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HEALTH CARE SATISFACTION AMONG OSTEOARTHRITIS SUFFERERS

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Health care satisfaction ratings were studied in 365 (131 male and 234 female) members of a Health Maintenance Organization (HMO) (ages 60-89) with osteoarthritis (OA). A hierarchical multiple regression analysis to account for variance in health care ratings showed that subjects with higher satisfaction ratings were older, tended to be male, and made fewer contacts with health care providers over the previous year. They also scored higher on arthritis self-efficacy, showing less perceived disability related to arthritis. Those with higher satisfaction ratings also believed that health care services were more accessible to them, despite their equal access. Of four factor-analytically derived subscales of health care attitudes (inconvenience, reluctance, dependence, and knowledge), only inconvenience and reluctance were significatly correlated with health care satisfaction ratings. The results suggest that perceived symptom control and inconvenience to services are important predictors of health care satisfaction in this population, despite the limited availability of treatments for OA.

KEY WORDS: Health care attitudes, patient satisfaction, osteoarthritis.

The recent health care crisis in the United State has focused attention on three central outcomes: \overline{cost} , quality of care, and patient satisfaction (Kaplan, 1993). Satisfaction is a particularly important outcome because it represents the value of care from the patient's perspective and is thus a key variable to be considered in planning strategies for managed competition. Under several managed competition proposals, health care

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recipients would have the opportunity to choose between competing health care plans each year during open enrollment periods. There would be continuing surveys of patient satisfaction, and results of these surveys would be made public (Olmos, 1993). Low patient satisfaction ratings might produce bad publicity, which would result in decreased enrollment (and financial loss) to group providers or health maintenance organizations (HMOs). Fiscal analyses have demonstrated that retention of patients is central to the profitability of provider groups (Stolberg, 1993). Therefore, understanding the determinants of patient satisfaction is crucial to the success of a managed competition system of health care.

Previous studies have identified several variables that correlate with health care satisfaction: frequency of utilization, health status, patient-physician relationship, age, and gender (Anderson and Zimmerman, 1993; Doyle and Ware, 1997; Hall and Dornan, 1988; Potts, Mazzuca and Brandt, 1986; Russell, 1990). Frequent visits to a primary care physician are associated with improvements in patient satisfaction, regardless of health staus improvement (Smith and Buesching, 1985). However, patient health status appears to play a mixed role in predicting satisfaction with health care providers. The relatively high frequency of physician contacts by those with chronic illness has been shown to foster improved patient-physician rapport and greater satisfaction (Patrick, Scrivens and Charlton, 1983). At the same time, deterioration associated with chronic illness may be attributed to the provider, resulting in lower satisfaction ratings (Hall, Feldstein, Fretwell, Rowe and Epstein, 1990).

Most previous research on patient satisfaction has targeted the general population; relatively few studies have been conducted on people who use the health care system most often. Older Americans are likely to use the health care system more frequently than younger adults (AARP, 1991), so predictors of health care attitudes for this group would be especially useful. Most older persons have at least one chronic medical problem (AARP, 1991) and the most prevalent is arthritis (Fries, 1988). Osteoarthritis (OA), the most common form of arthritis, is a chronic condition for which treatments are largely ineffective. Thus, people with OA may have strong, experience-based attitudes toward their health care providers. This paper investigates patient satisfaction in a group of older people with OA who were members of an HMO.

METHOD

Participants and procedure

Participants were 131 male and 234 female older members (60+) of a large HMO who had volunteered to participate in a one-year educational or social support group intervention. Volunteers responded to a mailing that was forwarded to 3,000 randomlychosen HMO members 60 years of age or older. All respondents reported symptoms of osteoarthritis, with 90% of the diagnoses confirmed by physician records. Demographic data are listed in Table 1. The ethnicity of the sample was largely Caucasian (92.3%). The mean age of participants was 70 years (SD = 5.6 years) when they entered the study. Most participants (72.6%) were married, with 4.9% single, 14.5% widowed, and 7.9% divorced, and most were retired (83.0%). The highest level of education reported by 31.0% of the subjects was high school (or less); 43.6% reported some college education or professional certificates, and 25.4% had college degress. Medical conditions besides arthritis were reported by 70% of the participants. The median income of p * Several h trained unive from patient exception of the twelve-m and social s

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Table 1 Den

Variable name Gender

> Male Female

Marital Status Single Married Widow or v

Divorced Ethnicity

Caucasian Hispanic/L African An Asian Other

Employment Employed Retired/uni

Education co High schor Some colle Bachelor's Master's d

Doctorate Years HMO

Age (M, SD) Family Aanr 0 - 20k 20k - 50K

Above 50

The median time since osteoarthritis had been diagnosed was 6 years. The median income of participants was \$20,000-\$30,000 annually.

Several health and psychosocial measures were either administered verbally by trained university students, self-reported in a pen-and-paper format, or taken directly from patient medical charts. All measures were taken in a single interview, with the exception of health care utilization rates, which were taken from medical charts for the twelve-month period prior to the interview. Medical history, quality of well-being, and social support measures were administered verbally.

Measures (see below)

Demographic variables

Participants gave a brief medical history and reported their age, income, educational level, gender, and the date of osteoarthritis diagnosis.

Health care utilization

Participants' utilization of the health care system was measured by counting the number of health care contacts listed in their official charts in the 12-month period prior to their psychosocial interview. Health care contacts were, therefore, operationalized as those contacts considered sufficiently important to warrant documentation in medical

Table 1 Demographic characteristics of HMO sample of osteoarthritis sufferers (N = 365)

Variable name	N	Percent
Gender		
Male	131	35.9%
Female	234	64.1%
Marital Status		
Single	18	4.9%
Married	265	72.6%
Widow or widower	53	14.5%
Divorced	29	7.9%
Ethnicity		
Caucasian	337	92.3%
Hispanic/Latin/Mexican-American	10	2.7%
African American	6	1.6%
Asian	6	1.6%
Other	6	1.6%
Employment status		
Employed	62	17.0%
Retired/unemployed	303	83.0%
Education completed		
High school diploma or less	113	31.0%
Some college/professional certificates	159	43.6%
Bachelor's degree	50	13.7%
Master's degree	38	10.4%
Doctorate	5	1.3%
Years HMO member (M, SD)	15.9 years	9.6 years
Age (M, SD)	70.2 years	5.6 years
Family Aannual income (valid N = 323)		•
0 – 20k	88	27.2%
20k – 50K	179	55.4%
Above 50k	56	17.4%

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records, including both personal visits and phone calls. Medical charts were examined by trained HMO personnel who also documented the type of provider, the type of contact, and the reason for each contact.

Health status

The Quality of Well-being (QWB) scale is a general measure that combines preferenceweighted measures of symptoms and functioning to provide a numerical point-in-time expression of well-being, which ranges from zero (0) for death to one (1.0) for asymptomatic optimum functioning. It is thus a combined index of morbidity and mortality. Subjects select from 27 symptom/problem complexes, without providing details about the intensity or duration of symptoms and problems, nor any underlying pathology. The measure simply indicates the symptom's presence or absence on a given day. The symptom/problems complexes are weighted by perceived severity. The QWB also involves three scales of function: mobility, physical activity, and social activity. Each step on these scales has its own associated preference weight. In the General Health Policy Model, QWB inputs are integrated with terms for the number of people affected and the duration of time affected to produce a group measure of *well years*. The validity and reliability of the QWB has been documented in several published studies (see Kaplan and Anderson (1990) review).

Perceived self-efficacy

The Arthritis Self-Efficacy Scale consists of 20 items which require respondents to indicate how certain they are that they can perform various tasks (Lorig, Chastain, Ung, Shoor and Holman, 1989). Respondents are asked to rate certainty on a scale from 10 (very uncertain) to 100 (very certain). Typical items are "How certain are you that you can manage arthritis pain during your daily activites?" and "How certain are you that you can turn an outdoor faucet all the way on and all the way off?" Reliability of the scale has been shown to range from .85 to .90 (Lorig *et al.*, 1989).

Helplessness

The Arthritis Helplessness Index (AHI) was used to assess the degree to which participants felt helpless in the face of arthritis (Nicassio, Wallston, Callahan, Herbert and Pincus, 1985). The questionnaire consists of 15 items scaled in a six-point Likert-type format from "strongly disagree" to "strongly agree." Participants were asked to agree or disagree with statements such as "I have considerable ability to control my pain" and "It seems as though other factors beyond my control affect my arthritis." Previous research has found the overall internal reliability to be 0.69, and test-retest reliability to be 0.52, over a one-year period (Stein, Wallston and Nicassio, 1988). Internal consistency as assessed by Cronbach's alpha has been shown to be .63 for the helplessness factor (Stein, Wallston and Nicassio, 1988).

Depression

The Center for Epidemiologic Studies Depression Scale (CES-D) was designed to measure current levels of depressive symptomatology, with an emphasis on depressed mood (Radloff, 1977). The CES-D is a 20-item self-report measure for use in general population surveys to assess the relationships between depression and other variables. Studies have indicated that the scale is internally consistent, has moderate test-retest reliability, and has high concurrent and construct validity (Radloff, 1977).

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Social support

Tangible social support was assessed by using a self-report measure created by Schaefer, Coyne and Lazarus (1981). In the 7-item tangible support section, a summated score is obtained for incidents in which support from another person is available.

Health care attitudes

A survey of health care practices and attitudes, based on the literature on health care use and health care satisfaction, was developed specifically for the present study. Participants were asked to rate both their health care facility and their doctors and nurses on a four-point scale: poor, fair, good, or excellent. In the remaining 22 items, primarily yes/no questions were asked about to the participants' recent experiences with their health care providers and their resulting attitudes. A listing of abbreviated items is included in Table 2. Typical items were "Do you go to the doctor as a preventative measure?" and "Do you feel that your doctor is your friend?"

RESULTS

The frequency distribution of health care satisfaction ratings is shown in Table 3. On a four-point scale, subjects reported a mean rating of their health care facility as 3.28 (SD = .63) and a mean rating of their doctors and nurses as 3.33 (SD = .61). Given that the difference between the two ratings was not significant (p > .05), the correlation between the two was = .65, p < .01 Nearly half the subjects gave ratings of "excellent," indicating the possibility of a ceiling effect for the four-point Likert scale. Only one subject rated both doctors and nurses and their health care facility as "poor."

Means, standard deviations, and ranges for the remaining measures are shown in Table 4. During the 12 months prior to the interview, the mean number of health care contacts recorded from medical charts was 16.9 (SD = 13.0). The median number of contacts was 13. The number of health care contacts ranged 0 to 128, with the distribution showing a positive skew (skewness = 2.8). The distribution was also strongly peaked (kurtosis = 16.0).

The total number of contacts was divided among primary care physicians (43.9%), telephone calls (27.4%), nurses (9.4%), nurse practitioners (3.6%), physicians' assistants (3.3%), emergency room visits (2.5%), urgent care physicians (1.9%), hospital admissions (1.0%), mental health care providers (< 0.1%), and other hospital visits (6.9%). Arthritis symptoms were given as the primary reason for 10.5% of the total health care contacts. Other reasons were symptoms other than arthritis (72.3%), prescription refills (5.1%), referrals (4.0%), regular physical exams (2.5%), scheduled procedures (1.8%), iatrogenic effects of medications (1.6%), follow-up visits (1.2%), emergencies (0.7%), and referrals by family or friends (0.3%). A one-way analysis of variance indicated no difference between the overall utilization rates for males and females, p > .05.

Subjects reported mild to moderate levels of impaired health status as measured by the QWB⁻(M^- = .64, SD = .09). Arthritis self-efficacy, a measure of both arthritis symptoms and locus of control, showed that subjects were, on average, fairly certain that they could function despite their arthritis symptoms (M = 73.0, SD = 16.2). The variability on this measure, however, was large, with scores ranging from 26.5 to 100.

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		Factor la	oadings*	-
Abbreviated item	Factor 1	Factor 2	Factor 3	E Factor 4
Wait until extremely ill before calling?	.73			
Avoid going to the doctor?	.70			
Go to doctor as preventative measure?	57	•		
Go to doctor only when cannot diagnose self?	.52	.33		
Go to doctor because family suggested it?	.31			
Arthritis is something outside your control?	.29			
How do you consider your health?		.65		
Increased doctor visits over the years		61		
Take care of your health without much help?		.55		26
See more than one doctor?		37	26	
Travel time to doctor's office		.30		
Difficulty arranging transportation to doctor?			56	
If had to pay more, would you limit use?				
Does stress affect how often you see doctor?		·	46	
Doctor visits interfere with daily activities?			43	*
Decreased doctor visits over the years?			41	
Go to doctor only for prescription refills?	35		37	27
Feel your doctor is your friend?			.30	.25
How knowledgeable are you about arthritis?				.70
How aware of variety of services at HMO?			36	.59
Has doctor alleviated symptoms of arthritis?				.58

*Factor loadings with absolute value less than .25 not shown.

Variable	N	Percent
Rating of health care facility $(N = 364)$	<u></u>	
Poor	1	0.3%

Table 3 Health care facility ratings and ratings of doctors and nurses

Good	191	52.6%
Fair	24	6.6%
Poor	1	0.3%
Rating of doctors and nurses $(N = 363)$		
Excellent	136	37.4%
Good	195	53.6%
Fair	32	8.8%

Subjects deviation o on the CES (Radloff, 19 reported, o SD = 2.5)helplessnes (SD = 0.7)helplessnes to sympton In order to several extract fac questionnai is, although ones did r explained 1 Four-fac Factor loac four factor: each of the care provic doctor" and .73 to .29. Factor 2 was named appraisals control (a 1 doctor"). F Factor 3 health care use if had t Factor load

> Table 4 Me Variable nam HMO contact Quality of we Arthritis self-Helplessness CES-D depre Tangible soci Health care r Health care d Health care it Health care k

Subjects reported a mean total depression score (CES-D) of 8.6, with a standard deviation of 7.6 (see Table 4). A total of 13.9% of the subjects scored 16 or higher on the CES-D, indicating that they were at risk of depression or in need of treatment (Radloff, 1977), about the same percentage as found in the general population. Subjects reported, on the average, moderate amounts of tangible social support (M = 6.3, SD = 2.5) on a 10-point scale, although scores varied across the full range. On the helplessness measure, participants reported a mean helplessness rating of 4.2 (SD = 0.7) on a 10-point possible scale (0-10) where "0" represents extreme helplessness). This score reflects relatively moderate feelings of helplessness related to symptom control.

Factor 4

-.26

-.27

.25

.70

.59

.58

In order to reduce the 22 remaining items from the survey of health care attitudes to several broader constructs, a Principal Components Analysis (PCA) was used to extract factors. Of the 365 original subjects, 364 answered all items in the questionnaire. A scree plot of eigenvalues was found to level after four factors. That is, although a total of 7 factors emerged with eigenvalues greater than 1.0, the latter ones did not add appreciably (less than 6% each) to the proportion of variance explained by the first four alone (33.1%).

Four-factor solutions were rotated to orthogonal positions using the varimax method. Factor loadings greater than 0.25 for each of the factors are shown in Table 2. The four factors were labeled based on the item content of those items loading highest on each of the factors. Factor 1 included 6 items that reflected a reluctance to use health care providers. It included items like "waiting until extremely ill before calling your doctor" and "avoid going to the doctor." Factor loadings (absolute values) varied from .73 to .29. This factor was named Health care reluctance.

Factor 2 included six items that reflected dependence on health care providers and was named health care dependence. It included items which described poor selfappraisals of health, recent increases in health care use, and a low health locus of control (a negative response to "take care of your health without much help from your doctor"). Factor loadings (absolute values) varied from .65 to .30.

Factor 3 included seven items that were each related to perceived inconvenience of health care. It included items like "difficulty arranging transportation" and "would limit use if had to pay more." This factor was named perceived inconvenience of health care. Factor loadings (absolute values) varied from .56 to .30.

Table 4 Means and standard deviations for health and psychosocial variables

			14	
Variable name (possible score range)	M	SD	Min	Max
HMO contacts in prior 12 months	16.9	13.0	0	128
Quality of well-being (0-1.00)	.64	.09	.42	1.00
Arthritis self-efficacy (0-100)	73.0	16.2	26.5	100.0
Helplessness (0-10)	4.2	0.7	1.0	6.0
CES-D depression (0-60)	8.6	7.6	0	42
Tangible social support (0-10)	6.3	2.5	0	10
Health care reluctance factor (6-12)	3.1	2.4	4	12
Health care dependence factor (6-16)	3.7	1.8	6	15
Health care inconvenience factor (7-14)	8.1	1.8	8	14
Health care knowledge factor (3-10)	6.2	1.6	3	9

Factor 4 included three items that reflected a knowledge of health care services. It included items like "how aware of the variety of services available from HMO" and "how knowledgeable about arthritis." Factor loadings (absolute values) varied from .70 to .58. This factor was labeled health care knowledge.

Based on the factor analysis results, four subscale scores were computed by adding those items loading highest on each of the four factors. Internal consistencies for the subscales based on Cronbach's alpha were .60 for health care reluctance, .48 for health care dependence, .38 for health care inconvenience, and .33 for health care knowledge (3 items).

Of the 365 volunteer subjects, 359 had valid scores on all of the variables described above. For these 359 cases, correlations between measures are shown in Table 5. While the health care facility rating showed a slight (but significant) negative correlation (r = -.10, p < .05) with the number of health care contacts, this relationship was not true of the rating of doctors and nurses. Both physical health variables (arthritis selfefficacy and QWB scores) were positively correlated with the health care facility ratings (r = .17 and r = .11, respectively), but the correlation between the QWB and the rating of doctors and nurse did not reach significance (r = .09, p > .05).

All three psychosocial variables (tangible social support, helplessness, and depression) were correlated with health care facility ratings (p < .05), with better psychological adjustment being associated with higher ratings. This was also true of ratings of doctors and nurses, with the exception of tangible social support, which was not. Of the four factor-analyzed dimensions from the health care attitudes questionnaire, only two (health care inconvenience and health care reluctance) were correlated with the two health care ratings. The health care dependence and health care knowledge factors did not correlate with either of the two health care ratings.

Multiple regression analyses were used to explore the relative importance of the various measures in predicting the participants' subjective ratings of their health care providers, while controlling for demographic variables and exposure to the health care system (number of health care contacts). Both ratings of health care satisfaction (facility rating and doctor and nurse ratings) were separately analyzed as dependent measures. Potential regressors were tested hierarchically in the following order: demographic variables, frequency of prior health care contacts, illness and health variables, psychosocial variables and health care attitudes. At each step in the analysis, regressors were entered in a stepwise fashion, with the variable showing the highest partial correlation entered first. Additional regressors were judged statistically significant if they contributed uniquely to the variance in health care ratings at the .05 probability level, while controlling for other variables already included in the model.

The results of the multiple regression analyses are shown in Tables 6 (health care facility) and 7 (doctors and nurses). For the health care facility ratings, age was entered first, accounting for 14% of the variance in health care ratings, F(1,356) = 7.28, p < .05. Older subjects had higher health care ratings than younger subjects. Gender was tested as a second demographic predictor, but this relationship was not significant after controlling for age (p > .05). The number of health care contacts was then added to the model as a significant regressor after controlling for age, F(1,355) = 5.82, p < .05, explaining an additional 5% of the variance. Subjects who had fewer health care contacts in the previous year had higher ratings of their health care facility.

In Step 2, arthritis self-efficacy and QWB scores were also tested in a stepwise fashion. Arthritis self-efficacy was a stronger predictor than QWB, and this was entered

e services.'It 1 HMO" and ried from .70 ed by adding ncies for the 48 for health es described ble 5. While 2 knowledge depression) ychological s of doctors hip was not rthritis selfunce of the health care ing order: and health .05). ignificant nen added) = 5.82, /er health as entered () = 7.28, ealth care atisfaction health care are facility acility. e analysis factors did ith the two Of the four QWB and he model. tatistically he highest dependen correlation is entered stepwise at the .05 only two . Gender

Table 5 Zero-order correlations between psychosocial variables, health care satisfaction, and health care use (N = 359)

Vari	able name	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11) (12)
(1)	Rating of health care facility	1.00	.65**	10*	.17**	.i.t*	.13*	.15*	18**	11*	.00	.25** .01
(2)	Rating of doctors and nurses		1.00	02	.12*	.09	.03	.11*	13*	11*	.09	.33**07
(3)	Annual health care contacts			1.00	17**	20**	07	17**	.09	05	.29**	12*07
(4)	Arthritis self-efficacy				1.00	.38**	.22**	.40**	43**	10	37**	.18**12*
(5)	Health status (QWB)					1.00	.13*	.16*	27**	04	27**	.14** .02
(6)	Tangible social support						1.00	.15**	19**	.12*	16**	.0705
(7)	Helplessness (AHI)*							1.00	22**	10.	22**	.03 –.09
(8)	Depression (CES-D)								1.00	.12*	.20**	25** .10*
(9)	Health care reluctance									1.00	15**	12*04
(10)	Health care dependence										1.00	.10 –,01
(11)	Health care inconvenience				1							1.00 - 06
(12).	Health care knowledge		-									1.00

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*p < .05 **p < .01 * High score indicates less helplessness.

Variable name	В	Beta	p to enter	Multiple R ²	omnibus df	omnibus F	
Step 1:	· · · · · · · · · · · · · · · · · · ·		,		· · · · · · · · · · · · · · · · · · ·	-	
Age	.0169	.153	.007	.14	1,356	7.28	
Gender	-	-	.055 (NS*)	- ,	-	_	
Health care contacts	00369	077	.016	.19	2,355	6.60	
Step 2:	•,						
Arthritis self-efficacy	.00533	.137	.001	.25	3.354	8.13	
Quality of well-being	. –	-	.426 (NS)	-	-	-	
Step 3:							
Tangible social support	- .	-	.057 (NS)		-	·	
Helplessness	. –	<u> </u>	.115 (NS)		-	_	
Depression	-		.058 (NS)		_		
Step 4:			•				
Health care inconvenience	.102	.206	< .001	.32	4,353	10.30	
Health care reluctance	-		.273 (NS)	·	-	-	
Health care dependence	. –	-	.535 (NS)				
Health care knowledge		· 🗕	.269 (NS)			+	

Table 6 Summary of stepwise hierarchical regression to explain ratings of health care facility

*NS = not significant at .05 level.

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Variable name	В	Beta	p to enter	Multiple R ²	omnibus df	omnibus F
Step 1:					······································	· ·
Age	.0198	.184	< .001	.20	1,356	14.84
Gender	130	102	.009	.24	2,355	11.03
Health care contacts	· <u>-</u>	_ i	.460 (NS)	_	-	-
Step 2:						
Arthritis self-efficacy	.00251	.067	.021	.27	3,354	9.24
Quality of well-being	n - 1	· _	.414 (NS)	-	· _	
		an a				
Step 3:						
Tangible social support	-	- :	.805 (NS)	· <u> </u>		-
Helplessness	-	· . – · ·	.137 (NS)	· . -	·	-
Depression	-		.222 (NS)	•••• ·	-	· · -
		-	. •			
Step 4:				17		
Health care inconvenience	.144	.301	< .001	.40	4,353	16.70
Health care reluctance	-		.286 (NS)			
Health care dependence	-	_ :	.232 (NS)	· -		, —
Health care knowledge	-	, – 1	.654 (NS)	-	-	-

 Table 7
 Summary of stepwise hierarchical regression to explain ratings of doctor and nurses

"NS = not significant at .05 level.

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as a significant regressor in the model, F(1,354) = 10.82, p < .05. This accounted for an additional 6% of the variance in health care facility ratings. QWB scores did not explain any additional variability in ratings after arthritis self-efficacy was included in the model (p > .05).

In Step 3, the three psychosocial variables (social support, helplessness, and depression) were tested. Although none of the three added significantly to the model, both social support and depression approached significance as predictors (p = .057 and p = .058, respectively). The trend in these relationships was that more depressed individuals and individuals with fewer social supports rated their health care facility lower. Because the partial correlations for these variables, however, were not significant, no psychosocial variables were added to the model.

Age, health care contacts, and arthritis self-efficacy together accounted for 25% of the variance in health care facility ratings, F(3,354) = 9.24, p < .50. The last step in the hierachical analysis (Step 4) was to consider the four factors related to health care attitudes as possible regressors. These four variables were, once again, considered in a stepwise fashion. Health care inconvenience was a significant addition to the model, accounting for an additional 7% of the variability in health care ratings, F(1,353) =15.79, p < .05. Subjects who felt that health care services were more accessible rated their health care facility higher. The three remaining health care factors were not significant predictors (p > .05) after health care inconvenience was included in the model. Together with the demographic and psychosocial variables, the entire model including four regressors explained 32% of the variance in health care facility ratings. An omnibus test of significance showed the model to be statistically significant, F(4,353) = 10.30, p < .05.

An identical multiple regression technique was followed to explain variability in ratings of doctors and nurses. The results, listed in Table 7, were similar to the findings for ratings of health care facility, with the exception that gender was a significant predictor and number of health care contacts was not. The complete model accounted for 40% of the variability in ratings of doctors and nurses, F(4,353) = 16.70, p < .05.

DISCUSSION

The purpose of this study was to examine factors associated with patient satisfaction among older people with osteoarthritis. Ratings of health care providers were generally high, as found with other populations (Hays and Ware, 1986), with higher ratings from older, male participants who had fewer contacts with the health care system. Health care ratings may show a ceiling effect because health care is perceived as a generally beneficial service (Hays and Ware, 1986). Still, there was sufficient variability in ratings to show significant relationships with a number of other variables.

Frequent visits to the health care provider did not produce increased satisfaction, in contrast to the conclusions of Smith and Buesching (1985). Interestingly, frequent telephone contact with health care providers was associated with lower ratings. This suggests that patients may make phone calls to their health care providers in order to avoid personal contact. Alternatively, patients who make more calls may have more problems and be pursuing answers to questions about medication or iatrogenic effects, or simply making calls to complain about their symptoms.

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Hunt, McEwen and McKenna (1984) found that females were likely to report more symptoms and to use health care services more than males. In predicting ratings of doctors and nurses, gender added significantly to the model, while the number of health care contacts did not. However, in predicting satisfaction with the health care facility, gender was not a significant factor, but fewer contacts with the health care system predicted more satisfaction.

Health care inconvenience added to the prediction of satisfaction both with the health care facility and with doctors and nurses. This is particularly interesting because members of an HMO are presumed to have equal access to the health care system. Participants who had difficulty arranging transportation, or found health care less convenient, were less satisfied. These data indicate that HMOs should have primary care facilities as widely dispersed as is economically feasible, rather than having larger facilities located in fewer areas.

"Feeling your doctor was your friend" loaded positively on the perceived inconvenience factor. Thus, people who felt that their doctor was their friend gave more positive ratings. This finding emphasizes the importance of a strong interpersonal patientphysician relationship. This supports the Szasz and Hollender (1956) model of "mutual participation" and is consistent with research that indicates that a physician/patient partnership leads to more patient satisfaction (Roter, Hall and Katz, 1988; Anderson and Zimmerman, 1993).

Although the psychosocial variables — social support, helplessness, and depression — did not enter into the models predicting health care satisfaction, their univariate correlations with the participants' ratings of the health care facility were significant. Feelings of helplessness and depression were also correlated with ratings of doctors and nurses. These data indicated that people who were more depressed rated the facility and their doctors and nurses lower; people who felt less helpless assigned higher ratings both to the health care facility and to their doctors and nurses. Thus, the psychosocial characteristics of patients should not be ignored in developing a national health plan. However, it should be noted that older patients are often reluctant to consult mental health professionals.

The objective measure of health (QWB) was correlated with ratings of the health care facility, but not with satisfaction with physicians or nurses. However, in neither model did the QWB add to the prediction of health care satisfaction. Perceived self-efficacy was related to the prediction of satisfaction with both the health care facility and physicians and nurses. Thus, the participant's perceived disability was more important than objective indices of health in ratings of patient satisfaction. HMOs may want to implement education classes for older members with osteoarthritis to teach them techniques or methods for overcoming disabilities that may be related to the aging process.

The participants in the study were primarily Caucasian and married, with some college education. Many of the members received coverage from a previous employer. HMO members have continual access to health care services for a relatively small fee (\$5 to \$10 per visit). Thus, their health care use patterns may be different from the patterns of those who pay for services or who have other health care plans. Because of these factors, the variables predicting satisfaction may not generalize to the population at large. In addition, only about 25% of the eligible population of HMO members volunteered to participate in the study. Despite these caveats, the participants are probably representative of other HMO members of their age.

In summary, HMOs will probably increase their members's satisfaction if they keep their co-payments low, have health care facilities widely dispersed so that are easily accessible for older members, and attend to the psychosocial characteristics of the population. Training physicians and nurses to identify depressed people and make appropriate referrals might also reduce plan switching. These suggestions should also be applicable to the general population if a national health plan goes into effect.

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