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The Influence of Race on Approaching Families for Organ Donation and Their Decision to Donate

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ABSTRACT

Objectives. This study examined whether patients' race was associated with their families' being approached for organ donation and agreeing to donation.

Methods. Logistic regression models were applied to data collected from records at 112 hospitals.

Results. The odds that a family of a White patient was approached for donation were nearly twice those for a family of an African American. The odds of donation also differed by race, but the magnitude varied by patient and hospital characteristics.

Conclusions. Much attention directed toward racial disparity in donation has focused on attitudes of the public. The behavior of hospital staff also may be related to differences in rates. (*Am J Public Health*. 1999;89:244-247)

African Americans with end-stage organ failure wait longer than Whites for organ transplants and are less likely to receive transplants.¹⁻⁵ Despite a shortage of organs, the number of patients who are medically suitable for donation is much greater than the actual number of patients who donate.⁶⁻⁸ In order to devise strategies to increase donation among African Americans, we need to understand better whether the process of donation in hospitals differs for Whites and African Americans.

We used data from several regions of the United States to examine whether the likelihood of a family member's being approached for donation differed by race of the patient. In addition, we assessed whether the likelihood of agreeing to donate differed by race.

Methods

Patients

We studied White and African American patients who died between 1990 and 1993 at 112 hospitals located in 7 regions

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(see Table 1 for a list of the regions). Each region provided a minimum of 2 years of data.

We defined patients as medically suitable for donation if they were younger than 71 years, if they did not have a contraindication to organ donation,⁹ and if they met clinical criteria for brain death.¹⁰ We studied patients with an available next of kin and eliminated those ($n = 166$) whose families initiated discussion of organ donation with hospital personnel.

Data Sources

At each hospital, data collectors reviewed the records of all patients who died during the review period. They identified all patients who were medically suitable for donation and documented age, gender, cause of death, unit at time of death, and the 2 variables of interest—whether the patient's family was approached for organ donation and whether they agreed to donate.

We obtained bed size, trauma center status, transplant center status, teaching status, and hospital ownership for each hospital in the database.^{11,12}

Analysis of Data

We examined whether the rate for each variable of interest differed by race with χ^2 tests. We used logistic regression analysis¹³ to determine the influence of race on being approached for donation, controlling for potentially confounding patient and hospital characteristics (see Table 1). If a family member was approached for donation, we assessed the influence of race on agreeing to donate by using the same approach. For both analyses, we tested whether interaction terms involving the race variable improved the fit of the model.

Results

Sample Characteristics

The database contained 2202 White and 814 African American patients who were medically suitable for donation. Compared with White patients, African Americans were more likely to be male; to be younger; to have died in a pediatric or medical intensive care unit; to have died in hospitals located in New York, Washington, DC, New Jersey, and the Delaware Valley region; to have entered the database in 1992 or 1993 (regions with a greater proportion of African Americans entered the database during these years); and to have been treated in larger

hospitals, trauma centers, transplant centers, teaching hospitals, and public hospitals (Table 1).

Race and Approach for Organ Donation

Hospital staff approached 73% of families of patients for donation; however, families of White patients (79%) were approached more often than families of African Americans (67%) ($P < .001$). With controls for patient and hospital characteristics, the odds that a family of a White patient was approached were nearly twice (odds ratio [OR] = 1.7; 95% confidence interval [CI] = 1.3, 2.2) those for a family of an African American patient.

The odds that a family was approached for donation were also greater for those patients who were aged 21 to 50 years (21–30 years, OR = 2.6; 95% CI = 1.4, 4.6; 31–40 years, OR = 3.3; 95% CI = 1.8, 5.9; 41–50 years, OR = 3.0; 95% CI = 1.7, 5.6); who died of trauma-related causes (OR = 2.0; 95% CI = 1.6, 2.6); who died on a pediatric intensive care unit (OR = 2.7; 95% CI = 1.3, 5.4), on a surgical intensive care unit (OR = 2.3; 95% CI = 1.4, 3.6), or on a medical/surgical ward (OR = 2.6; 95% CI = 1.5, 4.4); who died in a hospital located in Kentucky (OR = 12.9; 95% CI = 6.2, 27.0), California (OR = 3.1; 95% CI = 1.9, 5.4), or the Upper Midwest (OR = 3.9; 95% CI = 2.3, 6.7) region; who died in for-profit hospitals (OR = 2.9; 95% CI = 1.4, 6.3); and who died after 1990 (1991, OR = 1.6; 95% CI = 1.2, 2.1; 1992, OR = 2.4; 95% CI = 1.8, 3.2; 1993, OR = 2.5; 95% CI = 1.9, 3.5) than for other patients. The fit of the logistic regression model did not improve with the inclusion of interaction terms that involved the race variable.

Race and Consent to Organ Donation

Of those families approached for donation, fewer than half (47%) agreed to donate an organ. Fewer ($P < .001$) families of African American patients (31%) agreed to donate organs than did families of White patients (52%). The multivariate model that fit the data best contained 5 interaction terms involving race. For all interactions, families of White patients were more likely than families of African American patients to agree to donate, but the magnitude of the effect varied by the level of the other variable involved in the interaction. The odds of donation were greater for Whites than for African Americans when deaths were trauma related (OR = 6.0; 95% CI = 3.6, 10.2). When deaths were not trauma related, the odds of donation were 2.4 times greater (95% CI = 1.5, 3.7) for Whites. For patients 30 years and older, the odds of dona-

tion were 5 times greater (95% CI = 3.1, 8.1) for Whites than for African Americans, but for those younger than 30 years, the odds of donation were about 3 times greater (OR = 2.7; 95% CI = 1.7, 4.4) for Whites. If a patient died on a medical intensive care unit, the odds of donation were 14.5 times greater (95% CI = 5.6, 37.7) for Whites than for African Americans. For patients who died elsewhere in the hospital, the odds of donation were only 3 times greater (95% CI = 2.0, 4.4) for Whites. The association between donation and race also differed by geographic location. The odds of donation for Whites were greater if the patient came from the California region (OR = 3.9; 95% CI = 2.3, 6.7) than from other regions (OR = 2.5; 95% CI = 1.8, 3.4). Finally, the odds of donation for Whites who died in nonpublic hospitals were 4.5 times greater (95% CI = 2.9, 6.9) than for African American patients, but the odds did not differ when patients died in public hospitals.

Discussion

Despite the great need for organs within the African American community, the families of African American patients were less likely to be approached for donation than the families of White patients; and, among the families approached, those of African American patients were less likely to agree to donate an organ. If all eligible families had been approached, and if we apply the rate of donation we observed in this study, an additional 83 donations from African American patients and 240 donations from White patients would have resulted. The potential for more donations would be even greater if rates of consent to donation for each group could be increased over current rates.

Further work is required to understand why hospital staff approached families of African American patients less often than families of White patients. Potential reasons may be related to differences in how hospital staff relate to families of African American and White patients, differences in how hospital staff perceive African American vs White families' disposition toward donation, and/or differences in the rates at which patients are identified by hospital staff as medically suitable for donation. The last reason mentioned may have an attitudinal component or a clinical component associated with it.

Several authors suggest that reasons for the unwillingness of African Americans to donate organs involve a lack of awareness and knowledge about organ donation; religious fears, myths, and misperceptions; distrust of the health care community; fear of a premature declaration of death; lack of

TABLE 1—Characteristics of Patients Who Were Medically Suitable for Donation, According to Race

	African American (n = 814 ^a)	White (n = 2202 ^a)	P
	No. (%)	No. (%)	
Male	535 (66)	1279 (58)	.001
Age, y			.005
0–10	88 (11)	196 (9)	
11–20	133 (16)	321 (15)	
21–30	151 (19)	382 (17)	
31–40	118 (15)	319 (15)	
41–50	128 (16)	327 (15)	
51–60	119 (15)	326 (15)	
>61	73 (9)	319 (15)	
Cause of death			.502
Trauma-related ^b	377 (47)	1045 (49)	
Unit at time of death			.001
Emergency department	48 (6)	145 (7)	
Pediatric intensive care unit	92 (12)	196 (9)	
Surgical intensive care unit	373 (47)	1072 (50)	
Medical intensive care unit	133 (17)	273 (13)	
Medical/surgical ward	107 (14)	437 (20)	
Other	39 (5)	37 (2)	
Region			.001
New York Organ Donor Network	109 (13)	45 (2)	
Kentucky Organ Donor Affiliates	22 (3)	320 (15)	
California Transplant Donor Network	125 (15)	642 (29)	
LifeSource Upper Midwest	33 (4)	667 (30)	
Washington Regional Transplant Consortium	312 (38)	271 (12)	
New Jersey Organ and Tissue Sharing Network	82 (10)	106 (5)	
Delaware Valley Transplant Program	131 (16)	151 (7)	
Year			.001
1990	143 (18)	616 (28)	
1991	156 (19)	545 (25)	
1992	279 (34)	622 (28)	
1993	236 (29)	422 (19)	
Size of hospital			.001
<150 beds	4 (<1)	25 (1)	
150–349 beds	149 (18)	834 (38)	
>349 beds	661 (81)	1342 (61)	
Trauma center	723 (89)	1676 (76)	.001
Transplant center	418 (51)	847 (38)	.001
Teaching hospital	496 (61)	905 (41)	.001
Ownership			.001
Not-for-profit	577 (71)	1633 (74)	
For profit	31 (4)	135 (6)	
Public	206 (25)	427 (19)	

^aThe denominator used to calculate percentages for some variables is less than the total sample size owing to missing values.

^bTrauma-related deaths = motor vehicle accidents, gun-shot wounds, and head trauma.

communication with health care providers; and the perception that organs of African Americans will not go to African Americans who need them.^{14–16} However, changing the attitudes and perceptions of families may not totally solve the problem. Little work has been conducted to determine whether racial differences in donation are the result of hospital practices, but research does suggest that hospital practices are related to donation rates in general.^{17–26}

Further research into the process of organ donation is also required to understand better why the odds of donation were even

higher for White patients than for African Americans among those who died from trauma, those who were older than 30 years, those who died on a medical intensive care unit, and those who died in a nonpublic hospital. It is not clear whether factors such as type of death or patient age interact with family attitudes or beliefs about donation to produce these differential effects or whether aspects of the hospital environment are responsible for them.

In conclusion, despite the great need for organs by African Americans, families of African Americans were approached less

often for donation than those of Whites; and among families approached, those of African Americans were less likely to donate an organ. Although several attitudes and beliefs among African Americans have been suggested as the reasons for the disparity in rates of organ donation between African Americans and Whites, hospital practices associated with the identification of patients who are medically suitable for donation and with the request for donation may also be important factors that contribute to differences in donation by race. □

Contributors

All authors contributed to the design of the study. Edward Guadagnoli and Patrick McNamara analyzed the data and wrote the paper. Carol Beasley, Michael Evanisko, and Andrea Poretsky helped plan the study, designed data collection instruments, assisted with data collection, and contributed to writing the paper. Clive Callender contributed to writing the paper. All authors are guarantors for the integrity of the research.

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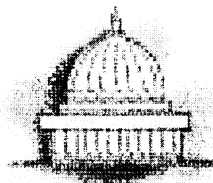
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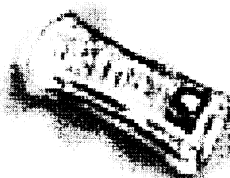
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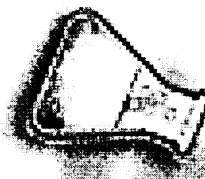
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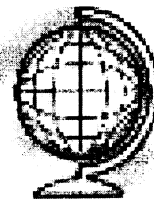
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