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PATTERNS OF COPING AMONG FAMILY CAREGIVERS

OF FRAIL OLDER ADULTS

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Abstract

Past studies have extensively examined factors associated with coping strategies that caregivers use to ameliorate distress or solve problems. While these studies have found that stressors and individual resources influence choices of coping strategies, they have tended to overlook caregivers' social resources and have rarely considered the possibility that distinct groups of caregivers may use different sets of coping strategies. We conducted latent-class analyses to identify distinct groups of caregivers: those using no particular patterns of coping (unpatterned-coping), those centering on ameliorating distress (emotional-coping), and those focusing on both ameliorating distress and solving problems (hybrid-coping). Stressors distinguished all three coping groups, individual resources differentiated the hybrid-coping group from the emotional-coping group and the unpatterned-coping group, and social resources separated the emotional-coping group and the hybrid-coping group from the unpatterned-coping group. These findings indicate different factors contributing to caregivers' use of different coping styles and suggest ways to better help caregivers.

Family members are important sources of informal care for older adults (Wolff & Kasper, 2006). Approximately 42 million family caregivers in the United States provide nearly 20 hours of care per week, on average, to adults with limitations in daily activities (National Alliance for Caregiving, 2009). The estimated economic value of the care that family caregivers provide is approximately $450 billion a year, which exceeds total Medicaid spending and approaches 90% of the entire expenditure on Medicare (Feinberg, Reinhard, Houser, & Choula, 2011). Without family caregivers, many frail older adults would have to turn to the government for help, placing an enormous burden on existing social programs.

Of all family members, spouses and adult children are the most likely to take on the responsibility for providing care to frail older adults. Caregiving often has negative consequences for caregivers' well-being (Pinquart & Sörensen, 2003), because it interferes with caregivers' daily routines; causes physical, emotion, and financial strains; and depletes their energy (Lin, Fee, & Wu, 2012). Many studies have examined why caregivers choose certain strategies to cope with caregiving stress (Kneebone & Martin, 2003; Li, Cooper, Bradley, Shulman, & Livingston, 2012), but these studies face two major limitations. First, many prior studies have built upon the stress-process model (Pearlin, Mullan, Semple, & Skaff, 1990) to examine how stressors and caregiver's individual resources are associated with coping strategies, but few have paid attention to the role of caregiver's social resources (Chappell & Dujela, 2009). Another limitation is that past studies often have ignored the heterogeneity among caregivers in that different groups of caregivers may have different patterns of coping. If such heterogeneity exists, it is important to understand what contributes to the heterogeneity so that better interventions can be designed to help caregivers in need.

This study used a caregiver survey that supplemented the 2004 round of the National

Long-Term Care Survey (NLTCS) to examine patterns of coping among spouse and adult-child caregivers of frail older adults. In particular, we asked two questions. First, are there distinct groups of family caregivers using different coping strategies? Second, if distinct groups of family caregivers are found, what factors differentiate these groups? This study advances the caregiving literature by taking a person-oriented approach (Bergman & Magnusson, 1997) and using a latent class analysis (Collins & Lanza, 2010) to address these two questions.

Factors Associated with Coping

Stressors disrupt the equilibrium of an individual's life and create distress. Once disrupted, an individual will use coping strategies in an attempt to regain this equilibrium. The stress-process model (Pearlin et al., 1990) suggests various factors associated with how caregivers cope. In general, these factors can be grouped into three domains: stressors, caregiver's individual resources, and caregiver's social resources. The associations between these domains and coping are reviewed in the following.

Stressors. Stressors are "the conditions, experiences, and activities that are problematic for caregivers" (Pearlin et al., 1990, p. 586). When the number of stressors increases, caregivers' lives are likely to be more disrupted and they are likely to be in greater need of finding ways to cope. Past studies have documented many stressors that caregivers face. Specifically, the more deteriorated older adults' health, the more activities of daily living (ADL) or instrumental activities of daily living (IADL) difficulties older adults have, and the more behavioral problems older adults display, the more likely caregivers are to experience caregiving stress and thus use coping strategies to reduce this stress (Chappell & Dujela, 2009; Haley, Roth, Coleton, Ford, West, Collins, & Isobe, 1996; Kramer, 1993).

Caregiver's individual resources. Caregivers may use their individual capacities to

develop coping repertoires when facing stressors. Past studies have demonstrated that caregivers' demographic characteristics, health conditions, relationships to care recipients, and caregiving history are likely to influence their ability to cope. Specifically, younger caregivers are more likely than older ones to distance themselves from stressful situations or change their appraisal of situations, perhaps because they have yet to come to terms with the aging process and its accompanying decline in health (Chappell & Dujela, 2009). Younger caregivers are also more likely than older caregivers to come up with solutions to problems, probably because they have more knowledge and resources than older caregivers (Kramer, 1993). Traditionally, women have been socialized to be relationship-oriented, whereas men have been socialized be task-oriented. As a result, female caregivers are more likely than male ones to pray for guidance, talk with a friend, and get busy with other activities to keep their minds off the problem (De Vries, Hamilton, Lovett, & Gallagher-Thompson, 1997; Lutzky & Knight, 1994). Findings from prior research regarding race and ethnicity have been mixed, however. Whereas some studies have shown that Black and Hispanic caregivers are less likely than White caregivers to seek support and take action (Haley et al., 1996; Montoro-Rodriguez & Gallagher-Thompson, 2009), other studies have yielded opposite results (Knight, Silverstein, McCallun, & Fox, 2000). In addition, caregivers with more education have more resources than their respective counterparts to confront problems (Kramer, 1993). Caregivers with poorer health are less likely to use wishful thinking or avoidance to cope with distress (Kramer, 1993). Mutual support is expected between spouses, while adult children's support of their older parents is less expected (Rossi & Rossi, 1990). Thus, adult-child caregivers are more likely than spouse caregivers to experience higher levels of stress and use self-blame or problem-focused coping (Wilcox, O'Sullivan, & King, 2001). Caregivers who have a shorter duration of caregiving are more likely to use avoidance or

wishful thinking than caregivers who have a longer duration of caregiving (Kramer, 1993), probably because the former have not adjusted to the onset and progression of the recipient's health condition.

Caregiver's social resources. Social resources are caregivers' interpersonal networks from which they can draw to cope with stress (Pearlin & Schooler, 1978, p. 5). Many researchers have documented how social resources can help people cope with stress and increase their well-being (Thoits, 1995). Yet, surprisingly, only three studies have examined how caregivers' social resources are associated with different coping strategies. Chappell and Dujela (2009) found that the number of instances of unpaid assistance from the network was positively associated with both problem-focused and emotion-focused coping. Hong (2009) also found that the number of unpaid caregivers, social support from friends or relatives, and family disagreements over caregiving were associated with the increase of service utilization. Nevertheless, Beeber and her colleagues (2008) showed that caregiver's social network size was not a significant predictor of service utilization. The conflicting findings from the latter two studies may arise because they focused on different services that caregivers used to overcome caregiving stress. Our study used a wider range of coping strategies to identify groups of caregivers using different patterns of coping.

Conceptualization of Coping Strategies

Coping is defined as "cognitive and behavioral efforts made to master, tolerate, or reduce external and internal demands and conflicts among them" (Folkman & Lazarus, 1980, p. 223). Coping strategies generally can be classified as *emotion-focused coping*, where people focus on ameliorating distress associated with the problem, or *problem-focused coping*, in which people directly tackle the problem causing distress (Folkman & Lazarus, 1980). Instead of relying on the

standardized measures of coping, like the Ways of Coping scale (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Cruen, 1986), developed for the general population, we used two sets of measures that the NLTCS designed specifically to capture caregivers' coping strategies. One set adapted Pearlin and his colleagues' (1990) operationalization of how caregivers manage their distress, including spending time alone, engaging in activities for distraction, and using alcohol or drugs to calm down. The other is a variety of external assistances that caregivers can use to solve caregiving problems, such as modifying home environments, using assistive devices, and getting services to reduce the caregiving burden. Which strategies caregivers choose to cope with stress may depend on both the situational demands and the strategies available to them.

Analytic Approaches to Coping Strategies

Many prior studies have adopted a variable-oriented approach to analyze coping strategies by conducting a factor analysis of different coping strategies to identify the underlying structure of coping strategies for the whole population of caregivers (Skinner, Edge, Altman, & Sherwoon, 2003). A caveat of these studies, however, is that they did not consider the heterogeneity of caregivers that exists at the subgroup level. Specifically, if various individual caregivers face different situational demands, have different available coping strategies to choose from, and use different coping strategies, the whole population of caregivers probably should be viewed as an aggregation of several distinct subtypes of caregivers that differ in the coping strategies chosen and the reasons why they chose these strategies. A person-oriented approach (Bergman & Magnusson, 1997) emphasizes the need to identify heterogeneous groups within a population based on distinct patterns of individuals' attitudes or behaviors. Latent class analysis (Collins & Lanza, 2010) is a statistical application using this approach.

Two studies have applied latent class analysis to understand patterns of service

utilization. Beeber and her colleagues (2008) identified three groups of caregivers, including caregivers who rarely used any community-based support service; caregivers who mainly used adult day-care services; and caregivers who used home healthcare, in-home aide, and respite care. Using more recent data that included more services available for caregivers, Hong (2009) also found three groups of caregivers: caregivers who rarely used any service, caregivers who mainly used in-home services, and caregivers who used all services. Distinct groups of caregivers were identified by these two studies probably because while both studies focused on service utilization, the content of service utilization differed between the two studies. Since service utilization is only one aspect of the coping strategies caregivers can use to reduce distress, the present study extended this line of research by considering not only the utilization of services but also the strategies Pearlin and his colleagues (1990) proposed that caregivers can use to ameliorate caregiving stress.

In sum, this study makes an important contribution by filling the theoretical gap in the caregiving literature. Built upon the stress-process model, we considered the role of caregiver's social resources, in additional to stressors and caregiver's individual resources, in influencing how caregivers cope. Moreover, using a latent class analysis and including a broader range of coping strategies, we explored whether there are distinct groups of caregivers who used different patterns of coping. Together, these advances can help researchers and family caregivers better understand whether there are distinct groups of caregivers with different coping styles, what factors differentiate these groups, and which caregivers are most in need of help.

Method

Study Design and Sample

Data used in the analysis came from a caregiver study that supplemented the 2004 round

of the National Long-Term Care Survey (NLTCS), a longitudinal study of Medicare beneficiaries age 65 or older that has been conducted since 1982. The interviews were repeated in 1984, 1989, 1994, 1999, and 2004. To offset high sample attrition because of mortality within this population, the data were refreshed in each wave with a sample of persons who turned 65 after the previous survey. Respondents with one or more limitations (ADL or IADL) that had lasted or were expected to last at least three months were screened to receive a detailed interview. Primary informal caregivers, identified by community-dwelling respondents with at least one disability, were subsequently interviewed in a supplemental survey. Although the NLTCS is a longitudinal study, caregivers could not be uniquely identified across waves and thus only the most recent caregiver survey was used in the analysis. The survey provides rich information on caregivers' demographic background, health, employment, and caregiving experience, as well as care recipients' behavioral problems.

In 2004, 20,474 older adults were contacted. Of them, 5,201 community-dwelling older adults were screened to receive detailed interviews, 2,300 of whom reported receiving unpaid help and identified a primary caregiver. In the end, 1,923 primary caregivers completed the caregiver survey. Because the current investigation focused on spouse and adult-child caregivers, 371 caregivers who were other relatives or unrelated individuals were excluded (19.29% of the completed caregiver interviews). In total, the analysis consisted of 1,552 caregivers, including 622 spouses and 930 adult children. One advantage of the NLTCS is that it recruited caregivers of older adults with at least one functional limitation, regardless of the type of illness or health condition. This is in contrast with samples used in most prior studies, which have concentrated on caregivers whose care recipients had dementia or specific health problems (Gottlieb & Wolfe, 2002). Thus, relative to other studies, the NLTCS sample better represents the family caregiver

population in general.

Measures

   Coping. Two types of coping strategies were included. Caregivers were asked to identify,

when they were under stress from caregiving, how often they spent time alone, ate, took

medications to calm down, drank alcohol, prayed or meditated, talked with friends or relatives,

spent time on exercise or hobbies, smoked, watched TV, and read. These behaviors were

operationalized as emotion-focused coping because they are used to ameliorate negative

emotions associated with caregiving (Folkman & Lazarus, 1980). Response categories for each

coping strategy ranged from *never*, *once in a while*, and *fairly often*, to *very often*. Because the

distributions of most answers were skewed, response categories were collapsed into *no* (= 0,

never) and *yes* (= 1, *once in a while*, *fairly often*, and *very often*). In addition, caregivers were

asked whether they had sought and used the following services: respite or caregiver support

services from a government source, information about how to get financial help, help with

personal care or nursing care, help with housework, meal delivery services, transportation

services, home modifications, and assistive devices. These behaviors were operationalized as

problem-focused coping as these services are used to directly tackle the problem causing

caregiving stress (Folkman & Lazarus, 1980). Response categories for these questions were *no*

(= 0) or *yes* (= 1). Cronbach's alpha is not calculated for these items for two reasons. First, the

concept of internal consistency is not applicable to assessing the psychometric adequacy of

coping measures (Billings & Moos, 1981; Folkman & Moskowitz, 2004), because when one

coping strategy works, there is no need for caregivers to use other coping strategies. In addition,

Cronbach's alpha is a statistic calculated for the whole sample, assuming that items perform the

same way for everyone in the sample. Our study focused on identifying different groups of

caregivers with distinct coping strategies, assuming that these items perform differently for different caregivers. Thus, Cronbach's alpha is not appropriate for the measures of coping strategies in this study. Although we could not provide Cronbach's alpha for measures of coping strategies, we presented the goodness-of-fit statistics to indicate how well our latent-class model fits the data.

Stressors. Care recipients' health conditions such as arthritis, diabetes, hypertension, or heart disease were added together, with a total of 32 possible conditions ($\alpha = .65$). The number of ADL difficulties is a sum of 9 items, including problems with eating, getting in or out of bed, getting in or out of chair, walking around inside, going outside, dressing, bathing, using the toilet, and controlling bowel movement or urination ($\alpha = .84$). The number of IADL difficulties is a sum of 7 items, consisting of problems with preparing meals, doing laundry, doing housework, shopping for groceries, managing money, taking medicine, and making telephone calls ($\alpha = .89$). Both ADL and IADL difficulties lasted or were expected to last for three months or longer. According to Teri and her colleagues' typology (1992), three domains of behavioral problems were constructed. Depressive behaviors were measured by two questions asking caregivers how often care recipients had cried and acted depressed or downhearted. Memory-related problems were gauged by four questions asking caregivers how often care recipients had repeated questions, dressed the wrong way, hid belongings and forgot about them, and clung to caregivers or followed them around. Disruptive behaviors were assessed by nine questions asking caregivers how often care recipients had kept them up at night, had a bowel or bladder accident, became agitated or angry, swore or used foul language, believed that someone was going to harm them, threatened people, showed sexual behavior or interest at the wrong time and place, and destroyed or damaged property. All of the above questions referred to behaviors that

had occurred during the week prior to the interview, and response categories ranged from *no day* (1) to *five or more days* (4). We took the average of the respective sum scores to create scales for depressive behaviors (α = .65), memory-related problems (α = .67), and disruptive behaviors (α = .72), with higher scores representing a greater frequency of behavioral problems.

Caregiver's individual resources. Caregiver's age was measured in years, with a range from 23 to 97. Gender was coded as woman (= 1) or man (= 0). Race and ethnicity were classified as White (reference group), Black, Hispanic, and others. Education consisted of four categories: less than high school, high-school graduate (reference group), post-high school, and bachelor's degree or higher. Working was coded as 1, and 0 otherwise. Self-rated health was assessed by asking caregivers to rate their physical health on a scale from 1 = *poor* to 4 = *excellent*. Caregivers were asked whether they had difficulty lifting or moving care recipients (0 = *no*, 1 = *yes*) or could not give the special medical care that care recipients needed (0 = *no*, 1 = *yes*). Relationship to care recipient was measured as a dichotomous variable (1 = adult-child caregiver, 0 = spouse caregiver). Caregivers were asked of how long it had been since they had started taking care of care recipients as much as they were doing now (on a scale from 1 = *less than three months* to 8 = *10 years or more*). Because all of these measures used single items, Cronbach's alpha cannot be calculated.

Caregiver's social resources. Care recipients reported the number of unpaid caregivers from whom they received help, ranging from 1 to 9. Social support from friends or relatives was examined by asking caregivers to what extent they had friends or relatives who cared for them, whose opinion in which had confidence, in whom they could trust, who helped keep their spirits up, who made them feel good about themselves, in whom they could confide, and whom they wanted to be with when feeling down or discouraged (on a scale from 1 = *strongly disagree* to 4

= *strongly agree*). We averaged the sum of these items to create a scale (α = .96) ranging from 1 to 4, with higher scores indicating more perceived support. Family disagreements included disagreements over whether family members did not spend enough time with care recipients, did not do their share in caring for care recipients, did not show enough respect for care recipients, lacked patience with care recipients, did not visit or call caregivers enough, did not give caregivers enough help, did not show enough appreciation of caregivers' work, or gave caregivers unwanted advice. The response categories ranged from *no disagreement* (1) to *quite a bit of disagreement* (4). We averaged the sum of these items to create a scale (α = .93) ranging from 1 to 4, with higher scores representing greater levels of family disagreements.

Analytic Strategy

Two analyses were conducted. The first analysis addressed the question of how many distinct groups of caregivers used different coping styles. A preliminary analysis of 10 emotion-focused and 8 problem-focused coping strategies across all caregivers suggested that there were 970 combination patterns. To decipher the latent structure underlying these combination patterns, latent class analysis is the best analytic strategy (Goodman, 2002). Each latent class represents a group of caregivers characterized by a distinct combination of coping strategies. Two sets of parameters were estimated, as shown in the equation below (Collins & Lanza, 2010). One is the probability γ's that a caregiver belongs to latent class *c*. The other set of parameters is item-response probabilities ρ's, indicating the probability of observing response γ_c in coping strategy *j*, given that the caregiver belongs to latent class *c*. Together, these two sets of parameters inform us how likely each caregiver is to be classified into particular latent classes, given the observed coping strategy she adopts.

$$P(\boldsymbol{Y} = \boldsymbol{y}) = \sum_{c=1}^{C} \gamma_c \prod_{j=1}^{J} \prod_{r_j=1}^{R_j} \rho_{j,r_j|c}^{I(y_j=x_j)}$$

These parameters were estimated using the expectation-maximization algorithm (Dempster, Laird, & Rubin, 1977), searching for maximum-likelihood parameter values for which the data are most likely to be observed. To avoid local optima, 600 random sets of starting values for the initial stage and 120 final stage optimizations were used. We relied on the Akaike information criterion (AIC; Akaike, 1987), the Bayesian information criterion (BIC; Schwartz, 1978), and the Lo-Mendell-Rubin test (Lo, Mendell, & Rubin, 2001) to select the best-fitting model. A model with a smaller AIC or BIC and a lower p-value for the Lo-Mendell-Rubin test represents the optimal balance of model fit and parsimony, and thus was selected as the final model (Asparouhov & Muthén, 2012). Based on the overall pattern of item-response probabilities in the final model, we labeled these different latent classes and estimated how likely caregivers were to belong to each class.

The second analysis addressed the question of what factors differentiated distinct groups of caregivers using different coping strategies. Built on the first analysis, covariates were incorporated into the latent class analysis by estimating a multinomial logistic regression (Agresti, 1990). The dependent variable consisted of the latent classes identified in the first analysis. The explanatory variables were measures capturing stressors, caregiver's individual resources, and caregiver's social resources. We standardized numeric variables before entering them as predictors in the multinomial regression model, making it easier to compare the strength of the association across covariates (Collins & Lanza, 2010). Missing data for both analyses were handled using the full-information maximum-likelihood approach (Allison, 2010). The analyses were conducted using the statistical package Mplus Version 7 (Muthén & Muthén, 2012).

Results

Distinct Groups of Caregivers Using Different Coping Styles

As shown in Table 1, among 1,552 caregivers examined in the study, talking with friends or relatives (77%), praying or meditating (72%), and watching TV (71%) were the most common emotion-focused coping strategies that caregivers used to handle stress, whereas substance use, such as taking medicine (15%), drinking (13%), and smoking (13%), were the least common. Reading (67%), spending time alone (61%) or on exercise or hobbies (56%), and eating (44%) were in the middle. The prevalence of problem-focused coping was generally lower than that of emotion-focused coping. Of the types of problem-focused coping, obtaining assistive devices (58%) was the most common; using services for personal or nursing care (30%) or help with housework (19%) and making home modifications (29%) were in the middle; and using meal delivery services (11%), transportation services (11%), or respite care (11%) and requesting information on financial help (11%) were the least common.

[Table 1 about here]

We estimated a series of latent class models, ranging from one class to six classes. Table 2 presents the AIC, the BIC, and the Lo-Mendell-Rubin test for each of these competing models. The AIC and BIC continued to decrease as more latent classes were added but leveled off after the three-latent-class solution. The Lo-Mendell-Rubin test rejected the one-latent-class and two-latent-class models in favor of the three-latent-class model. Given that the three-latent-class model had the optimal balance of model fit and interpretation of the resulting latent classes, we chose it as our final model.

[Table 2 about here]

The estimated prevalence of membership in each of the three classes and the estimated

probabilities for caregivers within each class to endorse each of the 18 coping strategies are summarized in Table 3. We labeled the first class an *unpatterned-coping* group because caregivers in this group had less than a 50% of chance endorsing any of the coping strategies. Caregivers in the second class had more than a 50% of chance endorsing 7 coping strategies, and these strategies all concentrated on emotion-focused coping. Consequently, we labeled it as an *emotional-coping* group. Finally, caregivers in the last class had more than a 50% of chance endorsing 10 coping strategies: 7 in emotion-focused coping and 3 in problem-focused coping. Because this group used both emotion-focused and problem-focused coping, we called it a *hybrid-coping* group. Of the 1,552 family caregivers examined in this study, it is estimated that 20% were in the unpatterned-coping group, 46% in the emotional-coping group, and 33% in the hybrid-coping group. In sum, the majority of caregivers adopted a certain style of coping.

[Table 3 about here]

Factors Differentiating Groups of Caregivers

We further investigated what factors were likely to differentiate the unpatterned-coping group, the emotional-coping group, and the hybrid-coping group. As shown in Table 4, caregivers in the unpatterned-coping group, on average, experienced the smallest number of stressors, reported having the fewest difficulties of caring for care recipients, perceived the least support from friends or relatives, and engaged in the lowest level of disagreements with family members regarding caregiving. They were also the oldest and the most likely to be spouses and men. By contrast, caregivers in the hybrid-coping group experienced the largest number of stressors, reported having the most difficulties of caring for care recipients, had the largest informal caregiving network, and engaged in the highest level of disagreements with family members regarding caregiving. In addition, they received the highest level of education and were

the most likely to be adult children or working. For most covariates mentioned above, the emotional-coping group was between the unpatterned-coping group and the hybrid-coping group.

[Table 4 about here]

We incorporated a multinomial logistic regression into the latent class analysis to examine what covariates can still differentiated these groups when other covariates are present. To better present the results, we showed the odds ratio and the 95% confidence interval for each covariate in Table 5. We found that two stressors and two measures of the caregiver's social resources but none of the caregiver's individual resources differentiated the emotional-coping group from the unpatterned-coping group. Specifically, a one-standard-deviation increase in depressive behaviors and memory-related problems was associated with a 42% and 39% increase, respectively, in the odds of belonging to the emotional-coping group versus the unpatterned-coping group. A one-standard-deviation increase in perceived social support and family disagreements over caregiving was associated with a 26% and 42% increase, respectively, in the odds of being in the emotional-coping group versus the unpatterned-coping group. Caregiver's individual resources did not distinguish between the emotional-coping group and the unpatterned-coping group.

[Table 5 about here]

More covariates--four stressors, two measures of the caregiver's individual resources, and two measures of the caregiver's social resources--were found to distinguish the hybrid-coping group from the unpatterned-coping group than the emotional-coping group from the unpatterned-coping group. A one-standard-deviation increase in the number of ADL difficulties, depressive behaviors, memory-related problems, and disruptive behaviors was associated with a 30%, 45%,

40%, and 52% increase, respectively, in the odds of belonging to the hybrid-coping group relative to the unpatterned-coping group. In addition, the odds of being in the hybrid-coping group relative to the unpatterned-coping group were about three times greater for caregivers who reported having difficulty lifting or moving care recipients. Adult-child caregivers were almost twice as likely as spouse caregivers to be in the hybrid-coping group rather than the unpatterned-coping group. A one-standard-deviation increase in perceived social support and family disagreements over caregiving was associated with a 32% and 63% increase, respectively, in the odds of belonging to the hybrid-coping group relative to the unpatterned-coping group.

We also found that one stressor and two measures of the caregiver's individual resources distinguished the emotional-coping group from the hybrid-coping group, as shown in the last column of Table 5. Specifically, caregivers were more likely to be in the hybrid-coping group as opposed to the emotional-coping group when the care recipients had more ADL difficulties (1.30 versus 0.84), when caregivers experienced difficulty lifting or moving care recipients (3.00 versus 1.48), or when caregivers were adult children (1.98 versus 1.22).

Discussion

Past studies have extensively examined factors associated with coping strategies that caregivers use to ameliorate distress or solve problems. Although researchers have found that stressors and individual resources influence choices of coping strategies, they often have overlooked caregivers' social resources. Prior studies also have rarely considered the possibility that distinct groups of caregivers may use different sets of coping strategies. We conducted latent-class analyses to identify distinct groups of caregivers and used multinomial logistic regression to examine whether stressors, caregiver's individual resources, and caregiver's social resources differentiate these groups.

The analysis revealed three distinct groups of family caregivers. It is estimated that 20% of the sampled caregivers were in the unpatterned-coping group, 46% in the emotional-coping group, and 33% in the hybrid-coping group. Nearly 80% of caregivers engaged in some form of coping. The finding that one third of caregivers were in the hybrid-coping group suggests that many caregivers had to reduce both internal and external demands associated with caregiving simultaneously. Notice that our latent class analysis did not find a group of caregivers that used only problem-focused coping. The absence of such a group may be because caregiving inevitably causes distress and distressed caregivers are unlikely to seek problem-solving while doing nothing to reduce distress. Without using a latent class analysis, it is not possible to uncover these heterogeneous patterns of coping strategies used by distinct groups of caregivers.

Using Pearlin's stress-process model (1990) as a theoretical framework, we found that stressors, caregiver's individual resources, and caregiver's social resources differentiated caregivers using different coping styles. Of all caregivers, those in the unpatterned-coping group tended to report the smallest number of stressors and experienced the fewest difficulties of caring for care recipients. This group of caregivers did not use either emotion-focused or problem-focused coping, probably because they could manage the caregiving tasks. Nevertheless, when care recipients begin to display depressive symptoms or memory-related problems, such as repeating questions, hiding belongings, or clinging to caregivers (often occurring among older adults with dementia), it creates a daily nuisance, inconvenience, and distress for caregivers. Caregivers may feel that they can handle these nuisances and inconveniences and thus try to adopt emotional-coping strategies to overcome distress. Finally, when care recipients need help with ADLs or caregivers have difficulty lifting or moving care recipients, caregivers may realize that they cannot perform some specific caregiving tasks, and subsequently use

hybrid-coping to overcome distress, as well as difficulties with caregiving tasks.

We need to keep several limitations in mind when interpreting the results. First, older adults who have a work history of less than 10 years, who cannot obtain Medicare coverage through their spouses, and who immigrated to the United States recently or unlawfully are not eligible for Medicare. Thus, findings derived from the study cannot be applied to caregivers of these older adults. Second, although the latent class analysis identified distinct groups of caregivers using different coping strategies, the analysis was exploratory and thus different classes could emerge if a different set of coping strategies is analyzed (Beeber et al., 2008; Hong, 2009). This study covered a wide range of coping strategies but did not include every coping strategy used by caregivers. Future research should test whether the finding of these three distinct groups of caregivers can be replicated when more coping strategies are considered. Last, we are surprised that race and ethnicity of the caregivers did not distinguish different groups of caregivers either in the bivariate or multivariate associations. Knight and Sayegh (2010) suggested that caregivers' coping styles may be more responsive to cultural values specific to racial and ethnic groups than the simple categorization of race and ethnicity. We need better data to tap the cultural values that each of these groups hold and to examine whether these cultural values mediate or moderate the association between caregivers' patterns of coping and stressors, individual resources, and social resources for different racial and ethnic groups.

Findings derived from this study provide important directions for future research. This study identified three distinct groups of caregivers with different patterns of coping strategies, indicating that caregivers are not one homogeneous group. Future research is needed to examine whether these groups differ in their well-being, how likely their coping styles are to change over time, and what factors might affect these changes (Nolan, Grant, & Keady, 1996). The findings

also have important implications for family practitioners. We found that care recipients' problem

behaviors and caregivers' negative interactions with family members were positively associated

with emotional-coping, suggesting that family practitioners need to pay attention to caregivers

who are under these stresses and provide them with timely emotional support. In addition, the

number of care recipients' ADL difficulties and caregiver's difficulty of lifting or moving care

recipients were factors propelling them to seek outside help. Adult-child caregivers were more

likely than spouse caregivers to obtain formal aid. For these caregivers, family practitioners not

only need to provide emotional support, but also to assist them in obtaining reliable and

affordable services to reduce the caregiving burden.

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Table 1. Percentages of Family Caregivers Who Said How They Coped

	%
Emotion-focused coping	
Talk with friends or relatives	77.39
Pray or meditate	71.82
Watch TV	71.49
Read	67.15
Spend time alone	61.08
Spend time on exercise or hobbies	55.80
Eat	44.33
Take medication to calm	14.61
Drink alcohol	13.22
Smoke	12.52
Problem-focused coping	
Obtain assistive devices such as wheelchairs or walkers for care recipient	58.16
Use services for personal or nursing care at care recipient's home	29.72
Make modifications in care recipient's home	28.56
Use services to help with housework at care recipient's home	18.90
Use services delivering meals to care recipient's home	11.04
Use transportation services for care recipient	10.80
Use respite or caregiver support services	10.80
Request information on financial help for care recipient	10.59
N	1,552

Table 2. Summary of Information for Selecting Number of Latent Classes (N = 1,552)

Number of Latent Classes	Likelihood ratio statistics	AIC	BIC	Vuong-Lo-Mendell -Rubin likelihood ratio test (*p*-value)
1	5287.90	28588.27	28684.52	
2	3918.84	26015.30	26213.15	.00
3	3641.02	25460.57	25760.02	.00
4	3581.23	25300.51	25701.56	.56
5	3576.09	25178.34	25680.99	.21
6	3555.02	25118.06	25722.31	.06

Table 3. Three-Latent-Class Model (N = 1,552)

	Latent Class		
	Unpatterned coping	Emotional coping	Hybrid coping
Probability of membership	.20	.46	.33
Conditional probability of a *Yes* response			
Emotion-focused coping			
Talk with friends or relatives	.22	.91	.92
Pray or meditate	.22	.85	.85
Watch TV	.08	.90	.86
Read	.04	.86	.81
Spend time alone	.14	.72	.75
Spend time on exercise or hobbies	.07	.67	.70
Eat	.05	.50	.61
Take medication to calm	.02	.13	.24
Drink alcohol	.01	.15	.18
Smoke	.03	.16	.14
Problem-focused coping			
Obtain assistive devices	.45	.41	.89
Use personal or nursing care	.21	.08	.63
Make home modifications	.16	.15	.55
Use services to help with housework	.14	.08	.36
Use meal deliver services	.05	.04	.24
Use outside services for transportation	.07	.04	.22
Use respite or caregiver support services	.04	.02	.27
Request information on financial help	.03	.07	.20

Table 4. Distributions of Stressors, Caregiver's Individual Resources, and Caregiver's Social Resources Across Three Latent Classes

	Unpatterned coping		Emotional coping		Hybrid coping	
	Mean or %	SD	Mean or %	SD	Mean or %	SD
Stressors						
Number of health conditions (0-17)[bc]	4.73	0.16	4.96	0.11	5.92	0.14
Number of ADL difficulties (0-9)[bc]	2.24	0.13	2.30	0.09	3.93	0.12
Number of IADL difficulties (0-7)[abc]	2.33	0.14	2.79	0.09	3.65	0.12
Depressive behaviors (1-4)[abc]	1.13	0.02	1.33	0.02	1.54	0.03
Memory-related problems (1-4)[abc]	1.18	0.02	1.40	0.02	1.58	0.03
Disruptive behaviors (1-4)[abc]	1.09	0.01	1.18	0.01	1.37	0.02
Caregiver's individual resources						
Age[ab]	66.90	0.77	64.16	0.50	62.78	0.55
Women (vs. men)[ab]	56.15		64.85		70.08	
Race and ethnicity						
White	86.12		80.67		82.01	
Black	5.68		8.96		8.70	
Hispanic	5.36		6.44		5.80	
Others	2.84		3.92		3.48	
Education[bc]						
Less than high school	22.51		22.08		14.45	
High school graduate	35.37		34.33		30.66	
Post high school	22.51		26.92		31.64	
Bachelor's degree or higher	19.61		16.67		23.24	
Employment[bc]	29.30		30.79		38.45	
Self-rated health[b]	2.99	0.05	2.89	0.03	2.87	0.04
Difficulty lifting or moving care recipient[abc]	10.73		15.52		39.65	
Can't give special medical care[abc]	8.86		13.17		27.82	
Adult child (vs. spouse)[abc]	49.85		58.16		68.53	
Length of time since becoming a caregiver	4.68	0.11	4.66	0.07	4.56	0.08
Caregiver's social resources						
Number of informal caregivers (1-9)[bc]	1.25	0.03	1.32	0.03	1.47	0.04
Social support from friends or relatives (1-4)[ab]	2.99	0.05	3.20	0.03	3.26	0.03
Family disagreement over caregiving (1-4)[abc]	1.10	0.02	1.26	0.02	1.46	0.03
N	317		717		518	

Note. Response categories for self-rated health are poor (= 1), fair (= 2), good (= 3), and excellent (= 4). Response categories for the length of time since becoming a caregiver are less than 3 months (= 1), 3 to 6 months (= 2), 6 months to 1 year (= 3), 1 to 2 years (= 4), 2 to 4 years (= 5), 4 to 7 years (= 6), 7-10 years (= 7) and more than 10 years (= 8). [a]Statistically significant difference between unpatterned-coping and emotional-coping at $p < .05$. [b]Statistically significant difference between unpatterned-coping and hybrid-coping at $p < .05$. [c]Statistically significant difference between emotional-coping and hybrid-coping at $p < .05$.

Table 5. Odds Ratios (OR) and 95% Confidence Intervals (95% CI) from the Multinomial Logistic Regression of Memberships in Latent Classes (N = 1, 552)

	Emotional coping vs. Unpatterned coping		Hybrid coping vs. Unpatterned coping		
	OR	95% CI	OR	95% CI	Diff.
Stressors					
Number of health conditions[a]	1.03	(0.85, 1.23)	1.20	(0.98, 1.47)	
Number of ADL difficulties[a]	0.84	(0.68, 1.05)	1.30**	(1.03, 1.64)	***
Number of IADL difficulties[a]	1.10	(0.89, 1.35)	0.96	(0.77, 1.21)	
Depressive behaviors[a]	1.42*	(1.05, 1.94)	1.45*	(1.06, 1.98)	
Memory-related problems[a]	1.39*	(1.02, 1.89)	1.40*	(1.02, 1.93)	
Disruptive behaviors[a]	1.23	(0.86, 1.77)	1.52*	(1.05, 2.19)	
Caregiver's individual resources					
Age[a]	0.94	(0.73, 1.21)	1.12	(0.84, 1.48)	
Women (vs. men)	1.15	(0.82, 1.61)	1.28	(0.86, 1.91)	
Race and ethnicity					
White (ref.)					
Black	1.30	(0.67, 2.50)	0.93	(0.43, 2.00)	
Hispanic	0.95	(0.46, 1.95)	0.99	(0.44, 2.22)	
Others	0.98	(0.37, 2.61)	0.81	(0.26, 2.53)	
Education					
Less than high school	0.99	(0.63, 1.56)	0.68	(0.39, 1.20)	
High school graduate (ref.)					
Post high school	0.93	(0.61, 1.42)	0.98	(0.61, 1.59)	
Bachelor's degree or higher	0.70	(0.44, 1.13)	0.97	(0.58, 1.64)	
Employment	0.90	(0.58, 1.39)	1.20	(0.75, 1.95)	
Self-rated health[a]	0.96	(0.81, 1.15)	0.98	(0.80, 1.20)	
Difficulty lifting or moving care recipient	1.48	(0.86, 2.54)	3.00***	(1.73, 5.20)	***
Can't give special medical care	1.23	(0.69, 2.20)	1.79	(0.98, 3.27)	
Adult child (vs. spouse)	1.22	(0.74, 1.99)	1.98*	(1.14, 3.44)	*
Length of time since becoming a caregiver[a]	0.97	(0.83, 1.14)	0.98	(0.81, 1.17)	
Caregiver's social resources					
Number of informal caregivers[a]	0.98	(0.79, 1.21)	1.13	(0.91, 1.41)	
Social support from friends or relatives[a]	1.26**	(1.08, 1.46)	1.32**	(1.09, 1.60)	
Family disagreement over caregiving[a]	1.42*	(1.05, 1.92)	1.63**	(1.20, 2.21)	
Intercept	2.69***	(1.63, 4.44)	0.94	(0.53, 1.69)	
		Log Likelihood = -12674.29, d.f. = 56			

[a]The variable is rescaled to have a mean of zero and a standard deviation of one to ease the interpretation of the coefficient.
* $p < .05$, ** $p < .01$, *** $p < .001$