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Caregiver Reactions to Aggressive Behaviors in Persons with Dementia in a Diverse, Community-Dwelling Sample

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Abstract

Purpose—To describe caregiver challenges with and confidence managing three aggressive behavior types in persons with dementia: verbal aggression, destroying property, and threatening to hurt others.

Design and Methods—Secondary analysis of baseline data from the 2001–2004 Resources for Enhancing Alzheimer’s Caregiver Health II (REACH II) initiative.

Results—One or more aggressive behaviors within one week were reported by more than a third of caregivers, with most expressing upset but fewer expressing confidence managing the behaviors. Caregiver distress and confidence differed by race/ethnicity in response to verbal aggression, with more White/Caucasian caregivers expressing upset than Hispanic/Latinos or Black/African-Americans. Fewer Hispanic/Latinos expressed confidence managing verbal aggression, compared to White/Caucasians or Black/African-Americans.

Discussion—Aggressive behaviors challenge caregivers, with reactions varying by behavior type and race/ethnicity. Cultural and contextual factors suggest the need to tailor interventions, especially skill-building interventions that increase confidence managing aggressive behaviors while decreasing upset.

Keywords

dementia; behavioral symptoms; caregiving; aggressive behavior; health disparity

Introduction

Aggressive behaviors in dementia are part of a larger constellation of frequently occurring behavioral dementia symptoms. They are common, distressing to family caregivers, and lead to increased rates of institutionalization, neuroleptic medication use, and adverse health outcomes for caregivers and persons with dementia (E. B. Fauth & Gibbons, 2014; Gauthier et al., 2010; Kochhann et al., 2011; Kunik, Snow, Davila, McNeese, et al., 2010). Conceptual and operational definitions of aggressive behaviors have not been consistent and longitudinal studies have been limited, making prevalence estimates difficult (E. Fauth et al., 2012; Nowrangi, Lyketsos, & Rosenberg, 2015; Truzzi, Valente, Engelhardt, & Laks, 2013; van der Lee, Bakker, Duivenvoorden, & Droes, 2014). One definition of aggression is “an overt act, involving the delivery of noxious stimuli to (but not necessarily aimed at) another object, organism or self, which is clearly not accidental” (Patel & Hope, 1992, p. 212). This encompasses verbal abuse, destroying property, threats to harm others, and even physical assault (Hall & O'Connor, 2004). The estimated point prevalence of aggressive behaviors in dementia is 30% to 50%, with an overall prevalence of more than 90% of persons with dementia potentially experiencing at least one episode meeting the criteria for aggressive behavior over the course of their condition (Cipriani, Vedovello, Nuti, & Di Fiorino, 2011; Keene et al., 1999; Kunik, Snow, Davila, Steele, et al., 2010; Lyketsos et al., 2002; Zhao et al., 2015).

Other research has also supported the frequent occurrence of aggressive behavior in persons with dementia. As detailed previously in (Hansen, Hodgson, Budhathoki, & Gitlin, 2015), 38.3% ($N=241$) of a large sample of 630 persons with dementia in the Resources for Enhancing Alzheimer's Caregiver Health II (REACH II) demonstrated at least one aggressive behavior in the preceding week. The most prevalent behavior type was verbal aggression (34.4%, $N=217$), followed by threatening to hurt others (8.6%, $N=54$), and destroying property (7.1%, $N=45$). Examining prevalence rates by race/ethnicity, after adjusting for covariates, only verbal aggression was significantly different by race/ethnicity, with Black/African-Americans having an adjusted odds ratio of 2.26 ($p=0.035$, 95% CI [1.06–4.84]) greater likelihood than White/Caucasians of demonstrating this behavior type in a one-week time period (Hansen et al., 2015).

Most people with dementia live at home, with family caregivers providing the majority of hands-on care. A frequent precursor to aggressive behavior in the context of dementia care is providing personal hygiene and other personal care activities (Cipriani et al., 2011). While preventing and managing aggressive behaviors is important (Gauthier et al., 2010), most caregivers do not have access to specialized training that would prepare them to manage or prevent these behaviors (Prince, Prina, & Guerchet, 2013).

Caregiver reactions to dementia caregiving, including managing behaviors, have been described as being positive or negative. Both positive and negative aspects of caregiving have been linked with caregiver and care recipient outcomes, with positive aspects of caregiving associated with better outcomes and negative aspects associated with worse outcomes (Alvira et al., 2015; Roth, Fredman, & Haley, 2015).

The term used in this manuscript that is associated with positive caregiving is confidence. Confidence, in this study, refers to the confidence caregivers self-report when managing specific behavioral symptoms of dementia they encountered while caring for the care recipient. Other terms associated with positive caregiving include competence, self-efficacy, and resilience. Positive caregiving is adaptable, demonstrates skill, and addresses the needs of the person with dementia without substantial negative effects on either the caregiver's or care recipient's physical and mental health (Roth, Fredman, et al., 2015; Zarit, 2012). Confidence was chosen in this study as it was an additional question added to the Revised Memory and Behavior Checklist and was the data point collected in baseline data referring to caregivers' self-reported perception of positive or adaptive reactions to behavioral symptoms of dementia (Schulz et al., 2006).

The term used in this manuscript that is associated with negative caregiving is upset. Upset, in this study, refers to how upset caregivers report themselves to feel when encountering specific behavioral symptoms of dementia while caring for care recipients. Other terms associated with negative aspects of caregiving include distress and burden. These terms can be considered to describe the negative aspects of dementia caregiving and include characteristics such as emotional reactivity, scarce or overwhelmed coping mechanisms, and difficulty adapting or responding to the needs of the person with dementia (Roth, Fredman, et al., 2015). Negative aspects of caregiving may contribute to adverse physical and mental health outcomes for both the caregiver and the person with dementia. Upset was chosen in this study as it is a standard part of the Revised Memory and Behavior Checklist in the parent study and was the only data point collected in baseline data referring to caregivers' self-reported perception of negative reactions to behavioral symptoms of dementia (Schulz et al., 2006).

The literature is replete with studies examining both the positive and negative aspects of caregiving, including studies that test interventions to increase or support the positive aspects and decrease or diminish the negative aspects (Allen et al., 2017; Alvira et al., 2015; Feast, Orrell, Russell, Charlesworth, & Moniz-Cook, 2017; Hughes et al., 2014; Huis In Het Veld, Verkaik, Mistiaen, van Meijel, & Francke, 2015; Pendergrass, Becker, Hautzinger, & Pfeiffer, 2015). However, there are fewer studies that examine differences between how these positive and negative aspects are experienced by different race/ethnic caregiving communities and differences in how interventions are delivered or received, especially in response to specific behaviors encountered when caring for persons with dementia (Graham-Phillips, Roth, Huang, Dilworth-Anderson, & Gitlin, 2016; Kally et al., 2014; Roth, Dilworth-Anderson, Huang, Gross, & Gitlin, 2015; Roth et al., 2013).

The extant literature suggests that caregivers react to caregiving and behaviors differently based on variation in cultural, ethnic, and/or racial backgrounds, socioeconomic, and care recipient characteristics (Cherry et al., 2013; Covinsky et al., 2003; Dilworth-Anderson, Williams, & Gibson, 2002; Heo & Koeske, 2013; Hilgeman et al., 2009; Kim, Chang, Rose, & Kim, 2012; O'Connor, 2012; Prince et al., 2013; Smith, Williamson, Miller, & Schulz, 2011; Sorensen & Pinquart, 2005). More specifically, studies have consistently shown that Black/African-American caregivers tended to be less depressed and Hispanic/Latinos more depressed than their White/Caucasian counterparts (Covinsky et al., 2003; Sorensen &

Pinquart, 2005). Also, both Black/African-Americans and Hispanic/Latinos have tended to report higher caregiver satisfaction, more positive caregiving outcomes, and lower caregiver burden than White/Caucasians (Bekhet, 2015; Evercare, 2008; Roth et al., 2003; Roth, Dilworth-Anderson, et al., 2015; Sorensen & Pinquart, 2005).

However, few studies have examined the impact that aggressive behaviors specifically have on caregivers and how that impact may differ by race/ethnicity. Aggressive behaviors can be a trigger for hospitalization or relocation to a nursing home and caregiver needs and coping strategies have previously been shown to differ by race/ethnicity (Elliott, Burgio, & Decoster, 2010; Heo & Koeske, 2013; Samson, Parker, Dye, & Hepburn, 2016). Thus it is important to understand caregiver reactions and whether they differ by race/ethnicity for designing appropriate caregiver educational and supportive interventions.

The purpose of this study is to examine caregiver reactions to aggressive behaviors. Specifically, we examine caregiver upset with and confidence in managing three types of aggressive behaviors: verbal aggression, destroying property, and threatening to hurt others. Three descriptive questions are posed:

1. What is the level of caregiver-reported upset with overall aggressive behavior and each aggressive behavior type?
2. What is the level of caregiver-reported confidence managing overall aggressive behaviors and each aggressive behavior type?
3. Do levels of upset with and confidence managing aggressive behavior differ by race/ethnicity and aggressive behavior types?

To frame reactions to aggressive behaviors we use the Stress Process Model (Haley, Lane Brown, & Levine, 1987; Lazarus & Folkman, 1989; Pearlin, Mullan, Semple, & Skaff, 1990) which suggests that stressors (e.g., aggressive behavior), may be appraised as threats by the caregivers and overwhelm their coping mechanisms, eventually leading to poorer caregiver outcomes. Drawing upon this framework, we posit that a relationship exists between caregiver upset with aggressive behaviors and their confidence managing the behaviors. Further extrapolating from this model, the relationship may differ depending on caregiver perception of threat for each aggressive behavior type and how they respond to these behaviors may differ by their cultural/ethnic/race background.

Research Design and Methods

Funded by the National Institute on Aging, the 2001–2004 REACH II initiative tested an innovative multi-component intervention for a large, geographically and racially/ethnically diverse caregiver sample. The data included in this study was collected at baseline interviews, prior to randomization and receipt of the REACH II intervention.

Sample

REACH II consisted of a convenience sample of 642 dyads of persons with dementia and their family caregiver (219=White/Caucasian, 212=Hispanic/Latino, and 212=Black/African-American), recruited from five U.S. cities (Birmingham, Alabama; Memphis,

Tennessee; Miami, Florida; Palo Alto, California; and Philadelphia, Pennsylvania), with both Hispanic/Latinos and Black/African-Americans oversampled so that differences by race/ethnicity could be investigated. In a previous study, 630 of these dyads were examined for caregiver-reported presence of aggressive behaviors, with twelve dyads not included due to ambiguous race/ethnicity designation in the publicly available dataset (Hansen et al., 2015). Of these, 241 caregivers (68=White/Caucasian, 93=Hispanic/Latino, and 80=Black/African-American) reported that the person with dementia for whom they provided care demonstrated aggressive behavior and were thus included in this study.

Caregivers were eligible for inclusion if they were (a) 21 years of age or more, (b) living with a person with dementia, (c) providing care six months or more, (d) providing four hours of assistance or more, and (e) experiencing at least two signs of caregiver distress, such as feeling angry or frustrated or feeling their health had declined. Additional inclusion criteria addressed logistical concerns (e.g., telephone accessibility, intent to remain in area).

Caregivers were excluded if they (a) did not speak English or Spanish, (b) were in treatment (radiation/chemotherapy) for cancer, (c) were anticipating imminent institutional placement of the person with dementia, or (d) were cognitively impaired.

Persons with dementia were eligible for inclusion if they had diagnosis of dementia or cognitive impairment (MMSE score of 23 or less). Persons with dementia were excluded if they (a) did not speak English or Spanish, (b) were in treatment for cancer, (c) had severe mental illness, or (d) were bedbound.

Further recruitment procedures and eligibility criteria for REACH II were described in more detail elsewhere (Belle et al., 2006).

Procedures

Both caregivers and persons with dementia provided written consent; however, caregivers provided proxy consent on behalf of persons with dementia who could not consent on their own. Following consent and enrollment, participants were interviewed face-to-face in English or Spanish by interviewers who had been trained extensively using a standardized protocol. All materials, including response cards, were translated into Spanish from English, using forward-and-back translation (Belle et al., 2006).

The Inter-University Consortium for Political and Social Research (ICPSR), part of the Institute for Social Research at the University of Michigan, houses the online repository for REACH II data. All ICPSR data undergo a confidentiality review and are altered when necessary to limit the risk of disclosure before being made publicly available. ICPSR provides clean data files in major statistical software formats and codebooks, all of which require no special permissions to access or use (Schulz et al., 2006). This secondary analysis was reviewed and approved as exempt by the institutional review board of the lead author's institution (IRB # NA_00085344).

Measures

Race/ethnicity—All participants who indicated Hispanic/Latino as their ethnicity were designated as an exclusive group regardless of any other race/ethnicity selection. Then the remaining participants were divided into exclusive groups as either non-Hispanic Black/African-American or non-Hispanic White/Caucasian.

Dependent Variable—The Revised Memory and Behavior Checklist (RMBC) was used to assess memory and behavior difficulties and includes three aggressive behavior types: verbal aggression, destroying property, threatening to hurt others (Roth et al., 2003; Teri et al., 1992). For each aggressive behavior type endorsed, caregivers were asked to rate how upset they felt when encountering specific behavioral symptoms of dementia. In a REACH II-specific addition to the RMBC, participants in this study were also asked to rate how confident they felt when managing specific behavioral symptoms of dementia. As described earlier, upset refers to the negative caregiver reaction of feeling upset when encountering specific behavioral symptoms of dementia and confidence refers to the positive caregiver reaction of feeling confident managing specific behavioral symptoms of dementia. Responses were recorded on a 5-point scale (*not at all, a little, somewhat, very much, extremely*). The data were initially described for this study using the full scale. However, for the remaining analyses, the full scale was reduced to a dichotomous variable to describe data and examine for differences between groups. Responses were reduced to a dichotomous variable in this case because several response categories contained few responses, limiting the data interpretation. The dichotomous variables were created by assigning *not present* to the original categories of *not at all upset/confident* or *a little upset/confident* and assigning *present* to the original categories of *somewhat upset/confident, very much upset/confident, or extremely upset/confident*.

Descriptive variables—The Stress Process Model guided selection of factors that may affect caregivers' ability to cope with the stress of encountering aggressive behaviors in dementia. These include intrinsic (e.g. depression) and extrinsic variables (e.g. educational level, socioeconomic status) that may affect caregivers' threat appraisal and perceived ability to cope with stress. Variables selected have also previously been identified in research as being associated with caregiver outcomes (Hughes et al., 2014; van der Lee et al., 2014).

Covariates include age, gender, caregiver education, economic status measured by asking caregivers their ability to pay for basics, time caring for the person with dementia, spousal relationship to the person with dementia, and caregiver physical health. Depressive symptoms were measured using the 10-item Center for Epidemiologic Studies Depression Scale (CES-D) CES-D has adequate reliability (Cronbach's alpha=0.85 to 0.90) and construct and concurrent validity (Radloff, 1977).

Statistical Analyses

Aggressive behaviors and caregiver reactions were described individually by type and as a composite score of overall aggressive behavior. Sociodemographic variables were described and analyzed across groups using a Chi-square test, Fisher's Exact test, Kruskal-Wallis test, Analysis of Variance (ANOVA), or logistic regression, as appropriate. Pairwise comparisons

used the Bonferroni correction. Similar statistical methods were used to evaluate differences in caregiver reactions by race/ethnicity. Bivariate correlations between upset and confidence were examined using Spearman's rho correlation coefficient. Variables that are continuous and non-normally distributed have both median and mean values reported in Table 1.

All statistical analyses were conducted using IBM SPSS software (IBM Corp., 2015).

Results

Study Participants

The characteristics of caregivers reporting at least one episode of aggressive behavior by the person with dementia in the previous week, are described in Table 2. As shown, caregivers were over 60 years of age on average and mostly female. Most had a non-spousal relationship to persons with dementia. Caregivers in this sample were more highly educated on average than the general population with 58.1% ($N=140$) educated beyond high school, 23.6% ($N=57$) completing high school, and 18.3% ($N=44$) completing less than high school. Close to half of caregivers reported finding it "somewhat" difficult to pay for basics. Caregivers reported providing care for over five years on average. Most caregivers rated the quality of their physical health as good or higher. Caregivers were also found to have some depressive symptoms, but not meeting criteria for a clinical diagnosis of depression, on average.

Analyzed by race/ethnicity, Hispanic/Latinos were more likely to be female than Black/African-American caregivers. Black/African-Americans provided care for more years than White/Caucasians in pairwise associations. White/Caucasians had a higher mean level of education, having attained some college or an Associate's degree, compared to Hispanic/Latinos who completed high school. Hispanic/Latino caregivers had significantly worse physical health than Black/African-American caregivers and White/Caucasian counterparts. Hispanic/Latinos and Black/African-Americans also had significantly more difficulty paying for basics than did White/Caucasians.

Caregiver Reactions to Aggressive Behaviors

Total sample—On average, caregivers reported being "moderately" upset by aggressive behaviors, without regard to type. Caregivers also reported only "a little" confidence managing aggressive behavior. As seen in Tables 3 and 4, when caregivers' responses to questions about how upset they were and how confident they were managing aggressive behaviors were described dichotomously, more than two-thirds of caregivers were upset with all aggressive behaviors, regardless of type. Examining the specific type of aggressive behavior, over three-quarters of caregivers were upset with destroying property and threatening to hurt others, while a slightly lower percentage reported being upset by verbal aggression. This contrasts with a little over half of caregivers reporting being confident managing aggressive behaviors of any type, with more caregivers reporting being confident managing threatening to hurt others and verbal aggression, but less than half reporting being confident managing destroying property.

By race/ethnicity—Caregivers' reported levels of upset in response to all aggressive behaviors did not differ significantly by race/ethnicity, however, caregivers' reported confidence levels did differ significantly by race/ethnicity for aggressive behaviors, without regard to type, with Hispanic/Latinos reporting lower levels of confidence than either Black/African-Americans or White/Caucasians. When further examining by type of aggressive behavior, caregivers' upset with verbal aggression was the only behavior that differed significantly by race/ethnicity. White/Caucasians had the highest percentage of caregivers who expressed upset, Hispanic/Latinos were next highest, and Black/African-Americans had the lowest percentage, though even for this group, more than half reported some level of upset. Caregiver confidence managing verbal aggression also differed significantly by race/ethnicity, with a lower percentage of Hispanic/Latino caregivers expressing confidence than White/Caucasians, who in turn had a lower percentage reporting confidence managing verbal aggression than Black/African-Americans.

Associations between Caregiver Upset and Confidence

Total sample—Overall, a statistically significant negative correlation with a weak to medium strength of association was found between caregivers' reported level of upset and confidence for all aggressive behavior without regard to type. In other words, higher levels of reported upset were correlated with lower levels of reported confidence. This was also true for two specific types of aggressive behavior, verbal aggression and threatening to hurt others. However, no statistically significant correlation was found between upset and confidence for destroying property.

By race/ethnicity—A statistically significant negative correlation—with a weak to medium strength of association between levels of caregiver upset and confidence—was found for all aggressive behavior, among both White/Caucasian and Black/African-American caregivers. Examining further by specific aggressive behavior type, all three race/ethnic groups had statistically significant negative correlations between upset and confidence for verbal aggression. For only White/Caucasians, there was also a strong negative association between upset and confidence for threatening to hurt others. No statistically significant correlations between upset and confidence were found for destroying property in any of the race/ethnic groups.

Discussion

This study is the first to our knowledge to examine a large, racially, ethnically, and geographically diverse sample of caregivers reporting level of upset with and confidence managing specific aggressive behavior types in community-dwelling persons with dementia. This is important because it can inform development of culturally sensitive and tailored interventions to support family caregivers of persons with dementia who encounter these common behaviors.

Overall, more caregivers in this sample were upset with aggressive behaviors than were confident managing aggressive behaviors. Statistically significant differences were found for specific behaviors: fewer Black/African-Americans reported being upset with verbal aggression than Hispanic/Latinos and White/Caucasians; White/Caucasians reported being

more upset with verbal aggression when compared to the other two groups; and, Hispanic/Latinos had the lowest percentage of caregivers reporting having confidence managing aggressive behaviors overall, as well as managing verbal aggression, when compared to Black/African-Americans and White/Caucasians.

All statistically significant correlations between upset and confidence were negative, though the presence of correlation and strength of association differed by race/ethnicity, gender, and spousal relationship. This suggests that the relationship between upset and confidence may be specific to race, ethnicity, dyadic relationships, and/or culture. However, all of the significant correlations were only weak to medium in strength of association, except for the reported reactions of White/Caucasians to threatening to hurt others behavior. Within the framework of the stress and coping framework, these negative associations suggest that as caregivers appraise the potential threat of aggressive behavior, they may be at increased risk of upset if their evaluation of their ability to manage the behavior is low. That is, having little confidence may predispose caregivers to feeling upset with the behavior. Especially for White/Caucasians reporting the presence of threatening to hurt others, interventions to increase their sense of confidence in managing the behavior may have potential to increase their coping skills and decrease upset. This is supported by numerous previous studies in the literature that have found that interventions designed to increase self-efficacy, competence, and confidence reduced caregiver-reported distress, burden, and upset (Gitlin, Winter, Dennis, Hodgson, & Hauck, 2010; Huis In Het Veld et al., 2015; Kally et al., 2014; Nogales-Gonzalez, Romero-Moreno, Losada, Marquez-Gonzalez, & Zarit, 2015).

The differences in caregiver reactions raise a number of questions for future study. More research is needed to understand the context and factors associated with the differential reactions to specific types of aggressive behaviors, such as Black/African-Americans' lower upset with the behaviors and Hispanic/Latinos' lower confidence in managing the behaviors. It may be that perspectives shaped by cultural influences and social networks lead some aggressive behavior types to be more challenging to caregivers than others. Understanding which specific factors contribute to these differences may allow for intervention development to enhance caregiver skill and confidence in managing these behaviors.

One example of these differences is our finding that fewer Black/African-Americans reported being upset with verbal aggression while more reported confidence managing verbal aggression compared to White/Caucasians and Hispanic/Latinos. This is consistent with the findings of (Roth et al., 2003) that Black/African-Americans were less upset than White/Caucasians by dementia-related behaviors overall, though that study also found that Hispanic/Latinos were similarly less upset. Further exploration of how Black/African-American caregivers frame verbal aggression may be helpful in advancing intervention development in this area. Cultures, or even families, differ in how patterns of communication are expressed and perceived (Hecht, Jackson, & Ribeau, 2002). In some cultures, verbal expressions of frustration and anger are considered both normal and healthy, while in other cultures these same communication styles could potentially be perceived as aggressive and frightening. It is conceivable that these differences in perception could heavily influence how caregivers perceive verbal expressions of anger, frustration, or distress in dementia as well.

In this sample, Hispanic/Latino caregivers had the lowest level of confidence managing aggressive behaviors. They also reported the lowest levels of education and poorest health, echoing the Evercare Study of Hispanic Family Caregiving in the US and other previous studies (Evercare, 2008; Karlin, Weil, & Gould, 2012; Llanque & Enriquez, 2012). In the context of the stress and coping framework, this suggests that having limited resources, such as lower education and less access to health care, may contribute to Hispanic/Latinos appraising threats in their environment as more stressful and overwhelming than groups who have easier access to these resources. For example, caregivers who perceive behaviors as threatening may be more easily overwhelmed because of the cumulative effect of the primary stressors, including dementia-related behaviors, and secondary role strain, including economic constraints, which are greater than their capacity to cope with threatening behavior. As the coping capacity is overwhelmed, the perceived ability to manage aggressive behavior may be decreased and confidence may lag. If this hypothesis is true, it suggests that intervening by addressing education, health care, and economic disparities may affect the confidence with which these caregivers can approach persons with dementia who have aggressive behavior.

Hispanic/Latinos also bring strengths to the caregiving experience (Hodge & Sun, 2012; Napoles, Chadiha, Eversley, & Moreno-John, 2010) that may influence their perception of behaviors. Hispanic/Latinos did not have the highest level of upset with all behaviors, which is again consistent with literature that suggests that these caregivers report lower caregiver burden and greater satisfaction in the caregiving experience than White/Caucasians, despite being more likely to live with and spend more time caring for the person with dementia (Coon et al., 2004; Evercare, 2008). Development of interventions to potentially increase their confidence managing aggressive behaviors may benefit caregivers by focusing and capitalizing on those strengths. For example, building on their lower perceived burden and greater satisfaction overall, Hispanic/Latinos may benefit from targeted interventions to increase confidence in this specific aspect of providing care for persons with dementia. Skill-building training that increases Hispanic/Latino caregivers self-efficacy in dementia caregiving tasks may be especially potent as a tailored intervention. Starting from a place of relatively low upset with these behaviors, these caregivers' confidence may benefit from narrowly targeted training that focuses on the skills that are under-developed. Thus the threat posed by aggressive behavior may decrease further as caregiver skill increases and ultimately Hispanic/Latino caregivers may experience even higher levels of satisfaction in caregiving.

Though differences by caregiver race/ethnicity in the ways they cope and adapt to caregiving has been studied (Lawton, Rajagopal, Brody, & Kleban, 1992; Navaie-Waliser et al., 2001; Skarupski, McCann, Bienias, & Evans, 2009; Toth-Cohen, 2004), little is known about what strategies caregivers use to cope with aggressive behaviors and whether they differ among racial/ethnic groups. Intervention development may also benefit by examining strategies that are commonly and successfully used in one culture for potential modification or adaptation for use in other cultural contexts. Strategies that seem obvious or commonplace in one culture may be surprising and novel in another culture. Research to potentially adapt successful strategies in one culture for use by another cultural group may be well-served by

more closely examining how caregivers of differing race/ethnicities approach the prevention and management of aggressive behaviors in persons with dementia.

Stress and coping models (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986; Haley et al., 1987; Pearlin et al., 1990) may also be helpful when considering possible hypotheses regarding the relationship between caregiver upset and confidence. Caregivers who have lower confidence managing aggressive behaviors may perceive the behaviors as a greater threat, leading eventually to a higher level of upset. On the other hand, caregivers who reported being more upset with aggressive behaviors may in turn assess their own ability to manage the behaviors as inadequate and thus report lower confidence. In either case, behavioral interventions may be especially helpful in reframing the aggressive behavior for the caregiver and decreasing upset and/or increasing confidence.

Differences in access to health care, economic, and environmental resources must be considered when describing how one group of caregivers compares to another in any caregiving aspect. Unsurprisingly, in this study we found that caregivers were primarily female and non-spouses; however, Black/African-Americans were more likely to be male and to have cared longer for the person with dementia. While caregivers overall reported good or better physical health, Hispanic/Latinos were more likely to be in poorer physical health than White/Caucasians or Black/African-Americans. Though most caregivers reported finding it somewhat difficult to pay for basics, both Black/African-American and Hispanic/Latinos found it more difficult than White/Caucasians. White/Caucasians also reported a higher mean level of education than the other two groups. These differences support findings in other studies of the disparity between race/ethnicities in terms of socioeconomic and caregiving resources (Lines & Wiener, 2014). These differences are critical to consider when designing interventions that are tailored to the specific needs of caregivers as the unique set of challenges experienced by caregivers are greatly impacted by the adequacy and availability of resources, and so any interventions must account for these differences to be effective.

When considering positive and negative aspects of caregiving, it should also be briefly noted that in addition to behavioral symptoms, being female and a spousal caregiver have both been found to be associated with greater burden and lower satisfaction with caregiving (Chiao, Wu, & Hsiao, 2015; Kim et al., 2012; Poysti et al., 2012). Similarly, it is possible that gender and relationship shape caregiver reactions to aggressive behaviors. Future research should consider the contribution of these factors to appraisals of aggressive behaviors.

Finally, it is important to highlight the role of the larger context in which aggressive behavior occurs. Unfortunately, the many aspects of the context in which behaviors occur continue to elude measurement, yet are critical to consider. Behavior that is lower risk to the caregiver, such as shaking a fist, and behavior that is higher risk, such as swinging a cane at the caregiver's head, would both be classified in this study as threatening to harm another. However, the context of that behavior—including its duration, accompaniment by other actions, severity, and so on—form an important aspect of understanding how caregivers react to the behavior. Previous trauma experienced by either the caregiver or the person with

dementia may also have a profound effect on how these events are perceived. This is particularly true if the trauma consists of abusive behaviors that are part of the dyadic relationship at some point in the past. Differences in size, weight, age, strength, and gender can also all conceivably have a substantial impact on the caregiver's reaction. These are important areas for further exploration in other studies that may help to guide the development and tailoring of supportive interventions in the future.

Limitations

As this was a secondary data analysis, this study was necessarily limited by the nature of the data collected and participant demographics in the original multi-site trial. There are likely other factors concerning the context in which specific aggressive behaviors occur and how caregivers manage behaviors to advance intervention development that are not addressed in this study. Additionally, there are other race/ethnicities such as Asian-Americans, who are the fastest growing race/ethnic group in the U.S. (Brown, 2014), that were not represented in the data set, potentially limiting generalizability of findings. Further, the relationship between caregivers' upset with and confidence managing aggressive behaviors cannot be fully examined in this cross-sectional study.

Also noteworthy is that this study relied on caregiver self-reported measures. It is unknown whether there may be recall or response bias, in part due to perceived stigma or unfamiliarity with dementia-related behaviors. Cultural influences may affect how behaviors are perceived and how they are reported (Fox, Hinton, & Levkoff, 1999). Measuring caregiver reactions to specific dementia-related behaviors continues to be a challenge.

Conclusion

Aggressive behavior in persons with dementia poses a substantial challenge to caregivers. Caregiver reactions vary depending on the specific type of behavior and these differences extend to differential levels of upset with and confidence managing these behavior types among the three racial/ethnic groups in this sample. The occurrence of any aggressive behaviors was upsetting to over two-thirds of the sample, suggesting that caregivers may benefit from learning strategies for addressing these behaviors. It is unclear why Black/African-Americans caregivers reported being the least upset and Hispanic/Latinos reported having the least confidence managing these behaviors. These differences need further exploration and specifically how cultural and contextual factors influence upset and confidence. Identifying modifiable factors contributing to upset and confidence would be helpful to inform the design of interventions to enhance caregiver ability and skill in managing these behaviors.

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Table 1**Caregiver Covariates**

Variable	Unit
Age	Years
Gender	Male Female
Level of Education	0 = No formal education 1–11 = Levels of primary and secondary school 12 = High school 13 = Trade school 14 = Some college or associate's degree 15 = Undergraduate degree 16 = Master's degree 17 = Doctoral degree
Ability to pay for basics	Not difficult at all Not very difficult Somewhat difficult Very difficult
Center for Epidemiological Studies Depression (CES-D) score	Range = 0–30 8 = Probable depression
Time caring for person with dementia	Years
Spousal relationship to person with dementia	Spouse Non-spouse
Physical health	Poor Fair Good Very good Excellent

Table 2

Demographic Characteristics of Caregivers

	Total Sample (241)	White/Caucasian (68)	Black/African-American (80)	Hispanic/Latino (93)	<i>p</i>	Pairwise, by Race/Ethnicity
Age in years (<i>M, SD</i>)	62.9 (13.50)	62.8 (14.92)	65.2 (13.05)	61.1 (12.56)	0.217 (A)	
Gender (% , <i>N</i>)					*0.016 (χ^2)	Hispanics were more likely to be female than Blacks.
Male	22.8 (55)	19.1 (13)	33.8 (27)	16.1 (15)		
Female	77.2 (186)	80.9 (55)	66.3 (53)	83.9 (78)		
Level of Education ^a (0–17)					*0.002 (H)	Whites had a higher level of education than Hispanics.
(<i>Mdn, IQR</i>)	13.0 (2.0)	14.0 (3.0)	13.0 (2.0)	12.0 (4.0)		
(<i>M, SD</i>)	12.7 (2.67)	13.6 (1.77)	13.0 (1.95)	11.7 (3.40)		
Ability to pay for basics (% , <i>N</i>)					*0.021 (χ^2)	Hispanics and Blacks had more difficulty paying for basics than Whites.
Not difficult at all	21.2 (51)	33.8 (23)	15.0 (12)	17.2 (16)		
Not very difficult	24.1 (58)	23.5 (16)	30.0 (24)	19.4 (18)		
Somewhat difficult	40.7 (98)	36.8 (25)	40.0 (32)	44.1 (41)		
Very difficult	14.1 (34)	5.9 (4)	15.0 (12)	19.4 (18)		
Center for Epidemiological Studies Depression (CES-D) score ^b (0–30)					0.197 (H)	
(<i>Mdn, IQR</i>)	10.0 (9.0)	10.0 (7.0)	8.5 (8.0)	11.0 (12.0)		
(<i>M, SD</i>)	11.1 (6.54)	11.1 (6.09)	9.8 (5.80)	12.1 (7.33)		
Years caring for person with dementia					*0.013 (H)	Blacks cared for PwD for more years than Whites.
(<i>Mdn, IQR</i>)	3.0 (4.0)	2.4 (3.4)	4.0 (5.8)	3.0 (3.0)		
(<i>M, SD</i>)	5.6 (8.57)	4.4 (6.53)	7.7 (11.72)	4.6 (6.06)		
Spousal relationship to person with dementia (% , <i>N</i>)					0.497 (χ^2)	
Spouse	45.6 (110)	48.5 (33)	48.8 (39)	40.9 (38)		
Non-Spouse	54.4 (131)	51.5 (35)	51.2 (41)	59.1 (55)		
Physical health (% , <i>N</i>)					*<0.001 (<i>F</i>)	Hispanics reported poorer physical health than Blacks or Whites.

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	Total Sample (241)	White/Caucasian (68)	Black/African-American (80)	Hispanic/Latino (93)	<i>p</i>	Pairwise, by Race/Ethnicity
Poor	10.0 (24)	4.4 (3)	3.8 (3)	19.4 (18)		
Fair	29.9 (72)	17.6 (12)	30.0 (24)	38.7 (36)		
Good	34.0 (82)	41.2 (28)	43.8 (35)	20.4 (19)		
Very Good	19.5 (47)	26.5 (18)	17.5 (14)	16.1 (15)		
Excellent	6.6 (16)	10.3 (7)	5.0 (4)	5.4 (5)		

Notes.

^a Likert scale 0–17; 0 = No education to 17 = Doctoral education

^b CES-D reference range: 0–30; higher scores indicate more depressive symptoms.

A = ANOVA

H = Kruskal-Wallis test

F = Fisher's exact test

* = Significant at $p < 0.05$

Table 3

Presence of Caregiver Upset with Aggressive Behaviors, by Caregiver Race/Ethnicity

	Total Sample		White/Caucasian		Black/African-American		Hispanic/Latino		Pairwise, by Race/ Ethnicity
Within the past week...	N	PwD behavior N (%) CG confidence	N	PwD behavior N (%) CG confidence	N	PwD behavior N (%) CG confidence	N	PwD behavior N (%) CG confidence	
Verbal Aggression	217		61		71		85		χ^2
Upset present ^a	150 (69.1)		51 (83.6)		40 (56.3)		59 (69.4)		No significant pairs
Destroying Property	45		8		20		17		<i>F</i>
Upset present ^a	33 (73.3)		7 (87.5)		16 (80.0)		10 (58.8)		No significant pairs
Threatening to Hurt Others	54		12		25		17		<i>F</i>
Upset present ^a	39 (72.2)		9 (75.0)		18 (72.0)		12 (70.6)		No significant pairs

Notes.

^aSum of *upset level* categories "Moderately," "Very Much," and "Extremely."

F = Fisher's exact test

PwD = Person with Dementia

CG = Caregiver

Presence of Caregiver Confidence Managing Aggressive Behaviors, by Caregiver Race/Ethnicity

Table 4

	Total Sample		White/Caucasian		Black/African-American		Hispanic/Latino		Pairwise, by Race/Ethnicity
Within the past week...	N	PwD behavior N (%) CG confidence	N	PwD behavior N (%) CG confidence	N	PwD behavior N (%) CG confidence	N	PwD behavior N (%) CG confidence	
Verbal Aggression	217		61		71		85		χ^2
Confidence present ^a	123 (56.7)		38 (62.3)		48 (67.6)		37 (43.5)		Blacks reported greater confidence managing verbal aggression than Hispanics
Destroying Property	45		8		20		17		<i>F</i>
Confidence present ^a	19 (42.2)		3 (37.5)		11 (55.0)		5 (29.4)		No significant pairs
Threatening to Hurt Others	54		12		25		17 ^d		<i>F</i>
Confidence present ^a	32 (59.3)		6 (50.0)		19 (76.0)		7 (43.8)		No significant pairs

Notes.

^aSum of confidence level categories "Moderately," "Very Much," and "Extremely."

^dOne participant declined response to confidence level in managing Hurt Others behavior

F = Fisher's exact test

PwD = Person with Dementia

CG = Caregiver

Table 5

Association between Caregiver Upset and Confidence by Caregiver Race/Ethnicity

Spearman's rho (<i>p</i>)	Total Sample	White/Caucasian	Black/African-American	Hispanic/Latino
Overall Aggression	*-0.345 (<0.001)	*-0.397 (0.001)	*-0.461 (<0.001)	-0.201 (0.053)
Verbal Aggression	*-0.396 (<0.001)	*-0.389 (0.002)	*-0.551 (<0.001)	*-0.246 (0.023)
Destroying Property	-0.261 (0.084)	-0.503 (0.203)	-0.273 (0.244)	-0.370 (0.144)
Threatening to Hurt Others	*-0.316 (0.021)	*-0.731 (0.007)	-0.281 (0.174)	-0.018 (0.946)

Notes

*
= Significant at $p < 0.05$