

A Strategy for Improving Patient Satisfaction by the Intensive Training of Residents in Psychosocial Medicine: A Controlled, Randomized Study

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ABSTRACT

Purpose. To use a controlled, randomized design to assess the effect on patient satisfaction of an intensive psychosocial training program for residents.

Method. Twenty-six first-year residents, in two internal medicine and family practice community-based programs affiliated with the Michigan State University College of Human Medicine, were randomly assigned during 1991 and 1992 to a control group or a one-month intensive training program. Experiential teaching focused on many psychosocial skills required in primary care. A 29-item questionnaire administered before and after the residents' training evaluated their patients' satisfaction regarding patient disclosure, physician empathy, confidence in physician, general satisfaction, and comparison of the

physician with other physicians. Analyses of covariance with groups and gender as factors and pre-training patient satisfaction scores as the covariate evaluated the effect of the training.

Results. The patients of the trained residents expressed more confidence in their physicians ($p = .01$) and more general satisfaction ($p = .02$) than did the patients of controls. The effect of training on patient satisfaction with patient disclosure ($p < .01$) and physician empathy ($p < .05$) was greater for female than for male residents.

Conclusion. The intensive psychosocial training program for residents improved their patients' satisfaction. *Acad. Med.* 70(1995):729-732.

With the anticipated increase in psychosocial training for residents,¹ careful evaluation of its effect is essential. This paper concerns patient satisfaction, a key outcome measure of psychosocial training programs. Patient satisfaction is important because it is associated with patient cooperation,^{2,3} and, it has been suggested, improved health status.⁴ High

levels of satisfaction also are associated with fewer malpractice suits.⁵

Patient-centered approaches, i.e., those addressing patients' total needs primarily, are associated with increased patient satisfaction,^{2,3} but there is limited evidence that intensive, patient-centered training of residents increases their patients' satisfaction.⁶ Intensive psychosocial training is increasingly recommended for residents.⁷ Smith et al. recently reviewed all intensive psychosocial training programs (those devoting 100 or more hours yearly per resident) with an evaluation component and found only two programs that evaluated patient satisfaction as a measure of training impact.⁷ Employing a nonrandomized study without a pretest, Merkel and Nierenberg failed to find improvement in patients' satisfaction using a questionnaire that measured many non-physician-related aspects of satisfaction, such

as convenience and costs.⁸ Employing a mix of nonrandomized and randomized controls, Roter et al.⁶ demonstrated increased simulated patients' satisfaction using a questionnaire that measured only physician characteristics associated with satisfaction.

The present controlled, randomized study measured patients' satisfaction with physician behaviors that had been addressed specifically during intensive psychosocial training. We hypothesized that intensive, experiential training would increase satisfaction among trained residents' patients.

METHOD

Subjects

We chose two first-year resident classes in internal medicine and family practice for study. The classes entered com-

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munity-based programs at the Michigan State University College of Human Medicine in 1991 and 1992. Psychosocial medicine training was mandatory for first-year residents. Residents were approached prior to the rotation and asked to participate in the voluntary evaluation component. Eighteen men and 11 women agreed to take part; one resident refused. Control and training group residents were paid \$100 for participating in the research component. Data were incomplete for three residents, one from the training group and two from the control group, resulting in 26 valid cases.

Procedures

The complete evaluation of the psychosocial medicine program included the administration of several questionnaires, simulated-patient interviews, and outpatient interview audiorecordings. We report here results from the patient satisfaction questionnaire that was administered to patients in the residents' outpatient clinics before and after the psychosocial teaching intervention.

Residents' patients were approached in outpatient clinics and requested to complete the satisfaction questionnaire following their medical appointments. Patients who were minors or physically or mentally incapable of completing the questionnaire were excluded. Nine percent of patients refused to participate, resulting in 181 patient subjects.

Using stratified random procedures, we assigned residents to receive the one-month psychosocial training program (training group) or not to receive it (control group) during the first six months of their first residency year. Residents who served in the control group received the psychosocial training later in the year after they had completed their participation in the program evaluation as control subjects. Constraints on scheduling of residents limited the success of efforts to assign proportional numbers of men and women to the

training and control groups. The training group was composed of eight women and seven men, of whom six were international graduates and nine were U.S. graduates. The control group was composed of 11 men and three women, of whom five were international graduates and nine were U.S. graduates.

Psychosocial Training Program

The psychosocial training program was a four-week block rotation that was experiential, skill-oriented, and guided by competency-based objectives. Learner-centered objectives derived from those unique problems that the learner wanted to address. Teacher-centered objectives fell into four general categories (each with many specific behavioral objectives): interviewing, somatization, patient education, and self-awareness. The residents were given explicit learning models for many objectives.

The teaching had three components: core learning experiences, interviewing, and patient management. The core learning experience occurred three times weekly and included discussion of the background for whatever skill was being considered, followed by demonstration, modeling, and practicing the skill using role play. Occurring daily were interviewing rounds emphasizing psychosocial aspects of the patient and patient-management rounds emphasizing skills to address the newly identified psychosocial issues.

Measurement

We developed a 45-item questionnaire (available from the authors) to assess patients' attitudes toward their medical encounters in the outpatient clinic; 41 questions used a five-point Likert scale and four questions that involved direct comparison with another physician used seven-point scales. The questionnaire combined published material⁹ with 24 additional items written to include desirable physician and patient

behaviors specifically emphasized in our psychosocial curriculum.

The questionnaire was administered to 86 patients prior to its use in the evaluation project; the items were intercorrelated and factor-analyzed. Factor scales were formed from items loading .5 or greater, resulting in a 29-item, five-factor patient satisfaction questionnaire. Factors included assessments of: (1) patients' opportunities to disclose, (2) patients' perceptions of physician empathy, (3) patients' confidence in their physicians' abilities, (4) patients' general satisfaction with their medical appointments, and (5) patients' comparisons of their physicians with other physicians they had seen in the past (alphas ranged from .71 to .89).

Statistical Analysis

The numbers of patient satisfaction questionnaires completed for individual residents ranged from one (three residents) to six (three residents), with an average of three questionnaires per resident. The patient satisfaction questionnaires completed for each resident were pooled and averaged. Ten factor-scale scores were then computed, five scores (for the five factors listed above) for the pretraining period and five scores for the posttraining period. U.S. and international medical graduates did not differ significantly in patient satisfaction, so the data from these two groups were pooled.

The primary statistical model was analysis of covariance, with groups (trained versus untrained) and gender as the factors and pretraining satisfaction score as the covariate. A one-tailed 5% rejection region was selected for tests of the group factor, and a two-tailed 5% region for the gender factor and the group-by-gender interactions.

RESULTS

At the end of the training period, patients reported greater satisfaction with

Table 1

Measure of Patient Satisfaction	Mean Rating				F-Result					
	For Untrained Residents		For Trained Residents		Untrained vs Trained		Women vs Men		Group by Gender Interaction	
	Women	Men	Women	Men	F	p	F	p	F	p
	(n = 3)	(n = 9)	(n = 8)	(n = 6)						
Patient disclosure	4.08	4.51	4.47	4.19	.09	.771	.27	.610	8.89	.007
Physician empathy	4.11	4.30	4.42	4.11	.22	.647	.26	.613	4.42	.048
Patient confidence in physician	3.95	4.13	4.37	4.35	6.18	.015	.39	.539	.60	.446
General satisfaction	3.87	4.32	4.49	4.43	4.47	.024	1.03	.322	2.18	.155
Comparison of physician with others	5.45	5.13	5.36	4.85	.39	.541	2.02	.170	.10	.754

*The residents, in their first year of training in internal medicine or family practice, participated in either a control group or a one-month intensive training program in psychosocial medicine. A 29-item questionnaire was administered before and after the residents' training to evaluate their patients' satisfaction. The first four measures of patient satisfaction shown in the table were rated on a five-point scale, ranging from 1, highly dissatisfied, to 5, highly satisfied. "Comparison of Physician with Others" was rated on a seven-point scale, ranging from 1, poor in comparison, to 7, excellent in comparison. The posttest means have been adjusted for pretest scores.

trained residents than with untrained residents for two of five satisfaction scales (Table 1). They expressed more confidence in the residents ($F = 6.18, p = .01$) and more general satisfaction with their medical visits ($F = 4.47, p = .02$).

Male and female residents did not differ in patient satisfaction at the end of the training period. Male and female residents did differ in the relationships of the training program to patient satisfaction, however, for two dimensions of satisfaction: patient disclosure ($F = 8.89, p = .007$, for the group-by-gender interaction) and physician empathy ($F = 4.42, p = .048$). At the end of the training period, patients tended to be more satisfied on these two dimensions with female than with male residents who had taken the training program and less satisfied with female than with male residents who had not taken the program (means in Table 1).

DISCUSSION

Some, but not all, dimensions of patient satisfaction with resident visits were improved by intensive psychoso-

cial training of the residents. These results agree with those of a previous study that reported positive findings.⁶ Our program and the other program showing improvement⁶ both systematically taught interviewing and patient education, and both were guided by a learner-centered approach.⁷ One program reporting negative findings did not have these features.⁸ In addition, our program was unique in its emphasis on personal self-awareness, which is believed by many to be a key determinant of the doctor-patient relationship and patient satisfaction.⁷ The positive findings in the present program may have been due in part to the fact that the training was designed to improve the same skills that have been shown to be associated with patient satisfaction: patient-centered interviewing, informing patients, relationship building, and personal warmth and confidence.^{2,3}

Although our controlled, randomized design should have offset the impact of a Hawthorne effect, the possibility exists that residents in the training group "contaminated" those in the control group. However, the effect of such contamination would bias data in a conser-

vative direction; i.e., had the contamination not occurred, the training effect would have been even larger than the effect we found.

In view of the link of patient satisfaction to patient cooperation^{2,3} and, perhaps, health status,⁴ the present results are encouraging. Nevertheless, the results are preliminary and require confirmation by others and by future results in our ongoing study. As data become available, we plan to investigate the relationships of satisfaction to other patient outcome measures and to specific residents' attributes, such as their self-confidence¹⁰ and actual skills. The significance of this study is that, until more complete data are available, such programs offer research-based guidelines for others teaching psychosocial medicine to residents.

This work was supported by the Ferzer Institute in Kalamazoo, Michigan.

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Cover Note

WATER AND CHOLERA



Cholera arose in Asia and then spread through Russia and Europe in the eighteenth and nineteenth centuries, first becoming a European problem in British India. When cholera reached England in the 1830s, British physicians faced recurring epidemics with high mortality rates. As early as 1832, when the first massive cholera epidemic spread through London, a physician named John Parkin suggested that it was spread by water. But most physicians, including those advising the city fathers, accepted the traditional miasma theory, the view that the disease, like malaria, was spread by the gases given off by garbage, cesspools, and other filth.

The physician John Snow, another of the minority who accepted the water theory, collected a large amount of data during the 1848 epidemic showing correlations between numerous outbreaks and specific sources of water in the affected neighborhoods. He published his data and conclusions the next year in a classic epidemiologic study (*On the Pathology and Mode of Communication of Cholera, London Medical Gazette*).

The study convinced some of his medical colleagues, but it was not until the 1854 epidemic that he convinced the authorities in the most severely affected section of the city to take preventive measures based on his evidence. They removed the handle from the Broad Street water pump, the major source of water for the neighborhood, and the disease declined dramatically soon afterward. (John Snow's contribution to the health of his fellow Londoners is commemorated in the name of the local pub at the site of the pump.)

This success was a medical advance that went far beyond cholera, because the subsequent civic interest in public sanitation helped to control other diseases as well. At the same time, the public was horrified to find that their water could spread death even when it seemed wholesome. This fear is shown in the sketch by George John Pinwell. An engraver and watercolorist, he did the sketch as preparation for an illustration in an English magazine in 1866, while another cholera epidemic cut through Britain.

—ADDEANE S. CAELLEIGH