts may prevent a *potentially* abusive situation from deteriorating into a case of elder abuse. Healthcare providers need to be alerted to the fact that caregiving within an elderly spousal dyad often occurs in a climate where *both* the “sick or disabled” spouse *and* the “healthy” caregiver may actually be in poor health. They need to consider such situations “red flags,” or sources of concern, that require screening for potential abuse and, if necessary, proper intervention.

Limitations and Conclusions

Self-report bias is always an issue when using survey or interview methods to collect data, and it is of particular concern when studying a topic such as quality of elder care. Although researchers can never be absolutely sure that self-reports are entirely truthful, previous work has shown that abusive individuals are quite willing to admit their behavior to interviewers.^{7–13} In this study, given the focus on less-severe, “potentially harmful” behavior, coupled with the use of care recipient (“victim”) reports, it could be argued that self-report bias is of less concern. The fact that caregiver self-reports largely replicated the results further suggests that self-report bias was negligible in this study. It was also interesting that including reports from care recipients with moderate to severe cognitive impairment did not affect the results. Perhaps such cognitive impairment has less effect on reports of vivid or emotion-laden behavioral interactions like those that were the focus of study here. Further studies on the validity of self-reports by cognitively impaired elders seems warranted.

Another methodological limitation is the cross-sectional nature of the data used in these analyses. Thus, for example, the results cannot definitively address the issue of whether declines in care recipient and caregiver health *lead to* or *cause* potentially harmful caregiver behavior. A viable alternative explanation is that such negative interactions were already present before the caregiving needs arose and

possibly became worse under the added stress of caregiving. This may be the case, but a longitudinal prospective study would be required to address these issues.

Finally, although a variety of care recipient and caregiver variables were examined as risk factors for potentially harmful caregiver behavior, other factors that may play an important role in this process were not included in these analyses. Variables such as care recipient problem behaviors and perceived caregiver burden or stress may play an important explanatory or mediating role, whereas social support or the availability of respite or other informal assistance with caregiving may act as moderators. Although these and other variables certainly warrant further investigation, this was beyond the scope of the present analyses. The goal was to build a basic risk factor model for potentially harmful caregiver behavior, with a particular interest in the relationship between caregiver physical and mental health and potentially harmful caregiver behavior toward the care recipient.

Despite these limitations, from a risk factor perspective, the results indicate that higher levels of care recipient needs for help, a spousal caregiving situation, higher levels of caregiver cognitive impairment, poor caregiver physical health, and higher levels of caregiver depression are associated with potentially abusive behavior and should be a signal to other family members and healthcare providers that intervention may be warranted. As caregiver mental, emotional, and physical health decline, both care recipients and caregivers may be at risk for potentially negative long-term outcomes.

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