Older Persons' Evaluations of Health Care: The Effects of Medical Skepticism and Worry about Health

Tyrone F. Borders, James E. Rohrer, K. Tom Xu, and David R. Smith

Objective. To describe how skepticism about medical care and other individual differences, including worry about health status, are associated with evaluations of health care among the noninstitutionalized elderly.

Data Sources/Study Setting. Data were collected through a survey of approximately 5,000 community-dwelling elders (aged 65 and older) in a southwestern region of the United States.

Study Design. Global evaluations of health care were measured with two items from the Consumer Assessment of Health Plans Study (CAHPS) instrument, an overall care rating (OCR) and a personal doctor rating (PDR). Multivariate ordered logit regression models were tested to examine how medical skepticism and other factors were associated with ratings of 0–7, 8–9, and 10.

Principal Findings. Consumers who were skeptical of prescription drugs relative to home remedies, who held attitudes that they understand their health better than most doctors, and who worried about their health had worse OCR and PDR. Those who held attitudes that individual behavior determines how soon one gets better when sick had better PDR and OCR.

Conclusions. Health policymakers, managers, and providers may need to consider the degree to which they should attempt to satisfy skeptical consumers, many of whom may never rate their care highly. Alternatively, they may need to target skeptical consumers with educational efforts explaining the benefits of medical care.

Key Words. Consumer evaluations, satisfaction, elderly, medical skepticism

Consumer assessments have become an important tool for monitoring the accessibility and quality of health services. Health plans and systems routinely conduct consumer evaluations to monitor their performance and alter the delivery of care in order to retain and attract customers (Maciejewski, Kaweicki, and Rockwood 1997). Clinicians use consumer or patient satisfaction ratings to determine how they can better meet the needs of patients and, potentially, improve patient compliance (Sherbourne et al. 1992) and treatment outcomes (Kane, Maciejewski, and Finch 1997; Smith 2000). Finally, purchasers of health insurance plans such as employer groups and

consumers themselves sometimes examine ratings when deciding which plan to choose (Farley et al. 2002; Spranca et al. 2000).

Consumer ratings are, of course, subjective and thus may be influenced by various demographic, social, and health status factors. Health status has been shown to be correlated with consumer satisfaction, with persons in poorer health tending to have lower ratings (Aharony and Strasser 1993; Hall, Milburn, and Epstein 1993; Kane, Maciejewski, and Finch 1997; Lee and Kasper 1998; Rubin 1990; Smith 2000). Other research suggests that demographic factors, such as gender and age (Locker and Dunt 1978; Nelson-Wernick et al. 1989), as well as socioeconomic factors, such as educational attainment and income (Lee and Kasper 1998), are associated with evaluations. In the largest study to date of ratings by Medicare managed care beneficiaries, Zaslavsky and colleagues demonstrated that health status, age, education, and interactions between region and health and education, respectively, were important case-mix adjusters (Zaslavsky et al. 2001).

Other individual differences, including attitudes about health care, may affect consumer assessments. Donabedian points out in his discussion of quality that satisfaction is partly a function of individual as well as societal expectations (Donabedian 1988). Expectations can be shaped by a variety of experiences with previous medical care as well as deeply held attitudes. One concept that may capture such attitudes is skepticism toward medical care. Medical skepticism has been shown to be predictive of fewer physician visits, a lack of a usual physician, lower use of hospital care, and lower health care expenditures (Fiscella, Franks, and Clancy 1998) as well as mortality (Fiscella et al. 1999). A logical extension of these findings is the hypothesis that consumers shape a cognitive evaluation of their health care that conforms with their skeptical attitudes. In other words, consumers who are skeptical about

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Address correspondence to Tyrone F. Borders, Ph.D., Division of Health Services Research, Texas Tech University Health Sciences Center, 3601 4th St., Suite 1C165, Lubbock, TX 79430. With the Division of Health Services Research, School of Medicine, Texas Tech University Health Sciences Center, Lubbock, Tyrone F. Borders, Ph.D., is an Assistant Professor and the Division Chief, James E. Rohrer, Ph.D., is a Professor, and K. Tom Xu, Ph.D., is an Assistant Professor. David R. Smith, M.D., is Chancellor, Texas Tech University System, Lubbock.

medical care would be expected to have worse evaluations of health services as compared to those who are not skeptical.

In addition to attitudes about medical care, other individual differences may help to explain variation in ratings. As mentioned earlier, health status has been shown to be associated with satisfaction, but there are countless ways of assessing health. Measures of the presence/absence of disease are frequently available either from billing data or clinical records and can be merged with consumer assessment data. Perceived health-related quality of life measures, such as the Short-Form 12 (SF-12) (Ware, Kosinski, and Keller 1996) are sometimes used to control for differences in health. An additional brief measure that has the potential to reflect health status and affect the degree to which individuals evaluate their health care is their worry about their own health. Worry about health status has been shown to be predictive of greater utilization of medical services among the elderly, but has not been studied to determine if it associated with evaluations (Wolinsky and Johnson 1991).

The primary purpose of the present paper was to examine whether medical skepticism and worry about health affect overall care ratings (OCR) and personal doctor ratings (PDR) among the noninstitutionalized elderly, or persons aged 65 years and older, a group that has gone relatively understudied as compared to the general population of adults (Lee and Kasper 1998). Global ratings of care, such OCR and PDR, reflect multiple dimensions of satisfaction with care (Cleary and McNeil 1988), rather than specific dimensions of the quality or accessibility of services, and are used to make summary judgments and comparisons of health services across health plans or health systems. Specific hypotheses tested were:

H1: Elders who are skeptical about the benefits of medical care have lower OCR and PDR than those who are not skeptical

H2: Elders who worry about their health have lower OCR and PDR than those who do not worry about their health.

METHODS

Study Design and Setting

The study was conducted in a southwestern region of the United States, the 105 counties comprising West Texas, an area stretching between the U.S.–Mexican border on the west, the cities of Wichita Falls and Abilene on the east, the Texas Panhandle on the north, and the Permian Basin region on the south. Data were collected through a telephone survey of some 5,000

community-dwelling elders' health status, health care accessibility and quality, and other health-related factors. Telephone surveys are frequently conducted to assess consumer satisfaction, and their suitability has improved in recent years. Within Texas, only 4.18 percent of households are estimated to have no telephone service available (U.S. Census Bureau 2000a). Comparisons of estimates from the National Health Interview Survey between all households and households with telephones indicated very small (less than 1 percent) differences in health-related variables (Anderson, Nelson, and Wilson 1998).

To derive the sample, approximately 65,000 residences that had a directory-listed telephone number in West Texas were contacted. The sampling frame was drawn in direct proportion to residential listings from each area code and telephone exchange in the 105 counties. Up to five contacts were made to each telephone number. If more than one elderly person resided within the household, the interviewer asked to speak with the person aged 65 years or older who had the most recent birthday, which approximates random sampling within the household (Aday 1996). A modified version of the Mini Mental State Examination (Folstein, Folstein, and McHugh 1975) was administered to consenting respondents to screen for dementia. Excluding those who failed the cognitive screener, the participation rate was 72 percent; including those who failed the cognitive screener, the participation rate was 67 percent. Comparisons between the sample and 2000 census suggest that the sample slightly underrepresents Hispanic Americans and other minorities and overrepresents females (U.S. Census Bureau 2000b). According to 2000 census data, the Hispanic American population in West Texas is fairly homogenous in type, with Mexican Americans being the predominant Hispanic subgroup.

Because of the length of the survey, not all questions could be included in a single interview. Therefore, two waves of the survey were conducted. All of the independent variables and one of the dependent variables (OCR) were from Wave 1. A second dependent variable (PDR) was collected in Wave 2 in which participants were recontacted approximately three months after the initial interview. The overall response rates for Waves 1 and 2 was 53.2 percent. There were no statistically significant differences in major demographic variables between persons who participated in Wave 1 and those who participated in Waves 1 and 2.

Dependent Variables

Consumers' global evaluations of health care were assessed using two items from the Consumer Assessment of Health Plans Study (CAHPS) instrument

(Crofton, Lubalin, and Darby 1999). First, consumers who had received any type of health care in the previous six months were asked to rate their overall care. The overall care rating (OCR) is intended to reflect multiple dimensions of all health care experiences in the previous six months. Second, consumers who reported having a personal doctor or nurse were asked to rate that personal provider. The personal doctor rating (PDR) is intended to reflect all care provided by a personal doctor or nurse, if an individual has such a provider, over the same time period. Although analyses were conducted at the group level, rather than the individual level, as is the case in the present study, previous work suggests that reports of the delivery of care and access to care are the most strongly associated with OCR (Zaslavsky et al. 2000). Reports of the delivery of care and advice were found to be the most strongly associated with reports of PDR (Zaslavsky et al. 2000).

The CAHPS also includes ratings of one's specialist and health plan, but these were not incorporated in our survey. Moreover, the CAHPS includes additional items measuring reports of care, or whether an individual did or did not have a certain experience, which are more appropriate for identifying particular dimensions of access and quality in need of improvement. Although several of these reports were included in the survey used for the present paper, we focus on more general ratings because (1) they are routinely used to make summary judgements about the performance of health plans or, in the present case, the general health care system, and (2) they are influenced by both cognitive and emotional reactions to care experiences (Cleary and McNeil 1988), which have the potential to be influenced by medical skepticism and other individual differences.

It was assumed that, theoretically, the underlying evaluation ratings were continuous (negative infinity to positive infinity). Essentially, we were estimating the effects of the independent variables on the latent continuous rating. Scores for the ratings ranged from 0 (worst possible) to 10 (best possible). The Agency for Health Care Agency and Quality (2002) recommends that these scores be recategorized as 0–7, 8–9, and 10 when computing health plan estimates. Although we conducted analyses at the individual level, rather than the health plan level, we chose to recategorize the scores in this fashion because of the distribution of the original ratings.

Independent Variables

To further advance our understanding of how individual differences in attitudes, beliefs, and health status are associated with ratings of health care, a

comprehensive framework of the determinants of health care ratings would be useful. One possible framework that could aid in the organization of variables is the behavioral model developed by Andersen and colleagues. The original model theorized that three sets of factors (predisposing, enabling, and need) determine the use of health services (Andersen and Newman 1973). A more modern version of the behavioral model theorizes that these factors eventually affect health care outcomes, including satisfaction with health services (Andersen 1995).

Accordingly, independent variables were categorized as predisposing, enabling, and need characteristics. Predisposing factors included age, gender, race/ethnicity, marital status, acculturation, and medical skepticism. Race/ethnicity was categorized as non-Hispanic white, Hispanic American, black/African American, Asian or Pacific Islander, and Native American or Alaskan Native. Because of the relatively small percentage of the population in the latter three categories, they were combined to create an other race/ethnicity group. An acculturation index was comprised of five items that assessed English relative to Spanish reading, writing, and speaking proficiency. The index score was the average of five items scaled from 0 (least acculturated) to 100 (most acculturated).

Skepticism about medical care was measured using four items included in the National Medical Expenditures Survey (NMES) that have been used in studies predicting medical care utilization (Fiscella, Franks, and Clancy 1998). Respondents were asked the extent to which they agreed with the following statements using a five-item Likert scale: (1) I can overcome illness without the help from a medically trained professional, (2) home remedies are often better than drugs prescribed by a doctor, (3) it is individual behavior that determines how soon an individual gets well, and (4) I understand my health better than most doctors. A medical skepticism index has been used by other researchers (Fiscella, Franks, and Clancy 1998), but the Cronbach's alpha computed with our data did not demonstrate reasonable internal consistency ($\alpha = .55$). Thus, rather than using these items to compute a summary score, they were treated as independent factors representing whether the respondent agreed with each statement.

Enabling characteristics included rural residence, residence in a county along the U.S.-Mexican border, educational attainment, current employment, household income, and insurance status. Urban and rural residence was defined according to the Office of Management and Budget (OMB) definitions of metropolitan and nonmetropolitan (Ricketts, Johnson-Webb, and Randolph 1999). Rural counties were further classified as according to frontier

status, with a frontier county defined as one with fewer than seven persons per square mile. Household income was categorized as less than \$10,001 per year, \$10,001 to \$20,000 per year, \$20,001 to \$30,000 per year, and greater than \$30,000 per year. Health insurance coverage was categorized into one of five mutually exclusive groups: Medicare only, Medicare plus supplemental insurance, Medicaid only or Medicaid plus other coverage, other government or private insurance only, and no insurance coverage.

Physical and mental health-related quality of life were measured with the Medical Outcomes Study Short Form-12 (SF-12) (Ware, Kosinski, and Keller 1996). The presence of several chronic diseases (i.e., hypertension, coronary heart disease, stroke, arthritis, asthma/emphysema/chronic bronchitis, and diabetes) was controlled for. The number of physician visits in the past year (0 to 1, 2 to 4, and 5 or more visits) was included to control for the possibility that volume of physician service use may be related to health care ratings. Finally, worry about health status was measured using a single item contained in the Longitudinal Study on Aging in which respondents were asked if their overall health status had caused them a great deal of worry, some worry, hardly any worry, or no worry at all over the previous six months (Wolinsky and Johnson 1991). Responses were recategorized to distinguish worriers from nonworriers.

Statistical Analyses

Each dependent variable had more than two categories and the categories were ordinal (ratings of 0–7, 8–9, and 10). Therefore, ordered logit regression analyses were conducted. Univariate ordered logit regression analyses were conducted first to determine if there was an association between each independent variable and OCR and PDR. Next, multivariate ordered logit regression analyses were conducted to determine the independent effect of each independent variable, controlling for other predisposing, enabling, and need factors.

For the ease of interpretation, an ordered logit regression uses independent variables to explain the log odds ratio of one category to the adjacent category with a lower value. In this case, they were the log odds ratios of “10” to “8–9” and “8–9” to “0–7.” If an estimated parameter for an independent variable, such as worry about health status, was less than one, it would indicate that worriers were less likely to rate their care a “10” than “8–9” or less likely rate their care “8–9” than “0–7.” In other words, worrying about health would be associated with a lower care rating, controlling for other factors.

RESULTS

A total of 4,076 individuals rated their overall care; 3,131 rated their personal doctor. Table 1 describes the sample for the analyses involving OCR (from Wave 1 of the survey) and the relative frequency of each rating category (0–7, 8–9, and 10) by each independent variable. Table 2 describes the sample involving PDR (from Wave 2 of the survey) and the relative frequency of each rating category (0–7, 8–9, and 10) by each independent variable.

The potential for collinearity between the independent variables of primary interest was assessed by comparing reduced and full regression models. First, each independent variable of primary of interest (i.e., each medical skepticism item and the worry about health item) was entered individually into a regression model including predisposing, enabling, and need factors, but excluding the remaining variables of primary interest. The odds ratios from these models were then compared to those from full models containing all of the medical skepticism, worry about health, predisposing, enabling, and need factors. While not reported in the tables, the odds ratios differed little between the reduced and full models, suggesting that collinearity was not present.

Table 3 shows the adjusted odds ratios and corresponding 95 percent confidence intervals from the multivariate ordered logit regressions for OCR and PDR. Of the predisposing factors, age categories were largely unassociated with either rating, although persons aged 65 to 70 had significantly ($p < .05$) lower PDR than persons aged 81 and older. Males had significantly lower OCR and PDR. Acculturation was positively associated with OCR, but not PDR. In other words, individuals who have adopted more of an American culture had better OCR. Even when controlling for acculturation and other individual differences, Hispanics had significantly higher OCR and PDR. Similarly, individuals of another race/ethnicity had higher PDR. Individuals who had at least a high school education had higher OCR and PDR.

Three dimensions of medical skepticism were shown to predict consumer evaluations. Individuals who held attitudes that home remedies are better than prescription drugs had lower OCR and PDR. Consumers who agreed that individual behavior determines how soon they get well had higher OCR and PDR. Finally, those who agreed that they understand their health better than most doctors had lower OCR and PDR.

Few enabling factors were associated with either rating. Income was associated with PDR, but not OCR. Individuals who had Medicare plus other insurance such as Medigap and those who had private or other government

Table 1: Composition and Descriptive Statistics for OCR[†]

<i>Independent Variable</i>	<i>N = 4,076</i>	<i>10 (%) n = 1,950</i>	<i>8–9 (%) n = 1,555</i>	<i>0–7 (%) n = 571</i>
<i>Predisposing</i>				
Age category				
65–70*	1,537	44.5	41.5	13.9
71–75	1,054	50.5	36.1	13.2
76–80	804	48.1	38.1	13.6
81 and older	681	50.6	33.6	15.7
Acculturation index (<i>mean</i>)**	4,076	84.3	87.8	83.2
Married*	2,100	45.6	41.1	13.3
Single	1,976	50.2	35.0	14.7
Male****	1,220	39.8	44.2	15.9
Female	2,856	51.2	35.5	13.2
Race/ethnicity				
Hispanic****	436	58.9	25.6	15.3
Non-Hispanic white	3,449	46.3	40.0	13.7
Other race/ethnicity	191	50.2	32.9	16.7
Less than high school education****	1,071	56.3	26.8	16.8
High school or more	3,005	44.8	42.1	13.0
Medical Skepticism				
Can overcome illness	1,260	49.1	35.4	15.4
Cannot overcome illness	2,816	47.3	39.3	13.3
Home remedies are better****	1,352	44.1	38.1	17.7
Home remedies are not better	2,724	49.7	38.1	12.1
Own behavior determines health**	2,645	48.8	37.9	13.1
Own behavior does not determine health	1,431	45.9	38.5	15.5
Understand own health better*****	2,106	44.1	38.7	17.1
Does not understand own health better	1,970	51.8	37.5	10.6
<i>Enabling</i>				
Employed**	567	42.8	42.6	14.4
Not employed	3,509	48.6	37.4	13.9
Household Income				
\$10,000 or less/year	672	53.7	29.3	16.9
\$10,001–20,000/year	814	46.8	39.8	13.3
\$20,001–30,000/year*	611	45.5	41.9	12.6
Greater than \$30,000/year**	1,025	42.4	46.1	11.4
Did not report income	954	51.8	31.9	16.1
Insurance Status				
Uninsured	130	53.0	25.3	21.5
Medicare	464	56.4	31.2	12.2
Medicare plus other	1,899	45.9	40.2	13.8
Medicaid	1,202	46.6	39.7	13.5
Other private or government	381	48.8	35.4	15.7
Residence				
Urban	2,368	48.4	37.9	13.6
Frontier	413	46.0	41.4	12.5
Rural, nonfrontier	1,295	47.2	37.5	15.2

continued

Table 1. *Continued*

<i>Independent Variable</i>	<i>N = 4,076</i>	<i>10 (%) n = 1,950</i>	<i>8-9 (%) n = 1,555</i>	<i>0-7 (%) n = 571</i>
Mexican border county	700	49.0	35.7	15.2
Nonborder county	3,376	47.6	38.7	13.7
<i>Need</i>				
Hypertension (Yes)	2,336	47.3	38.4	14.3
(No)	1,740	48.5	37.8	13.6
Lung disease (Yes) ^{***}	793	45.1	37.1	17.8
(No)	3,283	48.4	38.4	13.1
Arthritis (Yes) ^{**}	2,698	46.1	39.4	14.5
(No)	1,378	51.3	35.7	12.9
Stroke (Yes)	328	47.8	34.7	17.3
(No)	3,748	47.8	38.4	13.7
Myocardial infarction (Yes)	503	47.7	38.7	13.5
(No)	3,573	47.8	38.0	14.0
Diabetes (Yes)	687	48.9	35.8	15.2
(No)	3,389	47.6	38.6	13.7
Coronary heart disease (Yes)	873	46.5	37.5	15.9
(No)	3,203	48.2	38.3	13.4
SF-12 PCS (<i>mean</i>) ^{****}	4,076	41.6	39.7	37.2
SF-12 MCS (<i>mean</i>) ^{****}	4,076	55.1	54.5	52.3
Number of physician visits				
0-1	1,139	52.9	34.1	12.9
2-4 ^{***}	1,998	47.3	38.2	14.4
5 or more ^{****}	939	42.8	42.8	14.3
Worry about health (Yes) ^{****}	1,836	39.5	42.6	17.8
(No)	2,240	54.6	34.4	10.8

[†]Statistical tests are based upon univariate ordered logit regression analyses.

*.10 significance level;

** .05 significance level;

***.01 significance level;

****.001 significance level.

insurance had lower PDR than those who were uninsured. There were no differences according to whether the respondent lived along the U.S.-Mexican border or whether the respondent resided in a rural, frontier, or urban county.

Health-related quality of life, as measured by the SF-12 physical and mental component scores (PCS and MCS) was positively associated with OCR but not PDR. Worry about health was significant in predicting OCR and PDR even after controlling for physical and mental health-related quality of life as measured by the SF-12, the presence of selected chronic conditions, and

Table 2: Sample Composition and Descriptive Statistics for PDR[†]

<i>Independent Variable</i>	<i>N = 3,131</i>	<i>10 (%) n = 1,522</i>	<i>8–9 (%) n = 1,264</i>	<i>0–7 (%) n = 345</i>
<i>Predisposing</i>				
Age category				
65–70**	1,241	45.3	42.6	12.0
71–75	834	50.0	39.0	10.9
76–80	592	50.8	39.5	9.6
81 and older	464	51.9	37.7	10.3
Acculturation index <i>mean</i> (0–100)****	3,131	84.4	89.4	87.9
Married*	1,669	46.2	43.8	9.9
Single	1,462	51.3	36.3	12.2
Male****	919	39.0	48.8	12.0
Female	2,212	52.5	36.8	10.5
Race/ethnicity				
Hispanic***	281	70.1	20.6	9.2
Non-Hispanic white***	2,721	45.9	42.6	11.4
Other race/ethnicity	129	58.4	35.6	6.2
Less than high school****	727	61.0	30.1	8.8
High school or more	2,404	44.8	43.4	11.6
Medical skepticism				
Can overcome illness**	1,007	47.9	40.2	11.8
Cannot overcome illness	2,124	48.9	40.4	10.6
Home remedies are better*	1,071	46.9	40.4	12.6
Home remedies are not better	2,060	49.4	40.3	10.1
Own behavior determines health**	2,111	49.8	39.8	10.2
Own behavior does not determine health	1,020	46.0	41.3	12.5
Understand own health better****	1,644	45.9	41.2	12.7
Does not understand own health better	1,487	51.5	39.4	9.0
<i>Enabling</i>				
Employed	457	45.0	45.0	9.8
Not employed	2,674	49.2	39.5	11.2
Household Income				
\$10,000 or less/year	464	61.2	29.7	9.0
\$10,001–20,000/year****	638	47.8	39.8	12.3
\$20,001–30,000/year****	516	45.3	44.1	10.4
Greater than \$30,000/year****	917	40.6	47.1	12.2
Did not report income**	596	54.7	35.5	9.7
Insurance Status				
Uninsured	84	65.4	28.5	5.9
Medicare	323	60.0	31.2	8.6
Medicare plus other****	1,517	43.5	43.1	13.2
Medicaid**	914	51.2	40.2	8.5
Other private or government****	293	49.1	39.5	11.2
Residence				
Urban	1,743	49.3	39.5	11.1
Frontier	324	44.7	44.4	10.8
Rural, nonfrontier	1,064	48.5	40.5	10.9

continued

Table 2. *Continued*

<i>Independent Variable</i>	<i>N = 3,131</i>	<i>10 (%) n = 1,522</i>	<i>8-9 (%) n = 1,264</i>	<i>0-7 (%) n = 345</i>
Mexican border county	475	51.5	38.7	9.6
Nonborder county	2,656	48.1	40.7	11.3
<i>Need</i>				
Hypertension (Yes)	1,757	48.7	39.3	11.9
(No)	1,374	48.4	41.7	9.8
Lung disease (Yes)	601	48.9	39.4	11.6
(No)	2,530	48.5	40.5	10.8
Arthritis (Yes)	2,030	49.2	39.3	11.4
(No)	1,101	47.5	42.3	10.1
Stroke (Yes)**	232	55.6	35.3	9.0
(No)	2,899	48.0	40.7	11.1
Myocardial infarction (Yes)**	379	54.0	37.2	8.7
(No)	2,752	47.8	40.8	11.3
Diabetes (Yes)***	495	54.3	37.1	8.4
(No)	2,636	47.5	40.9	11.4
Coronary heart disease (Yes)*	644	51.7	37.8	10.4
(No)	2,487	47.8	41.0	11.1
SF-12 PCS (<i>mean</i>)	3,131	41.0	41.3	40.1
SF-12 MCS (<i>mean</i>)	3,131	54.9	55.6	53.6
Number of physician visits				
0-1	1,150	48.3	40.7	11.0
2-4	1,349	49.2	39.8	10.9
5 or more	632	47.9	40.9	11.0
Worry about health (Yes)****	1,283	43.5	42.9	13.4
(No)	1,848	52.1	38.5	9.3

†Statistical tests are based upon univariate ordered logit regression analyses.

*.10 significance level;

** .05 significance level;

***.01 significance level;

****.001 significance level.

the frequency of physician visits in the previous six months, underscoring the potential importance of adjusting for subjective measures of health.

DISCUSSION

Consumer evaluations are frequently used to assess the performance of physicians, health care organizations, and health insurance plans (Maciejewski, Kawiecki, and Rockwood 1997). Because the consumer perspective is subjective, it could be affected by a variety of social, demographic, economic,

Table 3: Multivariate Ordered Logit Regression on OCR and PDR

<i>Independent Variable (reference group)</i>	<i>OCR (N = 4,076)</i>		<i>PDR (N = 3,131)</i>	
	<i>OR</i>	<i>95% C.I.</i>	<i>OR</i>	<i>95% C.I.</i>
<i>Predisposing</i>				
Age category (age 81 and older)				
Age 65–70	0.83*	(0.69, 1.01)	0.76**	(0.61, 0.95)
Age 71–75	1.03	(0.84, 1.25)	0.93	(0.73, 1.17)
Age 76–80	0.94	(0.77, 1.16)	0.99	(0.77, 1.26)
Acculturation index (0–100)	1.01**	(1.00, 1.01)	1.00	(0.99, 1.01)
Male (Female)	0.60****	(0.52, 0.69)	0.61****	(0.51, 0.72)
Race/ethnicity (non-Hispanic white)				
Hispanic	2.19****	(1.45, 3.32)	2.18**	(1.30, 3.66)
Other race/ethnicity	1.07	(0.80, 1.45)	1.46**	(1.01, 2.11)
Married (single)	1.02	(0.89, 1.17)	1.14	(0.97, 1.33)
Less than high school education (high school or greater)	1.41****	(1.20, 1.67)	1.47****	(1.21, 1.79)
Medical skepticism				
Can overcome illness	1.04	(0.91, 1.20)	0.96	(0.82, 1.12)
Home remedies are better	0.76****	(0.66, 0.86)	0.86**	(0.74, 1.00)
Own behavior determines health	1.19***	(1.05, 1.36)	1.25***	(1.07, 1.46)
Understand health better	0.67****	(0.59, 0.76)	0.75****	(0.65, 0.87)
<i>Enabling</i>				
Employed (unemployed)	0.87	(0.73, 1.04)	1.08	(0.88, 1.31)
Household Income (\$10,000 or less/year)				
\$10,001–\$20,000/year	0.94	(0.76, 1.16)	0.72**	(0.56, 0.93)
\$20,001–\$30,000/year	0.96	(0.76, 1.22)	0.79*	(0.60, 1.04)
\$30,000 and higher/year	0.91	(0.73, 1.14)	0.70***	(0.54, 0.91)
Did not report income	0.95	(0.77, 1.17)	0.89	(0.69, 1.16)
Insurance Status (uninsured)				
Medicare	1.36	(0.91, 2.03)	0.73	(0.43, 1.22)
Medicare plus other	0.93	(0.64, 1.35)	0.49****	(0.30, 0.79)
Medicaid	0.95	(0.70, 1.30)	0.65*	(0.40, 1.07)
Other private or government	0.93	(0.62, 1.40)	0.54**	(0.32, 0.92)
Residence (urban)				
Rural, nonfrontier	0.95	(0.83, 1.08)	1.00	(0.85, 1.16)
Frontier	0.98	(0.80, 1.20)	0.88	(0.69, 1.11)
Mexican border county (nonborder)	0.87	(0.72, 1.04)	0.86	(0.69, 1.07)
<i>Need</i>				
Hypertension	1.02	(0.90, 1.16)	0.91	(0.79, 1.05)
Coronary heart disease	1.04	(0.88, 1.24)	1.17	(0.96, 1.43)
Myocardial infarction	1.16	(0.94, 1.43)	1.22	(0.96, 1.57)
Stroke	1.05	(0.83, 1.31)	1.30*	(0.99, 1.71)
Arthritis	0.94	(0.82, 1.07)	0.98	(0.84, 1.15)
Lung disease	1.02	(0.87, 1.19)	1.09	(0.90, 1.30)
Diabetes	1.08	(0.92, 1.27)	1.21*	(0.99, 1.48)
SF-12 PCS	1.02****	(1.01, 1.03)	1.00*	(1.00, 1.01)
SF-12 MCS	1.02****	(1.01, 1.03)	1.01*	(1.00, 1.02)
2–4 physician visits (0–1)	0.94	(0.81, 1.09)	1.15*	(0.98, 1.36)
5 or more physician visits	0.94	(0.79, 1.12)	1.17	(0.95, 1.43)
Worry about health status	0.66****	(0.58, 0.76)	0.60****	(0.51, 0.71)

*.10 significance level;
 **.05 significance level;
 ***.01significance level;
 ****.001 significance level.

and health status factors. While an abundance of previous research has explored the factors associated with adults' evaluations of health care (Aharony and Strasser 1993; Hall, Milburn, and Epstein 1993; Kane, Maciejewski, and Finch 1997; Locker and Dunt 1978; Nelson-Wernick et al. 1989; Rubin 1990; Smith 2000), relatively few studies have focused on ratings among the community-dwelling elderly (Lee and Kasper 1998).

The present study is a departure from previous work because it used ratings from an instrument (CAHPS) developed for the assessment of health plans to measure evaluations of care among the general population of older persons in a southwestern region of the United States. Because ratings were collected from community-dwelling elders, some of whom did not have Medicare or other insurance, it has contributed to our understanding of how medical skepticism and other individual differences may influence older persons' overall care and personal doctor ratings.

The relationship between medical skepticism and health care ratings appears to be somewhat complex. We suggest that these findings support a self-presentation theory in which people express attitudes in line with their actions to avoid the appearance of inconstancy (Festinger 1957). For example, people who use home remedies may be demonstrating through their actions a low opinion of formal medical care. In other words, expressing dissatisfaction is consistent with their behavior. In contrast, agreeing that individual behavior determines how soon someone gets well was positively associated with evaluations. The latter question was phrased in more absolute terms, rather than in explicit relation to some aspect of medical care, which may partially explain the contrasting effect as compared to other dimensions of medical skepticism. However, individuals who believe their own behavior determines recovery from illness may have lower expectations of the health care system, thus creating a positive association between these two variables. In support of our final hypothesis, individuals who worried about their health status had lower OCR and PDR, even when controlling for other health status indicators. We posit that worry about health may reflect an affective and cognitive state that is more closely associated with the processes involved in deriving a rating of one's experiences with health services than traditional measures of health status, such as the SF-12 or the presence of diseases or conditions.

In addition to expanding our knowledge of how attitudes about medical care may play a role in older persons' evaluations of their care, the findings raise policy relevant questions about the degree to which the overall health care system should attempt to satisfy skeptical consumers. Some consumers may want large investments in medical research and technology to find

“cures” for medical illnesses whereas others may prefer investments in alternative medicine. Health policymakers may need to consider how responsive the medical care system should be to the demands of nonskeptical versus skeptical consumers. On the other hand, policymakers and providers may argue for increased education among skeptical consumers who could benefit from medical technology, particularly elderly persons who are more likely to have treatable chronic diseases.

A second implication is whether skepticism about medical care, as well as other individual differences, should be adjusted for when computing ratings. While the present study did not attempt to determine which factors should be adjusted for when making comparisons in evaluations across health plans, as other studies have done (Elliott et al. 2001; Zaslavsky, Zaborski, and Cleary 2000; Zaslavsky et al. 2001), it raises questions about whether failure to control for skepticism and worry about health could confound comparisons across health plans. Using data from the current study, we attempted to identify how control for medical skepticism affects the ratings between the non-Hispanic white and the Hispanic subpopulations (not shown in the results). Our additional analyses showed that Hispanic elderly persons on average were more likely to have higher overall ratings ($OR = 1.759$, $\beta = .565$) when controlling for variables routinely included as risk adjusters (age category, gender, and SF-12 PCS and MCS) but not controlling for any of the medical skepticism variables. However, when just one of the medical skepticism variables (whether individual behavior determines health) was added to the model and interacted with the Hispanic dummy variable while also controlling for age, gender, and SF-12 PCS and MCS, the effect of being Hispanic was significantly reduced ($OR = 1.486$, $\beta = .396$). The result from this exercise supports that when comparing overall care ratings, medical skepticism needs to be incorporated as an adjuster to truly reflect the underlying subpopulation differences. To further examine this possibility, future studies conducted at the plan level should include measures of attitudes about health care as well as other case-mix adjusters. In doing so, one important consideration is whether skepticism varies sufficiently across health plans to impact plan-level evaluations. More sensitive measures of attitudes about health care may need to be developed to serve as adjusters at the plan level. An additional consideration is whether skepticism is an exogenous construct unreflective of health care access and quality, such as age or gender, or a consequence of poor access and quality. However, skepticism toward medical care may have an independent effect on ratings in addition to its possible two-way causal relationship. Another example of this type of variable

with two-way effects is health status, which can be the cause and the consequence of health care access and quality.

In closing, the present paper suggests that in addition to other predisposing, enabling, and need factors, skepticism about medical care and worry about health status influence older persons' evaluations of their care. While we have no reason to believe that the associations found here would differ in other population samples, future research should include populations from other areas of the United States and additional age groups. Because of the cross-sectional nature of the current study, it is difficult to discern if medical skepticism predisposes individuals to rate their health care negatively, or if negative health care experiences predispose individuals to be skeptical of medical care. Thus, future research should use longitudinal studies that measure over time the effects of a wide range of self-care behaviors, previous health care experiences, health-related attitudes, and health worries on evaluations of subsequent health care encounters to fully understand the determinants of satisfaction or dissatisfaction.

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