Influence of Patient and Hospital Factors on Consumer Satisfaction With Inpatient Mental Health Treatment

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Objective: This study examines patient- and facility-related determinants of satisfaction with inpatient mental health services. *Methods:* A random sample of veterans discharged from Department of Veterans Affairs inpatient units with primary diagnoses of a psychiatric or substance use disorder (N=13,574) were mailed a 73-item questionnaire that addressed aspects of their recent hospital experience. Multiple regression analysis was used to evaluate the relationship between patient and hospital characteristics and both the likelihood of responding to the survey and aspects of satisfaction measured by 14 subscales. *Results:* A total of 4,968 veterans, or 37 percent, mailed back responses to the questionnaire. Respondents were older than nonrespondents and were more likely to be white and married and to have nonpsychotic disorders other than substance use disorders. The strongest and most consistent predictors of satisfaction were older age and better self-reported health. Longer length of stay was also associated with greater satisfaction on a majority of subscales. Findings among female and minority veterans were mixed across measures. Large facilities and facilities that specialize in mental health treatment had lower levels of satisfaction than others. Patient characteristics accounted for more of the variance in satisfaction than did facility characteristics. *Conclusions:* Older and healthier patients reported greater satisfaction with mental health care services. Accurate comparison of patient satisfaction between facilities requires that adjustments be made for differences in patient characteristics. Large facilities may need to make special efforts to personalize their services. (*Psychiatric Services* 48:1553–1561, 1997)

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Consumer satisfaction with health care is increasingly recognized as a major indicator of the quality of health care service delivery. Virtually every proposed health care "report card" now includes an evaluation of satisfaction with services, along with the evaluation of more traditional aspects of quality, such as access to services, the technical quality of care, outcomes, and costs (1–4). However, studies of patient satisfaction in psychiatry have been limited by small numbers of patients; use of single, unidimensional measures; lack of mechanisms for assuring anonymity of patients' evaluation of their treating clinicians; absence of demonstrated reliability and validity; and low response rates (4).

Providing "excellence in service as defined by customers" was recently identified as a major mission goal for the Veterans Health Administration (VHA) of the Department of Veterans Affairs (VA) (5). To promote this goal, in 1994 VA established a center for obtaining systematic consumer feedback (6). Data gathered by this center have been augmented and systematically incorporated into VA's National Mental Health Program Performance Monitoring System (7,8).

The study reported here presents data on patient satisfaction from a sample of recently discharged VA inpatients with primary psychiatric and substance use disorders. We used data from a mail survey to ex-

amine four phenomena: the magnitude and type of nonresponse biases, the internal-consistency reliability and intercorrelation of 14 different satisfaction subscales, patient characteristics that are associated with satisfaction on these scales, and the influence of selected hospital characteristics on satisfaction.

Methods

Sample

The sample for this study was randomly drawn from inpatients who were discharged to the community from VA medical centers between June 1 and August 31, 1995. The sample was selected to target 175 medical, surgical, and psychiatric patients from each VA hospital, with the goal of obtaining a sample of 105 responses from each service at each facility (9). The sampling frame was based on discharge abstracts in VA's decentralized hospital computer program, a local computerized workload database at each VA hospital. Data from these local databases are compiled to form the national patient treatment file, a comprehensive discharge abstract file of all episodes of VA hospital care.

We obtained data from these files on the age, gender, race, marital status, receipt of VA compensation payments, primary diagnosis, and length of stay for all patients in the sampling frame. The descriptive data (but not patients' names) were linked with codes on each returned questionnaire. The subsample used in this study included veterans with a primary psychiatric or substance use diagnosis (*ICD-9* codes 290.00 to 310.99).

Survey methods

Data were collected using a mail out–mail back methodology. A prenotification letter was sent out one week before the actual survey to each veteran. The questionnaire was sent out with a cover letter from the director of VHA's National Customer Feedback Center (the second author) and VHA's undersecretary for health assuring respondents that their responses would not be linked to their names and would not affect eligibility for VA benefits in any way. Two follow-up contacts consisted of a postcard reminder and, if that did not result in a response, a repeat mailing of the entire questionnaire (9).

Questionnaire

The questionnaire consisted of 73 questions, 60 of which were used in this study. The first part, which was not specific to mental health treatment, consisted of ten subscales with a total of 41 questions evaluating satisfaction with hospital care. The questions were derived from a questionnaire developed by the Picker Institute of Boston (10,11).

Nine of the ten subscales asked about specific problems that may have occurred during the most recent hospitalization; they assessed coordination of care among providers, open sharing of information with the patient, timeliness and accessibility of services, courtesy of staff, emotional support, attention to the patient's preferences and to involving the patient in decision making, quality of family involvement, physical comfort and attention to physical needs, and help with the transition from the hospital to outpatient status. The tenth subscale evaluated general satisfaction with hospital care.

The mail questionnaire enhanced respondents' assurance of anonymity, compared with earlier studies in which the questionnaires were administered on site or by telephone.

The second part of the questionnaire consisted of four subscales with a total of 19 questions focusing on satisfaction with mental health care; it was to be completed only by those who had received such care. Two of the subscales, totalling nine items, came from the short form of the Ward Atmosphere Scale, a social-climate scale widely used to assess mental health treatment environments (12). These two subscales assess involvement among patients and staff, or the sense of energy and engagement on the unit, and practical problem orientation, or the degree to which emphasis is placed on solving real-world problems.

A third subscale consisted of five items extracted from the Working Alliance Inventory (13) to evaluate the quality of the working, or therapeutic, alliance—the relationship between the patient and the patients' primary clinician, defined as "the person you thought of as your main clinician during the past year." The alliance items address issues such as the extent to which the patient felt the clinician understood the patient's problems, shared the patient's goals for treatment, and was dependable. The five items were selected because they were highly correlated with the entire scale ($r=.65$ to $.74$) and because they represent the scale's three main dimensions—agreement on tasks, agreement on goals, and affective bond (14). A final four-item subscale consisted of questions about general satisfaction with inpatient mental health services—for example, "Did VA [mental health] services help you with your problems?" (A copy of the questionnaire is available from the first author.)

Responses were coded into ordinal scales with 0 representing the least satisfaction and 1 the greatest satisfaction. Thus if an item had five response levels, they would be coded from 0 to 4 and divided by 4. Subscale scores were compiled by averaging single-item scores.

Hospital data

Questionnaires were obtained from patients at 135 VA medical centers, a mean±SD of 37.9±19.3 responses per medical center. These patient data were supplemented by measures reflecting key structural characteristics of each hospital derived from VA's

cost distribution report, a national hospital-specific, program-by-program summary of all VHA expenditures and staff allocation.

The data from the cost distribution report used in this study included measures of the size of the medical center, such as total number of full-time-equivalent employees; measures of the relative emphasis on inpatient mental health care, as contrasted with inpatient medical-surgical care, such as the percentage of all inpatient expenditures devoted to mental health care; and measures of the center's academic emphasis, such as the percentage of inpatient mental health expenditures allocated to support research and education, exclusive of research grants and contracts.

Analysis

Bivariate and multivariate analyses were used to identify predictors of response to the questionnaire and to identify potential biases in the respondent sample. Next, Cronbach's alphas were used to evaluate the internal-consistency reliability of each of the 14 subscales.

Third, a correlation matrix was examined to evaluate the level of redundancy among the 14 subscales. Finally, a series of multivariate models was constructed to examine the relationship between various patient characteristics (such as age, gender, race, marital status, and diagnosis) and medical center characteristics (such as size, mental health emphasis, and academic emphasis) and each of the 14 satisfaction subscales, adjusting for the influence of other factors.

Table 1

Characteristics of patients with psychiatric and substance use diagnoses discharged from Veterans Affairs (VA) inpatient units from June 1 to August 31, 1995, who did and did not respond to a survey on their satisfaction with the hospital experience

	Respondents		Nonrespondents				
Characteristic	N	%	N	%	χ^2	df	p<
Gender					5.91	1	.05
Male	4,959	95.1	8,022	96.0			
Female	256	4.9	337	4.0			
Race					204.33	3	.001
White	3,766	72.2	5,339	63.9			
Black	1,024	19.6	2,593	31.0			
Hispanic	303	5.8	276	3.3			
Other	122	2.3	151	1.8			
Marital status							
Married	1,903	36.5	1,781	21.3	374.46	1	.001
Divorced or separated	2,009	38.5	3,776	45.2	58.06	1	.001
VA compensation					96.45	2	.001
No VA compensation for a service-related illness	2,301	44.1	4,407	52.7			
Disability rating of 50 percent or more	1,272	24.4	1,782	21.3			
Disability rating of less than 50 percent	1,642	31.5	2,170	26.0			
Diagnosis							
Schizophrenia	1,173	22.5	2,211	26.5	26.87	1	.001
Major affective disorder	1,044	20.0	1,269	15.2	53.17	1	.001
Posttraumatic stress disorder	818	15.7	738	8.8	148.76	1	.001
Alcohol abuse or dependence	883	16.9	1,786	21.4	39.97	1	.001
Drug abuse or dependence	283	4.6	859	10.3	141.08	1	.001
Other[1]	1,059	20.3	1,496	17.9	12.21	1	.001

[1] Includes generalized anxiety disorder, dysthymia, and personality disorders

Results

Sample characteristics

Altogether 13,541 patients who were discharged with primary psychiatric or substance use diagnoses were sent questionnaires. A total of 4,968 patients (37 percent) responded. Table 1 presents data comparing respondents and nonrespondents. A multivariate analysis comparing respondents with nonrespondents, adjusting for other factors (multiple R^2=.07, p<.001), showed that respondents were older (beta=.10, p<.001) and more likely than nonrespondents to be female (beta=.029, p<.001), Hispanic (beta= .026, p<.001), and married (beta= .121, p<.001). Respondents were also more likely than nonrespondents to receive VA compensation for illnesses related to their military service that gave them a disability rating of 50 percent or more (beta=.045, p<.001) and to have a diagnosis of major affective disorder (beta=.286, p<.001) or posttraumatic stress disorder (beta=.069, p<.001).

Respondents were less likely than nonrespondents to be black (beta= –.067, p<.001) and to have a primary diagnosis of alcohol abuse or dependence (beta=–.045, p<.002) or drug abuse or dependence (beta=–.055, p< .001). Patients were also less likely to respond if they had been hospitalized in large medical centers (beta= –.039, p<.001) and in medical centers that devoted a high proportion of inpatient resources to mental health programs (beta=–.032, p<.001) or were more academically oriented (beta=–.041, p<.001).

The mean±SD age of respondents was 50.5±11.7 years, compared with 47±11.4 years for nonrespondents, a significant difference (t=16.5, df= 10,611, p<.001). As one would expect in a veteran sample, the great majority of respondents—95 percent—were male. The racial composition of the respondent group was 72 percent white, 20 percent black, 6 percent Hispanic, and 3 percent other ethnicities. Only 37 percent were married; 39 percent were separated or divorced, 22 percent had never married, and 3 percent were widowed. Altogether 78.5 percent had a primary psychiatric diagnosis, and 21.5 percent a substance use diagnosis (see the detailed diagnostic breakdown among respondents in Table 1).

Thirty-two percent of the respondents received VA compensation for illnesses related to military service with a disability rating of 50 percent or more, 24 percent received VA compensation for a service-related illness with a disability rating of less

Table 2

Internal consistency and correlation between subscales of the patient satisfaction questionnaire

Subscale and number of items in subscale	Internal consistency[1]	Correlation[2] 1	2	3	4	5	6	7	8	9	10	11	12	13
Satisfaction with overall hospital care														
1. Coordination (four)	.61	1.00												
2. Information (six)	.76	0.66	1.00											
3. Timeliness and access (three)	.68	0.66	0.65	1.00										
4. Courtesy (four)	.82	0.71	0.72	0.75	1.00									
5. Emotional support (five)	.84	0.67	0.80	0.68	0.77	1.00								
6. Respect for patients' preferences (three)	.80	0.66	0.70	0.66	0.75	0.74	1.00							
7. Family involvement (two)	.72	0.46	0.52	0.45	0.48	0.55	0.49	1.00						
8. Physical comfort (five)	.73	0.36	0.45	0.38	0.42	0.48	0.45	0.34	1.00					
9. Transition from hospital (six)	.87	0.53	0.65	0.52	0.59	0.68	0.60	0.53	0.46	1.00				
10. General satisfaction (three)	.72	0.64	0.63	0.62	0.70	0.68	0.72	0.46	0.41	0.58	1.00			
Satisfaction with mental health care														
11. Involvement of staff and patients (five)	.83	0.45	0.52	0.46	0.50	0.57	0.53	0.39	0.38	0.51	0.52	1.00		
12. Practical orientation (four)	.73	0.36	0.45	0.35	0.40	0.49	0.41	0.34	0.34	0.50	0.40	0.69	1.00	
13. Therapeutic alliance (six)	.92	0.42	0.48	0.41	0.45	0.51	0.43	0.36	0.31	0.49	0.41	0.48	0.44	1.00
14. General satisfaction (four)	.66	0.52	0.58	0.51	0.57	0.63	0.60	0.46	0.40	0.62	0.58	0.57	0.51	0.54

[1] Cronbach's alpha
[2] Pearson's r

than 50 percent, and 44 percent did not receive VA compensation for a service-related illness. On a global health status measure asking respondents to rate their current health as poor, fair, good, very good, or excellent, the average score was 2.3±1.07, a rating just above "fair." The average length of respondents' hospital stays was 23.3±71.4 days, compared with 22.1±42.2 for nonrespondents, not a significant difference.

The medical centers had an average of 1,192±730 full-time-equivalent (FTE) employees, with a range from 385 to 3,811 employees. The centers expended an average of 17.3 percent±12.2 percent of inpatient expenditures on mental health programs (range=4.4 percent to 56.9 percent). An average of 6.9 percent±5.7 percent of mental health program funds were spent on education and research (range=1 percent to 36 percent).

Subscale characteristics

As Table 2 shows, all but two of the 14 subscales met the criterion for internal-consistency reliability of .70 on Cronbach's alpha (15). Correlations between subscales were moderate to strong; Pearson's r ranged from .34 to .80. Of 91 paired correlations between subscales, only nine, or 10 percent, had a correlation of more than .70, the standard level for moderate redundancy (15).

Patient characteristics and satisfaction

Tables 3 and 4 show the results of an ordinary least squares multiple regression analysis of the relationship between patient and hospital characteristics and satisfaction. Table 3 shows results for the ten measures of satisfaction with hospital care, and Table 4 shows results for the four measures of satisfaction with mental health care. The tables shows standardized multiple regression coefficients, which reflect the strength of association of each predictor with the satisfaction subscale listed at the head of the column, after adjusting for the effect of all the other factors in the model. Multiple R^2 for the models shown in the tables ranged from 5 percent to 15 percent, showing that the models explained a modest proportion of the total sample variance in satisfaction.

Examination of standardized regression coefficients shows that one demographic characteristic (age) and one clinical characteristic (global health) were associated with greater satisfaction and were highly statistically significant on all 14 subscales. This finding replicates that of Cleary and associates (11), who used an earlier version of this instrument in a study of a national sample of U.S. hospitals.

In addition to these striking find-

Table 3

Standardized multiple regression coefficients showing relationships between patient and hospital facility characteristics and patients' satisfaction reported on ten measures reflecting aspects of hospital care

Characteristic	Satisfaction measure									
	Coordination[1]	Information[2]	Timeliness and access[3]	Courtesy[4]	Emotional support[5]	Respect for patients' preferences[6]	Family involvement[7]	Physical comfort[8]	Transition from hospital[9]	General satisfaction[10]
Age	.11***	.11***	.09***	.09***	.13***	.15***	.14***	.14***	.09***	.15***
Female				–.03*	–.04*	–.03*		–.03*	–.04*	
Black				–.05**	.03*			.08***		
Hispanic								.04*		
Married				.04*	.04*					.04*
Divorced or separated							–.05**			
VA compensation										
Disability rating of less than 50 percent				–.04*	–.04*					–.04**
Disability rating of 50 percent or more				–.04**						–.04**
Diagnosis										
Major affective disorder	.04*									
Schizophrenia	.06**		.04*		.04*	.05**				.06***
Posttraumatic stress disorder	.04*	.06**		.05**	.06**				.05**	.04*
Alcohol abuse or dependence		.04*			.04*			.04*	.05**	.05**
Drug abuse or dependence	.05*	.04*								
Global health status	.30***	.31***	.30***	.33***	.31***	.29***	.23***	.14***	.28***	.31***
Length of stay (natural log)			.05**		.06***		.04**	.05**	–.07***	.04**
Facility size	–.04*		–.04**			–.05**				–.03*
Percentage of resources for mental health care	–.05**	–.05***	–.05**	–.05**	–.05***	–.07***	–.06***	–.06***	–.05***	–.07***
Percentage of mental health care resources for education and research	–.04**		–.04*					–.04*		

[1] N=4,868 respondents (F=31.87, df=18, 4,849, p<.001; R^2=.107)
[2] N=4,966 respondents (F=33.89, df=18, 4,847, p<.001; R^2=.112)
[3] N=4,866 respondents (F=32.17, df=18, 4,847, p<.001; R^2=.107)
[4] N=4,965 respondents (F=37.88, df=18, 4,848, p<.001; R^2=.118)
[5] N=4,866 respondents (F=36.71, df=18, 4,865, p<.001; R^2=.120)
[6] N=4,864 respondents (F=35.05, df=18, 4,845, p<.001; R^2=.115)
[7] N=4,837 respondents (F=26.17, df=18, 4,818, p<.001; R^2=.089)
[8] N=4,836 respondents (F=14.46, df=18, 4,819, p<.001; R^2=.051)
[9] N=4,860 respondents (F=28.25, df=18, 4,841, p<.001; R^2=.095)
[10] N=4,868 respondents (F=41.13, df=18, 4,849, p<.001; R^2=.132)
*p<.05
**p<.01
***p<.001

ings for older veterans, female veterans reported less satisfaction than male veterans on seven subscales. This finding might be a reflection of the extreme minority status of female veterans in the predominantly male VA system (16), but it also replicates the results of a similar survey of a national sample of non-VA hospitals (10). However, female veterans reported more satisfaction than male veterans on the measure of therapeutic alliance, which addresses relationships with the primary treater.

Blacks reported less satisfaction, compared with whites, on the subscale measuring courtesy, but they reported more satisfaction than whites on subscales measuring the four variables of emotional support, physical comfort, involvement, and practical orientation. Hispanic veterans also had mixed responses. They were more satisfied with physical care and practical orientation, but less satisfied with general mental health care.

Married veterans reported more satisfaction than those of other marital statuses on several subscales measuring relationship-related variables, including courtesy, emotional support, and therapeutic alliance. Married veterans also reported more satisfaction on the subscale measuring general satisfaction. Veterans who were divorced or separated reported less satisfaction than other veterans on the family involvement scale, perhaps because their treatment was related to disappointments in the area of family life.

Clinical characteristics and length of stay

Consistent with the finding that veterans who rate their health as poor are less satisfied with services than others, veterans who were disabled

Table 4

Standardized multiple regression coefficients showing relationships between patient and hospital facility characteristics and patients' satisfaction reported on four measures reflecting aspects of mental health care

Characteristic	Satisfaction measure			
	Involvement of staff and patients[1]	Practical orientation[2]	Therapeutic alliance[3]	General satisfaction[4]
Age	.12***	.07***	.06***	.11***
Female		–.03*	.04*	–.03*
Black	.06***	.07***		
Hispanic		.06***		–.03*
Married			.04*	
VA compensation				
Disability rating of less than 50 percent				–.03*
Disability rating of 50 percent or more	–.04*		.06***	
Diagnosis				
Major affective disorder			.06***	.07***
Schizophrenia	.10***		.04*	.09***
Posttraumatic stress disorder	.09***	.09***	.07***	.08***
Alcohol abuse or dependence	.04*	.10***		
Drug abuse or dependence	.04*	.57***		
Global health status	.27***	.26***	.24***	.33***
Length of stay (natural log)	.10***	.10***	.05**	.12***
Facility size	–.04*			
Percentage of resources for mental health care	–.05**			–.03*
Percentage of mental health care resources for education and research				–.07***

[1] N=4,356 respondents ($F=30.50$, $df=18, 4{,}337$, $p<.001$; $R^2=.112$)
[2] N=4,261 respondents ($F=26.19$, $df=18, 4{,}242$, $p<.001$; $R^2=.100$)
[3] N=4,218 respondents ($F=17.92$, $df=18, 4{,}199$, $p<.001$; $R^2=.071$)
[4] N=4,488 respondents ($F=43.57$, $df=18, 4{,}469$, $p<.001$; $R^2=.149$)
*$p<.05$
**$p<.01$
***$p<.001$

by illnesses related to their military service and who were likely to be sicker than other veterans reported somewhat less satisfaction than veterans without service-related illnesses on several measures. In contrast, those with a diagnosis of schizophrenia reported more satisfaction than the diagnostic reference group consisting of veterans with nonpsychotic psychiatric disorders other than posttraumatic stress disorder or substance abuse or dependence. Veterans with posttraumatic stress disorder and alcohol abuse, and to a lesser extent those with major affective disorder and drug abuse, also reported more satisfaction than the diagnostic reference group.

It is especially notable, in view of current financially driven efforts to reduce hospital utilization, that longer length of stay was associated with higher levels of satisfaction on nine subscales, and was associated with less satisfaction only in the area of help with the transition out of the hospital. Long-stay veterans are likely to have a harder time making the transition back to their communities. To determine whether these findings were related to the effect of extremely long lengths of stay, these analyses were repeated using data from a subsample of veterans whose length of stay was less than 40 days. The results for the subsample were similar to those for the entire sample.

VA medical center characteristics

The overall size of VA medical centers was associated with lower levels of satisfaction on several subscales that are likely to reflect the impersonal and confusing ambience of large institutions: coordination of care, timeliness and accessibility of services, respect for the patient's preferences, and involvement among patients and staff.

The proportion of funds spent on mental health—a measure of the emphasis on mental health care at each hospital—was associated with lower levels of satisfaction on 12 of the 14 subscales. Emphasis on academic activities was associated with lower levels of satisfaction on the measures of coordination of care and the timeliness and accessibility of care.

Discussion

Methodological strengths and weaknesses

The study presented here successfully addressed most of the limitations identified in a comprehensive review of research on patients' satisfaction with mental health services (4). Unlike the small samples in earlier studies, the patient sample in our study was large enough to allow meaningful subgroup analyses. Our study used multiquestion scales that measured diverse aspects of patients' experiences instead of a single, unidimensional measure.

The mail questionnaire and the written assurances from high-level VA managers enhanced respondents'

assurance of anonymity, compared with earlier studies in which questionnaires were administered by staff on site or by telephone. In our study, data on internal consistency and interscale correlation were obtained to provide evidence of internal reliability and concurrent validity across subscales.

Several weaknesses remain. Test-retest reliability has not been demonstrated for these measures, and significant recall biases may have been introduced by the one- to five-month time lag between the end of the inpatient stay and completion of the survey. In addition, no validating data were available on the relationship between the measures of satisfaction and such independent criteria as the technical quality of care or clinical outcomes.

The most serious limitation of the study, however, and an important finding in its own right, is the low rate of 37 percent for return of the questionnaires. Two factors are likely to be responsible for this low response rate.

First, although the mail-out–mail-back method enhances the anonymity of respondents, it sharply reduces the likelihood of response, especially among people who are homeless or residentially unstable and who are therefore difficult to contact by mail. A recent one-day survey of all VA inpatients showed that 26 percent of veterans in general psychiatric units and 50 percent of those in substance abuse units had been homeless at the time of admission (17). The survey also found that homeless veterans were far more likely than other veterans to have substance use diagnoses, to be black and unmarried, and not to receive VA compensation for service-connected disabilities—patient characteristics that were strongly associated with nonresponse to this survey. Residential and social instability thus appear to be important potential reasons for the low response rate.

A second set of factors considered likely to contribute to the low mail-in response rate was the cognitive impairment of psychiatric patients, especially those with psychotic disorders, and relapses among those with substance use disorders.

Evaluation studies focusing on large community samples are inevitably forced to chose between conflicting methodological goals. In this study the comprehensiveness of survey data, reflected in the length of the questionnaire, and efforts to enhance anonymity by using the mail-out–mail-back method are both likely to result in reduced response rates. Methods selected for use in this study thus placed a premium on comprehensiveness and anonymity at the expense of the response rate.

The findings that older and less ill patients were more satisfied than others replicate the findings of a similar study of a representative national sample of nonpsychiatric patients.

In view of the low response rate and the concern about recall bias among psychiatric patients, collection of data on satisfaction at the time of hospital discharge may be preferable, especially in surveys involving patient populations such as the one in this study. Anonymity could perhaps be preserved by arranging for confidential completion of the survey in an off-ward setting.

Patient subgroups

Although the data-gathering strategy biased the sample toward the more residentially and socially stable segment of the treated population, the substantive findings on subgroup responses are of considerable interest and importance. It is reassuring that our most robust findings—that older and less ill patients were more satisfied than others—as well as our observations of less satisfaction among female patients replicate the findings of a similar study conducted on a representative national sample of nonpsychiatric patients treated at non-VA hospitals (10).

Although our findings that older veterans are substantially more satisfied with services than younger veterans replicate those of others (10), the explanation for this association is not clear. It seems unlikely that older patients are treated more attentively than younger patients, and we are therefore inclined to attribute this finding to age-related response biases. Perhaps older patients are more tolerant and understanding of the difficulties of health care service delivery. It is also possible that they are of a generation that is less demanding and has more respect for professional authority.

Although it is often assumed that female and minority veterans are dissatisfied with the services they get from VA (18,19), our findings for these subgroups were not consistently negative. As in studies of non-VA hospitals (11), female respondents in our study reported less satisfaction than male respondents on measures of general satisfaction, but they also reported more satisfaction than male respondents on the measure of their relationship with the primary treater. It would not be surprising if female veterans prefer the care they receive from VA in the privacy of an office, compared with the care they receive in the male-dominated atmosphere of a VA inpatient unit. This pattern of responses might also be found in non-VA settings if other women, like the female veterans in this sample, place a greater value on personal care than on institutional care.

Findings for black and Hispanic veterans were similarly mixed. For example, both blacks and Hispanics were more satisfied than whites in the areas of physical discomfort and practical orientation, but blacks felt they had been treated with less courtesy than whites, and Hispanics expressed less satisfaction on the gen-

eral measure of satisfaction with mental health care. The precise reasons for these patterns are unclear, but efforts should be made to see if they are replicable in other VA and non-VA samples.

Findings for subjective health assessment, primary diagnosis, and length of stay are also mixed. Patients who rated themselves as healthier on a global subjective health assessment were more satisfied with VA services than others, suggesting the possibility that their perceptions of the outcome of treatment may have influenced their perception of the quality of service delivery. It seems unlikely that sicker patients receive poorer treatment than healthier patients. On the other hand, patients with schizophrenia, the most disabling mental illness, reported more satisfaction on several measures than those with nonpsychotic disorders, perhaps because they have used VA services for long periods of time and have found them highly dependable.

Although much has been made of the alleged alienation of Vietnam combat veterans from the government and their dissatisfaction with VA services (20), patients with posttraumatic stress disorder, who are likely to include combat veterans, had significantly more positive responses than other patients on ten of 14 satisfaction measures, more than any other diagnostic group. During the past two decades VA has developed a broad array of specialized programs for the treatment of posttraumatic stress disorder, which have been found to generate higher levels of satisfaction than general programs (21). Specialized programs are also widely available for alcohol and drug abuse patients, which may account for the high levels of satisfaction of this diagnostic group as well.

Length of stay, which might have been expected to be associated with more severe illness and therefore less satisfaction, was related on nine measures with greater satisfaction and on one—help with transition from the hospital—with less satisfaction. The decline in lengths of stay in recent years has been more dramatic in mental health care than in other areas of VA health care (22). Psychiatric patients are poorer and more socially isolated than others (17), and as a result prolonged hospitalization may result in more of their needs being met. Long hospitalization may also increase the difficulty of making the transition back to the community after hospital discharge, as suggested by the negative relationship between length of stay and satisfaction in this area of care.

Hospital characteristics

This is the first consumer satisfaction study of which we are aware that included a large sample of hospitals from a single health care system and that therefore permitted examination of the relationship between hospital characteristics and patient satisfaction. Unfortunately, our measures of hospital characteristics are fairly simple. They do suggest, however, that large, more complex facilities and those that specialize in mental health care are less satisfying than others. Facilities that specialize in mental health care often function as referral centers for other hospitals and thus may treat more disturbed patients. Alternatively, the environment of such hospitals may be more stigmatizing than that of facilities in which general medical care predominates.

Satisfaction was also lower—in the areas of physical comfort and general satisfaction with mental health treatment—in hospitals that emphasized research and education, perhaps because responsibility for these activities distracts staff from focusing on patients' needs. More sophisticated analysis of subtler hospital characteristics, such as organization, staffing, and management style, may yield additional insights into these findings.

Use of multiple scales

Our examination of differences in satisfaction across patient subgroups highlights the value of using multiple measures in assessing patients' satisfaction. Although the 14 subscales were significantly correlated with each other, they were not so highly correlated as to be redundant, and specific subgroups scored differently on different subscales. The mental health subscales, and particularly the measure of therapeutic alliance, yielded information that would not have been available from the other subscales.

Individual hospitals' performance

The principal reason for conducting surveys on patients' satisfaction is to provide hospital clinicians and administrators with information on patients' experiences with care so that problematic aspects of care can be identified and improved (10,11,23). Thus it is striking that this study found numerous significant relationships between satisfaction measures and patient characteristics. These findings suggest that differences in patient mix may have a substantial influence on patients' assessment of their satisfaction independently of the behavior of hospital personnel.

To further explore this issue, we conducted two additional sets of multivariate analyses. In the first set we included only patient characteristics as independent variables, and in the second set we added dummy codes for the individual hospitals. The average r^2 for the models of satisfaction with patient characteristics alone was 8.9 percent, suggesting modest predictive power. When ratings for individual hospitals were included in the model, the r^2 increased to 14.4 percent. Thus of the total explained variance—that is, the variance attributable to patient characteristics and to variation across hospitals—61.6 percent (8.9 percent divided by 14.4 percent) was attributable to patient characteristics.

To further examine this issue, we compared satisfaction ratings across the major administrative subunits of the VA system: the 22 integrated service networks (5), which are geographic areas managed as seimautonomous service delivery units. We ranked each network by its average satisfaction score across all 14 measures in two ways, first with and then without adjustment for differences in patient characteristics between networks. On average, adjustment for patient characteristics changed rankings by 3.9 places, with one network changing from a rank of 15 before adjustment to a rank of 5 afterward.

Thus patient characteristics were found to influence relative satisfaction ratings. Adjustment should be made for the impact of these characteristics, or hospital staffs may be held accountable for satisfaction ratings that actually reflect differences in case mix that are beyond their control.

Conclusions

Assessment of patients' satisfaction in large health care systems is both feasible and informative. To avoid the low response rates we obtained with the mail-out–mail-back method, studies should include surveys that are completed at the time of discharge from the hospital. Because of the influence on satisfaction ratings of patient characteristics that are not under the control of program mangers or clinicians, adjustment should be made for differences in these characteristics when comparing hospitals' performances. Finally, large facilities and those that emphasize psychiatric inpatient care may need to make special efforts to personalize their services. ♦

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