

## Brief Report

# The Influence of Psychiatric Disorders on Patients' Ratings of Satisfaction With Health Care

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**OBJECTIVES.** Patient ratings of satisfaction with health care have been used by patients, insurers, and employers seeking data to compare the quality of health plans and systems of care. Concerns with these ratings include their subjective nature and potential for being influenced by patient characteristics unrelated to the quality of their care. The authors examined the influence of an active psychiatric disorder on patient satisfaction with health care, hypothesizing that patients with psychiatric disorders would be less satisfied with their health care, due to the adverse effects of these conditions on mood and cognition.

**METHODS.** The authors used linked claims and survey data from the 1991 Medicare Current Beneficiary Survey. Using logistic regressions that controlled for patient sociodemographic and clinical characteristics, the authors examined the influence of an active psychiatric disorder on satisfaction with overall quality of health care and with specific dimensions of quality. The authors also examined the effects of specific types of psychiatric disorders.

As the organization and delivery of health care undergo transformation, tools assessing the quality of care are becoming increasingly important.

**RESULTS.** Aged and disabled beneficiaries with psychiatric disorders were significantly less likely than those without disorders to be satisfied with the overall quality of health care, follow-up care, and the physician's concern for their overall health. Disabled beneficiaries were also less likely to be satisfied with the health information provided. Further variation was found by type of psychiatric disorder.

**CONCLUSIONS.** One interpretation of these findings is that Medicare beneficiaries with psychiatric disorders receive lower quality care, a possibility that warrants further investigation. Alternatively, patients with psychiatric disorders may report lower satisfaction despite receiving comparable health care; this interpretation points toward the need for casemix adjustment when comparing satisfaction ratings across health plans and the development of quality measures less susceptible to subjective biases.

**Key words:** patient satisfaction; psychiatric disorders; quality of care; casemix. (*Med Care* 1998;36:720-727)

One method, patient satisfaction surveys, are used by accreditation groups and regulatory agencies to evaluate and compare health plans.

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The National Committee for Quality Assurance (NCQA) has developed a survey to allow standardized comparisons of satisfaction among health plan enrollees.<sup>1</sup> A large-scale study of patient satisfaction with health plans, the Consumer Assessment of Health Plans Study (CAHPS), is underway. Among their advantages, patient satisfaction surveys can be brief, inexpensive, and broadly implemented. They have been found to provide useful information about interpersonal aspects of health care.<sup>2,3</sup>

A potential drawback of satisfaction surveys is that some clinical and sociodemographic characteristics of patients may influence their satisfaction ratings without reflecting differences in the patients' care. Younger age, male gender, and worse physical health have been associated with lower satisfaction with care. Better education and nonminority status also have been linked, albeit inconsistently, to lower satisfaction.<sup>3</sup> It has not yet been determined whether these findings reflect biases in patient assessments or actual differences in quality of care, but if sociodemographic or clinical characteristics do bias patients' assessments of care, then casemix adjustment may be necessary to compare plans fairly.

Psychiatric disorders also could influence patient ratings of satisfaction with health care. Satisfaction ratings are subjective, relying on patient perceptions, thoughts, and feelings. Psychiatric disorders can adversely affect perceptual, cognitive, and emotional states, leading patients to be less satisfied with their health care. The impact of psychiatric disorders on patient satisfaction has not been studied previously, although levels of distress and depressive symptoms have received some attention. Greenley et al<sup>4</sup> found that patients with higher levels of psychological distress reported lower satisfaction with care. The study focused on middle-range symptoms of depression and anxiety and did not consider the presence of other psychiatric symptoms. Linn and Greenfield<sup>5</sup> found a significant negative association of Zung Self-Rating Depression Scale scores with patient ratings of satisfaction with health care. The study focused on outpatients at a single academic center, where the quality of physical and mental health care may have been atypical. Neither study evaluated the influence of psychiatric disorders on satisfaction.

Using data from the 1991 Medicare Current Beneficiary Survey (MCBS), we examined the relationship between psychiatric disorders and satisfac-

tion in a national sample of elderly and disabled patients who rated the health care they received during the past year. The use of a national sample avoids the limitations of a single clinical site, where physical or mental health care may be better or worse than the norm. We hypothesized that patients with psychiatric disorders will be less satisfied with the overall quality of their health care than those without. We then explored whether differences in satisfaction were seen with specific types of psychiatric disorders or for particular components of health care quality. Our focus on psychiatric disorders (rather than on distress or symptoms) is significant because psychiatric diagnoses typically are included in claims databases and could be used for casemix adjustment.

Among categories of psychiatric illness, we hypothesized that affective, anxiety, and psychotic disorders would be strongly associated with lower patient ratings of satisfaction because of the negativism that is characteristic of these disorders. Negativism has been found to underlie individuals' ratings of subjective dissatisfaction in the work place and may play a similar role in patient assessment of health care.<sup>6</sup> In contrast to these conditions, organic disorders, substance abuse disorders, and personality disorders (as a group) are not characterized by negativism.<sup>7</sup>

## Methods

### Data

Data were derived from the 1991 MCBS administered by the Health Care Financing Administration.<sup>8</sup> A stratified, geographically representative national sample of elderly and disabled Medicare beneficiaries was interviewed about their health status, utilization of care, and attitudes toward the health care received in the previous year. The survey data were linked to all part B physician/supplier claims incurred during 1991. Exclusion criteria included residence in an institution or outside the 50 states, discontinuous Medicare participation, group health plan participation, and lack of reported service utilization during 1991. Because aged and disabled beneficiaries are distinct populations with different characteristics and health care needs, models were estimated separately for each group. Total sample sizes were 7,574 and 1,322, respectively. Because of item nonresponse, however, effective sample sizes for the regression analyses ranged from  $n =$

6,648 to  $n = 7,407$  for the elderly and from  $n = 1,231$  to  $n = 1,303$  for the disabled, depending on the particular outcome.

### Outcome Measures

Our primary outcome was whether MCBS participants reported being satisfied (reported "very satisfied" or "satisfied") or dissatisfied (reported "very unsatisfied" or "unsatisfied") with the overall quality of health care they received in the past year.

Secondary outcomes examined were whether patients were satisfied with other components of quality of care, including their ability to receive all of their care at the same location, the cost of care, follow-up care, ease of getting to their physician, information received from the physician about what was wrong, and the physician's concern for their overall health.

### Explanatory Variables

The presence of a psychiatric disorder was defined by whether respondents had at least one part B physician/supplier claim during 1991 with a primary ICD-9-CM diagnosis code in the range of 290 to 316. Psychiatric disorders were classified using standard categories: psychotic, organic, affective, anxiety, substance abuse, and "other psychiatric" disorders (principally adjustment, sexual, and personality disorders). Patients with multiple primary psychiatric diagnoses were assigned the disorder recorded most often, using a hierarchical ranking system to break ties.

Satisfaction ratings may be influenced by patient sociodemographic and nonpsychiatric clinical characteristics. Thus, the explanatory variables included age, sex, minority status (nonwhite or Hispanic versus white non-Hispanics), marital status (married versus unmarried), supplemental insurance coverage (Medicaid or private Medigap insurance versus Medicare only), education (high school and college versus less than high school), income, and use of a proxy respondent. Clinical status was represented by patient-reported information on health status (excellent, very good, good, fair, or poor), functional limitations (the number of Activities of Daily Living and Instrumental Activities of Daily Living with which the patient required assistance) and comorbid medical conditions. Medical comorbidities were aggregated to form subscales for the following organ system or disease categories: cardiovascular, res-

piratory, neurologic, endocrine, musculoskeletal, and cancer. Within each subscale, diseases were weighted by severity (1 = mild condition, 2 = moderate to severe condition).

### Analyses

Weighted summary statistics (means and standard deviations for continuous variables, proportions for dichotomous variables) for all of the analysis variables are reported for the subsamples of respondents with and without psychiatric disorders. Differences between the two subsamples were tested using F-tests for means and binomial tests for proportions.

The study hypotheses were tested by estimating multiple logistic regressions of satisfaction with care. To facilitate interpretation of the coefficient estimates, we report relative risks, defined as the probability of satisfaction if the factor of interest were present divided by the probability if it were not present. Because of the high proportion of the sample reporting satisfaction, odds ratios were inadequate approximations of the relative risks.<sup>9</sup> Thus, we report estimates of the actual relative risks, along with the corresponding confidence intervals, which are based on standard errors from a Taylor series expansion.<sup>10</sup> Because the standard errors, and hence confidence intervals, are only first-order approximations, they do not correspond precisely to the significance levels, which were derived from exact statistical tests.

All of the tables with descriptive statistics and regression estimates indicate results that are significant based on exact statistical tests, using 5% and 1% cutoffs for the level of Type I error. The 5% cutoff was used in testing the principal hypothesis about the influence of psychiatric disorders on satisfaction with overall quality of care. The nested analyses, however, which tested hypotheses about individual components of satisfaction, entailed comparisons across multiple outcomes, increasing the probability that some of the null hypotheses will be rejected because of random chance. Thus, we used a 1% cutoff to test hypotheses about satisfaction with individual components of care.

## Results

### Sample Characteristics

Among the entire sample (ie, patients with and without psychiatric disorders), aged patients had

TABLE 1. Descriptive Statistics for Independent Variables by Basis of Medicare Eligibility and Presence of Psychiatric Disorders

Patient Characteristics	Aged Patients		Disabled Patients	
	With Psychiatric Disorders ( <i>n</i> = 443)	Without Psychiatric Disorders ( <i>n</i> = 7,131)	With Psychiatric Disorders ( <i>n</i> = 357)	Without Psychiatric Disorder ( <i>n</i> = 965)
Minority (%)	12	12	28	25
Female (%)	65	61	43	40
Married (%)	47*	55	27*	45
Supplemental insurance (%)	86	88	70	67
Education				
Junior high (%)	30	29	32	29
High school (%)	37*	44	47	41
College (%)	11	13	6	5
Household income >\$15,000 (%)	40 <sup>†</sup>	46	16 <sup>†</sup>	25
Missing income (%)	12	9	4	7
Proxy respondent (%)	20*	6	18	18
Saw mental health specialist (%)	28	—	72	—
Psychotic disorders [% ( <i>n</i> )]	13 (59)	—	39 (139)	—
Organic disorders [% ( <i>n</i> )]	18 (79)	—	4 (14)	—
Substance abuse disorders [% ( <i>n</i> )]	3 (12)	—	6 (21)	—
Affective disorders [% ( <i>n</i> )]	20 (89)	—	22 (78)	—
Anxiety disorders [% ( <i>n</i> )]	36 (158)	—	19 (69)	—
Other psychiatric disorders [% ( <i>n</i> )]	10 (46)	—	10 (36)	—
Age [mean (SD); yr]	74.5 (6.65)	74.5 (6.70)	45.0* (11.6)	50.6 (11.52)
Self-assessed health [mean (SD)] Range: 1 (poor)–5 (excellent)	2.80* (1.16)	3.20 (1.18)	2.23 <sup>†</sup> (1.16)	2.07 (1.12)
Activities of Daily Living [mean (SD)] Range: 0 (no limitations)–6	1.33* (1.76)	0.84 (1.38)	1.24* (1.72)	1.83 (1.78)
Instrumental ADL [mean (SD)] Range: 0 (no limitations)–6	1.28* (1.65)	0.69 (1.17)	1.66 (1.64)	1.76 (1.60)
Medical comorbidity index [mean (SD)] Range: 0 (no comorbidities)–10	2.90 <sup>†</sup> (1.97)	2.69 (1.76)	2.18* (2.11)	3.00 (2.09)

\**P* ≤ 0.01 for difference between patients with and without psychiatric disorders.

<sup>†</sup>*P* ≤ 0.05 for difference between patients with and without psychiatric disorders.

a mean of 6.7 ± 5.9 physician visits during 1991, and disabled patients had a mean of 5.7 ± 8.4 physician visits. Among the subsample with a psychiatric diagnosis, aged patients had a mean of 3.2 ± 4.0 physician visits and disabled patients had a mean of 6.9 ± 8.4 physician visits for the psychiatric disorder.

Table 1 presents sociodemographic and clinical characteristics for the sample, stratifying by basis of Medicare eligibility and whether the

beneficiary had a psychiatric disorder. Compared with aged beneficiaries without psychiatric disorders, those with psychiatric disorders were significantly less likely to be married or to have a high school education or household income greater than \$15,000, but were more likely to require a proxy respondent. They also had more activities of daily living and instrumental activities of daily living needs, more comorbid medical conditions, and lower self-assessed health. Dis-

TABLE 2. Proportion of Patients Reporting Satisfaction With Care, by Basis of Medicare Eligibility and Presence of a Psychiatric Disorder

Proportion Reporting Satisfaction With	Aged Patients		Disabled Patients	
	With Psychiatric Disorders (n = 443)	Without Psychiatric Disorders (n = 7,131)	With Psychiatric Disorders (n = 357)	Without Psychiatric Disorders (n = 965)
Overall quality of care (%)	91*	95	82*	90
Components of quality of care (%)				
Ease of getting to physician	91	93	83	82
Costs of health care	66	67	56	53
Health information received	90 <sup>†</sup>	92	78*	87
Follow-up care	91*	96	86	91
Physician's concern for overall health	89*	93	81 <sup>†</sup>	88
Receiving care at the same location	90	92	83	84

\* $P \leq 0.01$  for difference in proportions between patients with and without psychiatric disorders in a chi squared test.

<sup>†</sup> $P \leq 0.05$  for difference in proportions between patients with and without psychiatric disorders in a chi squared test.

abled beneficiaries with psychiatric disorders were younger than those without psychiatric disorders and were less likely to be married or to have an annual household income more than \$15,000. They also required more assistance with activities of daily living and had lower self-assessed health and more comorbid medical conditions.

### Satisfaction Among Patients With and Without Psychiatric Disorders

As Table 2 shows, patient satisfaction with the overall quality of health care was high: 93% of patients in the sample reported that they were "satisfied" or "very satisfied" with the overall quality of their health care. A significantly lower proportion of patients with psychiatric disorders (aged and disabled) reported satisfaction with overall quality than patients without psychiatric disorders. Among aged beneficiaries, patients with psychiatric disorders also were significantly less likely to report satisfaction with their follow-up care and with their doctors' concern for their overall health. Disabled patients with psychiatric disorders were less likely to report satisfaction with the health information they received.

Table 3 shows relative risks comparing the satisfaction with the overall quality of care of

patients with and without psychiatric disorders, controlling for sociodemographic and clinical differences among patients. Satisfaction with overall health care remained significantly lower for both aged (RR = 0.98,  $P < 0.05$ ) and disabled patients (RR = 0.91,  $P < 0.01$ ) with any psychiatric disorder.

Table 3 also shows relative risks comparing satisfaction with overall quality for patients with specific types of psychiatric disorders to the satisfaction of patients without any psychiatric disorder. Aged patients with anxiety disorders were significantly less likely to report satisfaction (RR = 0.95,  $P < 0.01$ ). Disabled patients with psychotic (RR = 0.91,  $P < 0.05$ ), organic (RR = 0.68,  $P < 0.01$ ) and "other psychiatric" disorders (RR = 0.81,  $P < 0.01$ ) were significantly less likely to report satisfaction.

Table 4 presents relative risks comparing individual components of satisfaction between patients with and without psychiatric disorders, controlling for sociodemographic and clinical differences among patients. Aged patients with psychiatric disorders reported lower satisfaction with follow-up care (RR = 0.96,  $P < 0.01$ ). A trend toward significance was seen for satisfaction with physicians' concern for overall health (RR = 0.97,  $P = 0.04$ ). Disabled patients with psychiatric disorders

TABLE 3. Regression-Adjusted Comparison of Patients With and Without Psychiatric Disorders in Their Satisfaction With the Overall Quality of Their Health Care

Regressor	Satisfaction With Overall Quality of Care			
	Aged Patients ( <i>n</i> = 7,574)		Disabled Patients ( <i>n</i> = 1,322)	
	RR	95% CI	RR	95% CI
Any psychiatric disorder	0.98 <sup>†</sup>	0.95, 1.00	0.91*	0.85, 0.96
Type of psychiatric disorder				
Psychotic disorders	0.99	0.93, 1.05	0.91 <sup>†</sup>	0.82, 1.00
Organic disorders	1.02	0.98, 1.06	0.68*	0.40, 0.87
Substance abuse	0.90	0.71, 1.10	0.89	0.70, 1.09
Affective disorders	0.98	0.92, 1.03	0.94	0.83, 1.05
Anxiety disorders	0.95*	0.90, 0.99	0.90	0.79, 1.02
Other psychiatric disorders	1.01	0.93, 1.07	0.81*	0.64, 0.98

Note: Relative risks (RR) are obtained from two separate logit regressions, the first controlling for any disorder, the second controlling for the type of disorder. Confidence intervals (CI) are based on approximate standard errors, derived from a first-order Taylor series expansion; *P* values are derived from exact statistical tests. All of the logit models also control for age, sex, minority status, marital status, supplemental insurance coverage, education, income, proxy response, self-assessed health status, Activities of Daily Living, Instrumental Activities of Daily Living, medical comorbidities, and a constant term.

\**P* ≤ 0.01.

†*P* ≤ 0.05.

reported lower satisfaction with health information they received from their physicians (RR = 0.91, *P* < 0.01). A trend toward significance was

seen for satisfaction with follow-up care (RR = 0.95, *P* = 0.05) and physicians' concern for overall health (RR = 0.94, *P* = 0.02).

TABLE 4. Regression-Adjusted Comparison of Patients With and Without Psychiatric Disorders in Their Satisfaction With the Components of Health Care Quality

Satisfaction Measure	Aged Patients ( <i>n</i> = 7,574)		Disabled Patients ( <i>n</i> = 1,322)	
	RR	95% CI	RR	95% CI
Ease of getting to physician	1.00	0.97, 1.03	1.00	0.94, 1.06
Costs of health care	1.04	0.97, 1.11	0.92	0.80, 1.04
Health information received	0.98	0.96, 1.01	0.91*	0.85, 0.97
Follow-up care	0.96*	0.94, 0.99	0.95 <sup>†</sup>	0.91, 1.00
Physician's concern for overall health	0.97 <sup>†</sup>	0.94, 1.00	0.94 <sup>†</sup>	0.88, 0.99
Receiving care at the same location	1.00	0.97, 1.02	0.98	0.92, 1.04

Note: Relative risks (RR) for each outcome are obtained from a logit regression controlling for any psychiatric disorder. Confidence intervals (CI) are based on approximate standard errors, derived from a first-order Taylor series expansion; *P* values are derived from exact statistical tests. All of the logit models also control for age, sex, minority status, marital status, supplemental insurance coverage, education, income, proxy response, self-assessed health status, Activities of Daily Living, Instrumental Activities of Daily Living, medical comorbidities, and a constant term.

\**P* ≤ 0.01.

†*P* ≤ 0.05.

## Discussion

The principal new finding of our analysis was that aged and disabled Medicare beneficiaries with psychiatric disorders were less likely to report satisfaction with the overall quality of their health care than beneficiaries without psychiatric disorders. Although statistically significant, the differences seen in satisfaction between patients with and without psychiatric disorders were small in magnitude. For example, disabled patients with psychiatric disorders were 91% as likely to report satisfaction with the overall quality of their health care; aged patients were 98% as likely to report satisfaction. Nonetheless, small differences may be important. In a review of patient assessments of care, Kaplan and Ware<sup>2</sup> concluded that although patients generally give high ratings to the quality of care they receive, "small differences even at the upper end of the scale have important implications for patients' subsequent behavior with respect to health and health care."

Further study is needed to determine whether the differences observed are the result of psychiatric disorders' influence on patient assessments of care or whether Medicare patients with psychiatric disorders receive lower quality health care. Some researchers have argued that patient characteristics (demographic and clinical) may bias assessments of health care and should be subject to casemix adjustment when comparing satisfaction among competing health plans.<sup>2</sup> If psychiatric disorders bias patient ratings, then they should be considered for inclusion in such adjustment. Otherwise, health plans with higher proportions of patients with psychiatric disorders could be unfairly penalized. Estimates from the National Comorbidity Study have suggested that nearly 30% of the US population suffers from some type of psychiatric disorder during the course of a year and that the prevalence of individual disorders varies among geographic areas and sociodemographic groups.<sup>11</sup>

The alternative possibility—that Medicare beneficiaries with psychiatric disorders receive lower quality care—is also troubling. Our results suggest that patients with psychiatric disorders were particularly less likely to be satisfied with the continuity and integration of their care (follow-up care and physicians' concern for overall health). These areas should be starting points for further assessment of quality of psychiatric and medical care among Medicare patients. Use of other quality measures, including

the National Committee on Quality Assurance's HEDIS (the most recent version contains an expanded mental health module) and the American Managed Behavioral Healthcare Association's PERMS, may shed light on whether care for this population is affected adversely and in what ways.<sup>12,13</sup> More detailed methods of studying clinical quality, such as medical record abstraction, also may be useful.

We hypothesized that categories of psychiatric disorders most characterized by "negativistic" qualities would be associated with a lower likelihood of patient satisfaction. This hypothesis was not borne out. Although aged patients with anxiety disorders and disabled patients with psychotic disorders were significantly less likely to report satisfaction, so were disabled patients with organic and "other psychiatric" disorders. The influence on health care ratings of other psychological components of mental illness, eg, cognitive impairment, should be studied as well.

The limitations of our study include those inherent in analyses based on survey and claims data. First, we studied patients who received treatment during 1991 for a psychiatric condition. This sample definition ensured that patients had an active disorder during the study period and not a historical condition, yet excluded undiagnosed or untreated patients. Second, medical comorbidity controls were based on patient reports rather than on clinician assessment and thus were subject to recall bias. Third, claims data is subject to diagnostic inaccuracy, recording errors, and coding biases.<sup>14</sup> Finally, we attempted to control for all relevant patient sociodemographic, economic, clinical, and functional characteristics, yet unmeasured characteristics may still contribute to differences in satisfaction ratings.

In conclusion, further investigation is warranted to explore reasons why Medicare patients with psychiatric disorders are less likely to be satisfied with their health care. Studies should consider whether psychiatric impairment biases patient assessments and/or whether these patients receive lower quality of care. In addition, refinement of patient assessment measures should be directed toward reducing the impact of individual characteristics on quality assessment.

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