Research Article

The Relation Between Multiple Informal Caregiving Roles and Subjective Physical and Mental Health Status Among Older Adults: Do Racial/Ethnic Differences Exist?

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Abstract

Purpose of the Study: The present study examined whether race/ethnicity moderated the relation between type of caregiving role (none, one, or multiple care recipients) and subjective physical and mental health among older adults.

Design and Methods: The sample was drawn from the 2009 California Health Interview Survey. Racially/ethnically diverse adults aged 55 and older ($n = 24,241$) were categorized into 3 groups by caregiving roles: noncaregivers ($n = 18,626$; referent), caregivers with a single caregiving role ($n = 4,023$), and caregivers with multiple caregiving roles ($n = 1,772$). A 2-way analysis of covariance was conducted to test main and interaction effects.

Results: After adjustment for covariates, noncaregivers reported significantly worse self-rated health and lower psychological distress than caregivers with any type of role. The interaction between race/ethnicity and caregiving roles was significant only for self-rated health ($p < .05$). Blacks with multiple caregiving roles had poorer self-rated health than those with a single caregiving role and better self-rated health than noncaregivers, whereas other racial/ethnic groups with multiple caregiving roles had better self-rated health compared to both noncaregivers and those with a single caregiving role. Our sensitivity analysis showed that controlling caregiving-related variables present only among caregivers eliminated the differences in self-rated health between the two types of caregivers.

Implications: Findings suggest that caregivers report better self-rated health than noncaregivers and that the relation of multiple caregiving roles with self-rated health differs by race/ethnicity, with blacks differing from other racial/ethnic groups. This implies that caregivers experience gain, or are selected into the role of caregiving by virtue of having good health.

Keywords: Caregiving, Multiple Caregiving Roles, Race/ethnicity, Caregiver health

Providing care for family or friends, although sometimes rewarding, is generally demanding. According to a recent report on caregiving ([National Alliance for Caregiving, 2015](#)), 43.5 million U.S. adults (18.2%) provided care

for family or friends in the past year. The cost of informal care-giving in the United States was estimated to be \$522 billion a year ([Chari et al., 2015](#)). While providing care for one person is the most common type of caregiving, recent

statistics show that about 18% of caregivers provided care for two or more persons (National Alliance for Caregiving, 2015). Hereafter, we call these individuals “caregivers with multiple caregiving roles,” which is our main focus in the present study.

The impact of caregiving can be wide ranging. Caregiving can affect a caregiver’s career, finances, relationships, physical and mental health, and general well-being. Whereas a number of previous studies reported health risks of care provision (Chang, Chiou, & Chen, 2010; Pinquart & Sörensen, 2003; Schulz & Beach, 1999), others reported positive influences of caregiving such as perceived benefits, better well-being, and even decreased mortality risk (Brown et al., 2009; Capistrant, 2016; Coon et al., 2004; Lee & Bronstein, 2010; Roth et al., 2013; Roth, Fredman, & Haley, 2015). More specifically, the impact of caregiving on health outcomes can be summarized as follows. First, with regard to physical health outcomes, Pinquart and Sörensen (2003) found in their meta-analytic study integrating 84 published articles that caregivers tended to have poorer physical health than noncaregivers, showing a very small effect size in population-based samples. Second, with regard to mental health, the same meta-analysis revealed that caregivers have a tendency to be more stressed and depressed compared with noncaregivers. However, the reported effect sizes were much smaller in population-based samples than in convenience samples (Pinquart & Sörensen, 2003). Third, with regard to the caregiver-mortality link, while one study showed higher mortality in caregivers (Schulz & Beach, 1999), recent reviews based on population-based studies (Capistrant, 2016; Roth et al., 2015) reported that caregiving is associated with reduced mortality rates compared with noncaregivers.

While limited, previous research reported unique challenges faced by caregivers providing care for more than one care recipient (e.g., Bailey et al., 2010; DePasquale et al., 2016; Perkins, 2010; Scott, Hwang, & Rogers, 2006). Caregivers with multiple caregiving roles have competing caregiving demands and often experience reduced social network/support and stress resilience; this in turn may be associated with negative mental and physical health outcomes (Bailey et al., 2010; DePasquale et al., 2016; Perkins, 2010; Scott et al., 2006). In terms of mental health, Bailey and colleagues (2010) reported, using a convenience sample, that breast cancer patients with multiple caregiving roles had increased levels of depressive symptoms compared to noncaregivers and those with a single caregiving role. Regarding physical health, Chassin, Macy, Seo, Presson, and Sherman (2010) found that caring for multiple generations impaired caregivers’ physical health by less engagement in health behaviors than either noncaregivers or those who cared for parents only, after controlling for demographic variables, employment status, and total number of hours for caregiving per week. Although this study used a population-based sample, it did not include older adults. Moreover, Perkins (2010) reported special challenges

among what she described as “compound caregivers.” This is a type of sandwich caregiver who balances competing needs of their lifelong parenting of a dependent adult with intellectual disabilities while at the same time having additional caregiving responsibility for their own aging parents or other family members. Perkins and Haley (2010), using a convenience sample, found that “compound caregivers” reported increased desire for residential placement outside the family home for their co-residing adult child with intellectual disabilities, compared with noncompound caregivers, but found no differences in physical or mental health. These studies highlight the need for more research using population-based samples of older adults.

Despite the reported challenges of having multiple caregiving roles, what is particularly missing in the current literature is whether racial/ethnic differences exist among caregivers with multiple caregiving roles. The role of race/ethnicity or culture in caregiver health is well documented. Numerous studies reported racial/ethnic minority caregivers’ worse physical health outcomes compared with their white counterparts (Chen, Mair, Bao, & Yang, 2015; Elliott, Burgio, & DeCoster, 2010; Fredman, Daly, & Lazur, 1995; Knight, Longmire, Dave, Kim, & David, 2007; Pinquart & Sörensen, 2005). It should be noted that racial/ethnic minorities tended to have poorer physical health status (Chen et al., 2015; Elliott et al., 2010; Knight et al., 2007) and whites are more likely to have better self-rated health regardless of caregiving status (e.g., Danilovich, Xiang, & Pinto, 2017). Findings regarding emotional and psychological health outcomes, however, are somewhat mixed. In a review article on racial/ethnic differences among dementia caregivers, Janevic and Connell (2001) reported African American caregivers’ lower depression than white caregivers. Adams and colleagues (2002) found that Latino caregivers were more depressed than any other ethnic groups. In contrast, Coon and colleagues (2004) reported no significant differences in mental well-being between Latino/Hispanic and white caregivers. It is not yet clear whether racial/ethnic minority caregivers function better or worse when they have multiple informal caregiving roles. Given the paucity of research on racial/ethnic minority caregivers with multiple informal caregiving roles, we address the interplay of race/ethnicity and the type of caregiving roles among older caregivers.

Our conceptual framework is guided by the sociocultural stress and coping model (Knight & Sayegh, 2010) and the double-jeopardy theory (Dowd & Bengtson, 1978). The sociocultural stress and coping model (Knight & Sayegh, 2010) suggests that caregiving is a life stressor, which could lead to negative health outcomes. However, depending on how individuals appraise the caregiving context, caregiving experience may turn out to be positive or negative, and culture may play an important role in how caregivers interpret caregiving experience. In addition, the double-jeopardy theory (Dowd & Bengtson, 1978) views age and race/ethnicity as disadvantaged status. Therefore, older adults with racial/ethnic minority status may suffer from the

double disadvantage to health due to the interactive effects of age and race/ethnicity. Taken together, we conceptualized that older adults' cultural background (i.e., race/ethnicity) plays an important part in health status, as well as in the relationship between different types of caregiving roles and how caregivers appraise their own health.

The present study is motivated by (a) the paucity of population-based research on multiple caregiving roles among racially/ethnically diverse older caregivers and (b) the complexity of the impact of having multiple caregiving roles on caregiver health among older adults. The objectives of this study were to examine (a) whether the type of caregiving role (noncaregivers vs caregivers with a single caregiving role vs caregivers with multiple caregiving roles) was associated with subjective physical and mental health status among older adults and (b) whether race/ethnicity moderated the relation between type of caregiving role and physical and mental health status, using a population-based sample. Based on previous population-based studies, we hypothesized that (a) caregivers with multiple caregiving roles would have better physical health status than noncaregivers and single-role caregivers; (b) caregivers with multiple caregiving roles would be more psychologically distressed than noncaregivers and single-role caregivers; and (c) race/ethnicity would moderate the relation between the type of caregiving roles and subjective physical and mental health status among older adults. The present study adds to prior caregiving literature by using a population-based sample to investigate racial/ethnic differences in multiple caregiving roles.

Methods

Sample

The sample was drawn from the 2009 California Health Interview Survey (CHIS) that was collected between September 2009 and April 2010. The CHIS is a biannual telephone survey and the largest health survey conducted in a single state. The 2009 version is one of the few CHIS surveys that included caregiving-related variables and the most recent. More detailed information about sampling design and procedures is described elsewhere (California Health Interview Survey, n.d.; Ponce et al., 2004).

For the purpose of the study focusing on racially/ethnically diverse caregivers, we selected adults aged 55+ from diverse racial/ethnic groups (non-Hispanic whites, blacks, Hispanics, and Asians; $n = 24,241$). The selected sample was then divided into three groups by different types of caregiving roles: noncaregivers ($n = 18,626$; referent), caregivers with a single caregiving role ($n = 4,023$), and caregivers with multiple caregiving roles ($n = 1,772$).

Measures

Type of Caregiving

Before asking questions about caregiving, the interviewer explained to the respondent that some people provide help

to a family member or friend who has a long-term illness or disability and this may include help with things they can no longer do for themselves (California Health Interview Survey, n.d.). To identify different types of caregiving roles, we used the following 2 questions: "During the past 12 months, did you provide any such help to a family member or friend?" and "How many people have you provided care for in the past 12 months?" If necessary, "such help" was clarified to the recipient that this may include help with baths, medicines, household chores, paying bills, driving to doctor's visits or the grocery store, or just checking in to see how they are doing. When the respondent reported that they did not provide any care to a family member or friend in the past 12 months, they were categorized as "noncaregivers"; we used this group as our reference group. Among those who provided care to a family member or friend in the past 12 months, those who reported that they had provided care to one person were categorized as "caregivers with a single caregiving role" and those who reported that they had provided care to two or more persons were categorized as "caregivers with multiple caregiving roles."

Race/Ethnicity

The CHIS provides self-identified racial/ethnic categories of respondents' origins defined by the federal Office of Management and Budget and the U.S. Census Bureau. Due to small sample sizes for older caregivers from certain racial/ethnic categories (e.g., American Indian/Alaska Native), the present study selected participants who identified as one of the four major racial/ethnic groups (non-Hispanic white, black, Hispanic, or Asian).

Self-Rated Health

A single item question, "How would you rate your own health?" was used to assess self-rated health. Response categories were from 1 (*excellent*) to 5 (*poor*), with higher scores indicating poorer self-rated health.

Psychological Distress

Psychological distress was measured with the K6 (Kessler et al., 2002). Six items included in the K6 asked the respondents to report how often they felt nervous, hopeless, restless or fidgety, worthless, so depressed that nothing could cheer them up, and that everything was an effort using a five-point Likert scale ("none of the time" coded as 0 and "all of the time" coded as 4). A total score ranges from 0 to 24 and higher scores indicated greater levels of psychological distress. Internal consistency was acceptable in the present sample: $\alpha = .807$ for the overall sample; $\alpha = .805$ for non-caregivers; $\alpha = .812$ for caregivers with a single caregiving role; and $\alpha = .808$ for caregivers with multiple caregiving roles.

Covariates

Sociodemographic and other background characteristics (age [continuous], sex [male = 0; female = 1], marital status

[not married = 0; married = 1], educational attainment [less than high school = 0; high school diploma = 1; some college = 2], poverty level [0–199% federal poverty level (FPL) = 0; 200% + FPL = 1], chronic diseases and disability [continuous]) were selected as covariates. Additional caregiving-related characteristics (family vs friend caregiving [friend caregiving = 0; family caregiving = 1], receiving help from family/friends [no = 0; yes = 1], duration of caregiving [less than 3 months = 0; over 3 months = 1], living with the care recipient(s) [no = 0; yes = 1], total caregiving hours per week [continuous], and receiving paid help [no = 0; yes = 1]) were used as covariates for the sensitivity analyses.

Data Analysis

Descriptive analyses were conducted to report background characteristics of the sample. Chi-square or analysis of variance (ANOVA) tests were used to compare characteristics across three caregiving groups. A two-way analysis of covariance (ANCOVA) test was used to test main and interaction effects after adjusting for covariates. Adjusted estimated marginal means were compared using Bonferroni comparisons for post hoc testing. A series of sensitivity analyses were also conducted using ANCOVA to test potential effects of caregiving-related variables.

Results

Background Characteristics of the Sample

Table 1 presents unadjusted comparisons of background characteristics, which were significantly different across noncaregivers, caregivers with a single caregiving role, and caregivers with multiple caregiving roles. Compared to noncaregivers, caregivers with multiple caregiving roles were more likely to be younger, female, U.S.-born, have income 200 % or higher than the FPL, and have higher educational attainment and fewer chronic diseases. In comparison with caregivers with a single caregiving role, caregivers with multiple caregiving roles were more likely to be younger and female and have higher educational attainment. With regard to outcome variables, caregivers with multiple caregiving roles had significantly better self-rated health and higher psychological distress than both noncaregivers and caregivers with a single caregiving role.

Caregiving characteristics were compared between caregivers with a single caregiving role and caregivers with multiple caregiving roles. All characteristics were significantly different between the two groups except for receiving paid help for caregiving. Compared with caregivers with a single caregiving role, caregivers with multiple caregiving roles were less likely to be a family caregiver, provide care over 3 months and live with care recipients and more likely to receive help from family or friends. One thing to note is that caregivers with multiple caregiving roles tended to provide fewer hours

of caregiving than caregivers with a single caregiving role, which is somewhat counterintuitive.

Additional analyses confirmed that there were racial/ethnic differences in different types of caregiving. As shown in Table 2, in general, more whites were engaged in caregiving roles than other racial/ethnic groups, regardless of single or multiple caregiving roles. Compared with other racial/ethnic groups, more whites were engaged in a single caregiving role and more African Americans were engaged in multiple caregiving roles.

Results From ANCOVA

Table 3 summarizes results from a two-way ANCOVA examining the main effects of type of caregiving and race/ethnicity and the interaction of type of caregiving by race/ethnicity after adjusting for covariates. For the self-rated health outcome (left column in Table 3), the main effect of type of caregiving was significant ($F_{2,24401} = 7.78, p < .001$), such that caregivers with multiple caregiving roles had better self-rated health than noncaregivers and caregivers with a single caregiving role; caregivers with a single caregiving role also had better self-rated health than noncaregivers. There was a significant main effect of race/ethnicity ($F_{3,24401} = 42.82, p < .001$), indicating that older whites had the best self-rated health, whereas older Asians had the poorest self-rated health. The interaction of type of caregiving by race/ethnicity was significant ($F_{6,24401} = 2.27, p < .05$).

For the psychological distress outcome (right column in Table 3), after adjusting for covariates, the main effects of both type of caregiving ($F_{2,24401} = 6.21, p < .01$) and race/ethnicity ($F_{3,24401} = 6.43, p < .001$) were significant. Results indicated that caregivers with multiple caregiving roles had higher levels of psychological distress than noncaregivers and caregivers with a single caregiving role and that caregivers with a single caregiving role had higher levels of psychological distress than noncaregivers. Older blacks had lower levels of psychological distress, whereas older Hispanics had higher levels of psychological distress. The interaction of type of caregiving by race/ethnicity was not significant for psychological distress ($F_{6,24401} = 0.72, p < .05$).

Interpretation of the Significant Interaction Effect

Figure 1 displays estimated marginal means of self-rated health by type of caregiving and race/ethnicity after adjusting for covariates. In the overall sample, self-rated health was better as older adults had more caregiving roles, indicating that caregivers with multiple caregiving roles had the best self-rated health and noncaregivers had the poorest self-rated health. Noncaregivers and caregivers with a single caregiving role also differed significantly in self-rated health. When the sample was divided by race/ethnicity, however, two different patterns were observed. For whites, Hispanics, and Asians, self-rated health was better among caregivers with multiple caregiving roles compared to the

Table 1. Background Characteristics of the Sample ($n = 24,421$)

Characteristics	Type of caregiving			F or chi-square
	Noncaregivers ($n = 18,626$)	Caregivers with a Single CGR ($n = 4,023$)	Caregivers with Multiple CGRs ($n = 1,772$)	
	$M \pm SD$ or %	$M \pm SD$ or %	$M \pm SD$ or %	
Race/ethnicity				162.42***
Non-Hispanic white	80.1	86.8	85.7	
Black	4.1	3.5	4.7	
Hispanic	6.6	5.0	5.6	
Asian	9.2	4.7	4.0	
Age	69.54 ± 9.35	66.34 ± 8.55	64.59 ± 7.85	393.02***
Female	58.8	64.9	69.0	108.81***
Married	48.9	53.9	50.3	33.59***
Educational attainment				187.25***
Less than high school	9.1	4.8	4.7	
High school diploma	21.7	19.3	15.0	
Some college	69.2	75.9	80.3	
Poverty				73.90***
0–199% FPL	26.5	20.6	21.8	
200% + FPL	73.5	79.4	78.2	
US born	80.9	88.8	88.5	188.35***
No. of chronic diseases				46.55***
0	35.9	39.9	41.3	
1	38.8	38.1	34.4	
2+	25.3	22.0	24.3	
Disabled	45.1	41.9	43.2	15.34***
Self-rated health (1–5)	2.63 ± 1.15	2.50 ± 1.08	2.45 ± 1.07	38.29***
Psychological distress (0–24)	2.35 ± 3.27	2.76 ± 3.44	2.89 ± 3.40	42.07***
Caregiving characteristics ^a				
Family caregiving	—	80.6	63.7	189.61***
Receiving help from family/friends	—	74.7	78.4	9.55**
Caregiving over 3 months	—	76.7	70.5	24.42***
Living with care recipient(s)	—	39.1	19.5	214.57***
No. of caregiving hours per week	—	28.97 ± 47.78	19.09 ± 35.84	60.65***
Receiving paid help for caregiving	—	5.7	6.8	2.80

Notes. CGR = caregiving role(s); FPL = federal poverty level. Self-rated health was coded as 1 (*excellent*) and 5 (*poor*).

^aChi-square and *t*-test for caregiving-related variables were compared between caregivers with a single caregiving role and caregivers with multiple caregiving roles.

** $p < .01$. *** $p < .001$.

other groups. For blacks, however, self-rated health was significantly better among caregivers with a single caregiving role compared to noncaregivers and caregivers with multiple caregiving roles whose self-rated health did not differ significantly. Detailed adjusted means and standard errors by race/ethnicity and type of caregiving are summarized in Table 4.

Sensitivity Analyses

A series of sensitivity analyses was conducted to test potential influences of other confounding factors. First, to test potential differences between family and friend caregiving,

we conducted a sensitivity analysis by selecting family caregivers. We compared three groups of different types of family caregiving roles: noncaregivers ($n = 18,626$), family caregivers with a single caregiving role ($n = 3,243$), and family caregivers with multiple caregiving roles ($n = 1,129$). Results from the ANCOVA analysis showed the same pattern: the interaction between race/ethnicity and caregiving roles was significant only for self-rated health ($F_{6, 22978} = 2.20, p < .05$) (results not shown in tables). In our subsequent post hoc analyses to interpret the significant interaction effect, we found the identical racial/ethnic patterns observed in Figure 1 among family caregivers. For whites, Hispanics, and Asians, caregivers with multiple

caregiving roles had better self-rated health than noncaregivers and caregivers with a single caregiving role. For blacks, however, caregivers with a single caregiving role had significantly better self-rated health than noncaregivers and caregivers with multiple caregiving roles.

A second set of sensitivity analyses was conducted by adjusting for caregiving-related variables (family vs friend caregiving, receiving help from family/friends, duration of caregiving, living with the care recipient(s), total caregiving hours per week, and receiving paid help) in addition to covariates used in prior ANCOVA analyses. Given that caregiving-related variables were collected only for caregivers, noncaregivers were not included in this sensitivity analysis. After adjusting for all available caregiving characteristics in addition to other covariates, there was

no significant main effect of caregiving type for both self-rated health and psychological distress, whereas the main effect of race/ethnicity was significant for both self-rated health and psychological distress. The interaction effects of types of caregiving and race/ethnicity were not significant. Although the interaction effects were not statistically significant, the same racial/ethnic patterns were found for self-rated health even after adjusting for all caregiving-related characteristics. For whites, Hispanics, and Asians, caregivers with multiple caregiving roles showed better self-rated health than those with a single caregiving role. For blacks, however, the opposite pattern was found: black caregivers with multiple caregiving roles had poorer self-rated health than those with a single caregiving role.

Table 2. Racial/Ethnic Differences in Different Types of Caregiving

	Type of caregiving (%)			Chi-square
	Noncaregivers	Single CGR	Multiple CGR	
Total	76.3	16.5	7.3	
Race/ethnicity				162.42***
White	74.9	17.5	7.6	
African American	77.3	14.2	8.5	
Latino	80.4	13.2	6.4	
Asian	86.8	9.6	3.6	

Note. CGR = caregiving role(s).

*** $p < .001$.

Discussion

We explored racial/ethnic differences in the relation between different types of informal caregiving roles and subjective physical and mental health status using a population-based sample of older adults. Regardless of race/ethnicity, noncaregivers reported worse self-rated health and lower psychological distress than caregivers with any type of role. As expected, we observed a significant moderating role of race/ethnicity in the relationship between caregiving roles and self-rated health. For older whites, Hispanics, and Asians, caregivers with multiple caregiving roles had better self-rated health than noncaregivers and caregivers with a single role: caregivers with a single caregiving role had better self-rated health than noncaregivers and noncaregivers had the poorest self-rated health. Older blacks, however,

Table 3. Results from ANCOVA ($n = 24,421$)

Variable	Outcome: self-rated health				Outcome: psychological distress			
	<i>df</i>	<i>SS</i>	<i>F</i>	Partial η^2	<i>df</i>	<i>SS</i>	<i>F</i>	Partial η^2
<i>Covariates</i>								
Age	1	103.15	123.43***	.005	1	7757.57	816.38***	.032
Female	1	19.20	29.98***	.001	1	95.30	10.03**	.000
Married	1	19.64	23.51***	.001	1	901.46	94.87***	.004
Educational attainment	1	307.77	368.28***	.015	1	104.06	10.95**	.000
Poverty	1	363.52	434.98***	.018	1	3032.47	319.13***	.013
US born	1	27.63	33.07***	.001	1	159.25	16.76***	.001
No. of chronic diseases	1	2410.58	2884.46***	.106	1	1282.61	134.98***	.006
Disabled	1	2701.55	3232.62***	.117	1	15674.86	1649.56***	.063
<i>Main effect</i>								
Type of caregiving	2	13.01	7.78***	.001	2	117.95	6.21**	.001
Race/ethnicity	3	107.35	42.82***	.005	3	183.32	6.43***	.001
<i>Interaction effect</i>								
Type of caregiving $\times$ Race/ethnicity	6	11.39	2.27*	.001	6	41.06	0.72	.000
Error	24,401	20392.26			24,401	231869.02		
Total	24,421	195765.00			24,421	415130.00		

Notes. A two-way analysis of covariance (ANCOVA) was performed; *df* = degree of freedom; *SS* = sum of squares; Self-rated health was coded as 1 (*excellent*) to 5 (*poor*).

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

showed a distinctive pattern: blacks with a single caregiving role showed better self-rated health than noncaregivers and caregivers with multiple roles whose self-rated health did not differ significantly. When the noncaregiver group was taken out and caregiving-related variables were controlled in our sensitivity analysis, the differences in mental and physical health between the two types of caregivers disappeared. Nevertheless, our major finding, using a population-based sample, on caregivers' better self-rated health in comparison with noncaregivers adds to the literature. It also suggests further research needs to identify.

Caregiving's relation to health should be highlighted. With regard to physical health, noncaregivers had worse self-rated health than caregivers with a single caregiving role and multiple caregiving roles in the overall sample and all racial/ethnic groups except for Blacks. This reflects the Healthy Caregiver Hypothesis suggested by Fredman and colleagues (Fredman, Doros, Ensrud, Hochberg, & Cauley,

2009; Fredman et al., 2010). This finding was also consistent with recent large population-based studies on the impact of informal caregiving (Brown et al., 2009; Fredman et al., 2010; Roth et al., 2013) that were reported in two recent reviews (Capistrant, 2016; Roth et al., 2015). Roth and colleagues (2015) noted that "caregivers, as a general group, have significantly reduced mortality rates compared to their respective noncaregiving reference groups" (p. 312). With regard to caregiving's association with mental health, noncaregivers in general had better mental health than any types of caregivers with caregivers, with multiple caregiving roles showing the worst psychological distress. This was also consistent with previous studies using large population-based data (e.g., Trivedi et al., 2014).

The role of race/ethnicity in the relation between type of caregiving role and self-rated health deserves discussion. Unlike other racial/ethnic caregivers with multiple caregiving roles reporting the best self-rated health, older blacks with multiple caregiving roles had poorer self-rated health than those with a single caregiving role. In our subsequent sensitivity analysis comparing two types of caregivers after controlling caregiving-related variables, however, the significant difference in self-rated health between the two caregiving groups disappeared, while the racial/ethnic pattern remained the same. This unexpected finding parallels results found in Hilgeman and colleagues (2009) reporting no racial/ethnic differences in paths between the latent constructs of caregiving context and objective stress, or between objective stress and role strain. Role strain may differ between multiple and single caregiving; unfortunately, it was not measured in the CHIS. In addition, the following points should be considered. First, the effect is clearly not driven by differences between family and friend caregivers, as they displayed the same pattern. Second, sensitivity analysis focusing on only caregivers after controlling caregiving-related factors uses a much smaller sample and controls for a number of factors that would reasonably be expected to affect caregiving strain. In other words, the power is grossly reduced. Third, based on information presented in Table 1, most of those factors are weighted against

Figure 1. Estimated marginal means of self-rated health by type of caregiving and race/ethnicity. Notes. CGR = caregiving role(s). Estimated marginal means of self-rated health (SRH) were calculated after adjusting for covariates; SRH was coded as 1 (*excellent*) and 5 (*poor*).

Table 4. Adjusted Means and Standard Errors by Race/Ethnicity and Type of Caregiving ($n = 24,421$)

	Self-rated health			Psychological distress		
	Noncaregivers	Caregivers with a single CGR	Caregivers with multiple CGRs	Noncaregivers	Caregivers with a single CGR	Caregivers with multiple CGRs
	M (SE)	M (SE)	M (SE)	M (SE)	M (SE)	M (SE)
Overall	2.81 (.01)	2.71 (.03)	2.68 (.04)	2.27 (.05)	2.57 (.10)	2.66 (.15)
Race/ethnicity						
Non-Hispanic white	2.53 (.01)	2.53 (.02)	2.46 (.02)	2.40 (.03)	2.78 (.05)	2.72 (.08)
Black	2.84 (.03)	2.68 (.08)	2.81 (.10)	2.01 (.11)	2.07 (.26)	2.39 (.34)
Hispanic	2.80 (.03)	2.77 (.07)	2.61 (.09)	2.47 (.10)	3.06 (.22)	3.18 (.31)
Asian	3.07 (.03)	2.87 (.07)	2.83 (.11)	2.21 (.09)	2.39 (.23)	2.34 (.37)

Notes. CGR = caregiving role(s). Self-rated health was coded as 1 (*excellent*) to 5 (*poor*). Means were adjusted for age, sex, marital status, educational attainment, poverty, nativity status, disability status, and the number of chronic diseases.

caregivers with a single caregiving role who are more likely than those with multiple caregiving roles to live with the care recipient, to have been caregiving longer, and to provide more care per week. All of these factors are known to increase caregiving strain. Given that the CHIS did not have direct measure of role strain, future research might be benefitted by examining the potential influence of role strain using appropriate data. Despite the unavailability of care recipients-related variables in the CHIS data, information on such care recipient characteristics as type of illness (e.g., dementia, cancer, disability, etc.) and severity of illness would be valuable for further detailed analyses. These plausible reasons should be examined in future research.

Despite the nonsignificant interaction effect for psychological distress, findings relating to the mental health outcome are noteworthy. The pattern observed in the overall sample was in accordance with previous research (Pinquart & Sörensen, 2003), suggesting that caregivers in general have higher levels of psychological distress compared to noncaregivers and that caregivers with multiple caregiving roles have the highest psychological distress. There were also consistent racial/ethnic patterns in the relation between the type of caregiving role and psychological distress. Regardless of caregiving roles, blacks in general had the lowest psychological distress, whereas Hispanics had the highest psychological distress. This racial/ethnic pattern was reported in previous research focusing on mental health outcomes (Kim et al., 2011).

Another notable finding was that across all three types of caregiving roles, whites consistently showed the best self-rated health, whereas Asians exhibited the poorest self-rated health. As shown in Figure 1, Asian caregivers in general were the most vulnerable group regardless of their caregiving roles. Asian caregivers' relatively poor global health status has been reported in previous research (e.g., Janevic & Connell, 2001; Pinquart & Sörensen, 2005). Kim and colleagues (2011) also reported older Asians' relatively poor self-perceptions of their own mental health. Together, these data suggest that culture may play a role in self-perceptions of health regardless of caregiving roles (McMullen & Luborsky, 2006).

Findings from the present study have implications for research and practice. Given the limited research on compound caregivers, further examination on the mechanisms of caregiving burden among older caregivers with multiple caregiving roles should be prioritized. Given that caregivers with multiple caregiving roles, regardless of racial/ethnic backgrounds, may experience special challenges such as significant reduction in social network/support and stress resilience (Perkins, 2010), future research should first focus on identifying specific areas of challenges that many caregivers with multiple caregiving roles face. Also noteworthy is the potential cyclical nature of having multiple caregiving roles across one's caregiving career. Perkins and Haley (2010) reported that 37% of their sample of aging caregivers were current compound caregivers, but 66%

reported they had been a compound caregiver previously, and 34% anticipated the need to become one in the near future. Clinicians should be aware that older black caregivers with multiple caregiving roles may have special challenges and need additional support from both informal and formal sources. In particular, given the heightened level of poor health status observed among older black caregivers with multiple caregiving roles, ways to address their unique instrumental needs should be considered. A problematic area noted by Perkins (2011) is the provision of respite care when there are multiple caregiving responsibilities. As described by Perkins (2011), the benefit of respite may not be optimal if the caregiver is unable to be relieved from all caregiving roles simultaneously.

Some study limitations should be noted. First, the generalizability of our findings is limited due to the geographically limited sample. Caregivers living in different states may have different resources for caregiving. Second, because the CHIS did not collect data on the relationship with the secondary or tertiary care recipient or on the care recipient's characteristics (e.g., age, health problems, presence of dementia, severity of illness), we were not able to examine the influence of these variables. Given that Penning and Wu (2015) reported differential influences of the caregiver-care recipient relationship on mental health, sandwich caregivers caring for aging parents and children may experience different levels of stress than those providing care for two or more adults. Third, given that the CHIS did not ask questions about whether the caregiver was a primary caregiver or any minimum number of hours per week required to be considered a caregiver, the definition of caregiving used in the present study may have been limited. Fourth, we were not able to examine differences between caregivers providing care for two versus three care recipients due to small sample sizes for racial/ethnic minority groups. Future research should investigate the potential differences among caregivers with multiple caregiving roles. Fifth, as suggested by Knight and Sayegh (2010), future research should test cultural values such as familism and filial piety as potential contributors to choosing and using coping strategies that are specific to racial/ethnic groups that could explain observed differences in the relation between caregiving roles and perceptions of health status. There may be differences that manifest between people who voluntarily/involuntarily become caregivers and who subsequently voluntarily/involuntarily become multiple caregivers. Sixth, due to the cross-sectional nature of our data, the causal relation between caregiving roles and health status could not be tested. Future research should investigate the causal directionality of the relation between multiple caregiving roles and health risks using longitudinal data, and also investigate the potential cumulative effect of multiple caregiving roles across the lifespan. Seventh, despite the large sample size used in the present study, the significant interaction effects should be interpreted with caution due to extremely small effect sizes. Lastly, there may be subracial/

ethnic group differences. Previous research suggests different health outcomes among different groups of Asian older adults (Kim et al., 2010). Future research should consider heterogeneity of racial/ethnic groups. Notwithstanding these limitations, one of the unique strengths of the present study was using a population-based sample to address the effect of multiple caregiving roles; in contrast, previous research on multiple caregiving roles mostly used convenience samples.

In conclusion, our findings using a population-based sample suggest that caregivers with any type of role are more psychologically distressed, but their self-rated health is better than noncaregivers. This implies that caregivers may be either self-selected to be in better health or may gain health benefits from caregiving, which deserves further investigation. Our findings also suggest that the relation between multiple caregiving roles and self-rated health may differ by race/ethnicity, with blacks differing from other racial/ethnic groups. Our sensitivity analysis controlling caregiving-related variables present only among caregivers eliminated the differences in self-rated health between the two types of caregivers. Future research should elucidate reasons for better self-rated health among racially/ethnically diverse older caregivers using a population-based sample.

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Conflict of Interest

None reported.

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