

ience supports the contention that questionnaires provide a valid, consistent, legible medical history, which saves time for the physician and allows him to focus quickly on major patient problems rather than on the drudgery of data collection. Most studies also show a high number of false positive answers, but once this is taken into consideration, it does not detract from the usefulness of the questionnaire.

Most of the literature suggests patient acceptance of questionnaires. The Lahey Clinic, although limiting themselves to a "middle-class American population,"¹¹ found in a study of 2,000 patients that 477 had favorable comments, six negative comments, and the remainder no comment.¹ They note that patients are often more comfortable in answering history questions in the security of their own home where they have access to family files, medications, and other important historical facts. Hall¹² notes another benefit of the familiar home environment: patients may be willing to impart very personal information in writing that they would hesitate to give in person.

We have been able to find little information in the literature on the acceptability of questionnaires to pa-

tients with relatively disadvantaged educational backgrounds. Gumpel and Mason found their questionnaire "useful in patients with little or no English,"⁹ since most, as in our study, were able to obtain help at home. Coombs et al¹³ tried to reduce patient time (hence cost) at the computer interview terminal by measuring performance factors in their automated, computerized histories. The average education of their patients was 12.4 years and, as expected, they found a negative correlation between education and interview time at the computer. Mailed questionnaires would seem to have several advantages over computer interviews. First, the patient can take all the time he desires, and second, the questionnaire can be batch-processed by the computer, which is more economical.¹

Our evidence supports the utility and acceptability of a complicated, medical history questionnaire in a rural, relatively unsophisticated, indigent patient population. We believe that such questionnaires can help to improve our efficiency as physicians without sacrificing the patient's opinion of his care. This information should have implications as the medical establishment attempts to bring

comprehensive health care to rural, underserved areas of this country.

References

1. Rockart JF, McLean ER, Hershberg PI, et al: An automated medical history system. *Arch Intern Med* 132:348-358, 1973
2. Grossman JH, Barnett GO, McGuire MT, et al: Evaluation of computer-acquired patient histories. *JAMA* 215:1286-1291, 1971
3. Slack WV, Hicks GP, Reed CE, et al: A computer-based medical history system. *N Engl J Med* 274:194-198, 1966
4. Cross HD, Bjorn JC: *Problem Oriented Practice*. Chicago, Modern Hospital Press, 1970
5. 1970 Census: General social and economic characteristics for West Virginia Department of Commerce/Bureau of Census, PC1-C50, Washington, DC
6. PROMIS II Adult Medical History Questionnaire. Princeton, NJ, Systemedics, Inc, 1970
7. Brodman K, Erdman AJ, Lorge I, et al: Cornell medical index: An adjunct to medical interview. *JAMA* 140:530-534, 1949
8. Kanner IF: Programmed medical history-taking with or without computer. *JAMA* 207:317-321, 1969
9. Gumpel JM, Mason AMS: Self-administered clinical questionnaire for outpatients. *Br Med J* 2:209-212, 1974
10. Kerr D: Letter to the editor. *Br Med J* 2:505, 1974
11. Hershberg PI, Englehardt C, Harrison R, et al: The medical history question as a health screening test. *Arch Intern Med* 127:266-272, 1971
12. Hall GH: Experiences with outpatient medical questionnaires. *Br Med J* 1:42-45, 1972
13. Coombs GJ, Murray WR, Krahn DW: Automated medical histories: Factors determining patient performance. *Comput Biomed Res* 3:178-181, 1970

Development and Use of a Patient Satisfaction Questionnaire

Brian L. Hines, MSW, Quentin D. Clarkson, PhD, and David D. Smith, MD
Portland, Oregon

Patient satisfaction is being increasingly recognized as an important dimension of quality medical care. The growing emphasis among both consumers and providers on increasing the "personalization" and "acceptability" of medical care makes it essential that methods be developed to operationally define and measure these concepts.

Numerous well-designed studies of patient satisfaction have been con-

ducted, but few of these have been in a family practice setting. General community attitudes toward physicians and medical care have been examined by Hulka and others.¹ Lebow has studied the satisfaction of parents with an outpatient pediatric center.² Single visits of mothers and children to a walk-in pediatric clinic have been scrutinized in an investigation which focused on doctor-patient communication.³

Aside from the dearth of family practice studies, review of the patient satisfaction literature also indicates that there seems to have been little effort made to integrate patient satisfaction research into ongoing educational and/or service programs. Most of the surveys to date have been

"one-shot" affairs, with virtually no attention paid as to how the results could be used to improve patient care. Although the typical finding is that patients are generally quite satisfied with their medical care, few have tried to explicitly define what constitutes an acceptable level of satisfaction.

Methods

Our primary interest lay in utilizing patient satisfaction data to evaluate the performance of residents and the operation of our clinic. We needed a patient feedback system that was convenient to use with fairly large numbers of patients, and would provide specific information that could be

This study was presented at the North American Primary Care Research Group meeting in San Francisco, California, on April 22-24, 1976. Requests for reprints should be addressed to Mr. Brian L. Hines, Department of Family Practice, University of Oregon Health Sciences Center, 3181 S.W. Sam Jackson Park Road, Portland, Ore 97201.

used in resident training. A questionnaire developed by John Ware and Mary Snyder appeared to be suitable for adaptation to our purposes. It was carefully constructed and has been systematically tested.^{4,5}

Ware and Snyder's original 80-item questionnaire was reduced to 25 items, and several new questions were added. Changes in phrasing made the questions specific to our family practice doctors and clinic. The resulting questionnaire* was designed to measure patient attitudes in four different areas: accessibility/convenience, continuity of care, provider conduct (concentrating on the doctor but including nurses and receptionists), and overall satisfaction.

Patients respond to each question by choosing one of the following: Strongly Agree, Agree, Uncertain, Disagree, Strongly Disagree. Some sample questions are "Family practice doctors always do their best to keep the patient from worrying" and "I hardly ever see the same doctor when I go to the Family Practice Clinic."

Initial testing of the questionnaire was carried out in December 1975, on a sample of the patients of our third-year residents. Every tenth person seen in the clinic by each of the six residents over a three-month period was included in the sample. With a second mailing of the questionnaire, a response rate of 81 percent was achieved (116/144 responses).

Results

Overall, our patients were quite satisfied with their care. Thirteen percent had no complaints at all, and only 14 percent registered five or more dissatisfied responses out of the 27 questions. A lack of parking facilities (74 percent) and excessive waiting time (27 percent) were the most com-

monly cited problem areas. Questions dealing with provider conduct received generally favorable responses, though 12 percent agreed that "sometimes family practice doctors make the patient feel foolish."

Factor analysis was used to gain deeper insight into the attitudes of our patients. This statistical technique is a method for determining the number and nature of the variables (or factors) underlying larger numbers of measures. In our case, it would tell us which questions were measuring virtually the same dimension of patient satisfaction.

Eight factors, or attitude dimensions, were empirically revealed through the factor analysis. The most important of these was a "doctor-patient relationship" factor. This appears to deal with the reassurance given and concern shown by the doctor. Overall satisfaction with our clinic's medical care was most highly associated with this factor. A second factor had more to do with "technical communication," advising patients about preventive care and telling them what to expect during treatment.

"Clinic staff" questions made up the third factor, which indicates that patient attitudes toward nurses and receptionists are relatively independent of attitudes toward their doctor. On a "continuity of care" factor we found that patients who say that they hardly ever see the same doctor at our clinic tend to agree that our doctors often make patients feel foolish and do not explain the patients' medical problems to them.

"Parking," "waiting time," and "access" were all separate factors. Thus, patient dissatisfaction with these aspects of medical care did not appear to be associated with negative attitudes toward the doctors or office staff. This suggests that people are able to discriminate between care that is truly depersonalized and that which is merely somewhat inconvenient or inefficient.

Before the results of this survey were tabulated our clinic director established a "goal" for most of the questions. This goal was set in terms of the maximum percent of dissatisfied responses that would be acceptable to us, recognizing that you cannot please everyone all of the time. For instance, we wanted no more than ten percent of our patients to agree that "Family

practice doctors don't seem to care if they hurt you during the examination." (Fortunately, only six percent agreed.)

Reports were then prepared which indicated for each question the "goal" percentage of dissatisfied responses, and the "actual" percentage. Each third-year resident received a confidential individual report, which included the comments made by his patients and an overall interpretative summary written by a member of our evaluation team.

On only one "doctor-patient relationship" question did one resident significantly exceed the stated goal. This is encouraging to us, since third-year residents should be practicing in a manner that is acceptable to most of their patients. Though falling short of our goal in regard to perceived clinic waiting time, we are taking steps to correct the problem.

Comment

Feedback from patients must be used in conjunction with other measures in evaluating resident and clinic performance, but it does provide a perspective that would otherwise be lacking. We plan to extend our work to include the patients of first and second-year residents as well, and to learn more about how patient satisfaction is related to other variables such as patient compliance and changes in health status accompanying treatment.

References

1. Hulka HS, Kupper LL, Daly MB, et al: Correlates of satisfaction and dissatisfaction with medical care: A community perspective. *Med Care* 13:648-658, 1975
2. Lebow J: Evaluation of an outpatient pediatric practice through the use of consumer questionnaires. *Med Care* 13:250-255, 1975
3. Korsch BM, Negrete VF: Doctor-patient communication. *Sci American* 227:66-74, 1972
4. Ware JE, Snyder MK: Dimensions of patient attitudes regarding doctors and medical care services. *Med Care* 13:669-682, 1975
5. Snyder MK, Ware JE: A study of twenty-two hypothesized dimensions of patient attitudes regarding medical care. Publication No. PB-239-518/AS, National Technical Information Service, March, 1974

*A copy of the questionnaire and detailed results of this study can be obtained from: Brian Hines, MSW, Department of Family Practice, University of Oregon Health Sciences Center, Portland, Ore 97201.