Race/Ethnicity and End-of-Life Care among Veterans

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Background: Few studies have examined comprehensively racial/ethnic variations in quality of end-of-life care.

Objective: Examine end-of-life care quality received by Veterans and their families, comparing racial/ethnic minorities to nonminorities.

Research Design: This is a retrospective, cross-sectional analysis of chart review and survey data.

Subjects: Nearly all deaths in 145 Veterans Affairs Medical Centers nationally (n = 94,697) in addition to Bereaved Family Survey (BFS) data (n = 51,859) from October 2009 to September 2014.

Measures: Outcomes included 15 BFS items and 4 indicators of high-quality end-of-life care, including receipt of a palliative care consult, chaplain visit, bereavement contact, and death in hospice/palliative care unit. Veteran race/ethnicity was measured via chart review and defined as non-Hispanic white, non-Hispanic black, Hispanic, or other.

Results: In adjusted models, no differences were observed by race/ethnicity in receipt of a palliative care consult or death in a hospice unit. Although black Veterans were less likely than white Veterans to receive a chaplain visit, Hispanic Veterans were more likely than white Veterans to receive a chaplain visit and to receive a bereavement contact. Less favorable outcomes for racial/ethnic minorities were noted on several BFS items. In comparison with family members of white Veterans, families of minority Veterans were less likely to report excellent overall care, and this difference was largest for black Veterans (48% vs. 62%).

Conclusions: Bereaved family members of minority Veterans generally rate the quality of end-of-life care less favorably than those of white Veterans. Family perceptions are critical to the evaluation of equity and quality of end-of-life care.

Key Words: disparities, end-of-life care, veterans

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Racial and ethnic disparities in the receipt of quality health care in the United States are well-documented, including care at the end of life.[1–6] Some observed differences in utilization of treatments and services at the end of life, however, may be more reflective of patient preferences rather than poor quality.[7–9] Given that the consistency between care provided and patient preferences is the cornerstone of optimal end-of-life care,[10] evaluations of quality must include the patient and family perspective. Assessments of end-of-life care quality often rely upon the perceptions of bereaved family members.[11,12] Few studies have examined racial/ethnic disparities in family perceptions of the quality of end-of-life care.[6,13–17]

The Veterans Affairs (VA) health care system offers a unique setting in which to conduct a population-based study of racial/ethnic disparities in end-of-life care. First, the proportion of US Veterans who are minorities closely mirrors that of the general population.[18,19] Second, the VA has been collecting bereaved families' evaluations of end-of-life care nationally since 2008 using the validated Bereaved Family Survey (BFS).[12,20,21] Third, the VA's integrated clinical and administrative databases permit examination of multiple factors that can influence the quality and outcomes of care. Finally, the VA health care system is built on the framework of equal access to care, thereby largely eliminating many potential confounders in the study of disparities.[22] No study to date, in a VA or non-VA setting, has conducted a large, comprehensive examination of racial/ethnic differences in end-of-life quality indicators and family perspectives of end-of-life care. Therefore, our objective was to examine the quality and outcomes of end-of-life care received by Veterans and their families comparing racial/ethnic minorities to nonminorities.

METHODS

Study Design and Data Sources

We performed a retrospective, cross-sectional analysis of chart review and BFS data collected between October

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2009 and September 2014. Data were collected as part of ongoing activities of the Performance Reporting and Outcomes Measurement to Improve the Standard of Care at End-of-life (PROMISE) Center. PROMISE is a national VA quality improvement program that monitors the care of all Veterans who die in VA inpatient units, including acute care, intensive care, hospice/palliative care, and VA nursing home settings.

Chart review data were derived from the VA's Corporate Data Warehouse that integrates databases containing clinical, financial, and administrative information. Deaths were retrieved using a method that identifies over 95% of inpatient decedents.[20,23] Patient charts were examined for the presence of end-of-life quality indicators, and clinical and demographic patient data. To assess family perceptions of end-of-life care, the decedent's next-of-kin was contacted and asked to complete the BFS through mail or telephone. Following PROMISE protocol, surveys were completed between 6 and 10 weeks after the patient's death.[24] Although the BFS became primarily mail-based by 2012, measurement invariance across both survey modes has been demonstrated.[25] The BFS was derived from the Family Assessment of Treatment at End of Life-Short Form survey, that has established reliability and validity.[12,20,21] The global and individual items included in the BFS have been validated in prior work.[25–27] Further details regarding the collection of these data are described elsewhere.[24] Response rates for the BFS across study years ranged from 50% to 65%. Smith et al[28] found that BFS nonresponse was more likely when the patient was younger and nonwhite. Based on this work, we apply inverse propensity nonresponse weights to statistically account for nonresponse in our adjusted analyses. Trained PROMISE staff conducted chart reviews and telephone interviews, both of which were protocol-driven. All staff were required to meet a minimal level of agreement and accuracy before collecting data independently. Supervisors conducted regular data quality audits. Institutional review board approval was obtained from the Corporal Michael J. Crescenz VA Medical Center.

Variables and Measures

End-of-life Quality of Care Indicators

Four binary end-of-life quality indicators were derived from the chart review: (1) receipt of a palliative care consult within the last month of life; (2) at least 1 contact between a chaplain and a family member or the Veteran was attempted within the last month of life; (3) a bereavement contact with a family member was made within 2 weeks after the patient's death; and (4) death occurred in a designated hospice/palliative care unit. These measures were selected because they are associated with higher quality end-of-life care[11,12,29,30] and are recommended as preferred practices by the National Quality Forum.[31]

BFS Outcomes

The BFS was used to measure family perceptions of quality of end-of-life care. Our primary outcome was the BFS Performance Measure (BFS-PM). The BFS-PM is a global item on the survey that asks respondents to rate the overall care received by the Veteran in the last month of life using a 5-point Likert scale ranging from "poor" to "excellent." The BFS-PM has been endorsed by the National Quality Forum as a palliative and end-of-life care measure.[32] We also examined 14 individual items from the BFS focused on specific aspects of end-of-life care (eg, communication with providers, receipt of desired treatment, emotional support). These single items were measured as dichotomous yes/no responses or on a 4-point Likert-type scale indicating the degree to which different domains of care were met. For each item, responses were dichotomized as the best possible answer versus all others following PROMISE reporting [Supplemental Digital Content (SDC), Table 1, Supplemental Digital Content 1, http://links.lww.com/MLR/B256).[33]

Race/Ethnicity

Race/ethnicity, the primary predictor variable, was obtained through self-report and classified as: non-Hispanic white (ie, "white"), non-Hispanic black (ie, "black"), Hispanic, and other. The other category included Asian, Pacific Islander, Filipino, Native American, and mixed race. VA clinical databases had missing race/ethnicity data for 7% of cases. Medicare data, available in the Corporate Data Warehouse, were used to supplement race/ethnicity data for 99% of missing cases. Hot deck imputation, which uses data from similar complete cases to predict the absent value, was used to complete race/ethnicity data for the remaining 1% of missing cases.[34]

Key Study Covariates

Patient-level covariates included age, sex, relationship of next-of-kin (spouse/child/sibling/other family/other), and Elixhauser comorbidity score using a 1-year lookback period.[35,36] Facility-level covariates included location (urban/rural), geographic region (Northeast, South, Midwest, Mountain, and West), and VA Medical Center facility complexity level. The medical facility complexity level is a VA administrative categorization based on a weighted combination of 7 factors which include patient volume and risk, extent of teaching and training activities, available clinical services, and amount of research involvement. VA Medical Centers were categorized as high (level 1a, 1b, or 1c) or low (level 2 and 3) complexity. These variables were used as covariates in our predictive models to account for their independent effects on study outcomes.[26,27]

Statistical Analysis

Descriptive statistics were calculated to examine differences in patient and facility characteristics by race/ethnicity using χ^2 for categorical variables and analysis of variance for continuous variables. We used robust logistic regression models that adjusted for patient and hospital characteristics, and BFS survey nonresponse bias[28] to examine relationships between our primary predictor variable of race/ethnicity and our study outcomes. We adjusted for clustering within facilities using robust jackknife estimates of standard errors.

Several supplementary analyses were performed. First, to examine whether any disparities we observed on the BFS were related to any measured or unmeasured characteristics of

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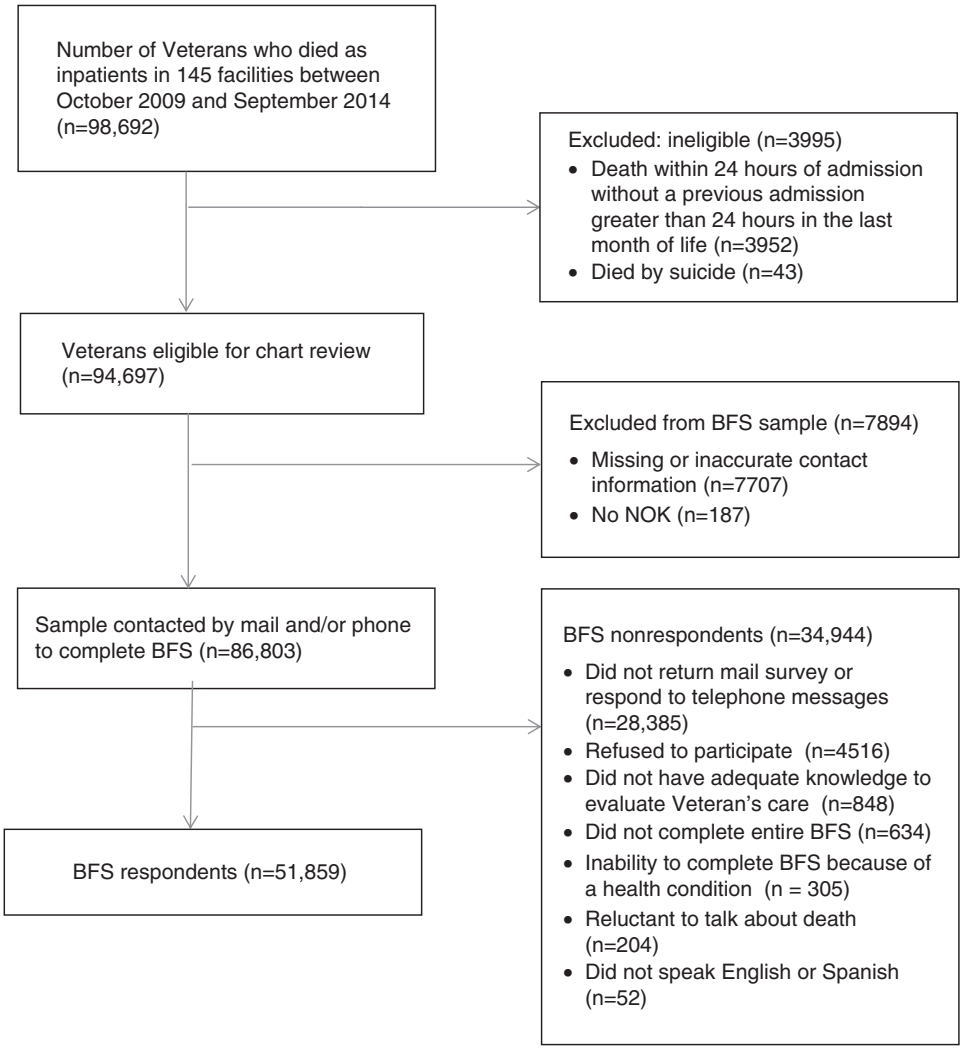

FIGURE 1. STROBE diagram for chart review and Bereaved Family Survey (BFS) samples.

the facilities in which Veterans were cared for, we fit a series of fully adjusted, fixed effects regression models using dummy variable indicators for each VA Medical Center. Second, as our cross-sectional study encompassed a period of 5 years, we also conducted a separate set of fully adjusted regression models that accounted for potential cohort effects by including a set of dummy variables for each study year. Finally, we examined, independently, whether the receipt of a palliative consult or death occurring in an inpatient hospice/palliative care unit moderated any disparities observed on the BFS by including adjustment for these end-of-life quality indicators in the fully adjusted models. We used STATA statistical software version 13.1 (StataCorp., CollegeStation, TX) for all analyses. We set statistical significance level at $P < 0.05$.

RESULTS

Sample Characteristics

Our study of racial/ethnic differences in quality of end-of-life care used data from 2 overlapping samples: (1) a larger sample of nearly all acute, long-term, and hospice/palliative care unit deaths in 145 VA Medical Centers during the study period that was used to examine receipt of the 4 quality indicators (n = 94,697), and (2) the sample of decedents with complete BFS data (n = 51,859) (Fig. 1). The patient and facility characteristics for both samples are provided in Table 1. Among total deaths in the sample, the average age of patients was 74 years. The sample consisted primarily of male Veterans (98%) who had an average of 5.3 medical conditions at the time of death. The majority of patients were cared for in level 1 complexity facilities (77%). Ninety percent of patients died in urban facilities. Over 40% of the deaths occurred in VA facilities located in the southern US. The distributions were similar for the sample of Veterans whose family completed the BFS. In both samples, significant differences were noted across racial/ethnic groups. Compared with white patients, black and Hispanic patients were younger, had higher levels of comorbidity, and were more likely to be treated in higher complexity facilities in urban areas. Higher percentages of black Veterans died in

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TABLE 1. Patient/Facility Characteristics by Race/Ethnicity for Inpatient Death and Bereaved Family Survey (BFS) Samples in 145 VA Medical Centers (VAMCs), October 2009 to September 2014

	White (n = 72,895)	Black (n = 17,183)	Hispanic (n = 2993)	Other Race/Ethnicity* (n = 1626)	Total Deaths (n = 94,697)	P†
Patient/facility characteristics by race/ethnicity for inpatient deaths						
Patient age [mean (SD)] (y) (%)	75 (11.70)	71 (12.28)	73 (12.86)	75 (12.70)	74 (11.96)	<0.001
<50	<1	2	2	2	1	
50–59	7	14	11	8	8	
60–69	28	33	31	28	29	
70–79	22	20	18	20	21	
80–89	30	23	27	29	28	
90+	13	8	11	13	12	
Patient male sex (%)	98	98	98	97	98	<0.001
Listed next of kin relationship (%)						<0.001
Spouse	38	33	37	41	37	
Child	34	32	35	31	34	
Sibling	13	17	12	12	13	
Other family	8	12	9	9	9	
Other nonfamily/no next of kin	7	5	6	6	7	
Elixhauser comorbidity [mean (SD)]	5.29 (2.56)	5.56 (2.56)	5.55 (2.64)	5.14 (2.53)	5.34 (2.57)	<0.001
Missing data % n	<1% n=72,215	<1% n=17,064	1% n=2955	1% n=1608	<1% n=93,842	
VAMC complexity level (%)						<0.001
Level 1a, 1b, 1c	73	91	88	74	77	
Level 2, 3	27	9	12	26	23	
VAMC urban/rural classification (%)						<0.001
Urban	88	95	98	91	90	
Rural	12	5	2	9	10	
Region (%)						<0.001
Northeast	19	14	13	9	18	
Midwest	21	18	5	14	20	
South	39	56	31	27	41	
Mountain	8	2	23	10	7	
West	13	10	29	40	14	
	White (n=41,598)	**Black (n=8072)**	**Hispanic (n=1395)**	**Other race/ethnicity* (n=794)**	**Total Surveys (n=51,859)**	**P†**
Patient/facility characteristics by race/ethnicity for patients whose family completed the BFS						
Patient age [mean (SD)] (y) (%)	76 (11.53)	72 (12.25)	74 (12.66)	76 (12.15)	76 (11.79)	<0.001
<50	1	2	2	1	1	
50–59	6	13	9	6	7	
60–69	25	31	29	26	26	
70–79	21	21	19	21	21	
80–89	33	25	29	31	31	
90+	14	9	12	15	14	
Patient male sex (%)	98	98	99	97	98	0.03
Listed next of kin relationship (%)						<0.001
Spouse	45	38	44	47	44	
Child	30	27	32	28	30	
Sibling	12	18	12	12	13	
Other family	7	12	8	8	8	
Other nonfamily/no next of kin	5	5	4	4	5	
Elixhauser comorbidity [mean (SD)]	5.22 (2.56)	5.52 (2.52)	5.57 (2.65)	5.16 (2.55)	5.28 (2.56)	<0.001
"Missing data" % n	<1% n=41,206	<1% n=8014	2% n=1374	1% n=786	<1% n=51,380	
VAMC complexity level (%)						<0.001
Level 1a, 1b, 1c	71	90	87	74	74	
Level 2, 3	29	10	13	26	26	

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VAMC urban/rural classification (%)								**< 0.0-01**
Urban	**87**	**95**	**97**	**92**	**89**			
Rural	**13**	**5**	**3**	**8**	**11**			
Region (%)								**< 0.0-01**
Northeast	**20**	**14**	**12**	**8**	**19**			
Midwest	**22**	**18**	**5**	**14**	**21**			
South	**38**	**58**	**32**	**27**	**41**			
Mountain	**7**	**1**	**23**	**9**	**7**			
West	**12**	**8**	**29**	**41**	**13**			

*Other race/ethnicity includes: Asian, Pacific Islander, Filipino, Native American, and mixed race.
†, χ^2 and analysis of variance were used to test differences between groups.

facilities in the southern US, and higher percentages of Hispanic Veterans died in the mountain and western regions of the country, as compared with white Veterans.

Results From Unadjusted Models

Unadjusted proportions and odds ratios for the end-of-life quality indicators and BFS outcomes are presented in Table 2. In these crude models, black patients were significantly less likely than white patients to receive a palliative care consult [59% vs. 64%; odds ratio (OR), 0.81; 95% confidence interval (CI), 0.72–0.92), and to have a chaplain consult documented (75% vs. 79%; OR, 0.83; 95% CI, 0.71–0.98). Hispanic Veterans were more likely than white Veterans to have a chaplain note documented (84% vs. 79%; OR, 1.44; 95% CI, 1.13–1.84). On the BFS-PM, family members of minority Veterans were less likely than those of white Veterans to report that the overall care received during the last month of life was excellent (for black Veterans: 46% vs. 62%; OR, 0.51; 95% CI, 0.47–0.55; for Hispanics: 57% vs. 62%; OR, 0.81; 95% CI, 0.71–0.92; for other minority groups: 58% vs. 62%; OR, 0.82; 95% CI, 0.72–0.94). The odds of bereaved family members of black, Hispanic, and other racial/ethnic minority Veterans reporting the most favorable response on the 14 individual BFS items were lower than that of whites for 13, 8, and 5 items, respectively.

Results From Multivariate Models

Following adjustment for patient and facility characteristics, the odds of receiving a palliative care consult for black Veterans were not significantly different from that of white Veterans (61% vs. 64%; OR, 0.89; 95% CI, 0.79–1.01). Compared with white Veterans, black Veterans were less likely to have a chaplain note/contact (74% vs. 79%; OR, 0.83, 95% CI, 0.73–0.94), while Hispanic Veterans were more likely to have a documented chaplain note (87% vs. 79%; OR, 1.74; 95% CI, 1.28–2.37) and bereavement contact (66% vs. 61%; OR, 1.23; 95% CI, 1.01–1.51). No statistically significant differences were observed between white Veterans and members of other minority groups (eg, Asian Veterans) in the quality indicators following adjustment for potential confounding variables (Table 3).

In adjusted models, family members of minority Veterans were significantly less likely than those of white Veterans to report receiving excellent overall care during the last month of life by the following odds ratios: 0.57 (95% CI, 0.53–0.61) for black Veterans, 0.85 (95% CI, 0.76–0.94) for Hispanic Veterans, and 0.83 (95% CI, 0.71–0.97) for Veterans from other racial/ethnic groups. As compared with the responses of bereaved family members of white Veterans, family members of black Veterans were less likely to report the most favorable scores on 11 of the 14 BFS items related to specific aspects of care by adjusted odds ratios ranging from 0.42 (95% CI, 0.40–0.45) on whether providers gave enough help with funeral arrangements to 0.92 (95% CI, 0.85–0.99) that providers always gave wanted medication and treatment. Family members of black and Hispanic Veterans were more likely than those of white Veterans to report that providers always kept the family informed of the patient's status (71% vs. 68%; OR, 1.12; 95% CI, 1.06–1.20 for

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TABLE 2. Unadjusted End-of-Life Quality Indicators and Bereaved Family Survey (BFS) Outcomes by Race/Ethnicity in 145 VA Medical Centers, October 2009 to September 2014

	% OR (95% CI)[‡]				
	White*	Black	Hispanic	Other Race/ Ethnicity[§]	Overall Sample
Unadjusted end-of-life quality indicator outcomes by patient race/ethnicity					
Quality indicators	n = 72,895	n = 17,183	n = 2993	n = 1626	n = 94,697
Palliative care consult	64	59	61	63	63
	—	0.81 (0.72–0.92)	0.88 (0.75–1.04)	0.94 (0.82–1.08)	
Chaplain note/contact	79	75	84	80	78
	—	0.83 (0.71–0.98)	1.44 (1.13–1.84)	1.09 (0.92–1.29)	
Bereavement note/contact	61	60	62	62	61
	—	0.96 (0.83–1.11)	1.02 (0.86-1.21)	1.06 (0.89–1.25)	
Death in an inpatient hospice/palliative care unit	34	32	29	33	34
	—	0.92 (0.73–1.16)	0.77 (0.55–1.10)	0.94 (0.78–1.13)	
Unadjusted BFS outcomes by patient race/ethnicity					
BFS items[†]	n = 41,598	n = 8072	n = 1395	n = 794	n = 51,859
Overall rating of patient's care was excellent (BFS-PM)	62	46	57	58	60
	—	0.51 (0.47–0.55)	0.81 (0.71–0.92)	0.82 (0.72–0.94)	
Providers always took time to listen	74	73	73	75	74
	—	0.92 (0.86–0.99)	0.94 (0.81–1.08)	1.03 (0.83–1.27)	
Providers always gave wanted medication and treatment	80	76	78	78	79
	—	0.82 (0.77–0.88)	0.91 (0.79–1.05)	0.91 (0.79–1.05)	
Providers were always kind, caring, and respectful	84	80	81	83	83
	—	0.76 (0.71–0.83)	0.81 (0.70–0.94)	0.98 (0.77–1.25)	
Providers always kept family informed	69	70	70	69	69
	—	1.03 (0.96–1.10)	1.07 (0.93–1.22)	0.99 (0.84–1.16)	
Providers alerted family before the patient's death	82	81	81	84	82
	—	0.91 (0.84–0.99)	0.94 (0.82–1.07)	1.11 (0.90–1.38)	
Providers always attended to personal care needs	69	64	67	68	68
	—	0.81 (0.76–0.86)	0.95 (0.84–1.07)	0.98 (0.85–1.13)	
Patient's pain never made him/her uncomfortable	22	20	24	19	22
	—	0.90 (0.84–0.96)	1.11 (0.93–1.31)	0.86 (0.70–1.05)	
Patient's PTSD stress never made him/her uncomfortable	87	82	79	82	86
	—	0.66 (0.61–0.72)	0.55 (0.47–0.64)	0.67 (0.55–0.81)	
Providers always gave enough spiritual support	65	53	60	65	63
	—	0.60 (0.57–0.64)	0.79 (0.68–0.92)	0.98 (0.87–1.11)	
Providers always gave enough emotional support before the patient's death	66	58	60	64	64
	—	0.73 (0.68–0.77)	0.80 (0.70–0.91)	0.91 (0.78–1.07)	
Providers always gave enough emotional support after the patient's death	71	60	64	67	69
	—	0.63 (0.59–0.66)	0.72 (0.64–0.80)	0.82 (0.73–0.92)	
Providers gave enough information about survivor benefits	52	36	40	38	49
	—	0.53 (0.49–0.56)	0.62 (0.53–0.72)	0.58 (0.50–0.68)	
Providers gave enough information about burial and memorial benefits	60	45	47	49	57
	—	0.54 (0.50–0.58)	0.59 (0.52–0.68)	0.63 (0.54–0.73)	
Providers gave enough help with the funeral arrangements	78	57	59	66	74
	—	0.37 (0.34–0.39)	0.40 (0.34–0.48)	0.55 (0.47–0.65)	

*White race category was used as the reference group.
†Sample size varies to reflect missing data for individual survey items (Supplemental Digital Content, Table 1, http://links.lww.com/MLR/B256).
‡Logistic regression clustered by facility was used to test differences between racial/ethnic groups.
§Other race/ethnicity includes: Asian, Pacific Islander, Filipino, Native American, and mixed race.
BFS-PM indicates BFS Performance Measure; CI, confidence interval; OR, odds ratio; PTSD, posttraumatic stress disorder.

blacks; 72% vs. 68%; OR, 1.21; 95% CI, 1.06–1.38 for Hispanics). As compared with family members of white Veterans, BFS respondents for Hispanic Veterans were less likely to report the most favorable response on 7 of the 14 specific BFS care items by adjusted odds ratios ranging from 0.44 (95% CI, 0.38–0.53) for help with funeral arrangements to 0.88 (95% CI, 0.77–1.00) that providers always gave enough emotional support before the patient's death. Family members of Hispanic Veterans were more likely than those of white Veterans to report that the patient's pain never made him/her uncomfortable (24% vs. 21%; OR, 1.20; 95% CI, 1.00–1.44). Family members of Veterans from other races/ethnicities were less likely than those of white Veterans to report receiving the most favorable care on 4 of the specific BFS care items, as evidenced by adjusted odds ratios ranging from 0.59 (95% CI, 0.50–0.71) for information about survivor benefits to 0.68 (95% CI, 0.55–0.84) that post-traumatic stress symptoms never made the patient uncomfortable (Table 4).

Supplemental Analyses

The supplemental analysis including facility-level fixed effects produced similar results to the models reported above in Table 4 but also demonstrated some notable differences (SDC Table 2, Supplemental Digital Content 2, http://links.lww.com/MLR/B257). Some observed racial/ethnic disparities on the BFS, including provision of wanted medication and treatment, kindness of providers, and attention to personal care needs, became insignificant when

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TABLE 3. Adjusted Proportions and Odds Ratios for End-of-Life Quality Indicators by Veteran Race/Ethnicity (n = 94,697*)

End-of-Life Quality of Care Indicators for Deceased Patients	Adjusted Proportion (%) OR (95% CI)†		
	White Vs. Black‡	White Vs. Hispanic‡	White Vs. Other Race/Ethnicity‡,§
Palliative consult	64 vs. 61	64 vs. 63	64 vs. 64
	0.89 (0.79–1.01)	0.94 (0.81–1.10)	0.98 (0.86–1.11)
Chaplain note/contact	79 vs. 74	79 vs. 87	79 vs. 82
	0.83 (0.73–0.94)	1.74 (1.28–2.37)	1.19 (0.98–1.43)
Bereavement note/contact	61 vs. 59	61 vs. 66	61 vs. 66
	0.92 (0.81–1.05)	1.23 (1.01–1.51)	1.20 (1.00–1.45)
Death in an inpatient hospice unit	34 vs. 32	34 vs. 28	34 vs. 33
	0.91 (0.73–1.14)	0.75 (0.56–1.01)	0.97 (0.82–1.15)

*Only patients with complete covariate data were included in the final model (only Elixhauser Score has missing data: <1%).

†Logistic regression adjusted for patient age, sex, Elixhauser Comorbidity score, next of kin relationship, VA Medical Center geographic region, VA Medical Center urban/rural classification, VA Medical Center complexity, and clustering by facility were used to test differences between end-of-life quality of care indicators and racial/ethnic groups.

‡White race/ethnicity was used as the reference category for all analyses.

§Other race/ethnicity includes: Asian, Pacific Islander, Filipino, Native American, and mixed race.

CI indicates confidence interval; OR, odds ratio.

adjusting for facility. In addition, the difference observed on the BFS-PM between Hispanic and white Veterans became insignificant in the fixed effects models. No notable differences in the findings were observed in models that included adjustment for year (SDC Table 3, Supplemental Digital Content 3, http://links.lww.com/MLR/B258). We also found that death in a hospice unit (SDC Table 4, Supplemental Digital Content 4, http://links.lww.com/MLR/B259) or receipt of a palliative care consult (SDC Table 5, Supplemental Digital Content 5, http://links.lww.com/MLR/B260) did not explain observed racial/ethnic differences on the BFS-PM.

DISCUSSION

In this national sample of VA inpatient deaths occurring over a 5-year period, we found notable differences in bereaved family members' reports of the quality of care received by Veterans at the end of life. On the BFS-PM, the percentage of family members giving an overall excellent rating for the patient's care was significantly lower for racial/ethnic minority Veterans as compared with white Veterans, and this disparity was largest for black Veterans.

In addition to the overall rating, racial/ethnic disparities of the greatest magnitude were noted on specific BFS items related to psychological and spiritual support, and benefits. Family members of all studied minority Veteran groups were less likely than family members of white Veterans to report that post-traumatic stress symptoms never made the patient uncomfortable. Responses from Veterans' family members on the BFS concurred with findings from the chart review in the area of spiritual support. The chart review indicated that black Veterans were less likely than white Veterans to receive a chaplain consult, and families noted this absence by evaluating spiritual care less favorably. Although Hispanic Veterans were more likely than white Veterans to receive a chaplain consult, their families were less likely to report that enough spiritual support was received. This suggests that although a chaplain visit may have occurred, the spiritual needs of minority Veterans and their families are not being met satisfactorily, and is consistent with other research.[13,15] Bereaved family members of all studied racial/ethnic minority groups were less likely than the family members of white Veterans to report that providers gave enough information about funeral, burial, and survivor benefits. Limited knowledge of VA services by minority groups has been documented previously in the literature[37]; therefore, our findings provide additional impetus for understanding the source of the disparity surrounding receipt of benefit information, and ultimately improving how information is communicated in a culturally sensitive way.

Few studies have examined racial/ethnic differences in end-of-life care processes in the VA and the results depict a complex clinical picture. Fischer et al[38] examined the charts of 217 Veterans in 1 VA facility and found no differences by race/ethnicity in pain management and the presence of advanced directive discussions, symptom-directed plans of care, and do-not-resuscitate orders. A large retrospective cohort study of seriously ill Veterans showed that African American and Hispanic Veterans were equally or more likely than white Veterans to receive intensive end-of-life treatments, including intensive care unit stays; however, some differences were noted to be disease-specific.[39] More recently, Burgio et al[40] analyzed the medical records of nearly 5000 Veterans in 6 VA Medical Centers and found that African American Veterans were less likely than white Veterans to have do-not-resuscitate orders or advance directives in place, and to receive medications for the relief of pain and anxiety. However, the researchers did not observe racial differences on several other end-of-life processes, including the receipt of a palliative care consult and the receipt of pastoral care. Our chart review of over 94,000 Veterans found no statistically significant differences by race/ethnicity for receipt of a palliative care consult and the occurrence of death in an inpatient hospice/palliative care unit. Contrary to Burgio et al,[40] we noted that black Veterans were less likely to receive a chaplain consult as compared with white Veterans. Although the results of these studies are conflicting in some areas, the collective findings suggest that Veterans are being largely afforded equal access to palliative and hospice services regardless of race/ethnicity and that these services

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TABLE 4. Adjusted Proportions and Odds Ratios Comparing Bereaved Family Survey (BFS) Outcomes by Veteran Race/Ethnicity (n = 51,859*)

	Adjusted Proportions (%) OR (95% CI)†		
BFS Items	**White vs. Black§**	**White vs. Hispanic (All Races)§**	**White vs. Other Race/Ethnicity§,‖**
Overall rating of patient's care was excellent (BFS-PM)	62 vs. 48 0.57 (0.53–0.61)	62 vs. 57 0.85 (0.76–0.94)	62 vs. 57 0.83 (0.71–0.97)
Providers always took time to listen	74 vs. 74 1.01 (0.95–1.08)	74 vs. 75 1.04 (0.90–1.21)	74 vs. 75 1.07 (0.87–1.30)
Providers always gave wanted medication and treatment	79 vs 78 0.92 (0.85–0.99)	79 vs. 79 1.00 (0.89–1.15)	79 vs. 79 0.99 (0.84–1.15)
Providers were always kind, caring, and respectful	84 vs. 82 0.86 (0.80–0.93)	84 vs. 82 0.89 (0.76–1.05)	84 vs. 84 1.04 (0.84–1.28)
Providers always kept family informed	68 vs. 71 1.12 (1.06–1.20)	68 vs. 72 1.21 (1.06–1.38)	68 vs. 70 1.08 (0.92–1.27)
Providers alerted family before the patient's death	82 vs. 81 0.90 (0.83–0.99)	82 vs. 83 1.03 (0.88–1.19)	82 vs. 85 1.18 (0.93–1.49)
Providers always attended to personal care needs	68 vs. 65 0.88 (0.83–0.94)	68 vs. 69 1.02 (0.91–1.15)	68 vs. 69 1.03 (0.89–1.20)
Patient's pain never made him/her uncomfortable	21 vs. 21 1.02 (0.95–1.09)	21 vs. 24 1.20 (1.00–1.44)	21 vs. 18 0.84 (0.69–1.03)
Patient's PTSD stress never made him/her uncomfortable	88 vs. 82 0.66 (0.61–0.72)	88 vs. 81 0.60 (0.52–0.69)	88 vs. 83 0.68 (0.55–0.84)
Providers always gave enough spiritual support	65 vs. 54 0.63 (0.59–0.67)	65 vs. 60 0.82 (0.70–0.95)	65 vs. 65 0.98 (0.85–1.12)
Providers always gave enough emotional support before the patient's death	65 vs. 59 0.78 (0.74–0.83)	65 vs. 62 0.88 (0.77–1.00)	65 vs. 64 0.95 (0.81–1.11)
Providers always gave enough emotional support after the patient's death	71 vs. 61 0.66 (0.62–0.70)	71 vs. 65 0.78 (0.69–0.88)	71 vs. 68 0.90 (0.78–1.03)
Providers gave enough information about survivor benefits	52 vs. 35 0.51 (0.47–0.54)	52 vs. 41 0.64 (0.56–0.74)	52 vs. 39 0.59 (0.50–0.71)
Providers gave enough information about burial and memorial benefits	60 vs. 46 0.59 (0.55–0.62)	60 vs. 46 0.58 (0.51–0.66)	60 vs. 48 0.63 (0.53–0.74)
Providers gave enough help with the funeral arrangements	78 vs. 60 0.42 (0.40–0.45)	78 vs. 61 0.44 (0.38–0.53)	78 vs. 68 0.60 (0.51–0.72)

*Only patients with complete covariate data were included in the final model (only Elixhauser Score has missing data (< 1%).
†Logistic regression adjusted for patient age, sex, Elixhauser Comorbidity score, next of kin relationship, VA Medical Center geographic region, VA Medical Center urban/rural classification, VA Medical Center complexity level, survey nonresponse and clustering by facility were used to test differences between Bereaved Family Survey outcomes and race/ethnic groups.
‡Sample size varies to reflect missing data for individual survey items (Supplemental Digital Content, Table 1, http://links.lww.com/MLR/B256).
§White race/ethnicity and was used as the reference category for all analyses.
‖Other race/ethnicity includes: Asian, Pacific Islander, Filipino, Native American, and mixed race.
BFS-PM indicates BFS Performance Measure; CI, confidence interval; OR, odds ratio; PTSD, posttraumatic stress disorder.

are not being disproportionately underutilized by minorities as observed in civilian settings.[4]

Chart-derived indicators, however, do not provide a complete assessment of the quality, and equity, of end-of-life care. Using reports of quality from bereaved family members, our study illuminates the presence of a previously undocumented racial/ethnic disparity in the VA—that family members of minority Veterans rate the quality of end-of-life care significantly lower than their white counterparts. Comparable findings have been documented in non-VA settings[6,13–15]; however, in notable contrast to the work of others,[13,14,17] disparities on the BFS items were not mitigated when either a palliative care consult was received or death occurred in a hospice/palliative care unit. Therefore, examining how cultural considerations are integrated into specific end-of-life care practices in the VA is an area that requires future examination.[3] The results of our supplemental analyses that included fixed effects for facility suggest that some of the observed differences may be attributable to characteristics of facilities themselves, and thus should be a focus of future work.

The results of this study and a growing body of literature[6,41,42] support the hypothesis that communication breakdowns between providers, patients and families may be responsible, in part, for the racial/ethnic differences we observed in the overall rating of care received during the last month of life, as well as for specific aspects of end-of-life care. As a whole, our findings imply that although providers are taking the time to listen to patients and their families, these conversations may not be translated into practice. Similarly, other researchers have found that minority patients' preferences for end-of-life care are less likely to be documented in the chart[41] and are less likely to be followed by care providers.[42] Future research surrounding communication practices of all VA clinical staff who provide direct patient care at the end of life is needed. The potential roles of

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health literacy and patient-provider race concordance also warrant consideration.[43,44]

There are important limitations to consider while interpreting the findings. First, our study is based in part upon retrospective chart reviews. It is possible that some quality indicators may have not been recorded although they were performed. Second, we rely upon retrospective reports of bereaved families' perceptions of care in our analysis of quality which introduces the potential for bias related to recall ability, as well as unmet expectations of care. It is also possible that what family members perceive as quality care may not reflect the preferences of the deceased patient. Third, our sample consists primarily of male Veterans and the findings may not generalize to women. Fourth, due to insufficient sample sizes, we were unable to examine separately the outcomes of all under-represented racial/ethnic minority groups. Despite these limitations, this study offers one of the largest, most comprehensive and methodologically rigorous studies of the relationship between race/ethnicity and end-of-life quality to date.

Notable racial/ethnic disparities in family perceptions of the quality of end-of-life care were identified in a national sample of Veterans who died in the VA health care system. Few differences, however, were observed by race/ethnicity in the documented delivery of services associated with improved quality of care at the end of life. Taken together, these results suggest that family perceptions are a critical component of evaluating equity and quality of end-of life care. Further research is needed to define reasons for observed variations in bereaved family perceptions of care and to design interventions to improve quality of care for patients of all races and ethnicities.

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