JOURNAL OF PALLIATIVE MEDICINE
Volume 12, Number 12, 2009

DOI: 10.1089/jpm.2009.0063

Associations between United States Acculturation and the End-of-Life Experience of Caregivers of Patients with Advanced Cancer

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Abstract

Background: Cultural beliefs and values influence treatment preferences for and experiences with end-of-life (EOL) care among racial and ethnic groups. Within-group variations, however, may exist based on level of acculturation.

Objectives: To examine the extent to which EOL treatment factors (EOL treatment preferences and physician–caregiver communication) and select psychosocial factors (mental health, complementary therapies, and internal and external social support) differ based on the level of acculturation of caregivers of patients with advanced cancer.

Methods: One hundred sixty-seven primary caregivers of patients with advanced cancer were interviewed as part of the multisite, prospective Coping with Cancer Study.

Results: Caregivers who were less acculturated were more positively predisposed to use of a feeding tube at EOL (odds ratio [OR] 0.99 [$p = 0.05$]), were more likely to perceive that they received too much information from their doctors (OR 0.95 [$p = 0.05$]), were less likely to use mental health services (OR 1.03 [$p = 0.003$] and OR 1.02 [$p = 0.02$]), and desire additional services (OR 1.03 [$p = 0.10$] to 1.05 [$p = 0.009$]) than their more acculturated counterparts. Additionally, caregivers who were less acculturated cared for patients who were less likely to report having a living will (OR 1.03 [$p = 0.0003$]) or durable power of attorney for health care (OR 1.02 [$p = 0.007$]) than more acculturated caregivers. Caregivers who were less acculturated felt their religious and spiritual needs were supported by both the community (β -0.28 [$p = 0.0003$]) and medical system (β -0.38 [$p < 0.0001$]), had higher degrees of self-efficacy (β -0.22 [$p = 0.005$]), and had stronger family relationships and support (β -0.27 [$p = 0.0004$]).

Conclusions: The level of acculturation of caregivers of patients with advanced cancer does contribute to differences in EOL preferences and EOL medical decision-making.

Introduction

Variations in decision making about and treatment preferences for end-of-life (EOL) care among racially and ethnically diverse patients with advanced cancer and their caregivers are embedded within a matrix of cultural beliefs and values. Culture, which refers to the beliefs, values, and lifeways of people of diverse races and ethnicities, shapes how individuals view health, illness, and death.[1–3] As the population of the United States continues to become racially and ethnically diverse and the incidence of cancer mortality increases within these groups, the need for culturally sensitive interventions focused on improving patient and family quality of life and satisfaction with health care at EOL, as well as appropriate allocation of resources, has become more obvious. Cultural beliefs and perspectives are essential elements that inform EOL treatment preferences and decision-making processes.

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Accepted July 15, 2009.

Several studies have demonstrated a significant variation among different races and ethnicities in EOL care treatment preferences,[4–17] yet there has been little investigation into within group variation due to acculturation. Acculturation occurs as people of different cultures meet, interact with each other, and exchange beliefs, values, and lifeways.[1–3] Due to rapidly growing multigenerational racial and ethnic populations, there is also within culture variability in individuals' degree of acculturation.[18,19] This phenomenon makes it even more difficult to provide EOL care based exclusively on race and ethnicity because even within an ethnic group such as Mexican Americans there may be differences in health values and health care choices based on how much an individual has adopted the U.S. culture, in other words, has become "Americanized." It is important to consider the level of acculturation of patients with advanced cancer and their caregivers, as this may shape their ability to understand their treatment choices and express their treatment preferences to health care providers. The Coping with Cancer (CwC) study is a National Cancer Institute (NCI)-funded, multi-institutional prospective investigation that was designed to fill these gaps in research on ethnic disparities in EOL care. This article uses data from the CwC to examine the extent to which EOL treatment factors (treatment preferences and physician–caregiver communication) and select psychosocial factors (mental health, additional services, and internal/external social support) differ based on the level of acculturation of the caregivers of patients with advanced cancer.

Methods

Sample

Patients with advanced cancer and their primary informal caregivers were recruited as part of the CwC study between February 2002 and July 2008. Participating sites included four comprehensive cancer centers in the Northeast and two in the Southwest. Study protocols were approved by each Institutional Review Board and all participants provided written informed consent.

Eligibility criteria included: a diagnosis of advanced cancer (presence of distant metastasis, failure of first-line chemotherapy, and clinician estimated life expectancy of less than 6 months); age 20 years or older; identified unpaid, informal caregiver; and clinic staff assessment of adequate stamina to complete the interview. Patient–caregiver dyads in which either could not speak English or Spanish or met criteria for dementia or delirium were excluded.

A total of 1003 caregiver–patient dyads were approached to participate in the CwC study; 281 dyads did not participate. Of the 722 dyads who participated, 555 did not complete the United States Acculturation Scale because the caregivers were of American descent by report; 167 dyads completed the United States Acculturation Scale.

Measures

Demographic/related variables. Age, gender, race, education, income, health insurance, religious affiliation, recruitment site, and relationship to patient were recorded as reported by the caregiver. Patient's diagnostic information was obtained from chart review.

Acculturation. Using Cuellar's Acculturation Rating Scale (ARS)[20] and an investigator-developed United States Acculturation Scale: A Measure to Assess Americanization (USAS), caregivers were asked questions related to their language preference and cultural identity. The ARS is a 5-item scale that assesses language usage and preferences (1 = only non-English to 5 = only English) as a determinant of U.S. acculturation. The USAS expands on the ARS by using 6 additional questions/statements to assess language usage/preference and 8 questions/statements to assess cultural identity. For example, caregivers responded to the following statement: "You like to identify yourself as . . ." 1 = non-American only to 5 = American only. In addition, the interviewer rated the degree to which the respondent is acculturated to the United States (1 = totally non-Americanized to 5 = totally Americanized). Using a 5-point Likert scale the 20 items were summed to yield an overall acculturation score (range, 20–100). A lower acculturation sum score represented less acculturation. Cronbach α was 0.97 for the ARS and 0.98 for the USAS; correlation between the ARS and USAS was 0.70.

Treatment preferences. Caregiver preferences for the patient's EOL treatment were assessed with yes/no questions: "Would you want [patient] to be kept alive if it required him/her being on a breathing machine?", "Would you want [patient] to be kept alive if it requires him/her having a feeding tube?", and "If you could chose, would you prefer that [patient] choose (1) a course of treatment that focused on extending life as much as possible, even if it meant more pain or discomfort or (2) a plan of care that focused on relieving pain and discomfort as much as possible, even if that meant not living as long."

Physician–caregiver communication. Using investigator-developed questions, physician–caregiver communication was assessed in two areas: doctor listens and information provided. Doctor listens was assessed by asking the caregiver to respond yes/no to the following question, "Do you feel that the doctors listen to your concerns about [patient's] medical condition?" To assess the amount of information provided, caregivers responded (1 = less information than needed, 2 = more information than needed, or 3 = just the right amount) to the following question, "How much information do the doctors provide you with about [patient] medical treatment?"

Mental health. Caregivers' use of mental health services before and after the patients' cancer diagnoses was assessed using a yes/no response to the following questions: "Have you discussed with a professional any emotional or mental health problem you may have experienced before your loved one became sick?" and "Have you discussed mental health concerns with a professional since the patient was diagnosed with cancer?" The Structured Clinical Interview for the DSM-IV (SCID) Axis I Modules[21] was used to screen caregivers for major depressive disorder, general anxiety disorder, panic disorder, and posttraumatic stress disorder. Caregivers who met criteria for a mental health disorder were given a score of "1"; all others were given a score of "0."

Desire for additional services. Caregivers' desire for additional services was assessed by asking the caregiver using yes/no responses if additional specific services (complementary therapies, individual counseling sessions, counseling for family members, and nutritional counseling), would help the caregiver cope with the patient's illness.

Religious/spiritual support. Caregivers' perception of religious/spiritual support from the community and medical system was assessed using two questions from the Religious Coping Index (RCI).[22] Caregivers were asked: "To what extent are your religious/spiritual needs being supported by your religious community?" and "To what extent are your religious/spiritual needs being supported by the medical system?" (1 = not at all to 5 = completely supported).

Family relationships. Three statements from the Family Relationship Index (FRI)[23] were used to assess family relationships and support. Caregivers responded (1 = definitely true to 4 = definitely false) to the following statements, "Family members really help and support one another," "We put a lot of energy into what we do at home," and "There is a feeling of togetherness in our family."

Self-efficacy. Caregivers' personal beliefs about the ability to control one's environment and life circumstances were assessed using the 10-item General Self-Efficacy Scale (GSES).[24] For example, "It is easy for me to stick to my aims and accomplish my goals." Reponses ranged from 1 = not at all true to 4 = exactly true.

Patient/spousal dependency. Caregivers responded to six questions from the Patient and Spousal Dependency Scale[25] on how dependent they were on the patient in different areas of their lives (1 = not at all dependent to 5 = extremely dependent). For example, "How dependent are you on your spouse/partner/other for household management?"

Cognitive flexibility/optimism/control. The sum score of the 12-question Cognitive Flexibility Scale (CFS)[26] was used to assess caregivers' coping flexibility. Caregivers responded (1 = strongly agree to 6 = strongly disagree) to statements related to their coping behaviors. For example, "I feel like I never get to make decisions." Optimism and control were assessed using the 10-item Life Orientation Test (LOT),[27] caregivers responded (1 = strongly disagree to 5 = strongly agree) to the extent to which statements reflected how he/she viewed and dealt with life in general. For example, "If something can go wrong for me, it will."

Data analysis

Descriptive statistics were used to characterize the demographics of the study sample. *t* test statistics were used to test associations between acculturation and gender, race, health insurance, marital status, income, relationship to patient, recruitment site and primary cancer site. Pearson correlation coefficient statistics were used to test associations between acculturation and education and age. Logistic regression analyses were used to test associations between acculturation scores and treatment preferences and other select psychosocial factors. Data were analyzed with the SAS System for Windows version 9.1 (SAS Institute, Inc., Cary, NC).

Results

Sample characteristics

Characteristics of the167 sample caregivers and their acculturation levels are described in Table 1. The majority of caregivers were female (74%), and married (79%). Caregivers' mean age was 49.2 (standard deviation [SD] = 14.9) and mean years of education was 12.4 (SD = 4.1). Whites (49%) and Hispanics (43%) had the highest participation rates. Acculturation sum scores were significantly higher ($p < 0.0001$) in white (88.10) and black (88.25) caregivers compared to Hispanic participants (42.41). Less acculturated caregivers were more likely to be uninsured, have lower incomes, and come from a southern site. Catholic caregivers had lower acculturation sum scores (62.35) than Protestant (87.39) and Jewish (89.60) caregivers. Caregivers for patients' with stomach cancer had lower acculturation sum scores, most likely reflective of Hispanics higher incidence of infection-related cancers (i.e.: stomach cancer).[28] Table 2 describes participant characteristics for the Acculturation Scale. Forty-six percent of the caregivers were born in the United States and had a higher acculturation sum score (77.29) compared to the 54% of caregivers born outside the United States who had an acculturation sum score of 44.33. Seventy-two percent of the interviews were completed in English, acculturation sum score of 81.65, whereas 28% of the caregivers were interviewed in Spanish, acculturation sum score of 28.93.

EOL treatment and select psychosocial factors

The association between caregiver acculturation and EOL treatment factors and select psychosocial factors is described in Table 3.

Treatment preferences. Overall, 86% of caregivers of advanced cancer patients would not chose a course of treatment that focused on extending life if it meant more pain and discomfort for the patient, 57% would not want the patient to receive a feeding tube, and 62% would not have the patient placed on a ventilator. Caregivers who did prefer the use of a feeding tube had a lower acculturation sum scores compared to those who did not ($p = 0.05$).

Physician–caregiver communication. Ninety-four percent of caregivers reported that the doctor listened to their concerns. Seventy percent reported that they received the right amount of information. However, 24% thought that they received too little information, while 6% felt that they received too much information. Caregivers who had higher acculturation sum scores felt that too little information was provided (OR 1.02, $p = 0.05$), whereas caregivers with lower acculturation sum scores felt that too much information was provided (OR 0.95, $p = 0.05$).

Mental health. Seventy-eight percent of caregivers did not use mental health services prior to and after the patient's diagnosis of advanced cancer. Caregivers with higher acculturation sum scores were more likely to use mental health services both pre-diagnosis (OR 1.03, $p = 0.003$) and post-diagnosis (OR 1.02, $p = 0.02$). Differences in SCID diagnosis of mental illness were not found.

Desire for additional services. Overall, caregivers did not report a desire for any additional services. Sixty-eight percent did not desire complementary therapies or individual counseling sessions, 73% did not desire counseling for family members, and 67% did not desire nutritional counseling. However, caregivers who did desire additional services had

TABLE 1. CAREGIVER CHARACTERISTICS AND LEVEL OF ACCULTURATION

	n *(%)*	*Acculturation sum score*	t *value*	df	p *value*
Full sample	167	67.14 (27.21)			
Gender			1.74	165	0.08
Male	43 (26%)	73.33 (24.51)			
Female	124 (74%)	64.99 (27.86)			
Race					
White	**79 (47%)**	**88.10 (9.87)**	**14.35**	**119**	**<0.0001**
Black	**8 (5%)**	**88.25 (6.30)**	**7.12**	**25.7**	**<0.0001**
Asian	8 (5%)	62.75 (12.56)	−0.93	10.8	0.37
Hispanic	**71 (43%)**	**42.41 (21.00)**	**−15.19**	**110**	**<0.0001**
Other	1 (1%)	33.00	−1.26	165	0.21
Health insurance			**9.35**	**163**	**<0.0001**
Insured	110 (66%)	78.48 (20.79)			
Uninsured	55 (33%)	44.35 (24.56)			
Don't know	1 (1%)	85.00			
Married			−0.25	164	0.81
Yes	132 (79%)	67.11 (26.95)			
No	34 (20%)	68.24 (28.19)			
Unknown	1 (1%)	73.00			
Income			**5.58**	**89.4**	**<0.0001**
Higher income (>$50,999)	47 (28%)	84.60 (13.20)			
Lower income (<$51,000)	60 (36%)	62.25 (27.20)			
Refused	21 (13%)	83.87 (14.68)			
Don't know	39 (23%)	45.77 (26.82)			
Religion					
Catholic	**95 (57%)**	**62.35 (28.26)**	**−2.58**	**160**	**0.01**
Protestant	**18 (11%)**	**87.39 (17.20)**	**4.94**	**28.6**	**<0.0001**
Jewish	**5 (3%)**	**89.60 (7.27)**	**5.98**	**8.24**	**0.0003**
Other	27 (16%)	65.69 (24.88)	−0.26	164	0.79
None	11 (7%)	78.91 (21.96)	1.51	164	0.13
Pentecostal	3 (2%)	47.00 (24.64)	−1.29	164	0.20
Baptist	8 (5%)	57.25 (26.07)	−1.04	164	0.30
Kinship (relationship to patient)					
Spouse	85 (51%)	70.10 (26.25)	1.47	144	0.14
Child	29 (17%)	67.10 (27.62)	0.02	144	0.98
Sibling	13 (8%)	68.00 (23.53)	0.14	144	0.89
Other relative	**13 (8%)**	**43.31 (27.41)**	**−3.41**	**144**	**0.0009**
Friend	**3 (2%)**	**93.67 (2.31)**	**10.31**	**27.4**	**<0.0001**
Other	2 (1%)	78.00 (1.41)	0.57	144	0.57
Parent	1 (1%)	20.00	−1.74	144	0.08
Unknown	21 (13%)	68.00 (27.69)			0.88
Location					
Northeast	**99 (59%)**	**83.0 (17.2)**	**12.20**	**120**	**<0.0001**
Yale	**62 (37%)**	**83.84 (17.95)**	**7.63**	**163**	**<0.0001**
VA	**5 (3%)**	**93.80 (1.79)**	**12.04**	**117**	**<0.0001**
DFCI	15 (9%)	76.87 (17.46)	2.12	21.8	0.05
NHOH	**17 (10%)**	**82.12 (15.59)**	**3.78**	**29.2**	**0.0007**
Southwest	**68 (41%)**	**44.1 (22.1)**	**12.20**	**120**	**<0.0001**
Parkland	**63 (38%)**	**42.91 (22.28)**	**−11.77**	**109**	**<0.0001**
Simmons	5 (3%)	58.60 (14.54)	−0.71	165	0.48
Patient's primary cancer site					
Lung	**27 (%)**	**77.8 (23.7)**	**2.24**	**157**	**0.03**
Pancreatic	**16 (%)**	**80.6 (16.8)**	**3.10**	**25.5**	**0.005**
Colon	15 (%)	77.1 (22.1)	1.48	157	0.14
Stomach	**8 (%)**	**39.6 (22.8)**	**−3.00**	**157**	**0.003**
Leukemia or Lymphoma	10 (%)	57.9 (30.6)	−1.05	157	0.30
Unknown	6 (%)	66.25 (26.07)			0.93
Other	70 (%)	63.08 (28.11)			0.05

	Mean	SD	*Pearson coefficient* (r)	p *value*
Education	**12.4**	**4.1**	**0.24**	**0.002**
Age	**49.8**	**14.9**	**0.57**	**<0.0001**

VA, Veteran's Administration; DFCI, Dana Farber Cancer Institute; NHOH, New Hampshire Oncology-Hematology.

Table 2. Caregiver Acculturation Scale Characteristics ($N = 167$)

	n (%)	Acculturation sum score Mean (SD)
Born in United States	77 (46%)	77.29 (17.27)
Born outside the United States	90 (54%)	44.33 (23.75)
Interviewed in English	120 (72%)	81.65 (15.11)
Interviewed in Spanish	47 (28%)	28.93 (10.63)

SD, standard deviation.

higher acculturation sum scores compared to caregivers who did not desire additional services.

Psychosocial support factors. Caregivers with lower acculturation sum scores felt more spiritually supported by their religious community ($p = 0.0003$) and the medical system ($p < 0.0001$), reported higher levels of self-efficacy ($p = 0.005$) and had stronger family relationships ($p = 0.0004$). No significant findings were found in patient and spousal dependency, cognitive flexibility, control and optimism.

Discussion

This study explored the extent to which EOL treatment factors (EOL treatment preferences and physician–caregiver communication) and select psychosocial factors (mental health, complementary therapies, and internal/external social support) differ based on the level of acculturation of the caregivers of patients with advanced cancer. Results of this study revealed that caregivers who were less acculturated were more positively predisposed to use of a feeding tube at EOL, were more likely to perceive that they received too much information from their doctors, were less likely to use mental

Table 3. Bivariate Associations between Caregiver Acculturation and End-of-Life Treatment and Select Psychosocial Factors ($N = 167$)

	Yes		No			
Measures	n (%)	Mean acculturation score (SD)	n (%)	Mean acculturation score (SD)	OR (95% CI)	p value
EOL treatment factors						
Treatment preferences						
Ventilator	38 (38%)	54.13 (28.91)	63 (62%)	59.46 (24.72)	0.99 (0.98–1.01)	0.32
Feeding tube	43 (43%)	51.47 (26.32)	58 (57%)	61.84 (25.71)	0.99 (0.97–1.00)	**0.05**
Extend life vs. relieve pain	14 (14%)	58.36 (27.94)	84 (86%)	57.18 (26.67)	1.00 (0.98–1.02)	0.89
Physician–caregiver communication						
Doctor listens	73 (94%)	56.42 (25.49)	5 (6%)	72.80 (28.20)	0.97 (0.93–1.02)	0.20
Information provided						
Too little	20 (24%)	69.20 (26.61)	63 (76%)	55.81 (25.19)	1.02 (1.00–1.04)	**0.05**
Too much	5 (6%)	33.20 (16.08)	78 (94%)	60.69 (25.71)	0.95 (0.91–1.00)	**0.05**
Right amount	58 (70%)	57.76 (24.96)	25 (30%)	62.00 (28.63)	0.99 (0.98–1.01)	0.52
Select psychosocial factors						
Mental health service use						
Prediagnosis	37 (22%)	79.70 (21.16)	128 (78%)	63.93 (27.47)	1.03 (1.01–1.05)	**0.003**
Postdiagnosis	36 (22%)	77.53 (20.98)	130 (78%)	64.31 (27.99)	1.02 (1.00–1.04)	**0.02**
SCID dx of mental illness						
Major depressive disorder	9 (6%)	83.67 (11.03)	142 (94%)	66.85 (27.14)	1.04 (0.99–1.08)	0.10
Generalized anxiety disorder	7 (5%)	73.57 (21.92)	140 (95%)	68.32 (26.80)	1.01 (0.98–1.04)	0.61
Panic disorder	7 (5%)	89.71 (8.08)	140 (95%)	67.37 (26.62)	1.09 (0.99–1.20)	0.10
PTSD	10 (7%)	70.70 (24.57)	141 (93%)	67.65 (26.96)	1.01 (0.98–1.03)	0.72
Desire for additional services						
Complementary therapies	20 (32%)	79.95 (16.36)	42 (68%)	55.86 (25.68)	1.05 (1.02–1.09)	**0.002**
Individual counseling sessions	20 (32%)	80.55 (13.82)	42 (68%)	57.11 (26.40)	1.05 (1.02–1.09)	**0.003**
Counseling for family members	17 (27%)	79.76 (14.96)	45 (73%)	58.98 (26.43)	1.05 (1.01–1.08)	**0.009**
Nutritional counseling	21 (33%)	76.19 (19.76)	42 (67%)	58.07 (26.37)	1.03 (1.01–1.06)	**0.01**

	Standardized β	p value
Religious/spiritual support		
Religious Community	−0.28	**0.0003**
Medical System	−0.38	**<0.0001**
Self-efficacy	−0.22	**0.005**
Family Relationships	−0.27	**0.0004**
Patient and Spousal Dependency	0.22	0.18
Cognitive Flexibility	−0.04	0.79
Optimism	−0.14	.07
Control	0.06	0.41

SD, standard deviation; OR, odds ratio; CI, confidence interval.

health services, and desire additional services than their more acculturated counterparts. In addition, caregivers who were less acculturated felt their religious/spiritual needs were supported by both the community and medical system, had a stronger degree of self-efficacy, and had stronger family relationships and support.

Results of this study revealed that the majority of caregivers of patients with advanced cancer, regardless of their acculturation score, would not choose a course of treatment that focused on extending life if it meant more pain and discomfort for the patient and would prefer that the patients not be kept alive if it required a ventilator or feeding tube. However, caregivers who were less acculturated were more predisposed to prefer that the patient have a feeding tube at EOL. This finding may be a reflection of the cultural value placed on food by racial and ethnic minorities, and a belief that a low-burden therapy such as tube feeding may provide comfort at EOL by Hispanics.[14,15]

The majority of caregivers in this study perceived that doctors do listen to their EOL concerns and that they received the right amount of information from the doctors about the patient's prognosis. However, it is important to note, the caregivers who responded that they were receiving the right amount of or too much information from their physicians had only a low to moderate level of acculturation. The caregivers who responded they received too little information from their physicians were of a much higher acculturation level. Prior research has demonstrated that physicians deliver less information, communicate less support, and give less proficient care to black and Hispanic patients, as well as patients of lower educational level and socioeconomic status.[29–32] These findings suggest that patients and caregivers, though satisfied with their physicians, may not realize they are not receiving the information necessary to make knowledgeable EOL treatment decisions.

Although previous research has reported that blacks and Hispanics are more vulnerable to mental illness than whites,[33–36] very few caregivers in this study met criteria for a diagnosis of mental illness. Similarly, there was no change in caregivers' use of mental health services prior to and after the patient's diagnosis of advanced cancer. Despite the small use of mental health services by caregivers in this study, those who did utilize the services were more acculturated than those who did not. These findings may suggest that less acculturated caregivers are less likely to be knowledgeable of or be offered appropriate mental health services.

A low response rate was noted in the caregivers' desire for additional services. Caregivers who responded were less likely to choose additional services (complementary therapies, individual counseling, counseling for family members, and nutritional counseling). Those who did desire additional services were more acculturated than those who did not. The low number of responses, only 62 of the 167 caregivers interviewed, may suggest that caregivers do not realize that additional services exist and are available.

This study has several important strengths. Study participants were recruited from multiple sites in the Northeast and the Southwest, two geographic regions with distinct cultures. Although many recent studies have reported racial/ethnic differences in EOL care, this study provides clarity to within group differences in ethnic/racial populations. To the best of our knowledge, this is the first study to consider the extent to which caregivers' level of acculturation contributes to their EOL treatment preferences and select psychosocial factors. Limitations should also be considered when interpreting the study results. Although our sample came from several distinct sites, most of our black and Hispanic caregivers were recruited through two sites in Texas. The small sample size precluded conducting adjusted analyses of EOL treatment factors and psychosocial factors.

Overall, results of this study suggest that the level of acculturation of caregivers of patients with advanced cancer does contribute to differences in EOL treatment preferences and EOL care. Therefore, health care providers should be attentive to not only the cultural differences embedded in racial and ethnic groups, but also, to what extent the caregivers' have or have not integrated U.S. culture into their EOL treatment preferences and communication, and use of psycho-social support. Future analysis with larger sample sizes of both patients and caregivers will allow for further exploration of cultural differences in EOL treatment factors and psychosocial factors. Additional studies are needed to explore the remarkable heterogeneity of cultures, including the acculturation level among those of black and Hispanic origins to ensure that culturally sensitive EOL care is provided to both patients and their caregivers.

Acknowledgments

Supported in part by the National Institutes of Health Grants No. MH63892 and CA106370.

Author Disclosure Statement

No competing financial interests exist.

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