

# The Combined Effects of Participatory Styles of Elderly Patients and Their Physicians on Satisfaction

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**Objectives.** To test whether concordance or discordance of patient participation between patients and physicians is associated with higher satisfaction, and to examine the effects of patients' and physicians' participatory styles on patients' satisfaction with their physicians.

**Data.** Data collected in the Texas Tech 5000 Survey of elderly patients in West Texas were used. Patient satisfaction with their physicians was measured by a single item from the Consumer Assessment of Health Plans (CAHPS), representing patients' ratings of their physicians. Patient participation was measured by an index derived from a three-item instrument and physicians' participatory decision-making (PDM) style was measured by a three-item instrument developed by the Medical Outcomes Study.

**Methods.** An ordered logit multivariate regression was used to investigate the effects of patients' and physicians' participatory styles on satisfaction with physicians. The interaction between patients' participation and physicians' participatory styles was also included to examine the dependency of the two variables.

**Results.** Controlling for confounding factors, a higher PDM score was associated with a higher rating of patient satisfaction with physicians. A higher patient participation score was related to a lower physician satisfaction rating. The combined effect of patients' and physicians' participation styles indicated that for a low patient participation score, a high PDM score was not needed to produce high satisfaction. The greater the discordance in this direction, the higher the satisfaction. However, with a high patient participation score, only an extremely high PDM score would produce relatively high satisfaction.

**Conclusions.** The current study supports the discordance hypothesis. Participatory physicians and patient-physician communications concerning patient participation can promote higher satisfaction.

**Key Words.** Physicians' participatory decision-making style, patient participation, medical decision making, patient satisfaction

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Consumer satisfaction ratings in health care are commonly used indicators of access and outcomes (Kane, Maciejewski, and Finch 1997; Rohrer 1999). An early study found that patients' satisfaction with care was positively associated with their degree of involvement in decision-making during visits (Joos, Hickam, and Borders 1993). In particular, the Medical Outcomes Study

demonstrated that patients who rated their physicians as having a low participatory decision-making (PDM) score were more likely to change health care providers (Kaplan et al. 1996). Another study, using a patient sample from a university hospital, revealed that PDM scores were significantly associated with patients' satisfaction with the technical aspects of visits (Lerman et al. 1990). Also, among an asthmatic adult patient sample, higher patient satisfaction was found to be correlated with their physicians' PDM scores (Adams, Smith, and Ruffin 2001).

The majority of previous studies, including those cited above, focused on physicians' PDM style. The central question of these studies was whether patients were (more) satisfied if their physicians provided them with sufficient opportunities to participate in decision making. However, not all patients are participatory, regardless of their physicians' PDM style (Waterworth and Luker 1990). For example, one study identified three patterns of participatory style among early-stage breast cancer patients: delayers, deferrers, and deliberators (Pierce 1993). The variation in the level of participation across patients makes it difficult to establish a universal intervention to encourage patient participation (Neufeld, Degner, and Dick 1993). Nonetheless, one study found that interventions that accommodate patients' readiness and willingness to participate yielded improvement in health care outcomes (Prochaska and DiClemente 1983). Moreover, in a randomized trial, patients who were encouraged to use information gained during a 20-minute session prior to their doctor's visit to negotiate with their physician experienced improved treatment effectiveness (Greenfield et al. 1988).

Patients' nonparticipation is particularly pronounced among elderly patients. Specifically, older patients were less assertive, asked fewer questions, and provided less information to their physicians (Adelman, Greene, and Charon 1991; Greene et al. 1989). Also, elderly patients were less likely than younger persons to challenge a physician's authority and tended to leave the decision-making authority to physicians (Blanchard et al. 1988; Haug and Lavin 1979). Elderly patients' nonparticipation in care may be explained by their perceptions and expectations of a patient's proper role in medical care

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(McCormic, Inui, and Roter 1996), but their nonparticipation in health care has not been found to be universal (Hooper et al. 1982). Nevertheless, regardless of their participatory styles, elderly patients did respond to interventions that promoted participation (Rakowski, Hickey, and Dengiz 1987; Tennstedt 2000).

Although numerous studies have addressed patient satisfaction, physicians' PDM style, and patients' participation style, little is known about how the concordance between patients' and physicians' participatory styles affects elderly patients' satisfaction with their physicians. Based on the findings from previous studies, one would speculate that the matching of participatory patients with participatory physicians would yield the highest satisfaction due to improved information exchange between physicians and patients. Because elderly patients tend to be nonparticipatory, it is possible that elderly patients could become frustrated and overwhelmed by physicians who are overly enthusiastic about involving patients in decision making, resulting in lower satisfaction.

On the other hand, it can be argued that a mismatch between patients' and physicians' participatory styles (e.g., a passive patient with a physician encouraging participation) promotes satisfaction. The reasoning behind this premise is that patients who are passive participants in their own health care do not expect their physicians to encourage them to participate in medical decision-making. As a result, the passive patient might perceive the physician's enthusiasm about patient participation as representing better health care quality. It also follows that patients who are very participatory may be less satisfied than those who are not participatory if they perceive that their physicians do not allow them to participate as much as they would like. That is, patient satisfaction may be affected by discordance, with the mismatch of nonparticipatory patients and participatory physicians producing the highest level of patient satisfaction, and the mismatch of participatory patients and nonparticipatory physicians resulting in the lowest level of patient satisfaction. This might explain the finding from an early study that although most cancer patients in the sample wanted information, nonparticipatory patients were more satisfied (Blanchard et al. 1988).

In summary, the arguments for concordance and discordance lead to opposing conclusions regarding how the combination of patients' and physicians' participatory styles is related to patient satisfaction with their physicians. If patient satisfaction with providers is associated with discordance, then interventions that promote physicians' participatory style need to be prioritized. To test whether concordance or discordance is associated with higher satisfaction, this study examined the effect of the interaction of

self-reported perceptions of patients' and physicians' participatory styles on patients' satisfaction with their physicians. Using a sample consisting of more than two thousand community-dwelling elderly patients, the study answered the following questions:

1. Do elderly patients' and their physicians' participatory styles, respectively, affect patients' satisfaction with their physicians?
2. Does physicians' participatory style independently affect patients' satisfaction or is its effect dependent on patients' participation? If dependent, what is the direction of the dependency?

## METHODOLOGY

### *Study Design*

The current study analyzed data collected from the Texas Tech 5000 Survey. The Texas Tech 5000 Survey was based on a telephone listing of 65,000 households in West Texas that were screened to generate a sample of 5,000 persons age 65 and older. The Texas Tech 5000 was a longitudinal survey that started in November 2000. Respondents were contacted approximately every 6 months over a period of 18 months, for a total of three data collection points. The survey contains numerous questions about health services use, pharmacy service use, satisfaction with accessibility and quality, health insurance coverage, health beliefs, health status, and demographics, as well as other health-related factors. Spanish and English versions of the survey were developed and pretested. Informed consent was obtained over the telephone from each age-eligible respondent. Upon giving consent, respondents were asked to complete the Mini Mental State Examination to screen for cognitive impairment (Folstein, Folstein, and McHugh 1975). Respondents who passed this screening were asked to complete the survey. The overall response rate (i.e., the proportion of respondents who participated in all three rounds) was 45.2 percent, resulting in 3,135 respondents. The denominator used to calculate the response rate was 6,942, the total number of eligible households with an elderly person who passed the screening. The key variables used in the current study were taken from the third round of data collection.

### *Study Sample*

Among the 3,135 elderly patients who participated in all three rounds, 811 did not complete the questions regarding physicians' PDM style and their own

participation in care. In addition, 313 elderly persons did not respond to the satisfaction question. The final sample consisted of 2,167 elderly patients. The majority of the patients who did not respond to the questions regarding their physicians' PDM styles and their own participation were those who reported that they did not need to see a doctor during the past six months in the third round.

### *Satisfaction with Physicians*

The question regarding elderly patients' satisfaction with their physicians was taken from the Consumer Assessment of Health Plans (CAHPS) (Agency for Healthcare Research and Quality 2000). It is a numeric scale with 0 representing the worst and 10 representing the best. A preliminary examination indicated that the distribution of the satisfaction variable was strongly skewed toward the high end of the scale. Consequently, it was recoded into four categories: 0–7, 8, 9, and 10. Categorization of this variable to accommodate the skewed distribution was based on the recommendation made by the Agency for Healthcare Research and Quality (Agency for Healthcare Research and Quality).

### *Participatory Decision-Making (PDM) Style*

Physicians' PDM style was measured by a three-item scale that was first used by Kaplan and her colleagues in the Medical Outcomes Study (MOS) (Kaplan et al. 1995), later used by other researchers (Adams, Smith, and Ruffin 2001; Cooper-Patrick et al. 1999; Kaplan et al. 1996). The three items are:

1. If there were a choice between treatments, how often would your doctor ask you to help make the decision?
2. How often does your doctor give you some control over your treatment?
3. How often does your doctor ask you to take some of the responsibility for your treatment?

The response to each item was rated on a five-point scale from 0 (never) to 4 (very often). The aggregation of the three items produced a score between 0 and 12. A higher score indicated that a physician provided more encouragement of patient participation. In the MOS study, the internal consistency reliability (Cronbach's alpha) was 0.74. Among the 2,167 elderly patients in the current study, the internal consistency reliability was similar (0.72).

### *Patients' Participation*

Very few studies provided guidance to evaluate patients' participation in health care among the elderly population. However, one study experimented with designing a survey with eight closed- and open-ended questions specifically for elderly patients (Tennstedt 2000). These questions were grouped into three logic categories: before visit, during visit, and after visit. To reduce the respondents' burden and to avoid open-ended questions in the telephone interview, in the Texas Tech 5000 Survey, the eight items were collapsed into three questions based on the content and the sequence of the activities performed by the patients:

1. How often do you write out a list of symptoms, complaints, and medications you are taking before you visit a doctor?
2. How often do you express your preferences for tests, medications, and treatments to your doctor?
3. How often do you call your doctor to clarify information that is uncertain to you or report symptoms and side effects after a visit to your doctor?

The responses ranged from 0 (never) to 4 (very often). In the original eight-question version, each of the three questions was divided into multiple questions. For example, the first question in our survey was originally expressed as three questions asking about symptoms, complaints, and medications, respectively. To keep the model specification parsimonious, factor analysis was performed to create an index of patient participation. One factor was identified. The factor loadings for pre-, during- and postvisit variables were 0.50, 0.53, and 0.52, respectively.

### *Analyses*

Because of the ordinal categorization of the dependent variable, an ordered logit model was used in the multivariate analysis. The PDM score, the patient participation score, and the interaction between these two variables were included as explanatory variables. To control for potential confounding factors, elderly patients' characteristics were also included. These confounders were age (65–70, 71–75, 76–80, 81+ years old), gender, education (<high school, ≥ high school), race/ethnicity (non-Hispanic white, Hispanic, other), and place of residence. Place of residence was categorized into urban, rural but not frontier, and frontier counties. Rurality was defined based on the Office of Management and Budget's non-MSA (Metropolitan Statistical Area)

designation. A frontier county was defined as a county where the number of residents per square mile is less than seven (Ricketts, Johnson-Webb, and Randolph 1999).

Also, household income and insurance in addition to Medicare were included (see Table 1). Respondents' physical- and mental-health-related quality of life was measured by SF-12 (Ware, Kosinski, and Keller 1996). The 12 items in the SF-12 instrument were used to calculate two scales, the Physical Component Scale (PCS) and the Mental Component Scale (MCS). To control for the possible nonlinear effect of health on satisfaction, the second orders of

Table 1: Sample Composition and Descriptive Statistics ( $n = 2,167$ )

	<i>Mean</i>	<i>SD</i>	<i>Frequency</i>	<i>%</i>
Satisfaction score = [0, 7]			240	11.08
Satisfaction score = 8			418	19.28
Satisfaction score = 9			411	18.97
Satisfaction score = 10			1,098	50.67
PDM [0, 1]	0.562	0.291		
Patient participation [0, 1]	0.374	0.242		
No usual physician			219	10.11
Usual physician tenure, 0–4 years			809	37.33
Usual physician tenure, 5+ years			1,139	52.56
65–70 years old			894	41.26
71–75 years old			586	27.04
76–80 years old			414	19.10
81 years or older			273	12.60
Male			692	31.93
Female			1,475	68.07
Non-Hispanic white			1,826	84.26
Hispanic			263	11.68
Other			88	4.06
<High school			1,229	56.71
≥High school			938	43.29
Urban			1,220	56.30
Rural			715	32.99
Frontier			251	10.71
Household income <\$20,001			1,161	53.58
Household income \$20,001–50,000			755	34.84
Household income > \$50,000			251	11.58
Medicaid			246	11.35
Other federal insurance			220	10.15
Employer-provided insurance			737	34.01
Supplemental insurance			1,078	49.75
PCS [0, 1]	0.401	0.114		
MCS [0, 1]	0.535	0.089		

the two health variables were included in the multivariate analysis. Also, the tenure of a patient–physician relationship was included, which was categorized as: no usual physician, tenure of 0–4 years, and tenure of 5+ years.

## RESULTS

The sample composition and descriptive statistics were shown in Table 1. About half of the respondents gave a rating of 10 on their satisfaction with their physicians. Only 11 percent rated between 0 and 7. In the bivariate analyses, the PDM score was found to be positively correlated with satisfaction ( $p < .01$ ). In contrast, a higher patient participation score was associated with lower satisfaction ( $p = .06$ ). More than half of the elderly patients had been seeing their physicians for longer than five years. The age distribution was skewed to the right with a higher proportion of younger elderly patients. More than two-thirds of the sample were females and about 84 percent were non-Hispanic whites. About 57 percent did not have high school diplomas. The proportions of elderly persons living in urban, rural, and frontier counties were 56 percent, 33 percent, and 11 percent, respectively. Approximately 54 percent had household income lower than \$20,001. Almost half of the sample had supplemental insurance and one-third had employer-provided insurance. After being scaled to a [0,1] interval, the mean PCS and MCS scores for the sample were 0.401 and 0.535, respectively.

Table 2 reports the results from the ordered logit regression. The parameter estimates, standard errors of the parameter estimates and their 95 percent confidence intervals are shown. Under the specification of the ordered logit regression, the observed satisfaction rating was based on a continuous satisfaction variable, or the latent satisfaction, that was not observable to the researchers. Consequently, the parameter estimates represent the linear marginal effects of the explanatory variables on the latent satisfaction.

Controlling for confounding factors, a higher PDM score was associated with a higher rating of patient satisfaction with physicians. In contrast, a higher patient participation score was related to a lower satisfaction rating. The interaction between the PDM and the patient participation scores had a positive sign, indicating that the effect of the PDM score was positively dependent on patient participation and vice versa. The marginal effect of the PDM score was always positive. That is, a higher PDM score was associated with higher satisfaction for any given patient participation score. In contrast,

Table 2: Adjusted Effects of Participatory Decision Making (PDM) and Patient Participation on Satisfaction

	$\beta$	SE	95% C.I.
PDM	0.435*	0.259	(- 0.073, 0.943)
Patient participation	- 1.898***	0.412	(- 2.705, - 1.090)
PDM $\times$ patient participation	1.381**	0.600	(0.205, 2.558)
No usual physician			
Usual physician tenure, 0-4 years	0.131	0.149	(- 0.161, 0.423)
Usual physician tenure, 5+ years	0.293**	0.147	(0.005, 0.581)
65-70 years old			
71-75 years old	0.249**	0.104	(0.046, 0.453)
76-80 years old	0.086	0.117	(- 0.143, 0.314)
81 years or older	0.382***	0.142	(0.104, 0.660)
Male			
Female	0.373***	0.094	(0.188, 0.558)
Non-Hispanic white			
Hispanic	0.435***	0.158	(0.126, 0.744)
Other	- 0.118	0.215	(- 0.540, 0.303)
<High school			
$\geq$ High school	- 0.120	0.093	(- 0.302, 0.062)
Urban			
Rural	- 0.042	0.090	(- 0.219, 0.135)
Frontier	- 0.224	0.137	(- 0.492, 0.044)
Household income < \$20,001			
Household income \$20,001-50,000	- 0.189*	0.099	(- 0.383, 0.006)
Household income > \$50,000	- 0.274*	0.145	(- 0.558, 0.010)
Medicaid	- 0.027	0.141	(- 0.302, 0.249)
Other federal insurance	- 0.015	0.137	(- 0.284, 0.254)
Employer-provided insurance	- 0.146	0.094	(- 0.330, 0.038)
Supplemental insurance	- 0.184**	0.090	(- 0.360, - 0.008)
PCS	- 8.643***	2.425	(- 13.396, - 3.890)
PCS <sup>2</sup>	14.030***	3.135	(7.885, 20.175)
MCS	- 3.379	3.699	(- 10.628, 3.870)
MCS <sup>2</sup>	5.444	3.776	(- 1.958, 12.845)

\* $p < .10$ ;  
 \*\* $p < .05$ ;  
 \*\*\* $p < .01$ .

the marginal effect of patient participation was always negative within its possible range [0,1]. That is, for a low patient participation score, it would not need a high PDM score to produce high satisfaction. The greater the discordance in this direction, the higher the satisfaction. However, with a high patient participation score, only an extremely high PDM score would produce relatively high satisfaction. Thus, the results supported the discordance hypothesis.

As for the confounding factors, Table 2 indicates that a long patient–physician relationship tenure, older age, being female, being Hispanic, and low household income were associated with higher ratings of satisfaction with physicians. Also, elderly persons who had supplemental insurance had lower satisfaction ratings than those who did not have supplemental insurance. Mental health status was not found to be associated with satisfaction. The effect of physical health on satisfaction was U-shaped. Both the very sick and the very healthy patients had higher physician satisfaction ratings than patients with average or above average health status. The turning point was 0.616 on the [0,1] scale of physical health.

## DISCUSSION

The results from the current study supported the discordance hypothesis, rather than the concordance hypothesis, concerning the combined effect of patient participation and physicians' participatory style on patient satisfaction with their physicians in an elderly population. Specifically, the greater the discordance between high providers' PDM and low patient participation score, the more satisfied patients were with their health care providers. Both patients' and physicians' participatory styles were significantly associated with patient satisfaction. Although higher physicians' PDM scores were associated with higher patient satisfaction, higher patients' participation scores were associated with lower satisfaction.

Patients who put in time and effort before a doctor's visit to prepare a list of symptoms, complaints, and medications taken would have believed that these pieces of information could be used by their physicians, otherwise they would not have made such a list. If a physician failed to provide opportunities to allow the patient to discuss the prepared information, dissatisfaction may result. Even if the physician made a medically "right" decision without utilizing the patient's list, the patient may be disappointed because he or she would feel that his or her "work" was not appreciated. On the other hand, it is also possible that the negative association between patient participation and satisfaction results from patients performing these previsit activities to change the way their physicians treat them because of low levels of satisfaction. Furthermore, physicians' accommodation of patients' inquisitiveness and expression of their preferences during visits may play a critical role in patients' rating of physicians. Participatory patients may expect their concerns to be addressed by the physicians and their opinions be taken into account in the

final decision making. If a physician's explanation or reasoning for choosing a particular treatment is not consistent with the patient's expectations, dissatisfaction may result.

The World Health Organization (WHO) stated that patient involvement in care is not only desirable, but also a social, economic, and technical necessity (Waterworth and Luker 1990). Similarly, the American College of Physicians has asserted that patients have a right to self-determination (American College of Physicians 1984). In addition, some states in the United States have passed laws requiring physicians to inform patients regarding treatment options for breast and prostate cancers (Nattinger et al. 1996; Nayfield et al. 1994). There has been evidence that improvement in patient participation alone leads to better outcomes (Greenfield et al. 1988; Prochaska and DiClemente 1983), although these studies did not incorporate any consideration of the matching of patients' and physicians' participatory styles.

The direct implication of the discordance hypothesis is that in order to achieve high patient satisfaction with physicians, a physician always needs to be more participatory. Although it has been shown that elevating patient participation improves outcomes, as discussed earlier, it would be more effective, according to the results from the current study, to promote participatory decision-making among physicians. Another way to achieve improvement in satisfaction may be to identify the proper role of a patient in making a medical decision. Interventions may prove to be successful in encouraging elderly patients and their physicians to communicate about what information is needed from the patient and in which specific aspects of care the patient needs to participate. If the content of a patient's input during a medical encounter is well defined between a physician and a patient, we would expect that the patient may become more participatory. Physician-patient communications regarding exactly what information is needed from the patients would reduce patients' burden of preparation and make participation less overwhelming, especially among the elderly patients who are likely to have chronic conditions and are taking multiple prescription drugs. Also, communications regarding patient participation would provide physicians with information about patients' participatory styles so that they know to what extent they should provide opportunities for patients to participate in decision making without frustrating patients who are not participatory or disappointing patients who are participatory.

There are several limitations in the current study. First, the cross-sectional nature of the data did not allow for tests of the causal relationship between patients' and physicians' participatory styles and satisfaction, and the

impact of health on satisfaction over time may be significant. Second, the current study did not measure physicians' and patients' participatory styles during specific visits, as previous studies using the three-item PDM measure did (Kaplan et al. 1995; Kaplan et al. 1996). A longer reference period, six months, was used in the current study, whereas the MOS study used the PDM score for a specific visit (Kaplan et al. 1995) and the Cooper-Patrick study used a two-week reference period (Cooper-Patrick et al. 1999). Consequently, the PDM style described in the current study represents patients' general perception of their primary care physicians' PDM style rather than perceptions of physician's PDM style during a particular visit.

Third, the current study used self-reported perception of participation as opposed to participation observed by researchers. Only very few empirical studies used survey data to address patients' perception of their own participation style, especially among the elderly population. The validity of the patient participatory style used in the current study warrants further investigation, especially on the development of new instruments measuring patient participation, the content of which would more closely match that of physicians' participatory style.

Fourth, participation among elderly patients with chronic conditions may differ from that among those without chronic conditions. This possibility was tested by including five chronic conditions (hypertension, diabetes, chronic obstructive pulmonary disease, arthritis, coronary heart disease) in the multivariate analysis in the current study. These variables were not found to be statistically significant ( $\alpha = .05$ ) either jointly or individually. However, other chronic conditions that were not included in our data may alter the results.

Lastly, it is possible that the current study used a cohort of patients who formed their opinions about physicians when physicians were more authoritative and paternalistic (McCormic, Inui, and Roter 1996). As Americans become more health-conscientious and younger generations are exposed to more consumerism than ever before, we would expect that younger populations expect more patient participation in the medical care decision-making process. In our sample of more than two thousand patients aged 65 years or older, the mean doctor rating was 8.93. It was higher than the mean rating of 7.89 found in a previous study in which the majority of the subjects in the sample were younger than 55 years of age (Morales et al. 2001). Whether there are higher expectations of patient participation among younger generations, hence, a lower mean rating, and whether younger physicians are becoming more participatory in the process of adapting to the new consumeristic environment warrant further empirical investigation.

In conclusion, elderly patients' satisfaction with their physicians was found to be affected by both their own and their physicians' participatory styles. Elderly patients were most satisfied if they were nonparticipatory and their physicians were participatory. The nonlinear relationship between physicians' PDM styles and patient satisfaction found in this study indicates that interventions improving physicians' PDM would achieve higher patient satisfaction than those that target patient participation. In situations where only limited resources are available and interventions have to be prioritized to achieve higher ratings of patient satisfaction, it would be more effective for health care organizations to prioritize strategies that provide incentives for physicians to be more participatory.

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