Patients' Perceived Involvement in Care Scale:

Relationship to Attitudes about Illness and Medical Care

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This report describes the development of the Perceived Involvement in Care Scale (PICS), a self-report questionnaire for patients, and its relation to primary care patients' attitudes regarding their illnesses and the management of them. The questionnaire was administered to three independent samples of adult primary care patients. Patients' satisfaction and their attitudes regarding their illnesses are evaluated after their medical visits. This instrument is designed to examine three relatively distinct factors: 1) doctor facilitation of patient involvement, 2) level of information exchange, and 3) patient participation in decision making. Of these factors, doctor facilitation and patient decision making were related significantly to patients' satisfaction with care. Doctor facilitation and information exchange related consistently to patients' perceptions of post-visit changes in their understanding, reassurance, perceived control over illness, and expectations for improvement in functioning. The role of physicians in enhancing patient involvement in care and the potential therapeutic benefits of physician facilitative behavior are addressed. Key words: patient role; clinical decision making; doctor-patient communication; doctor-patient relationship; patient satisfaction J GEN INTERN MED 1990; 5:29-33.

PATIENT PARTICIPATION in medical care has emerged as an important factor in the practice of medicine.[1-4] Our previous research has shown that patients who perceived they played an active role during a primary care visit showed greater reductions in health concerns, increases in perceived control, and improvements in their medical problems, relative to patients who reported less involvement.[5] Active patient orientation, assessed by patient self-reports, also has been related to blood pressure control and side effects from antihypertensive medications.[6] Also, interventions designed to increase patient involvement have led to increased perceived control over illness,[7] as well as improvements in functional capacity and disease control.[8,9] Enhanced perceived control over one's illness and improved compliance have been hypothesized to be the mechanisms by which patient involvement exerts its positive influences.[3]

While previous research has suggested that patient participation in the medical visit may lead to improved outcomes, the exact mechanisms of this association have yet to be elucidated. Active patients may have benefited because they elicited more information from their physicians, because they had more control over medical decisions, or both. Additionally, patients' perceptions of the roles they played in their care may have been derived not only from their own behaviors but also from their physicians' behaviors. Yet, research on the patient's role, to date, has paid little attention to patients' perceptions of their physicians' efforts to facilitate their involvement in care.

The purpose of the present study was to elucidate patients' perceptions of physician-patient interactions and to evaluate the relationship of these perceptions to pertinent illness beliefs and attitudes. We constructed the Perceptions of Involvement in Care Scale (PICS), a self-report questionnaire that assessed patients' perceptions of doctor and patient behaviors that occur during a routine medical visit. Responses to the PICS were related to patients' attitudes regarding their illnesses and the management of them.

Based on theory and empirical evidence in the literature,[3,5,7,10-12] we expected that patients who perceived that they played a more active role in their care would have a better understanding of their health problems and treatment, would have a greater sense of control over their health, would feel more reassured, would expect greater improvement, and would be more satisfied with their health care providers. We selected these attitudinal variables based on their roles in influencing adherence to medical regimens[13-15] and the actual outcomes of medical care.[16-22]

METHOD

Subjects

Subjects were patients attending the primary care office of the Section of General Internal Medicine at Temple University Hospital. The majority of patients seen in this office were enrolled in a health maintenance organization. Eligible subjects included all patients who presented with new symptoms or an exacerbation of previous symptoms. Exclusion criteria for all three studies included illiteracy and evidence of active thought disorder. Patients who attended the clinic for a routine physical examination or for a follow-up visit for a stable chronic medical problem also were excluded. In all three study samples, less than 10% of eligible patients declined to participate. The mean age of study

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participants was 38.6 years; 62% of participants were female; 80% of participants were black. All data were collected during the spring and summer of 1987.

Development of the Questionnaire (Study 1)

Twenty-five statements were written describing overt behaviors of patients and their physicians that occur during a primary care visit. These statements were based upon the author's (CL) observation of patient–physician interactions during routine outpatient visits. In addition, eight primary care physicians were surveyed to review the list of behaviors developed subsequent to the observations. These statements included descriptions of question-asking, information provision, decision making, and expressing opinions and concerns. Patients responded to a binary agree/disagree format; 0 points for disagree and 1 point for agree. Higher scores reflected a greater degree of perceived patient activity and involvement during the medical visit.

The 25-item questionnaire was administered, following a medical visit, to 131 patients in an adult outpatient primary care setting. Following item analysis (see Results), a second version of the questionnaire was administered to 81 patients in order to cross-validate preliminary findings.

Relationship of the PICS to Patient Satisfaction (Study 2)

A new sample of 60 primary care patients were asked, following their medical visit, to complete the PICS and a modified version of the Ware Satisfaction Scale.[23] This ten-item, self-report measure evaluated satisfaction with the art of the care (e.g., "The doctor treated me in a friendly manner") and the technical aspects of the medical care (e.g., "The doctor seemed very competent and well trained").

Relationship of the PICS to Illness Attitudes (Study 3)

An additional sample of 83 primary care patients completed the PICS, following their primary care visit, and also responded to Likert-scale ratings of pre- to post-visit changes in the following illness beliefs and attitudes: understanding of their medical problem, reassurance regarding their health status, and perceived control over their medical problem. Responses for these three-point rating scales were "no change," "a little more," and "much more." Patients also were asked to predict how much discomfort they expected to have during the following week due to their medical problems ("no less"; a "little less"; or "much less"), and how well they expected to perform their normal daily activities during the following week ("no more able"; "a little more able"; and "much more able").

RESULTS

Development of the Questionnaire

Item analyses were performed on PICS data from our initial sample of 131 subjects. The final version of the PICS consisted of 13 items. Cronbach's alpha, a measure of the internal inconsistency of the whole instrument, was 0.73. An alpha coefficient of 0.60 was attained using an independent sample of 81 patients.

TABLE 1

Items and Factor Loadings for the Perceived Involvement in Care Scale (PICS)

Item	PICS Subscale		
	Doctor Facilitation	Patient Information	Patient Decision Making
Doctor Facilitation Scale (% variance = 11.4)			
My doctor asked me whether I agree with his/her decisions.	0.70	0.14	0.05
My doctor gave me a complete explanation for my medical symptoms or treatment.	0.56	−0.03	−0.04
My doctor asked me what I believe is causing my medical symptoms.	0.52	−0.06	−0.10
My doctor encouraged me to talk about personal concerns related to my medical symptoms.	0.50	0.30	0.05
My doctor encouraged me to give my opinion about my medical treatment.	0.75	0.23	0.24
Patient Information Scale (% variance = 25.2)			
I asked my doctor to explain the treatment or procedure to me in greater detail.	0.00	0.53	0.24
I asked my doctor for recommendations about my medical symptoms.	0.11	0.66	0.14
I went into great detail about my medical symptoms.	0.11	0.75	−0.09
I asked my doctor a lot of questions about my medical symptoms.	0.04	0.70	0.10
Patient Decision-making Scale (% variance = 9.7)			
I suggested a certain kind of medical treatment to my doctor.	0.29	−0.02	0.53
I insisted on a particular kind of test or treatment for my symptoms.	0.02	0.28	0.75
I expressed doubts about the tests or treatment that my doctor recommended.	−0.02	0.08	0.81
I gave my opinion (agreement or disagreement) about the types of test or treatment that my doctor ordered.	0.25	0.38	0.37

TABLE 2

Correlation of Perceived Involvement in Care Scales (PICS) Subscales with Patient Satisfaction

	PICS Subscale		
Ware Satisfaction	Doctor Facilitation	Patient Information	Patient Decision Making
Total	0.26*	0.16	0.17
Art of care	0.26*	0.18	0.04
Technical aspects of care	0.22*	0.14	0.24*

*$p < 0.05$ (one-tailed); n range 50–56.

TABLE 3

Correlation of Perceived Involvement in Care Scales (PICS) Subscales with Attributes of Patient Attitudes Regarding Illness

	PICS Subscale		
Attribute	Doctor Facilitation	Patient Information	Patient Decision Making
Understanding	0.36*	0.47†	0.15
Reassurance	0.30*	0.33*	−0.13
Perceived control	0.42†	0.27‡	−0.08
Predicted discomfort	0.13	0.19	0.09
Predicted functional capacity	0.46†	0.35†	−0.06

*$p < 0.01$ (one-tailed); n ranges from 61–68.
†$p < 0.001$ (one-tailed); n ranges from 61–68.
‡$p < 0.05$ (one-tailed); n range 61–68.

This change in coefficient is not remarkable, considering the small number of items in the scale.

Factor analysis of the final version of the PICS ($n = 131$) resulted in three relatively independent factors. Factor 1, labeled Doctor Facilitation (DF), included five items relating to physician facilitation of patient involvement. Factor 2, labeled Patient–physician Information Exchange (PI), consisted of four items dealing with the amount of information exchanged between doctor and patient. Factor 3, labeled Patient Decision Making (PDM), contained four items assessing patient involvement in decision making. As this factor analysis was exploratory rather than confirmatory, the naming of factors was somewhat arbitrary but appeared appropriate for descriptive purposes. Table 1 lists the items and the factor loadings.

To assess the relationship between PICS scores and age and sex, Pearson and biserial correlations were computed between PICS total and subscale scores and age and sex (the latter coded 1 = female; 0 = male). Age was not significantly related to PICS total or subscale scores, but females showed higher total scores ($r = 0.39$; $p = 0.003$), PI scores ($r = 0.45$; $p < 0.001$), and PDM scores ($r = 0.32$; $p = 0.01$) than did males.

Relationship of PICS to Outcomes

Correlations also were calculated between the Ware Satisfaction Scale and the PICS factor subscales. The DF subscale of the PICS correlated significantly with patients' satisfaction with both the art and technical aspects of the medical visit. PDM scores correlated significantly with patient satisfaction with the technical aspects of the medical visit, but not with the art of care. The PI subscale, however, did not correlate with patient satisfaction with the art or technical aspects of care (Table 2).

The PICS also was related to pre- to post-visit changes in illness attitudes. Correlations indicated that self-reported increments in patients' levels of understanding, reassurance, perceived control, and expected improvement in functional capacity were associated with higher scores on the DF and PI subscales of the PICS (Table 3). In contrast, the PDM subscale was not related to any of these outcomes. Patients' discomfort ratings were not associated with any of the PICS subscales.

To determine whether the correlations reported in Tables 2 and 3 were confounded with age and sex effects, a series of ordinary least-squares regression analyses was computed with the Ware scale and attitude outcomes as dependent variables (Table 4). Age and sex were forced into each equation, and the additional variance accounted for by PICS total scores was assessed by the increase in R^2. Controlling for age and sex, total PICS scores were associated significantly with patients' satisfaction with technical care, understanding, reassurance, perceived control, and predicted functional capacity. The additional contribution of the PICS in accounting for the variance in satisfaction with the art of care and expected discomfort was only marginally significant (Table 4).

TABLE 4

Regression Analyses of Patient Satisfaction and Illness Attitudes

Dependent Variable	Independent Variable	R^2 Increase	p (R^2 Increase)
Ware total	Sex and age	0.03	NS*
	PICS†	0.14	0.012
Ware art	Sex and age	0.00	0.012
	PICS	0.07	0.08
Ware technical	Sex and age	0.07	NS
	PICS	0.16	0.006
Understanding	Sex and age	0.00	NS
	PICS	0.21	0.001
Reassurance	Sex and age	0.03	NS
	PICS	0.21	0.001
Perceived control	Sex and age	0.01	NS
	PICS	0.11	0.014
Predicted discomfort	Sex and age	0.02	NS
	PICS	0.07	0.062
Predicted functioning capacity	Sex and age	0.01	NS
	PICS	0.14	0.006

*NS = not significant.
†PICS = Perceived Involvement in Care Scales.

DISCUSSION

We have developed an internally reliable instrument that measures patients' perceptions of their interactions with their physicians during medical visits. This instrument focuses on the exchanges of information and control between doctors and patients. It is composed of three relatively distinct factors: doctor facilitation of patient involvement during the visit (DF subscale); information exchange between patient and physician (PI subscale); and patient participation in medical decision making (PDM subscale). The first factor (DF) includes statements about physicians' behaviors, while the other two factors (PI and PDM) are composed exclusively of statements about the patients' behaviors during the medical visit.

Two studies were then conducted to explore the relationships between these factors and patient attitudes about their illnesses and treatments. Consistent with our hypotheses, the results revealed significant associations between certain aspects of patients' perceived involvement in medical care and their attitudes about their illnesses and treatments. In particular, we found that two components of the interaction between patients and doctors (DF and PI) had the strongest relationships to these outcomes. Patients' perceptions regarding their physicians' efforts to encourage and facilitate their participation during a medical visit were related to patients' levels of understanding, control, reassurance, expected functional improvement, and satisfaction with their physicians. Similarly, perceptions about information exchange between patients and physicians were significantly correlated with the same set of attitudes, except for satisfaction with the physician. Patients' perceptions about the extent to which they actually participated in making clinical decisions related only to their satisfaction with the technical aspects of their care. These findings suggest that it may be more important for patients to perceive that their doctor has listened to their problems, questions, and concerns; informed them about their health problems; and provided them with an opportunity to express their opinions than it is to perceive that they participated in medical decision making.

These results may explain why studies that have attempted to encourage patients to play a more active role in their own care have failed to document any improvements in patients' satisfaction with their physicians. Roter found, for example, that encouraging patients to ask their physicians more questions resulted in lower levels of satisfaction.[7] In a later study, Greenfield and coworkers provided patients with individualized information about their health problems and then encouraged them to ask questions and discuss their concerns with their physicians. Compared with an "education only" control group, these patients were no more satisfied with their physicians than were controls.[8] The encouragement provided in both of these studies prompted patients to elicit more information from their physicians. However, physicians' responses to such questions would be expected to vary considerably in terms of clarity and sensitivity. Our data suggest that patients' satisfaction may be more likely to reflect their interpretations of physicians' responses to their questions and other physician behaviors than to reflect their own behaviors related to seeking or providing this information.

We did find, however, that patients who indicated that they were more involved in decision making were more satisfied with their physicians' technical competence. However, they were no more satisfied with the art of care. This may be because these patients were more likely to participate in decisions regarding the technical aspects of care. In a previous study, we also found that patients who expressed their opinions were more satisfied with the medical visit.[24] This finding is important, because some physicians may believe that sharing control of decision making with patients will make them appear less competent.[25] In fact, quite the opposite might be true.

In our study, changes in patients' attitudes about their illnesses, such as their understanding of their medical problems, their sense of control over these problems, their concerns, and their expectations for improvement in functioning, were related to their perceptions of physicians' efforts to encourage involvement as well as to the levels of information exchange. Relationships between physician facilitation of patient involvement and illness outcomes have been demonstrated previously.[26-28] For example, physicians' expressions of empathy and support have been associated

with reductions in patients' health concerns.[26] In the psychiatric setting, physicians' efforts to elicit patients' requests and negotiate treatment plans led to improved health outcomes, adherence, and satisfaction.[27, 28] The importance of information exchange has been underscored by Greenfield's studies.[8, 9] In these studies, patients' controlling actions (i.e., questions, interruptions, and directions) were associated with changes in quality of life and diabetes control. Similarly, Roter[7] showed that patients trained to ask more questions experienced greater perceived control over their health problems. Thus, providing opportunities for patients to ask questions and discuss their problems, their concerns, and their management desires can have beneficial effects on both illness attitudes and outcomes.

A few limitations of the present study deserve mention. First, in-depth patient interviews might have provided additional useful information for instrument development. Future studies conducted in this manner might identify different or additional patient perceptions that relate to important health outcomes. Second, Likert-scale items measuring reassurance, understanding, and perceived control did not provide negative response options. However, while a small proportion of patients might have chosen such an option if available, it is unlikely that the obtained results would have been significantly different. Finally, the factor analysis conducted was exploratory and should be interpreted cautiously. Validation of these findings on other more heterogeneous populations is necessary to corroborate findings regarding subscales and outcomes.

Further research is needed to address two additional questions. First, what are the actual physician and patient behaviors (types of behavior and frequency) that determine patients' perceptions of the doctor–patient interaction? Comparisons between content analyses of audiotaped transcripts and the PICS might shed some light on this question. Second, do patients' perceptions of the interactions with their physicians influence actual health outcomes? If the answer is yes, are these outcomes mediated by patients' sense of control over health problems, illness understanding, expectations, concerns, and/or patient satisfaction? Studies of interventions to alter physician and/or patient behavior are needed to address these questions.

We believe that the Perceived Involvement in Care Scale may have two types of applications in the future. As suggested above, it may be used as a research instrument to define further the relationship between patient involvement in medical care, patient illness attitudes, and health care outcomes. Also, it may be used to evaluate the quality of care provided in the health care setting and to assess the impact of physician training programs. Further research is needed, however, to establish more firmly the relationship between this scale and relevant health outcomes.

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