Residents’ Awareness of Racial and Ethnic Disparities in Cardiovascular Care

Abstract

**Purpose** To characterize attitudes of residents toward racial/ethnic disparities in health care and to explore the effect of a simple intervention to improve awareness of these disparities.

**Methods** The authors surveyed residents in internal and emergency medicine rotating through the Coronary Care Unit of a major teaching hospital about their attitudes toward disparities in cardiovascular care before and after an intervention that fostered discussion of evidence for the existence of disparities, possible causes of disparities, and clinically focused approaches to quality improvement tailored to the residents’ practice environment.

**Results** Before the intervention, 35% of residents agreed that racial/ethnic disparities might occur for patients within the US health care system in general, and only 7% agreed that patients they personally treated might experience racial/ethnic disparities in healthcare. These proportions increased significantly after the intervention: 85% agreement at level of US health care system and 32% at the level of individual practice ($P < .001$). Changes in awareness did not differ by sex, postgraduate year of training, race/ethnicity, reported prior diversity training, or plans to subspecialize.

**Conclusion** Awareness of racial/ethnic disparities in care among residents remains low, particularly at the level of individual practice, but is amenable to intervention.

Introduction

Eliminating racial and ethnic disparities in health care is a national priority.1,2 Yet physicians may not always recognize these disparities in their own practices. Research on the attitudes of experienced physicians has demonstrated a paradoxical belief that the overall evidence of racial and ethnic disparities is strong yet these disparities are unlikely to occur in one’s individual practice.3 Given the recent increased attention to health care disparities in medical education,4,5 we expected younger physicians to both recognize and address disparities in their own practice. Accordingly, we sought to characterize attitudes of residents toward disparities in their practices and to explore the effect of a simple intervention to improve awareness. As a formative stage in a physician’s training, residency represents an ideal opportunity to increase awareness and motivation to address disparities as system failures in quality of care.6

**Methods**

**Study Design and Sample** We studied awareness of health care disparities by residents in internal and emergency medicine at one urban medical center during one academic year: July 1, 2007, to June 30, 2008. We focused on cardiovascular disparities because of the substantial evidence base in cardiovascular care4 and focused our intervention on residents rotating through the Coronary Care Unit (CCU) to maximize the relevance of our topic to the participants’ actual practice environment. This study was approved by the George Washington University Institutional Review Board.

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Intervention
Our educational intervention was an interactive, 60-minute seminar that focused on the evidence supporting the existence of racial/ethnic disparities, the role of social factors (such as setting or location of care) and clinical factors (such as variations in presentation by race/ethnicity), and techniques for improving quality of care to diminish disparities. Whenever possible, data specific to our hospital were compared with national data on quality of care.

Survey Design, Measurements, and Variables
We administered a survey with questions pertaining to quality and disparities in cardiovascular care, including factors that may explain the existence of disparities at the level of the US health care system, the hospital level, and the level of individual practice. Residents completed the survey immediately before and after our educational intervention. Survey items were adapted with permission from a previously published survey with a 5-point Likert scale for response options; the validation of this survey instrument is described in detail by Lurie et al. We dichotomized responses for participants’ awareness of disparities into high awareness (combining the responses of somewhat likely and very likely) and low awareness (all other responses).

Data Analysis
We used the McNemar test for paired comparisons to examine overall before and after intervention changes in awareness of disparities and multivariable logistic regression to estimate associations between having high awareness at the postintervention measurement while controlling for preintervention awareness and respondent characteristics: race/ethnicity (white versus nonwhite), sex, year of training, reported prior diversity training, and plans to subspecialize. All analyses were performed using SAS version 9.2 (Cary, NC).

Results
We collected surveys from all residents who participated in the intervention, which represents a 75% response rate (71 of 95) for all residents rotating through the CCU in the 2007–2008 academic year. Three-fourths of residents (53 of 71) participating in our intervention were in the internal medicine program, 58% (41 of 71) were men, 54% (38 of 71) reported themselves as white, and 55% (39 of 71) were postgraduate year (PGY)–2 level or higher (Table 1).

Before the intervention, 35% of participants (25 of 71) responded that disparities were very likely or somewhat likely in the US health care system in general, 17% (12 of 71) responded that disparities were very likely or somewhat likely to occur in their hospital, and only 7% of residents (5 of 71) responded that disparities were very likely or somewhat likely to occur in the care they provide individually for their patients (Table 2).

Postintervention responses showed significant increases in respondents who agreed that disparities were very or somewhat likely at the system level (85%; 60 of 71), at the hospital level (70%; 50 of 71), and at the level of their hospital or clinic practice (32%; 23 of 71) (all P < .001). More than half of residents (52%; 37 of 71) indicated that the scientific evidence for the existence of disparities in cardiovascular care was strong or very strong before the intervention, and that percentage also increased significantly to 70% (50 of 71) after the intervention (P < .001). These changes in awareness from preintervention to postintervention were significant not only for the overall sample but also for subgroups of respondents (P < .05) (Table 2).

Intervention
Survey Design, Measurements, and Variables

In multivariable logistic regressions adjusted for preintervention responses, postintervention awareness was

<table>
<thead>
<tr>
<th>TABLE 1</th>
<th>SURVEY RESPONDENT DEMOGRAPHICS</th>
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<tbody>
<tr>
<td>Demographic Factors</td>
<td>No. (%)</td>
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<tr>
<td><strong>Sex</strong></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>41 (58)</td>
</tr>
<tr>
<td>Women</td>
<td>30 (42)</td>
</tr>
<tr>
<td><strong>Race/ethnicity</strong></td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic white</td>
<td>38 (54)</td>
</tr>
<tr>
<td>Black</td>
<td>3 (4)</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>5 (7)</td>
</tr>
<tr>
<td>Asian/Middle eastern</td>
<td>24 (34)</td>
</tr>
<tr>
<td>Other/missing</td>
<td>2 (3)</td>
</tr>
<tr>
<td>Multirace/ethnicity</td>
<td>2 (3)</td>
</tr>
<tr>
<td><strong>Postgraduate year (PGY)</strong></td>
<td></td>
</tr>
<tr>
<td>PGY-1</td>
<td>32 (45)</td>
</tr>
<tr>
<td>PGY-2</td>
<td>25 (35)</td>
</tr>
<tr>
<td>PGY-3</td>
<td>13 (18)</td>
</tr>
<tr>
<td>PGY-4</td>
<td>1 (1)</td>
</tr>
<tr>
<td><strong>Training program</strong></td>
<td></td>
</tr>
<tr>
<td>Internal medicine</td>
<td>53 (75)</td>
</tr>
<tr>
<td>Emergency medicine</td>
<td>18 (25)</td>
</tr>
<tr>
<td><strong>Subspeciality plans</strong></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>48 (68)</td>
</tr>
<tr>
<td>No</td>
<td>6 (8)</td>
</tr>
<tr>
<td>Unsure</td>
<td>17 (24)</td>
</tr>
</tbody>
</table>

* N = 71.
not significantly associated with respondent characteristics, including sex, PGY of training, race/ethnicity, reported prior diversity training, or reported plans to subspecialize (data available on request).

Residents indicated the following factors were somewhat likely or very likely to explain differences in care for clinically similar patients in the US health care system in general: having health care insurance (80%; 57 of 71), type of insurance (75%; 53 of 71), English proficiency (70%; 50 of 71), level of education (54%; 38 of 71), and patient race/ethnicity (35%; 25 of 71) (data not shown).

**Discussion**

Our findings suggest that resident physicians may not be aware of racial and ethnic disparities in care despite increased attention to this issue in recent years. We also found no differences in awareness of disparities by participant characteristics, such as race/ethnicity or sex, before or after our intervention. These results suggest that limited awareness of racial/ethnic disparities in health care remains problematic even for an increasingly diverse physician workforce.

Although our results suggest that overall attitudes regarding disparities among physicians-in-training can be influenced by a focused educational intervention, attitudes toward reducing disparities in their own hospital or in their own practice may be particularly difficult to influence. Given recent evidence for within-practice racial/ethnic disparities both at the hospital and individual practice levels, addressing provider attitudes may be especially important for improving the quality of care for patients from minority backgrounds.

Moreover, most residents in our study felt that systems-level factors, such as insurance, education, and language barriers, were likely to explain any disparities in care for patients in general at the system level but were not likely to explain disparities in care for patients in their individual hospital.
care. Taken collectively, our findings suggest that residents may view disparities as a phenomenon that occurs largely outside their sphere of influence. Future approaches to health care–disparities education may require data about disparities at the level of residents’ hospital or individual practice to maximize the effect on attitudes.

Our findings should be interpreted in light of several limitations. We studied residents at a single medical center; results may differ at other institutions. Further, we were unable to examine longer-term changes in awareness of disparities, knowledge, or beliefs beyond the period of our study. We were also unable to perform subgroup analyses for our nonwhite participant group because of our relatively small sample size, and views within that group (eg, among Asian, black, or Hispanic residents) could be heterogeneous in a larger sample. Finally, we did not measure practices or outcomes related to residents’ views on disparities or quality of care. These are important areas for future studies to examine.

In conclusion, our study suggests that although baseline awareness of racial and ethnic disparities in care remains limited among residents, particularly at the level of individual practice, that awareness can be increased significantly by a focused educational intervention. Future efforts to reduce disparities in health care through changes in physician education should include particular emphasis on individual practice environments.

References