Well-being, appraisal, and coping in Latina and Caucasian female dementia caregivers: findings from the REACH study

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Abstract

While there has been considerable interest in studying ethnically diverse family caregivers, few studies have investigated the influence of dementia caregiving on Latino families. The current study includes participants from two sites of the REACH (Resources for Enhancing Alzheimer’s Caregiver Health) project to compare well-being, appraisal, and religiosity by ethnicity, with specific attention to levels of acculturation. Latina (n = 191) and Caucasian female (n = 229) dementia family caregivers from two regions of the United States (Miami, Florida and Northern California) were compared at baseline on demographics, care recipient characteristics, mental and physical health, and psychosocial resources, including appraisal style and religiosity. Latina caregivers reported lower appraisals of stress, greater perceived benefits of caregiving, and greater use of religious coping than Caucasian caregivers. The relationship of these variables to level of acculturation for the Latina caregivers was also explored. Implications of these results for psychosocial interventions with Latino and Caucasian family caregivers are discussed.

Introduction

Over the past decade, a significant amount of research has been conducted to determine the physical and psychological impact of caring for a family member with a progressive dementing disorder. To date, caregiving for family members with dementia in comparison to non-dementia caregivers and non-caregiving controls has been associated with elevated levels of depression, anxiety, anger, and poorer self-reported health (Bookwala, Yee & Schulz, 2000; Ory et al., 1999; Schulz et al., 1995). However, the vast majority of these studies focus on Caucasian caregivers. The challenge now facing researchers is to determine whether the impact of caregiving differs among ethnically diverse groups of family caregivers. The aim of this paper is to identify the influence of socio-cultural factors on caregivers’ well-being, appraisal, and coping processes. These results can help facilitate the development of culturally relevant and meaningful interventions for Latino and Caucasian caregivers.

The terms Latino and Caucasian will be used throughout the paper. It is important to note that the USA Latino or Hispanic population is a heterogeneous population representing people from over 20 different Spanish-speaking countries from North America, South and Central America, the Caribbean, and Spain. Moreover, Latinos may be from different racial groups including Caucasian. However, Caucasian will be used to represent non-Latino Caucasians, and since only female caregivers are included in the analyses discussed in this paper, the feminine term, Latina, will be used when appropriate.

This paper reviews the current literature on Latino and Caucasian caregivers, proposes a set of hypotheses regarding differences between Latina and Caucasian female caregivers on several stress process variables, and then examines these variables using baseline data from a unique data set. The data draws from the Resources for Enhancing Alzheimer’s Caregiver Health (REACH), a recent multi-site research project sponsored by National Institute...
on Aging and the National Institute of Nursing Research. REACH is a multi-year intervention program beginning in 1995 that investigates the effectiveness of innovative interventions to support family caregivers. Additional information on the national REACH project, its intervention sites, and the tailoring of REACH interventions is available in the literature (Coon, Gallagher-Thompson & Thompson, 2003; Coon, Schulz & Ory, 1999; Gallagher-Thompson et al., 2000; Schulz, 2000; Wisniewski et al., 2003). In this paper, we compare Latina and Caucasian female caregivers by using baseline data from the two REACH sites (Palo Alto, California and Miami, Florida) that enrolled caregivers from these two ethnic groups.

The impact of caregiving: well-being, appraisal and coping

Investigating the impact of caregiving among ethnic minority caregivers is critical given the dramatic shift in the demographic profile of the US population over the age of 65 (Administration on Aging, 2000). In the year 2000, an estimated 84% of people age 65 or older are non-Hispanic White, while only 8% are Black, 6% are Hispanic, 2% are Asian and Pacific Islander, and less than 1% are American-Indian and Alaska Native. However, by the year 2050, the number of Latino elders is expected to increase dramatically to an estimated 16% of adults age 65 or older (Administration on Aging, 2000; Therrien & Ramirez, 2000). From this group, it is estimated that at least 4.5 million Latino elders will require long-term care due to Alzheimer’s disease (AD) or other forms of dementia (Markides et al., 1997). This exponential growth in older adults will result in a dramatic increase in the number of families undertaking the informal caregiving role.

Several differences in caregiver characteristics have been found in studies comparing Latino and Caucasian caregivers. Latino caregivers tend to be younger, attain less education, have lower incomes and are more likely to be unemployed than Caucasian caregivers (Adams et al., 2002; Gallagher-Thompson et al., 2000; Connell & Gibson, 1997). Latino caregivers also are more often daughters while Caucasians are more frequently spouses (Cox & Monk, 1993; Kosloski, Montgomery & Karner, 1999; Mintzer, Rubert & Herman, 1994). Latino caregivers on average provide more hours of care than their Caucasian counterparts (National Alliance for Caregiving/AARP, 1997). In addition, initial research suggests that Latino caregivers delay institutionalization longer than Caucasians (Mintzer et al., 1994; Gaugler et al., 2003; Yaffe et al., 2002).

Although the impact of caregiving among Latinos remains unclear (Aranda & Knight, 1997; Valle, 1998), several studies have found that Latino caregivers report more depressive symptoms than caregivers from other ethnic groups (Adams et al., 2002; Harwood et al., 1998). Harwood and his colleagues (1998) in their study comparing 184 White Hispanic and 469 White non-Hispanic AD caregivers found a greater proportion of the Hispanic caregivers experienced clinically significant levels of depression. Similarly, Adams et al. (2002) illustrated in their study of 202 caregivers from four different ethnic groups that Mexican-Americans on average endorsed higher levels of depressive symptomatology than Japanese-American, African-American, and Caucasian caregivers. In a series of studies, Cox & Monk (1990; 1993; 1996) observed that Hispanic caregivers reported significantly higher levels of depression and personal strain and role strain when compared to African-American caregivers. In contrast, Mintz and colleagues (1992), in a study of 13 Cuban-American Hispanics and 15 non-Hispanic Whites, did not find significant ethnic differences in depressive symptoms as measured by the Center for Epidemiological Studies-Depression scale (CES-D; Radloff, 1977), but rather did find significant differences when they administered the Hamilton Depression Scale (Hamilton, 1967). Small sample size and instrumentation issues may account for these discrepant results. A few studies also suggest that Latino caregivers may experience greater amounts of other forms of psychological distress and strain when compared to other ethnic groups (Adams et al., 2002; Cox & Monk, 1993; 1996). Yet, minority caregivers also can face numerous barriers to formal service utilization that can impede mental health treatment designed to help alleviate distress, such as the use of psychotropic medications (Ayalon & Huyck, 2001; Coon, Ory & Schulz, 2003; Dilworth-Anderson, Williams & Gibson, 2002; Gallagher-Thompson et al., 2003).

In addition, family caregiving for physically or cognitively impaired older adults has been found to be associated with poorer self-rated health, immune functioning, and preventive health behaviors (Haley & Bailey, 1999; King & Brassington, 1997; Ory et al., 1999), as well as greater risk of mortality (Schulz & Beach, 1999). Preliminary research also shows that physical health concerns differ between Latino and Caucasian caregivers. For example, two separate studies found that Latino caregivers reported lower perceived health than Caucasian caregivers (Valle, Cook-Gait & Tabaz, 1993; Phillips et al., 2000); and, Cox and Monk (1990) found that 63% of Hispanic caregivers in contrast to 29% of African-American caregivers reported a negative change in their health over a six-month period. Polich & Gallagher-Thompson (1997) in a study focused on 42 Hispanic women caring for a relative with cognitive impairments discovered the participant perceptions of the impact of caregiving duties and responsibilities on their health was a significant predictor of depressive symptomatology. This particular pattern is consistent with other studies that have found a strong
linear correlation between depressive symptoms and somatic complaints among Latinos (Angel & Guarnaccia, 1989; Escobar et al., 1987). Finally, Calderon and Tennstedt (1998) in their small qualitative study of Puerto Rican, African-American and White caregivers observed that Puerto Rican female caregivers were more likely to express caregiver burden through somatic complaints such as losing weight, headaches, weakness and exhaustion. Unsurprisingly, some of these complaints were accompanied by poorer health behaviors such as not eating well.

Few studies have investigated the appraisal process of Latino dementia caregivers. The appraisal process determines how an individual interprets and reacts to environmental demands and stressors (Lazarus & Folkman, 1984). A number of factors can impact how stressful situations are appraised including ethnicity, culture, social support, and past history. In a project examining the family caregiving experience of 196 Mexican-American and 165 non-Hispanic White caregivers to community dwelling adults over age 55, the overall amount of burden expressed was similar in the two ethnic groups, but Mexican-Americans appraised less burden in two specific areas: less social restriction and less change in their elder-caregiver-family relationships. Moreover, Mexican-American spousal caregivers expressed more burden from care recipient disruptive behavior than did Mexican-American adult children serving as caregivers (Phillips et al., 2000) suggesting that familial relationships may impact appraisal. In contrast to these findings, Mexican-Americans compared with Anglo-Americans, African-Americans and Japanese-Americans in another recent study scored the highest of all four groups in pessimistic appraisal of their caregiving situations (Adams et al., 2002). Similarly, Valle et al. (1993) found Mexican-American caregivers expressed greater reactivity to patient behavioral disturbances when compared with their non-Hispanic White counterparts. Another study of 40 Cuban-American dementia caregivers in Miami, Florida, showed that appraisals of caregiver burden among the Latino caregivers were predicted by patient behavioral pathology, lower levels of perceived emotional support, and female caregiver gender (Harwood et al., 2000). Finally, qualitative work to date also suggests that Latino caregivers appraise and express burden differently than Caucasians (Calderon & Tennstedt, 1998; John & McMillian, 1998). For example, John & McMillian (1998) ascertained that Mexican-American caregivers characterized their experience as something other than burden, but in fact, used words such as frustration, worry and being overwhelmed that may be considered as components of burden in professional arenas. The somewhat inconsistent findings in ethnic differences in caregiver appraisal across studies may be due to a variety of issues including different measurement strategies and methodologies, different populations of Latinos and non-Hispanic Whites, divergent sample sizes, and ethnic differences in the definition of caregiver burden.

Although the vast majority of research focuses on the negative effects of caregiving, an emerging literature suggests that the perceived benefits of caregiving may be equally important in understanding the experience of caring for a relative with memory problems (Kramer, 1997; Miller, 1989). Both qualitative and quantitative research suggests that people may become or remain caregivers for several positive reasons, including the opportunity to give back to the care recipient; an improved relationship with care recipient or other family members; prevention of further care recipient deterioration or feeling good about the quality of care provided; the opportunity to serve as a role model; increased self-esteem; an enhanced sense of meaning or purpose; and feelings of pleasure (Farran et al., 1991; Farran, 1997; Harris, 1998; Lawton et al., 1989; Picot, 1995; Pruchno, Michaels & Potashnik, 1990). However, research on the similarities or differences regarding the perceived benefits of caregiving between Latino and Caucasian caregivers is very limited. In one study of 361 family caregivers to community dwelling older adults, Mexican-American caregivers evaluated their caregiving role more positively and reported less desire for termination of the caregiving relationship than non-Hispanic White caregivers (Phillips et al., 2000). Likewise, Adams and colleagues (2002) found that Mexican-Americans scored significantly higher on positive appraisal of their caregiving situation than Caucasians in a sample of dementia caregivers. In addition, greater caregiver satisfaction was associated with increased caregiver age and higher levels of social support in the study of Cuban-American caregivers mentioned earlier (Harwood et al., 2000).

A growing body of research indicates that involvement in religious activities may enhance various aspects of well-being by providing social integration, support, a relationship with a higher power, and systems of meaning and existential coherence (Ellison, 1991). People who attend organized religious activities have the opportunity to establish reliable informal social networks from which to derive support in times of stress (Taylor & Chatters, 1986). Religious attendance has been found to be associated with reductions in depression among Mexican-American adults and elders (Levin, Markides & Ray, 1996). Only a handful of studies have examined religious practices among Latino caregivers. In a qualitative study by Calderon and Tennstedt (1998), Latino caregivers identified religion as a key coping strategy to help them manage caregiving. In another study examining Latino and Caucasian caregiver coping styles, Latinos were less apt to talk about their situations, share private feelings, or obtain professional help than Caucasian
caregivers, but rather relied more on faith or prayer than their Caucasian counterparts (Valle et al., 1993). Similarly, Adams and his co-authors (2002) found Mexican-American caregivers used spiritual appraisal about their caregiving situation significantly more than Caucasian caregivers, however the two ethnic groups did not differ significantly in their use of religion as a coping resource.

Acculturation and Latino caregiving

The acculturation process has largely been ignored by previous studies investigating Latino caregivers. Acculturation is the process that occurs when different cultural groups come into continuous contact and the original cultural patterns change as a result (Teske & Nelson, 1974). Once thought to be unidirectional in its course, more recent views suggest that acculturation is multifaceted (Trimble, 2003) with the level of acculturation determined by an array of factors, from language use/preference, social affiliation and daily living habits to cultural identify/pride, cultural values, perceived prejudice/discrimination, duration of residence in the new culture, generational status and other factors (Cuellar, Arnold & Maldonado, 1995; Zane & Mak, 2003). Recent research also suggests that acculturation does not function the same for new immigrants in comparison to their offspring adding another layer to the complex nature of the construct (Tsai, 1998). Moreover, the assessment of acculturation and its components is often so complex and varied that a comprehensive assessment may not be practical or useful for researchers or other professionals (Zane & Mak, 2003).

Nevertheless, many experts agree that one consequence of the acculturation process is the level of distress or stress triggered by an individual's adjustment to a new culture (Berry, 2003). For example, acculturation measured in a variety of ways appears to be significant in understanding mental and physical health beliefs and practices among Latinos including issues related to dementia, depression and anxiety, substance use and abuse, religious coping, and the amount of informal support provided to older family members as well as the use of formal care services (Henderson & Gutierrez-Mayka, 1992; Mausbach et al., 2003; Miranda & Umhoefer, 1998; Rogler, Cortes & Malgady, 1991; Sabogal et al., 1987; Vega & Alegria, 2001). Still, very few studies have explored acculturation among Latino caregivers to older adults. With regard to caregiver appraisal, Polich and Gallagher-Thompson (1997) found Latina caregivers' dissatisfaction with familial support (one of two measures of caregiver burden in the study) was significantly correlated with depression among more but not less acculturated caregivers. However, they also observed that Latina caregivers' perceived impact of caregiving on their own health was related to depression regardless of level of acculturation. More acculturated Latinas also appear to use less positive religious coping to cope with their caregiving situations in comparison to their less acculturated counterparts (Mausbach et al., 2003). In contrast to these findings, Harwood and his colleagues (2000) did not identify any relationship between length of stay in the United States (as a measure of acculturation) and the role of positive or negative appraisals of the caregiving experience. In terms of service utilization, one study (Maldonado, 1985) did find that younger (more acculturated) Latino caregivers were more likely to attend support groups and gather information than older caregivers. Members of the older generation rarely attended the groups unless specifically brought by their adult children. This finding is similar to other research suggesting that older and less acculturated cohorts may be more likely to access formal care and services through younger and more acculturated family and friends (e.g., Henderson & Gutierrez-Mayka, 1992).

In sum, studies examining the role acculturation plays in dementia family caregiving are few, thereby warranting additional work with larger samples of Latino caregivers using the same index of acculturation.

The current study

The present investigation seeks to expand the limited amount of research findings available on Latino dementia caregivers in particular by comparing samples of Latina and Caucasian female caregivers from two sites representing distinct geographic regions of the United States. It compares these dementia family caregivers on a diverse range of measures, including mental and physical health and dimensions of appraisal and coping. Because so little research has examined the role of acculturation on the Latino caregiving experience, the relationship between level of acculturation and other variables such as depression, anxiety, appraisal of stress and coping strategies were also evaluated at both the Miami and Palo Alto REACH sites. Thus, the study also tries to extend the literature by considering this important construct in the analyses. Based on the research reviewed, we proposed the following four hypotheses:

1. On measures of depression, well-being, and anxiety, Latina caregivers are expected to report greater psychological distress than Caucasian caregivers.
2. Latina caregivers will report poorer health status and health behaviors than Caucasian caregivers. However, this hypothesis is based on a very limited number of studies involving Latino caregivers.
3. Subjective appraisals of caregiving stressors will differ by ethnicity, with Latina caregivers...
reporting lower levels of subjective upset in managing patient behavioral problems, and higher levels of subjective benefit from caregiving than Caucasian caregivers. However, this prediction is tempered by the inconsistent findings in the existing literature.

4. Latinas are predicted to use religious coping to a greater extent than Caucasian caregivers.

Methods

Participants

Both sites engaged in an array of recruitment strategies to attract both Latina and Caucasian participants in addition to methods described in the companion paper by Haley et al. (2004). These methods included referrals through senior service agencies, diagnostic and primary care centers and through media television, radio, and newspaper outlets. Moreover, Miami and Palo Alto sites tailored their recruitment strategies for Latino families by establishing relationships with Latino community agencies, and using Spanish-language outreach materials and Spanish-speaking staff as liaisons. Participants in this study were recruited from the Greater Miami region and throughout Northern California (Sacramento to Salinas).

Inclusion/exclusion criteria

In general, our criteria for inclusion were identical to those presented in the literature (Coon et al., 1999; Haley et al., 2004; Wiskniewski et al., 2003). Caregivers had to be at least 21 years old and a family member of the care recipient; live with the care recipient, have a telephone and plan to remain in the area for the duration of the study; and, have been caregiving for at least six months and providing at least four hours of care per day. Caregivers were excluded if they were undergoing chemotherapy or radiation for cancer, had been hospitalized more than three times in the past year or were terminally ill. Similarly, caregivers were excluded if their care recipients were undergoing chemotherapy or radiation for cancer, had more than three hospitalizations in the past year, or if nursing home admission was planned for them within the next six months. Their care recipients also had to have a Mini Mental State Exam Score (MMSE; Folstein, Folstein & McHugh, 1975) less than or equal to 23 (or have a documented diagnosis of dementia) and be unable to perform two or more Instrumental Activities of Daily Living (IADLs; Lawton & Brody, 1969) or one or more Activities of Daily Living (ADLs; Katz et al., 1963). In addition, all participants at Miami and Palo Alto had to identify as either Anglo/Caucasian or Hispanic/Latino. The Palo Alto site recruited only female caregivers while Miami included both male and female participants. Since comparisons between gender groups across site were not possible, only data from the female caregivers at the two sites are included in this paper.

Measures

Demographic characteristics The caregivers’ age, marital status, primary racial or ethnic group (using census categories), years of formal education, employment status, household income, and the caregiver’s relationship to the care recipient were evaluated. Caregivers were also asked to identify their own primary occupation and the primary occupation of their spouse. For those that had more than one job at a given time, they were asked to report the job that was their primary source of income. Jobs were coded using NAM-Powers Socioeconomic Status scores for occupations (Nam & Terrie, 1988). Scores range from 0–100, with service sector jobs scoring on the lower end and professional/technical positions scoring at the high end. The maximum NAM-powers job score in the couple was used. The care recipient’s cognitive status was evaluated using the Mini Mental Status Exam Score (MMSE; Folstein, Folstein & McHugh, 1975), which ranges between 0–30 with lower scores indicating more impairment. The MMSE has documented reliability and validity for use with a variety of older adults in a number of settings (MacNeill & Lichtenberg, 1999). Caregivers were also asked to report how many years they had been caregiving for their care recipient and the number of hours per day they provided caregiving assistance.

Caregiving stressors We assessed caregiver responsibilities as well as the extent to which caregiver’s reported disturbing behaviors. The seven-item Activities of Daily Living Scale (ADL; Katz et al., 1963) was used to assess the level of help the care recipient required to bathe, dress above and below the waist, eat, use the toilet, groom, and transfer in and out of a bed or chair. The eight-item Instrumental Activities of Daily Living Scale (Lawton & Brody, 1969) assessed deficits in higher-level self-care abilities, such as the help needed to use the telephone, prepare meals, do housework, do the laundry, shop, take medications, travel, and manage finances. Response options were dichotomous, where 0 = no and 1 = help needed. If the caregiver reported that the care recipient did need help to perform an activity, they were asked if they provided this help. The ‘yes’ responses to the items on the two scales were summed to yield two scores, total help needed to perform ADLs and IADLs. These were summed to form a single index of self-care impairment ($z = 0.84$). The Revised Memory and Behavior Problems
Caregivers (e.g., Gallagher-Thompson, Gonzalez, Haan & Hinton, 2001), and Latino caregivers mental health were discussed later under the construct of appraisal.

Caregiver depression was assessed with the Center for Epidemiological Studies Depression scale (CES-D) (Radloff, 1977). The CES-D is a 20-item measure that asks about the frequency with which respondents have experienced depressive symptoms within the past week. Response options range from 0–3 for each item, with higher scores indicating greater depression. This scale has been shown to have good psychometric properties with older adults (Hertzog et al., 1990), older Latinos (Gonzalez, Haan & Hinton, 2001), and Latino caregivers (e.g., Gallagher-Thompson et al., 2003; Harwood et al., 1998). Because of the recent interest in positive affective states as they relate to caregiving, we also examined the well-being subscale of the CES-D. This scale includes items on the CES-D that reflect positive states. Higher scores for this subscale indicate greater well-being. State anxiety was measured using a 10-item modified version of the original 20-item Spielberger State-Trait Anxiety Inventory (Spielberger et al., 1983). Respondents are asked how much they agree with each of the statements (e.g., I felt nervous), reporting over the past week, with possible responses ranging from 1–4 of ‘not at all’ to ‘very much.’ High scores indicate more anxiety, and the 10-item scale has an \( \alpha = 0.89 \). Adequate reliability and validity suggest reasonably strong support for use of the measure with populations of both younger and older adults (Carmin, Pollard & Gillock, 1999). In addition, caregivers’ self-report of psychotropic medication use was also recorded by brand/generic name and coded as anti-depressant, anxiolytic and/or psychotropic medication according to the Instant Drug Index (Aloisi, 1998).

Caregiver physical health Caregiver health was measured using four items that assess perceived physical health (Ware, Kosinski & Keller, 1996). The first question asks the respondents’ self-rated perception of their health. The response options range from ‘poor’ to ‘excellent.’ The next three questions compare the caregiver’s health to others and have responses ranging from ‘definitely false’ to ‘definitely true.’ A higher score reflects better health. The presence of unhealthy behaviors was assessed using five items that asked caregivers’ about over-eating or under-eating, drinking alcohol, lack of exercise, excessive weight gain and smoking habits (Posner et al., 1993). Higher scores indicate the presence of more unhealthy behaviors than lower scores.

Appraisals The RMBPC’s second scale contains 24 questions that quantify how much the care recipient’s problem behaviors bother the caregiver. For each endorsed problem behavior on the RMBPC, caregivers respond how much they are bothered by it on a five-point scale ranging from ‘not at all’ to ‘extremely.’ The Behavioral Bother Score is the average bother rating for only those behaviors exhibited by the care recipient. The higher the score the more bothersome the caregiver appraises the behaviors to be. This approach to calculating appraisal has been used in previous analyses (Goode et al., 1998; Haley et al., 1996) and allows for computation of average appraisals of stressors independent of the number of stressors. In cases in which caregivers reported no behavior problems, appraisal scores were coded as missing values because we could not divide by a denominator of zero. Recent work supports the valid use of the scale with Latinos, African-Americans and Caucasians (Roth et al., 2003). The Positive Aspects of Caregiving Scale contains 11 items (Schulz et al., 1997; Tarlow et al., in press) and is designed to assess the caregiver’s perception of benefits associated with the caregiving experience. The respondents are asked how much they agree with each of the statements (e.g., feeling useful, appreciated, or finding more meaning in life) on a five-point scale ranging from ‘disagree a lot’ to ‘agree a lot.’ High scores reflect more positive appraisals. Recent psychometric analysis tested with a large, ethnically diverse sample (Latinos, African-Americans and Caucasians) indicated the measure is both valid and reliable.

Religious coping and behavior Three items were used to determine the importance of religious faith or spirituality (0, not important to 4, very important) attendance at religious services or activities (1, never to 6, nearly every day) and the frequency of prayer or meditation (1, never to 6, nearly every day).

Acculturation

The Palo Alto and Miami sites used two different measures to evaluate the acculturation status of Latina participants. At Palo Alto, the majority of the participants were Mexican-American and therefore acculturation status was assessed using the Acculturation Rating Scale for Mexican-Americans-II (ARMA-II; Cuellar, Arnold & Maldonado, 1995). The ARMA-II is a 30-item Likert type scale that measures acculturation along three primary dimensions, including language, food, and religious activity. Acculturation Rating Scale for Mexican-Americans-II (ARMA-II; Cuellar, Arnold & Maldonado, 1995). The ARMA-II is a 30-item Likert type scale that measures acculturation along three primary dimensions, including language, food, and religious activity.
factors: language, ethnic identity, and ethnic interaction. At Miami, the Latina participants were Cuban-American, and therefore acculturation was measured using a measure developed in Miami for Cubans by Szapocznik et al., (1978). This scale is composed of 24 self-report items that assess behaviors typical of Hispanic and American cultures.

Because the sites used two different scales to assess the degree of acculturation, it was determined that the best strategy for relating the two scales was to identify items that were comparable between the measures. Although this approach does not capture all the facets of acculturation, it was preferable to relying solely on years in the United States or primary language spoken that have been used in other studies (e.g., Harwood et al., 1998). Three items were found to be identical on both scales, and these items were used to classify the samples at both sites into less-acculturated and more-acculturated groups. The three items are relevant to the acculturation content areas of daily living habits and behavior as well as language use and/or preference as categorized by Zane and Mack (2003). The shared items assessed the degree to which the respondents enjoyed English/American language: (1) TV programs, (2) books and magazines, and (3) music. Ratings were made on a five-point Likert scale and ranged from ‘not at all’ to ‘very.’ The average rating across the three items was calculated, those who scored above three were classified as more acculturated, while those who scored three and below were classified as less acculturated. The reliability of these three items was 0.63.

Instrumentation issues

Translation of the REACH measures involved several carefully planned steps. First, a number of measures were pilot-tested with local Spanish speaking caregivers using conceptual translations. These conceptual translations focused on maximizing meaning and intent across languages using language specific sentence structure, phrases, and shades of meaning as opposed to literal translations that focused on word-for-word transformations. Pilot results and feedback from participants influenced both measurement selection and the translation of selected measures. Next, a professional team was hired to conceptually translate the measures into Spanish and then back translate them into English to maximize meaning, intent and understanding across Spanish speakers representing different age cohorts, education levels, national origins and levels of acculturation. In cooperation with the professional team, California bilingual/bicultural REACH staff and the advisory board reviewed the initial professional translations suggesting minimal revisions. Measures were identical at both sites with the exception of the measure of acculturation discussed previously. In addition, the Miami REACH site bilingual/bicultural staff identified and entered relevant Cuban dialectal differences when needed. Participants at both sites completed study assessments in either Spanish or English based on their language preference.

Data analysis

In the primary analysis, we tested our hypotheses concerning differences between Caucasian female (n = 229) and Latina (n = 191) caregivers using a two (site) by three (group) analysis. The three groups were contrasted by ethnicity (Caucasian versus Latina) and by acculturation (high versus low) in the Latina group. For continuous dependent variables, Multiple Linear Regression was used and for the binary outcome variables, Multiple Logistic Regression was used. We completed our data analysis using the following framework: Site was coded as −1 (Miami site) and 1 (Palo Alto site), ethnicity was coded as −1 (Caucasian) and 1 (Latina), and acculturation was coded as 0 for Caucasians, −1 for low acculturated Latinas, and 1 for high acculturated Latinas. We took the cross products of these variables, to examine the interaction effects of site by ethnicity and site by acculturation. Because there were five tests per outcome variable, the alpha level was set at 0.01 to guard against spurious findings.

Since Caucasian, acculturated, and non-acculturated Latina caregivers differed on several demographic and descriptive variables, most notably education, kinship status (spouse versus non-spouse) and employment (employed versus unemployed), it is possible that the ethnicity and acculturation effects were the result of socio-demographic differences. While it is not possible in an observational study to locate the causes of any ethnicity and acculturation effects, it is of interest to determine whether or not these effects are the result of socio-demographic differences. Typically, demographic differences are statistically accounted for using Analysis of Covariance. However, there was a strong intercorrelation between ethnicity, education, kinship status and employment within our sample. For example, only 4% of Caucasians had less than a high school education compared to 38% of Latinas. This strong multicollinearity precluded using education, employment and kinship status as covariates in linear modeling, since the estimates of effects would be both biased and unreliable (Wax, 1992; McGee & Reed, 1984). To address this problem, we conducted a series of sensitivity analyses on subsets of the Latina and Caucasian subjects, matched by level of education, kinship status and employment status. For example, we selected a subset of the total sample of Latina (n = 191) and Caucasian (n = 229) participants used in the primary analyses who had more than a high school education to determine if the effects
seen in the primary analysis remained in this subpopulation. There were 117 Latina caregivers and 219 Caucasian caregivers in this particular sensitivity analysis. Thus, sensitivity analyses using the same data analytic procedures described in the primary analyses were conducted on education, kinship (spouses versus daughters and other female family caregivers) and employment status (employed versus unemployed).

Finally, site differences typically emerge in multi-site trials due to varied regional patterns (e.g., Arnold et al., 1997; Kraemer, 2000) such as dissimilar migration patterns, and distinct health plans and formal care services that are often used as recruitment sources. Although site differences were not the focus of the current study, we did anticipate such differences; and, therefore we included site as a variable in the analyses in order to reduce bias on other variables, and to increase the validity of the statistical analyses as well as the generalizability of the findings.

Results

Demographic and caregiver stressors

Demographic and descriptive data for Latina and Caucasian caregivers are shown in Table 1. For each variable, separate scores are presented for Caucasian caregivers, less acculturated Latina caregivers and more acculturated Latina caregivers. Age of the caregivers varied significantly by ethnicity \((t = -4.64, p < 0.001)\), with Latina caregivers being younger on average than Caucasian caregivers. Significantly more Caucasian caregivers had completed high school than Latina caregivers \((\text{Wald } \chi^2 = 45.84, p < 0.001)\) and more acculturated Latinas were more likely to have completed high school than less acculturated Latinas \((\text{Wald } \chi^2 = 8.38, p < 0.01)\). Significant ethnic differences were apparent for income with a greater proportion of Caucasians \((\text{Wald } \chi^2 = 43.00, p < 0.001)\) having incomes above $20,000 than Latinas. In addition, more acculturated Latinas \((\text{Wald } \chi^2 = 8.30, p < 0.01)\) had incomes above $20,000 than less acculturated Latinas. There were no significant differences in the caregivers’ marital status. In terms of employment status, more acculturated Latina caregivers were more likely to be employed than less acculturated Latina caregivers \((\text{Wald } \chi^2 = 6.58, p < 0.01)\).

Table 2 includes comparisons of care recipient characteristics and care recipient variables that have been associated with caregiver stress. Global cognitive impairment of the care recipients as assessed by the MMSE did not differ by ethnicity or level of acculturation. However, Latina caregivers described their care recipients as having more self-care impairments and behavior problems than Caucasians \((t = 4.18, p < 0.001; t = -2.62, p < 0.01)\); and, they reported spending more hours taking care of their care recipient per day than Caucasian caregivers \((t = 5.80, p < 0.001)\).

Caregiver mental and physical health

Table 3 shows mental and physical health outcomes by ethnicity and acculturation. The levels of depressive symptomatology as assessed by the CES-D were not significantly different by ethnicity or level of acculturation. There were no significant ethnic or acculturation differences on the CES-D well-being scale. Likewise, level of anxiety was not significantly different across groups.

In terms of physical health, no ethnic differences emerged regarding overall self-rated health or health behaviors. However, less acculturated Latinas in contrast to more acculturated Latinas did report significantly poorer overall health \((t = 2.84, p < 0.01)\). There were no significant differences between acculturation groups on unhealthy behaviors. In terms of medication usage, a significant difference did emerge in antidepressant use with more Caucasian caregivers reporting such use than their Latina counterparts \((\text{Wald } \chi^2 = 8.47, p < 0.01)\).

Caregiver appraisal and religious coping

As presented in Table 4, Latina caregivers appraised behavioral problems as less stressful and caregiving to be a significantly more positive experience than Caucasian caregivers \((t = -4.43, p < 0.001; t = 7.23, p < 0.001)\). For all three of the items assessing religious coping and behavior (prayer, attending religious services, and importance of religion), there were significant ethnicity effects. Latina reported more frequent prayer \((t = 5.48, p < 0.001)\), attendance at religious activity \((t = 5.12, p < 0.001)\), and importance of religion \((t = 6.39, p < 0.001)\) than Caucasians.

Site differences

Although site was not the focus of this paper, several differences were found between caregivers in Miami and Northern California. The average age of the caregivers varied according to site \((t = -7.32, p < 0.001)\), with caregivers at the Palo Alto site being younger than those in Miami. Overall, caregivers were also more likely to be employed at Palo Alto than Miami \((\text{Wald } \chi^2 = 11.34, p < 0.01)\). There was a significant site difference in relationship to care recipient. A larger proportion of Miami caregivers were spouses in comparison to Palo Alto caregivers \((\text{Wald } \chi^2 = 24.75, p < 0.001)\).

In terms of care recipient demographics, Miami care recipients were significantly older than Palo Alto care recipients as having more self-care impairments and behavior problems than Caucasians \((t = 4.18, p < 0.001; t = -2.62, p < 0.01)\); and, they reported spending more hours taking care of their care recipient per day than Caucasian caregivers \((t = 5.80, p < 0.001)\).
### Table 1. Demographic characteristics of caregivers by racial/ethnic group

<table>
<thead>
<tr>
<th>Variable</th>
<th>PALO ALTO</th>
<th>MIAMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>(417)</td>
<td>(414)</td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>61.45 (13.03)</td>
<td>71.49 (20.23)</td>
</tr>
<tr>
<td>Low Acculturated Latina Mean</td>
<td>52.35 (11.87)</td>
<td>45.17 (25.27)</td>
</tr>
<tr>
<td>High Acculturated Latina Mean</td>
<td>51.31 (13.70)</td>
<td>50.1 (26.07)</td>
</tr>
<tr>
<td>NAM-Powers</td>
<td>66.66 (11.58)</td>
<td>75.51 (18.86)</td>
</tr>
<tr>
<td>Low Acculturated Latina Mean</td>
<td>66.29 (9.99)</td>
<td>56.85 (27.27)</td>
</tr>
<tr>
<td>High Acculturated Latina Mean</td>
<td>63.25 (10.34)</td>
<td>72.88 (20.63)</td>
</tr>
<tr>
<td>Site Ethnicity Acculturation</td>
<td>Site by Ethnicity</td>
<td>Site by Acculturation</td>
</tr>
<tr>
<td>Age</td>
<td>2.89/&lt; 0.005</td>
<td>2.89/&lt; 0.005</td>
</tr>
<tr>
<td>NAM-Powers</td>
<td>0.66/0.51</td>
<td>0.66/0.51</td>
</tr>
<tr>
<td>% With income above $20,000</td>
<td>0.11/0.91</td>
<td>0.11/0.91</td>
</tr>
<tr>
<td>% Married</td>
<td>2.63&lt;0.01</td>
<td>2.63&lt;0.01</td>
</tr>
<tr>
<td>Employed (% full or part-time)</td>
<td>0.76/0.43</td>
<td>0.76/0.43</td>
</tr>
<tr>
<td>Relationship to patient (%)</td>
<td>2.63&lt;0.01</td>
<td>2.63&lt;0.01</td>
</tr>
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</table>

### Table 2. Comparison of patient characteristics and objective stressors by racial/ethnic group

<table>
<thead>
<tr>
<th>Variable</th>
<th>PALO ALTO</th>
<th>MIAMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Care recipients’ age</td>
<td>(416)</td>
<td>(414)</td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>78.71 (9.01)</td>
<td>13.61 (8.37)</td>
</tr>
<tr>
<td>Low Acculturated Latina Mean</td>
<td>76.67 (9.68)</td>
<td>14.21 (7.41)</td>
</tr>
<tr>
<td>High Acculturated Latina Mean</td>
<td>77.8 (10.19)</td>
<td>13.34 (6.61)</td>
</tr>
<tr>
<td>Care recipients’ MMSE</td>
<td>80.87 (7.90)</td>
<td>15.26 (8.09)</td>
</tr>
<tr>
<td>Low Acculturated Latina Mean</td>
<td>79.59 (8.17)</td>
<td>12.56 (7.83)</td>
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<tr>
<td>High Acculturated Latina Mean</td>
<td>81.00 (7.80)</td>
<td>13.81 (7.93)</td>
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<tr>
<td>Care Recipients’ self-care impairment</td>
<td>8.23 (3.34)</td>
<td>8.23 (3.34)</td>
</tr>
<tr>
<td>Care Recipients’ # of behavioral problems</td>
<td>9.89 (4.00)</td>
<td>10.44 (3.92)</td>
</tr>
<tr>
<td>Years of caregiving</td>
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<td>(417)</td>
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<tr>
<td>Mean (SD)</td>
<td>4.26 (5.18)</td>
<td>7.2 (4.63)</td>
</tr>
<tr>
<td>Hours of caregiving per day</td>
<td>6.27 (6.02)</td>
<td>10.50 (6.43)</td>
</tr>
<tr>
<td>Site Ethnicity Acculturation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Care recipients’ age</td>
<td>-2.89&lt;0.005</td>
<td>-2.89&lt;0.005</td>
</tr>
<tr>
<td>Care recipients’ MMSE</td>
<td>-0.66/0.51</td>
<td>-0.66/0.51</td>
</tr>
<tr>
<td>Care Recipients’ self-care impairment</td>
<td>5.1&lt;0.001</td>
<td>5.1&lt;0.001</td>
</tr>
<tr>
<td>Care Recipients’ # of behavioral problems</td>
<td>2.63&lt;0.01</td>
<td>2.63&lt;0.01</td>
</tr>
<tr>
<td>Years of caregiving</td>
<td>-2.11&lt;0.04</td>
<td>-2.11&lt;0.04</td>
</tr>
<tr>
<td>Hours of caregiving per day</td>
<td>5.8&lt;0.001</td>
<td>5.8&lt;0.001</td>
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<table>
<thead>
<tr>
<th>Variable</th>
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<th>t value/p-value or Wald Chi-square/p-value</th>
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<td></td>
<td>df</td>
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<td></td>
</tr>
<tr>
<td>Total CES-D</td>
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<td></td>
<td>1.26/0.21</td>
</tr>
<tr>
<td>CES-D well-being</td>
<td>(417)</td>
<td></td>
<td>1.65/0.10</td>
</tr>
<tr>
<td>Anxiety</td>
<td>(417)</td>
<td></td>
<td>4.43/&lt;0.001</td>
</tr>
<tr>
<td>Overall health</td>
<td>(415)</td>
<td></td>
<td>2.34/0.03</td>
</tr>
<tr>
<td>% Any unhealthy behavior</td>
<td>1</td>
<td></td>
<td>2.73/&lt;0.001</td>
</tr>
<tr>
<td>% Using antidepressant</td>
<td>1</td>
<td></td>
<td>6.21/0.02</td>
</tr>
<tr>
<td>medication</td>
<td>2</td>
<td></td>
<td>6.21/0.02</td>
</tr>
<tr>
<td>% Using anxiolytic medication</td>
<td>1</td>
<td></td>
<td>24.33/&lt;0.001</td>
</tr>
<tr>
<td>% Using any psychotropic</td>
<td>1</td>
<td></td>
<td>30.13/0.001</td>
</tr>
<tr>
<td>medication</td>
<td>2</td>
<td></td>
<td>30.13/0.001</td>
</tr>
</tbody>
</table>

### Table 3. Comparison of caregiver mental and physical health outcomes by ethnicity

<table>
<thead>
<tr>
<th>Variable</th>
<th>PALO ALTO</th>
<th>MIAMI</th>
<th>t value/p-value or Wald Chi-square/p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>df</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total CES-D</td>
<td>(417)</td>
<td></td>
<td>1.26/0.21</td>
</tr>
<tr>
<td>CES-D well-being</td>
<td>(417)</td>
<td></td>
<td>1.65/0.10</td>
</tr>
<tr>
<td>Anxiety</td>
<td>(417)</td>
<td></td>
<td>4.43/&lt;0.001</td>
</tr>
<tr>
<td>Overall health</td>
<td>(415)</td>
<td></td>
<td>2.34/0.03</td>
</tr>
<tr>
<td>% Any unhealthy behavior</td>
<td>1</td>
<td></td>
<td>2.73/&lt;0.001</td>
</tr>
<tr>
<td>% Using antidepressant</td>
<td>1</td>
<td></td>
<td>6.21/0.02</td>
</tr>
<tr>
<td>medication</td>
<td>2</td>
<td></td>
<td>6.21/0.02</td>
</tr>
<tr>
<td>% Using anxiolytic medication</td>
<td>1</td>
<td></td>
<td>24.33/&lt;0.001</td>
</tr>
<tr>
<td>% Using any psychotropic</td>
<td>1</td>
<td></td>
<td>30.13/0.001</td>
</tr>
<tr>
<td>medication</td>
<td>2</td>
<td></td>
<td>30.13/0.001</td>
</tr>
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### Table 4. Comparison of caregiver appraisals and coping by ethnicity

<table>
<thead>
<tr>
<th>Variable</th>
<th>PALO ALTO</th>
<th>MIAMI</th>
<th>t value/p-value or Wald Chi-square/p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>df</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavioral bother score</td>
<td>(416)</td>
<td></td>
<td>-1.83/0.07</td>
</tr>
<tr>
<td>Positive aspects of caregiving</td>
<td>(417)</td>
<td></td>
<td>2.73/&lt;0.001</td>
</tr>
<tr>
<td>How often do you pray?</td>
<td>(416)</td>
<td></td>
<td>0.60/0.55</td>
</tr>
<tr>
<td>How often do you attend</td>
<td>(416)</td>
<td></td>
<td>2.65/0.009</td>
</tr>
<tr>
<td>religious services?</td>
<td>(416)</td>
<td></td>
<td>0.00/0.97</td>
</tr>
<tr>
<td>How important is religion?</td>
<td>(416)</td>
<td></td>
<td>3.11 (1.01)</td>
</tr>
</tbody>
</table>
care recipients ($t = -2.89$, $p < 0.01$). Palo Alto caregivers reported more care recipient self-care impairments and behavior problems than Miami caregivers ($t = 5.10$, $p < 0.001$; $t = 2.63$, $p < 0.01$). Palo Alto caregivers also indicated they had been caregiving longer on average than Miami caregivers ($t = 3.12$, $p < 0.01$).

On measures of mental health, there was a significant site difference on the CES-D well-being scale ($t = 3.84$, $p < 0.01$), with Miami caregivers reporting overall lower well-being scores than Palo Alto caregivers. When medication use was evaluated, Miami caregivers were found to use antidepressants, anxiolytics, and any psychotropic medications more frequently than Palo Alto caregivers ($Wald \chi^2 = 7.16$, $p < 0.01$; Wald $\chi^2 = 24.33$, $p < 0.001$; Wald $\chi^2 = 30.13$, $p < 0.001$, respectively). Palo Alto caregivers appraised caregiving more positively ($t = 2.73$, $p < 0.01$), and attended religious services more frequently than Miami caregivers ($t = 2.65$, $p < 0.01$).

**Sensitivity analyses**

The results of all sensitivity analyses conducted on the subgroup of caregivers matched on either education, employment or kinship status were similar to those obtained from the larger sample. Thus, when adjustments were made to account for education, employment or kinship differences in the two ethnic groups, the key findings remained the same.

**Discussion**

Our results add to the limited amount of research that investigates similarities and differences between Latino and Caucasian dementia family caregivers in terms of their mental and physical well-being, positive and negative appraisal, and religious coping and behavior. This study is also one of the first to consider within group differences among Latinos by investigating the role of acculturation on these key variables. Moreover, since the caregivers were recruited from two distinct regions of the United States, our relatively large sample reflects some of the heterogeneity of the Latino population. Consistent with other multi-site studies (Arnold et al., 1997; Kraemer, 2000), we did find site differences. The inclusion of site as a variable in the analyses helped reduce bias and increase the generalizability of the results. However, we chose to focus on ethnic differences in this paper since site variability can be attributed to numerous other factors such as distinct immigration patterns, socio-demographic status, and differences in the availability, accessibility and acceptability of formal services.

Overall, our findings on demographic differences were similar to those in other studies (e.g., Adams et al., 2002; Cox & Monk, 1996). For example, Latina caregivers, regardless of geographic location, had lower levels of education and income than Caucasian caregivers. Latina caregivers also reported that their family member had more self-care impairments and more behavioral problems than those reported by Caucasian caregivers, and Latinas described providing more daily hours of care than Caucasians. There are several possible explanations for these findings. First, given that Latina caregivers reported lower incomes than Caucasians, they may have lacked the financial resources to access formal care services. Second, Latina caregivers that are not fluent in English may find the service delivery system difficult to navigate. Third, immigrant families may face additional barriers due to their immigrant status that impedes formal care access. Finally, Latinas may believe that seeking assistance with caregiving implies they are ‘burdened’. Previous work suggests that Latina caregivers do not readily endorse feelings of burden (Calderon & Tennstedt, 1998; Gallagher-Thompson et al., 2000; John & McMillian, 1998). Moreover, help seeking to alleviate burden would most likely be seen as incongruent with strong cultural traditions that dictate that Latinas must put the needs of their family members before their own (John & McMillian, 1998; Organista & Muñoz, 1996).

In contrast to previous studies (Adams et al., 2002; Harwood et al., 1998), there were no significant ethnic differences in depressive symptoms or anxiety. Thus, our first hypothesis regarding ethnic differences in mental health was not supported. However, Latinas did report less antidepressant use than Caucasians, even though they reported similar levels of depressive symptoms. These divergent results may be accounted for by a number of factors. For example, our results are based on a fairly large heterogeneous sample of Latinas while previous studies have been either based on a small number of participants or a homogenous group of Latinos. In addition, our results are based on clinical trial participants who may have a different symptom profile than those who do not volunteer for such research.

Our second hypothesis regarding physical health and health behaviors also was not supported. In contrast to previous work (Valle et al., 1993; Phillips et al., 2000), Latinas and Caucasian women did not differ significantly on self-rated overall health or health behaviors. Again, differences in sample sizes, selection criteria and analytic approaches could help explain these divergent findings across studies. Differences in acculturation level, expression of caregiving burden through somatic complaints (e.g., Calderon & Tennstedt, 1998; Gallagher-Thompson et al., 2000; Janevic & Connell, 2001) and the availability, accessibility and acceptability of formal support for participants could also help explain these contrasts.
In terms of caregiver appraisals of stress and positive aspects of caregiving, the significant ethnic differences found in the analyses supported our hypothesis. Our findings are particularly useful in understanding predictors of caregiver adaptation. Despite the fact that Latina caregivers were providing care for more hours per day, had lower education and income, and their relatives had more behavioral problems, they still described care recipient behavior problems as less bothersome and derived greater benefits from caregiving than did Caucasian women. These results may be shaped by a cultural world view that sees the act of caring for an older relative as congruent with the concept of la familia and the Latino cultural value of familismo (Sabogal et al., 1987) wherein reciprocity and solidarity among the family unit helps sustain caregivers and their roles (Ayalon & Huyck, 2001; Gallagher-Thompson et al., 2003; Phillips et al., 2000). Recognition of la familia may also help mitigate primary caregivers’ frustrations with the lack of care provided by other family members. This may occur through an understanding that the needs of secondary caregivers’ more immediate family members (e.g., their children) may have to come first (John & McMillian, 1998).

In addition, Latino caregivers’ appraisal of stress may be more related to the degree of disruption caregiving ultimately brings to their families rather than to themselves as individuals (Aranda & Knight, 1997; Phillips et al., 2000). Thus, Latinas in comparison to Caucasians may be more likely to perceive caregiving as having positive aspects and as a process that strengthens the family and supports social continuity (Phillips et al., 2000). Recent research also suggests that Latino caregivers’ perceptions of available emotional support may be particularly important in fostering positive appraisal of their caregiving situations (Harwood et al., 2000). Still, additional research is needed to investigate the impact of acculturation on familismo and other cultural values that may serve as protective factors against negative caregiving outcomes.

In support of our final hypothesis and consistent with other findings (e.g., Adams et al., 2002; Calderon & Tennstedt, 1998; Valle et al., 1993), Latinas were more likely than Caucasian caregivers to report the use of prayer, attendance at religious services, and the importance of religion in their lives. Thus, religious and spiritual activities may serve as particularly important coping strategies for Latinas to help buffer against the daily stress of caregiving through their promotion of social integration, social support and relationship with God (Mausbach et al., 2003; Thompson et al., 2002). Moreover, these findings coupled with the significantly higher levels of positive aspects of caregiving reported by Latinas in our study are congruent with Folkman and her colleagues’ recent work regarding the importance of creating positive events in life and the use of positive coping activities to help oneself manage chronic stress (Folkman et al., 1997; Folkman & Moskowitz, 2000).

Several differences between less acculturated and more acculturated Latinas emerged in the analyses. Less acculturated in comparison to more acculturated Latinas had lower incomes, had attained less formal education, and reported poorer overall self-rated health. Although not statistically significant, less versus more acculturated Latinas also tended to provide care for more hours per day and report higher levels of depressive and anxiety symptoms. A greater percentage also tended to be unemployed. Similar to research findings among non-caregiving Latino samples (see Balls Organista, Organista & Kurasaki, 2003 for a recent review), these findings suggest that mental and physical health differences in studies of Latino caregivers may be partially accounted for by a number of factors often associated with acculturation. These include significant differences in key resources (i.e., educational and financial), expectations surrounding familismo and informal support, and structural barriers such as language barriers and discrimination that can create additional barriers such as access to and use of health care and social services. Interestingly, less acculturated Latinas also tended to report more positive aspects derived from caregiving that may help counterbalance caregiving stressors and acculturative stress. All these differences are of particular importance since they emphasize the diversity among Latinos and the problems that can arise when within group heterogeneity is ignored. The relatively few acculturation effects found in the current study must be interpreted with caution. Since the Miami and Palo Alto sites used distinct acculturation measures, these results are based on an abbreviated acculturation measure that captures a limited number of the domains of acculturation (Zane & Mak, 2003). Therefore, it is important for researchers to continue to take into account the heterogeneity that exists among Latino caregivers in order to understand further the role acculturation plays in caregiving outcomes.

Our results generate a number of clinical implications. First, the results clearly highlight the heterogeneity that exists among Latina caregivers. Clinicians and researchers are urged to consider individual factors such as language, financial stress, educational attainment, acculturation and acculturative stress, and access to informal and formal support services when designing and implementing caregiver interventions (Cuellar, Arnold & Gonzalez, 1995; Gallagher-Thompson et al., 2000). Second, clinicians should carefully assess how economic and financial barriers may influence caregiver appraisal and coping processes. Developing interventions to improve overall caregiver well-being in light of economic, social, and financial disadvantages is warranted. Third, dissemination of information about dementia and related services to ethnic communities is urgently
needed. While there is a growing amount of psycho-educational information in Spanish, the changing demographics of our aging population requires greater sensitivity to language barriers. Moreover, our findings regarding ethnic differences in religious coping and behavior suggest that caregiving interventions for Latinas should consider how to incorporate religious practice as a strategy for coping with the challenges of caregiving. Consultation with Latino clergy for suggestions on how to best include religious themes may improve the effectiveness of interventions (Mausbach et al., 2003; Thompson et al., 2002).

While these findings contribute substantively to the literature, there are some important limitations to the current study. Despite similar inclusion/exclusion criteria and similar recruitment methodologies in Miami and Palo Alto, a number of site differences became apparent. The source of these differences may reflect underlying differences in the populations of the two sites or they may reflect other differences that were not accounted for in the present investigation. Therefore, some researchers (e.g., Harwood et al., 1998) have suggested focusing on single homogenous groups of Latinos rather than more heterogeneous samples. However, we believe both approaches are needed to deepen our understanding of and extend relevant findings to diverse groups of family caregivers. Another noteworthy limitation is that all of the participants were caregivers who volunteered to participate in a caregiver intervention with randomly assigned intervention groups. Thus, the sample may not be representative of caregivers that did not volunteer due to lack of time or unwillingness to participate in such a research project. Moreover, our findings are based on responses from Latinas and Caucasian female caregivers; and, therefore, our results cannot automatically be extended to Latino and Caucasian male caregivers or Latino groups that were not represented in our sample, much less other cultural groups. Finally, while many of the measures used in this study have growing psychometric evidence to support their use with diverse populations, we strongly encourage continued work in the measurement arena to advance our ability to accurately and adequately capture diverse caregiving experiences. Despite these limitations, our results emphasize the importance of considering ethnic and socio-cultural differences when developing caregiver interventions. Future REACH publications will focus on determining the efficacy of interventions tailored to meet the needs of diverse groups of dementia family caregivers.

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Czaja, PhD, David Loewenstein, PhD, Mark Rubert, PhD, Jose

Arguelles, MS, July Bean, PhD (former participant), Sara

(Principal Investigator), Soledad Arguelles, PhD, Trinidad

Timothy Heeren, PhD (former participant), Richard Jones,

Investigator), Robert Friedman, MD, Brooke Harrow, PhD,

University of Alabama (Birmingham and Tuscaloosa, Alabama):

LOUIS BURGIO, PhD (Principal Investigator—Tuscaloosa), Alan

Stevens, PhD (Principal Investigator—Birmingham), Alfred

Bartolucci, PhD, Dalois Guy, PhD, William Haley, PhD, David

Roth, PhD, Alan Stevens, PhD, David Vance, PhD.

Hebrew Rehabilitation Center for Aged Research and Training Institute

(Boston, Massachusetts): Diane Mahoney, PhD (Principal Investigator),

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Veterans Affairs Medical Center (Memphis, Tennessee): Robert

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Appendix A

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