Trauma Patient Satisfaction Survey Opens Discussion about Bias in Health Care

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Trauma Patient Satisfaction Survey Opens Discussion about Bias in Health Care

Abstract

Background

Patient satisfaction is an important part of quality care, and patient backgrounds can influence satisfaction with care. Since trauma disproportionately affects the underserved, this study aimed to determine the effects of race and insurance status on trauma patient satisfaction.

Methods

The validated Trauma Patient Satisfaction Survey (TPSS) was administered to 143 hospitalized trauma patients. ANOVA and Chi2 statistics were used to compare demographics with patient satisfaction. Qualitative data were analyzed with EZ-Text.

Results

Of the 143 patients surveyed, 95 (66%) were African American, 33 (23%) were Caucasian, and 15 (10%) were Latino. Sixty-one patients (43%) were uninsured. No statistically significant differences for any item were noted by race or insurance status on the TPSS. No patients perceived biased care by race, but three African American patients felt that care was different because of their insurance (2%, p=0.34). Patients who did perceive bias were less satisfied with their care (p=0.03).

Conclusions

In this exploratory survey of hospitalized trauma patients, we did not demonstrate a significant association between race or insurance status and patient satisfaction. Though we did not detect systemic disparities with respect to bias or satisfaction with care, patients who did perceive bias were less satisfied with their care.

Keywords

race; socioeconomic status; patient satisfaction; trauma

Cover Page Footnote

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Trauma Patient Satisfaction Survey Opens Discussion about Bias in Health Care

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Keywords: race, socioeconomic status, patient satisfaction, trauma

INTRODUCTION

Research has demonstrated an excess burden of injury in lower socioeconomic status (SES) communities and minority racial groups (Johnson, Sullivan, & Grossman, 1999; Onwuachi-Saunders and Hawkins, 1993). In the 2001 document, "Crossing the Quality Chasm: a New Health System for the 21st Century", the Institute of Medicine emphasized that health care should be equitable and patient- focused, irrespective of race or insurance status (Committee on Quality Health Care in America, Institute of Medicine [CQHCA, IOM], 2001). Though several investigators have found that injury mortality is higher for people of color and the uninsured, very little data exist that examine the relationship between race or SES with respect to the provision of trauma care and the process measures that affect these disparities (Haider et al., 2008; Rosen, Saleh, Lipitz, Rogers, & Gawande, 2009). Identification of modifiable determinants of outcomes in trauma care would help direct resources and provide better care to those with the greatest need. One of the possible mediators of outcome disparities in trauma patients is patient satisfaction with care.

Patient satisfaction is one of the important goals of surgical care. Patient satisfaction can impact follow-up rates and compliance, which may, in turn, affect outcomes (Campbell, Auerbach, & Kiesler, 2007; Hirsh et al., 2005; Kovac et al., 2002). Patient health behaviors and satisfaction with health care have been linked to demographic variables; the 2011 Agency for Healthcare Research and Quality (AHRQ) National Healthcare Disparities Report clearly outlines the connection between cultural competency, provider communication, and outcomes (National Healthcare Disparities Report, 2011). In the largest study to date of ethnic and cultural differences in satisfaction among surgical patients, Anayian and colleagues found that non-white patients with colon cancer, particularly non-English speakers, felt much less satisfied with access to care and health information, as well as confidence in providers of care (Ayanian et al., 2005). African Americans surveyed note mistrust stemming from perceptions of racism from Caucasian providers (Benkert et al., 2006), and both African Americans and Latinos who perceive racism from health care providers are more likely to be satisfied with care from physicians who match their race (Chen et al., 2005). Other investigators have noted that minority patients have greater dissatisfaction with health care providers' work, listening styles, explanations, and thoroughness, which may be attributable to cultural differences or measurement/metric bias (Woods et al., 2005; Doescher et al., 2000; Dayton et al., 2006).

Socioeconomic status (SES) has been shown to play a role in patient satisfaction, but the results are non-uniform. Benkert et al found that African American patients from lower socioeconomic strata reported much more dissatisfaction with care than other patients (Benkert et al., 2006). However, higher SES patients in New England, irrespective of race, were found to be less satisfied with their health care than other respondents (Carlson et al., 2000).

Extensive research has been published on the aftereffects of trauma, including post-traumatic stress disorder (Howgego et al., 2005; Mueser et al., 2007) and quality of life after trauma (Michaels et al., 2000), particularly brain trauma (Chiu et al., 2006; McCarthy et al., 2006). Other studies have evaluated quality of life after specific injuries, such as severe lower extremity injuries (O'Toole et al., 2008), as well as comparative studies of patient satisfaction and quality of life after particular procedures (Atroshi et al., 2007; Atroshi et al., 2006; Wright, Chambers, Robens-Paradise, 2002). However, little is known about trauma patient satisfaction with care and care providers. Because racial and socioeconomic disparities in patient satisfaction have been described, and because trauma disproportionately affects the poor and people of color, the goal of this study was to determine the effects of race and insurance status on satisfaction with trauma care (Fingerhut, Ingram, & Feldman, 1998; Redecker et al., 1995).

METHODS

Survey Construction

The template used to construct the Trauma Patient Satisfaction Survey (TPSS) was Peterson's validated Patient Experiences Questionnaire (Petterson, Veenstra, Guldvog, & Kolstad, 2004). This survey is a 21-item questionnaire on a 7-point varying Likert scale which assesses patient perceptions of quality of care, compassion, and confidence with caregivers. The questionnaire was modified to incorporate language relevant to trauma care and revised to optimize clarity, simplicity, and neutrality (Hulley et al., 2001). The TPSS queries satisfaction with care, but also incorporates several racial and SES bias-specific questions and solicits narrative comments related to perceptions of bias. After approval by the University Institutional Review Board, three phases of the project were undertaken: a run-in period of 15 patients, a planned cohort of approximately 50 patients, and a second, comparison cohort of 50 patients. A minimum number of 100 completed surveys had been selected as a sufficient sample size based on sample sizes from previous, unrelated satisfaction surveys reported in the literature (Hung et al., 2007; Schermer et al., 2003; Stalnacke, Elgh & Sojka, 2007).

The run-in period took approximately 4 weeks and led to modifications of the instrument based on patient feedback with respect to language and clarity, leaving a final survey of 24 questions.[Figure 1] The varying Likert scale was confusing to all 15 patients in the run-in period; based on patient feedback, question format was changed to "yes/no/maybe/unsure."

The final question was an open-ended question asking, "If you answered yes to any of the above [questions about biased care] please explain below." We utilized this mixed-methods approach, incorporating a qualitative component to the otherwise quantitative survey because this survey was the first patient satisfaction survey created for trauma patients and specifically concerned with racial or socioeconomic disparities. Because of this, we felt it was possible or even probable that our survey instrument might omit important questions. The qualitative component was included to both broaden our survey scope and potentially inform future research.

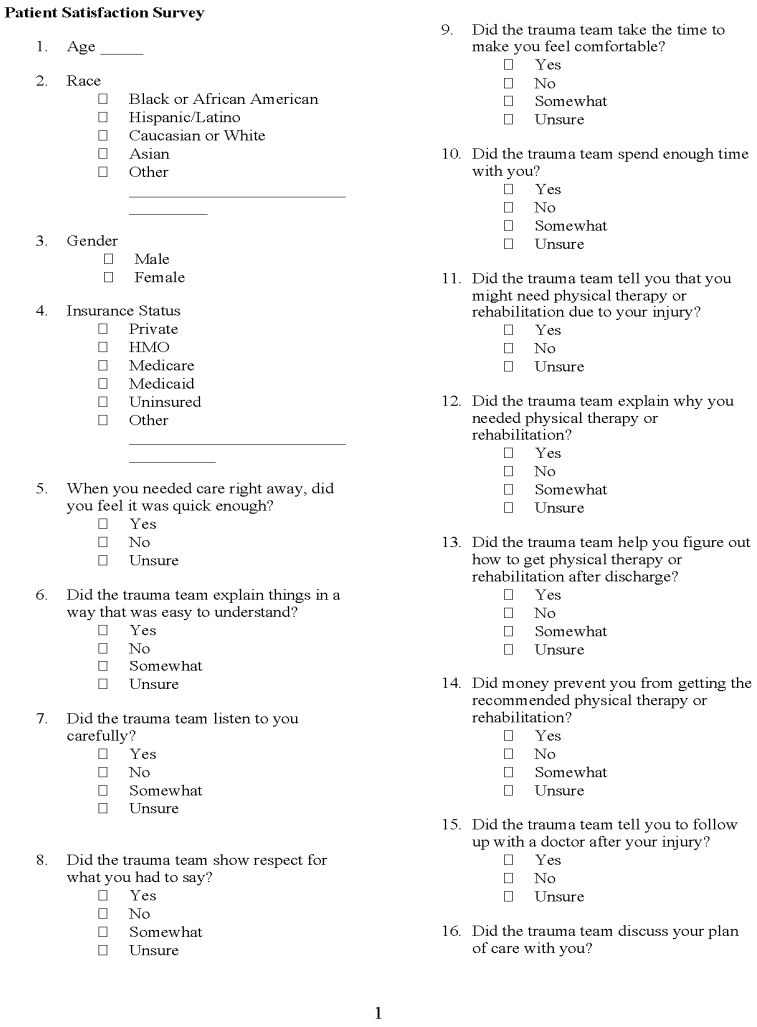
Survey Administration

Administration of the survey was performed in-person per recommendations by the run-in cohort by a multiethnic group of medical student research volunteers to a convenience sample of 121 patients over twelve months. The students had no clinical contact with the patients and were utilized to minimize bias. No unique patient identifiers were gathered, but basic demographic information was recorded about age, race, gender, and insurance status. Demographic and scoring information from the first 60 patients was then compared with the next 61 patients to validate the instrument. As a final validation tool, 22 additional patients completed and submitted the survey anonymously, without the research assistant being present.

After finalization of the survey instrument, all English-speaking hospitalized trauma patients who were not critically ill were approached (n=190) by the research assistants on their volunteer days. An additional fifteen patients on those days were Spanish - or Polish-speaking only and were not approached. One hundred forty-three patients (143/190, 76%) completed the survey. Student interviewers introduced themselves as research volunteers. They were instructed to tell the patients that participation was voluntary, and that survey results would be kept anonymous and confidential, no individual survey responses would be reported, and that the survey would have no impact on their hospital care. The first 121 patients were then administered the survey in-person by the research assistants. The final 22 patients completed the

survey without assistance and returned it to a locked box on their care ward; all 22 surveys were returned. These 143 patients comprise the study sample.

Figure 1: Trauma Patient Satisfaction Survey



Patient Satisfaction Survey

1. Age _____

2. Race
   - ☐ Black or African American
   - ☐ Hispanic/Latino
   - ☐ Caucasian or White
   - ☐ Asian
   - ☐ Other _____

3. Gender
   - ☐ Male
   - ☐ Female

4. Insurance Status
   - ☐ Private
   - ☐ HMO
   - ☐ Medicare
   - ☐ Medicaid
   - ☐ Uninsured
   - ☐ Other _____

5. When you needed care right away, did you feel it was quick enough?
   - ☐ Yes
   - ☐ No
   - ☐ Unsure

6. Did the trauma team explain things in a way that was easy to understand?
   - ☐ Yes
   - ☐ No
   - ☐ Somewhat
   - ☐ Unsure

7. Did the trauma team listen to you carefully?
   - ☐ Yes
   - ☐ No
   - ☐ Somewhat
   - ☐ Unsure

8. Did the trauma team show respect for what you had to say?
   - ☐ Yes
   - ☐ No
   - ☐ Somewhat
   - ☐ Unsure

9. Did the trauma team take the time to make you feel comfortable?
   - ☐ Yes
   - ☐ No
   - ☐ Somewhat
   - ☐ Unsure

10. Did the trauma team spend enough time with you?
    - ☐ Yes
    - ☐ No
    - ☐ Somewhat
    - ☐ Unsure

11. Did the trauma team tell you that you might need physical therapy or rehabilitation due to your injury?
    - ☐ Yes
    - ☐ No
    - ☐ Unsure

12. Did the trauma team explain why you needed physical therapy or rehabilitation?
    - ☐ Yes
    - ☐ No
    - ☐ Somewhat
    - ☐ Unsure

13. Did the trauma team help you figure out how to get physical therapy or rehabilitation after discharge?
    - ☐ Yes
    - ☐ No
    - ☐ Somewhat
    - ☐ Unsure

14. Did money prevent you from getting the recommended physical therapy or rehabilitation?
    - ☐ Yes
    - ☐ No
    - ☐ Somewhat
    - ☐ Unsure

15. Did the trauma team tell you to follow up with a doctor after your injury?
    - ☐ Yes
    - ☐ No
    - ☐ Unsure

16. Did the trauma team discuss your plan of care with you?

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- Yes
- No
- Somewhat
- Unsure

17. Have you been able to follow up with the trauma team or anyone else with questions about your care?
    - Yes
    - No
    - Somewhat
    - Unsure

18. Did the trauma team explain the steps you need to take to avoid coming back to the trauma center for the same reason?
    - Yes
    - No
    - Somewhat
    - Unsure

19. Did you trust everything the trauma team told you?
    - Yes
    - No
    - Somewhat
    - Unsure

20. Using any number from 0 to 10, where 0 is the worst possible and 10 is the best possible, what number would you use to rate the trauma team?
    - 0 Worst trauma team possible
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 9
    - 10 Best trauma team possible

21. Using any number from 0 to 10, where 0 is the worst possible and 10 is the best possible, what number will you use to rate your health care?
    - 0 Worst health care possible
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 9
    - 10 Best health care possible

22. In general how would you rate your overall experience?
    - Excellent
    - Very Good
    - Good
    - Fair
    - Poor

23. Do you feel that your care at NMH was different than other patients' because of your:

    Race
    - Yes
    - No
    - Somewhat
    - Unsure

    Gender
    - Yes
    - No
    - Somewhat
    - Unsure

    Age
    - Yes
    - No
    - Somewhat
    - Unsure

    Income/Insurance Status
    - Yes
    - No
    - Somewhat
    - Unsure

    Other

    _____

    _____

24. If you answered yes to any of the above, please explain below:

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Data Analysis

The first five questions related to demographics. The rest of the questions inquired about patient care. Patient responses to questions 5-10 and 15-19 were given numeric values and then summed to reflect the maximum and minimum patient satisfaction scores for our areas of interest [Figure 2]. These values were then compared between the three groups; the initial 60 patients, 61 control patients, and final 22 patients who completed the survey anonymously. Analysis of variance (ANOVA) and Pearson's chi^2 tests statistics utilized to identify any race- or SES-based patterns in satisfaction with care. Answers to questions 11-14 were provided to our partners at the Rehabilitation Institute of Chicago for further review.

Answers to the 24th question were transcribed and entered as full-text into EZ-TEXT. (CDC, 2005) Content Analysis was used to identify themes through the frequency of words, phrases, and concepts in respondents' comments (Krippendorff, 1980). For example, database

searches were conducted using the keywords “race”, “income”, “unemployment”, and “sex” and response frequency and content were analyzed by the principal investigator.

Figure 2: Scoring the Trauma Patient Satisfaction Survey

Questions 1-4: Demographics
Questions 5-10: Yes=1, No=0, Somewhat=0.5, Unsure=0.25
Questions 11-14: Relate to Rehabilitation access and services and are not scored
Questions 15-19: Yes=1, No=0, Somewhat=0.5, Unsure=0.25
Questions 20-21: scale from 1-10
Question 22, Overall Satisfaction
Excellent=4, Very Good=3, Good=2, Fair=1, Poor=0
Questions 23a-e: Relate to perceptions of care bias and are scored separately
Yes=0, Unsure=1, Somewhat=2, No=3
Question 24: Open-ended question about care bias, analyzed separately

Satisfaction, questions 5-10 plus 15-19
Best score possible: 11, Worst score possible: 0
Satisfaction scale, questions 20-21
Best score possible: 20, Worst score possible: 0
Overall satisfaction, question 22
Best score possible: 4, Worst score possible:0
Bias questions: Analyzed separately

RESULTS

Survey Validation

To assess the equivalency of the three phases of the survey (survey administration, survey comparative validation, and self-administered survey), the three groups were compared for differences in demographics and satisfaction scores. With respect to demographics, there were no statistically significant differences between the three groups of patients with respect to age, race, gender, or insurance status. [Table 1] Demographics for this cohort are comparable to the hospital’s overall trauma population for that year, with a predominance of younger, non-white, and male patients. However, our cohort differed markedly from the demographics of all hospitalized patients. At our institution during the same time period, only 35% of all hospitalized patients were male. Fifty-seven percent were Caucasian, 23% were African American, and 9% were Latino; and only 2.7% were uninsured.

Table 1: Demographic comparisons of early and later cohorts

	Group 1 (n=60)	**Group 2** (n=61)	**Group 3** (n=22)	**p-value**
Age (mean ± SD)	36 ± 14.9	37 ± 16.7	35 ± 19.5	0.73
Gender				
Male	47	50	19	0.61
Female	13	11	3	
Race				
African American	39	40	16	0.78
Caucasian	14	17	2	
Latino	7	6	2	
Asian	1	1	0	
Other	2	0	0	
Insurance				
Private	18	19	6	0.65
HMO	8	8	1	
Medicaid	6	5	2	
Medicare	3	3	2	
Self-pay	25	25*	11	

*Three patients preferred to not share their insurance status

Satisfaction was uniformly high during the study period [Table 2]. Summed satisfaction scores and self-reported scales were consistent throughout both cohorts and no significant differences between groups were noted for any of the answers on the questionnaire. [Table 3] Nor were there significant differences between the summed Satisfaction Score or Satisfaction Scale values from the instrument. Analysis of the qualitative data revealed that patients felt nursing care was separate and distinct from physician care, and that nursing care should be evaluated separately.

Table 2: Responses for TPSS Component Questions

Question #		N (%)
5	Yes No Unsure	135 (94.4) 8 (5.6) 0 (0)
6	Yes No Somewhat Unsure	138 (96.5) 3 (2.1) 1 (0.7) 1 (0.7)
7	Yes No Somewhat Unsure	138 (96.5) 3 (2.1) 1 (0.7) 1 (0.7)
8	Yes No Somewhat Unsure	138 (96.5) 5 (3.5) 0 (0) 0 (0)
9	Yes	135 (94.4)
	No Somewhat Unsure	3 (2.1) 1 (0.7) 4 (2.8)
10	Yes No Somewhat Unsure	139 (97.2) 0 (0) 1 (0.7) 3 (2.1)
15	Yes No Unsure	140 (97.9) 1 (0.7) 2 (1.4)
16	Yes No Somewhat Unsure	138 (96.5) 2 (1.4) 1 (0.7) 2 (1.4)
17	Yes No Somewhat Unsure	138 (96.5) 2 (1.4) 1 (0.7) 2 (1.4)
18	Yes No Somewhat Unsure	139 (97.2) 2 (1.4) 1 (0.7) 1 (0.7)
19	Yes No Somewhat Unsure	138 (96.5) 2 (1.4) 1 (0.7) 2 (1.4)

Table 3: Individual question and summed total comparisons of patient satisfaction between early and later cohorts

	Group 1 (n=60) (mean ± SD)	Group 2 (n=61) (mean ± SD)	Group 3 (n=22) (mean ± SD)	p-value
Questions				
5	0.95 ± 0.12	0.94 ± 0.11	0.92 ± 0.22	0.63
6	0.96 ± 0.14	0.97 ± 0.12	0.97 ± 0.23	0.67
7	0.96 ± 0.11	0.96 ± 0.10	0.97 ± 0.12	1.00
8	0.97 ± 0.12	0.96 ± 0.14	0.96 ± 0.15	0.67
9	0.95 ± 0.11	0.94 ± 0.13	0.94 ± 0.11	0.65
10	0.97 ± 0.13	0.98 ± 0.15	0.98 ± 0.16	0.70
Questions				
15	0.98 ± 0.15	0.98 ± 0.14	0.98 ± 0.12	1.00
16	0.96 ± 0.13	0.95 ± 0.13	0.96 ± 0.12	0.67
17	0.96 ± 0.12	0.95 ± 0.15	0.96 ± 0.14	0.69
18	0.97 ± 0.11	0.97 ± 0.11	0.96 ± 0.2	1.00
19	0.96 ± 0.15	0.95± 0.14	0.96 ± 0.15	0.71
Questions				
20	7.8 ± 1.2	8.1 ± 1.3	7.9 ± 1.2	0.19
21	8.1 ± 1.4	8.2 ± 1.2	8.1 ± 1.3	0.67
Question 22 Overall Satisfaction	3.6 ± 0.9	3.7 ± 0.8	3.5 ± 0.9	0.52
Satisfaction	9.6 ± 1.2	9.5 ± 1.4	9.5 ± 1.6	0.67
Satisfaction Scale	16.9 ± 1.9	17.2 ± 1.8	16.8 ± 2	0.37

Patient Satisfaction--Quantitative

Surveys were administered between July 2008 and August 2009. Of the 143 patients surveyed, 116 (81%) were male. 95 (66%) were African American, 33 (23%) were Caucasian, and 15 (10%) were Latino. Sixty-one patients (43%) were uninsured. African Americans and Latinos were much more likely to be uninsured than Caucasians (44% and 45% vs. 4%, $p<0.001$). The mean age of Caucasian patients (45 ± 20) was significantly older than African American (35 ± 15) and Latino (33 ± 12) patients ($p<0.01$). These numbers are comparable to the hospital's overall trauma population for that year. However, these numbers differ markedly from the demographics of all hospitalized patients at our institution. For the same time period, only 35% of all hospitalized patients were male, fifty- seven percent were Caucasian, 23% were African American, and 9% were Latino; only 2.7% were uninsured.

Overall satisfaction with trauma care was high and no statistically significant differences for any measure were noted by race or insurance status. [Table 4] No patients perceived biased care by race, but three African American patients felt that care was different because of their insurance status (2%, $p=0.2$).

Table 4: Patient satisfaction by race, gender, and insurance status

	Cohort (n=143)	Satisfaction (mean ± SD) **Best Score=11**	Satisfaction Scale (mean ± SD) **Best Score=20**	Bias (mean ± SD) **Best Score=15**
Age (mean ± SD)	36 ± 16.4	9.2 ± 1.2*	16 ± 2.4*	14.1 ± 0.8*
Gender (n,%)				
Male	116 (81)	9.5 ± 1.1	16.1 ± 3.4	13.1 ± 0.9
Female	27 (19)	9.8 ± 2.1	14.1 ± 2.5	14.2 ± 1
Race (n,%)				
African American	95 (66)	10.1 ± 1.8	15.3 ± 3.5	12.1 ± 1.8
Caucasian	33 (23)	9.2 ± 0.5	15.7 ± 1.5	14.3 ± 0.4
Latino	15 (10)	10 ± 1.1	16.1 ± 2.1	14.3 ± 0.5
Asian	2 (1)	10 ± 0.9	17 ± 1.9	14.5 ± 0.3
Other	2 (1)	9.1 ± 1.9	15.9 ± 1.9	12.9 ± 1.1
Insurance (n,%)				
Private	43 (30)	8.9 ± 1.5	14.3 ± 3.3	14.2 ± 0.4
HMO	17 (12)	10.1 ± 1.8	15.9 ± 2.5	14.4 ± 0.2
Medicaid	13 (9)	9.7 ± 1.9	17.4 ± 1.8	12.5 ± 2.1
Medicare	8 (6)	10 ± 1.1	17.8 ± 1.1	14.2 ± 0.3
Self-pay	61 (43)	10 ± 0.8	16 ± 2.1	12.1 ± 2.5

*Mean for all ages. Age comparisons: t-tests of means comparing 18-29 with 30+

Though this was a small number of patients, by using the Welch modification of the Student's t-test for small sample size and unequal variances, we determined that the patients who did perceive their care as biased were significantly less satisfied with their care based on the Satisfaction Scale ($p=0.03$). Though their overall Satisfaction Score was not significantly different ($p=0.09$), their bias scores were significantly more negative than the overall cohort ($p<0.001$). [Table5]

Table 5: Patient satisfaction with respect to perceptions of biased care

	Satisfaction	Satisfaction	Bias
	(mean ± SD) **Best**	Scale (mean ± SD) **Best**	(mean ± SD) **Best Score=15**
Overall Cohort (n=143)	9.5 ± 1.2	16 ± 2.4	14.1 ± 0.8
Patients Perceiving Bias	8.3 ± 2.2[a]	13 ± 3.1[b]	9.1 ± 0.5[c]

a: p=0.09 **b: p=0.03 c: p<0.001**

Patient Satisfaction--Qualitative

One theme that emerged with qualitative analysis was the perception that nursing care occasionally reflected race or insurance status bias. Eleven patients offered comments about nursing staff. Comments included:

"I could tell that my nurse looked down on me because I don't have insurance", and

"I already feel bad that I can't pay, without my nurse making me feel bad about it, too."

Three of the eleven patients who made these comments were the individuals who rated their overall stay and care as biased on our satisfaction survey. No patient described a particular event or incident leading to these feelings, nor were any specifics given as to the level of nursing care provider that engendered those feelings, such as Nurses' Aides or LPNs. As these surveys were administered anonymously, we were unable to follow up those individuals to determine if they had discussed the incidents with nursing administration, their doctors, or the Patient Services Representative.

DISCUSSION

In this exploratory survey of hospitalized trauma patients, satisfaction with care was uniformly high. The study did not find any evidence that race or insurance status, in general, affected patient satisfaction at our institution. However, the few patients who felt that their caregivers were biased with respect to their lack of insurance were significantly less satisfied with their care.

Several limitations of this study may affect the extrapolation of the findings. First, this is a single institution study in which patient satisfaction was quite high. Results may vary by institution based on geographic factors, number of beds, or other hospital characteristics that were not assessed. Given the high satisfaction scores, we may have encountered a "ceiling effect" that has also been described with other health survey instruments (Gandek et al., 1998). In the respect that the survey was adapted from a non-trauma satisfaction survey, then was validated in the same institution as it was piloted, which may limit generalizability to other institutions with different demographics or resources. Second, the survey was administered to most participants by personal interview. This method was employed intentionally, as literacy and numeracy issues were very common among study patients. This method enabled assistance with understanding words and scales and helped minimize confusing elements. Despite these precautions, it is possible that administering the survey in-person introduced bias. Also, the fact that medical students administering the survey had no formal training in interview technique or

expertise in survey administration may affect standardization and reliability of results. However, the uniformity of results between the three sample groups suggests this source of bias was minimized.

Another limitation is that our sample was limited to English-speakers. It is possible that our survey excludes perceptions of bias on the basis of language. Adaptation of this survey to non-English-speaking populations is underway. Other potential confounders include the length of the hospital stay, type and complexity of injury as measured by Injury Severity Scores or other scales, number of consultants involved in patient care, and number of services required, such as occupational therapy, speech therapy, and social work, which all may impact a patient's satisfaction. Further, it may be that patient satisfaction is generally high after surviving a traumatic event, explaining the "ceiling". Finally, a larger sample size would allow the performance of a multivariate analysis to investigate potential interaction effects and determine the magnitude of the effect of uninsured status and perceived bias on patient satisfaction. Future survey work will include the design and implementation of specific questions regarding satisfaction with nursing care and satisfaction with access to rehabilitative services, as well as comparing these data with outpatient measures of patient satisfaction, short- and long-term Quality of Life scores, and Post Traumatic Stress screening to better understand the influence of these factors on patient outcomes and satisfaction.

Despite these limitations, this work represents an important step in understanding trauma patients' satisfaction with care by creating and validating an instrument that can be administered anonymously. In summary, this single- institution survey of hospitalized trauma patients did not demonstrate a significant association between race or insurance status and satisfaction with care. However, on qualitative analysis, several patients did perceive biased care from nursing staff, which will require further, quantitative investigation. Finally, it is important to note that, though we did not detect systemic disparities with respect to bias or satisfaction with care, patients who did perceive bias were less satisfied with their care. Ultimately, the results of this work could help inform strategies to improve cultural competency at all levels of our institution, as this has been shown to particularly improve minority patient satisfaction with care (Weech-Maldonado et al., 2012).

CONCLUSION

In this exploratory survey of hospitalized trauma patients, we did not demonstrate a significant association between race or insurance status and patient satisfaction. Though we did not detect systemic disparities with respect to bias or satisfaction with care, patients who did perceive bias were less satisfied with their care.

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