ORIGINAL ARTICLE

Effect of a Biopsychosocial Approach on Patient Satisfaction and Patterns of Care

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BACKGROUND: **There is a growing tendency to include in medical curricula teaching programs that promote a biopsychosocial (BPS) approach to patient care. However, we know of no attempts to assess their effect on patterns of care and health care expenditures.**

OBJECTIVE: **To determine whether 1) a teaching intervention aiming to promote a BPS approach to care affects the duration of the doctor-patient encounter, health expenditures, and patient satisfaction with care, and 2) the teaching method employed affects these outcomes.**

METHODS: **We compared two teaching methods. The first one (didactic) consisted of reading assignments, lectures, and group discussions. The second (interactive) consisted of reading assignments, small group discussions, Balint groups, and role-playing exercises. We videotaped patient encounters 1 month before and 6 months after the teaching interventions, and recorded the duration of the videotaped encounters and whether the doctor had prescribed medications, ordered tests, and referred the patient to consultants. Patient satisfaction was measured by a structured questionnaire.**

RESULTS: **Both teaching interventions were followed by a reduction in medications prescribed and by improved patient satisfaction. Compared to the didactic group, the interactive group prescribed even fewer medications, ordered fewer laboratory examinations, and elicited higher scores of patient satisfaction. The average duration of the encounters after the didactic and interactive teaching interventions was longer than that before by 36 and 42 seconds, respectively.**

CONCLUSIONS: **A BPS teaching intervention may reduce health care expenditures and enhance patients' satisfaction, without changing markedly the duration of the encounter. An interactive method of instruction was more effective in achieving these objectives than a didactic one.**

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The term "patient-centered" approach to medical care refers to a style of practice that is oriented to the patient's needs rather than to the doctor's agenda, and which moves from professional control to patient empowerment. Its main components are the patient-centered interview[1] and patient counseling. The biopsychosocial (BPS) approach to care takes the patient-centered counseling process one step further. It draws from the observations that psychosocial factors are determinants of health[2–5] and from Engel's BPS model,[6,7] which assumes that the patient's complaints cannot be considered in isolation from their psychosocial causes and consequences. Consequently, a BPS orientation is an effort to gain an insight into both biomedical and psychosocial aspects of the patient's predicament and to help the patient deal with them simultaneously. The patient-centered and/or BPS approach to care have been shown to improve patient satisfaction,[8] reduce the frequency of malpractice suits,[9] and improve health outcomes.[10]

Patient-centered interviewing skills are the subject of several texts[11] and teaching courses in almost all medical schools in the United States[12] and United Kingdom.[13] Teaching interventions aimed at promoting a patient-centered or BPS approach among practicing physicians have been reported to change physician's knowledge[14] and observed[14–16] or self-reported[14,17–19] clinical behavior. Their effect on patient satisfaction and health care costs is uncertain: some authors have reported an increase in patient satisfaction[20,21] or no effect on it,[14,18] and we know of no attempts to assess the effect of such teaching interventions on health care costs.

This paper is part of the evaluation of a project attempting to promote a BPS orientation among primary care physicians through an intensive teaching program, consisting of a weekly 4- to 6-hour workshop for a total of 12 weeks. We present the results of 1) a before-after evaluation of the effect of the intervention on patient satisfaction, duration of the encounter, tests ordered,

medications prescribed, and referrals to consultants, and 2) a randomized blinded experiment comparing the effectiveness of two teaching methods in achieving these outcomes. We hypothesized that, as already reported by others, our teaching program would increase patient satisfaction[8,20,21] without markedly affecting the duration of the doctor-patient encounter.[22,23] We hypothesized also that it would reduce the number of tests ordered, medications prescribed, and referrals to consultants, and increase the frequency of psychosocial advice given. These latter hypotheses were based on self-reported changes in practice style of former graduates of the same program.

METHODS

Study Population

The study population consisted of 102 general practitioners (GP), randomly selected from a total of 523 from the North Israel district. They were invited to participate in a continuing medical education course on BPS-oriented primary care by the Family Medicine Institute of Tel-Aviv University in 1997. Of those invited, 58 declined either because they were reluctant to be videotaped during encounters with patients, had difficulties communicating in Hebrew, or had prior commitments. The remaining 44 GPs participated in the course. There were no differences in average age, gender, and seniority between the 44 GP participants in the course and the 58 who declined. All 44 participants consented to be randomized between two different teaching programs and to be videotaped during encounters with real or simulated patients. We did not request approval from the Institutional Review Board, because we felt that such an approval was not needed for this study.

Intervention

The teaching intervention of the short-term family therapy in ambulatory care (SFAT-AM) has been described elsewhere.[17] Briefly, the GP participants met once a week for a 4- to 6-hour workshop for a total of 12 weeks. Each meeting dealt with a single clinical problem/presenting symptom, and the patient-physician encounter was subdivided into 9 successive steps using the mnemonic MAGIC DATE. The first step consisted of an examination of the *M*ilieu of the encounter. It attempted to promote doctor's self-awareness, *A*djustment (the second step), and a focus on the task ahead. The third step was the beginning of the encounter. Its objective was *G*aining rapport with the patient, followed by an *I*nquiry into the patient's BPS problems, and *C*ontact, that is, the physical examination. Up to this step, the discussions with the GP participants dealt with the questions that physicians should ask a patient presenting with a given symptom/clinical problem under discussion, how these questions should be asked, how to interpret/respond to possible alternative answers by the patient, how to identify and respond to psychosocial clues that may emerge during the consultation, the updated clinical guidelines regarding the presenting symptom, and physician behavior during the physical examination. The sixth step was an attempt to reach an agreement with the patient on a BPS *D*iagnosis, and the participants discussed possible ways to suggest such diagnoses to the patient. The seventh step consisted of an *A*greement on the management, and the eighth step outlined the kind of help that physicians may offer for BPS problems and how to integrate it into the medical *T*reatment. The last step was an *E*valuation with the patient of possible additional expectations/questions, and a personal reflective self-audit of the consultation by the physician alone. This last step enabled the physician to get ready for a new milieu and to adapt him/herself to the next patient.

At the end of each weekly meeting, each GP participant had a guidelines file that was developed with the other participants and the facilitators on a BPS orientation to a specific common clinical problem. The GP participants were encouraged to implement the discussed clinical approaches and newly acquired types of behavior in their practice.

The 44 GP participants were randomly allocated into two groups (22 participants each), which were similar in average age, gender, practice load, and seniority. Each group met once a week with two preceptors. The first half of a weekly meeting was similar in both groups. It began with a 20-minute written test of the participants' knowledge on the topics to be dealt with during the same day and their comprehension of the topics of the previous meeting. The results of the test were distributed at the next meeting a week later. The test was followed by a 20- to 60-minute discussion, in the course of which the GP participants shared with their peers and facilitators their success in implementing the guidelines that were developed during the previous meeting in their practice and learned how to further modify their BPS orientation and adjust it to the busy clinic schedule. This was followed by informal presentations by the participants of cases drawn from their practice, with the problem to be discussed on the same day. For the following 60 to 90 minutes, the participants discussed typical encounters with such patients (with the patient alone, vs with a patient accompanied by a family member), problems (main complaint, main concern), and the patients' expectations. The discussion proceeded to the identification of key history and physical examination data, which are relevant for diagnostic and treatment decisions, as well as the need for additional laboratory and imaging tests and referrals. Special emphasis was placed on situations in which a diagnostic or treatment decision might harm the patient or lead to missing a life-threatening condition. The participants identified difficulties in communication with specific patients and various emotional and social problems, either one of which may be associated with, or even lead to, a patient decision to seek medical help. They described their own approach to dealing with such problems, and the facilitator suggested alternative approaches to typical emotional or social patient problems.

The two groups differed in the methods used during the second half of the meeting. In one group, the teaching (didactic) method consisted of lectures, reading assignments, and their discussions. The teaching (interactive) method of the second group included a smaller proportion of lectures and reading assignments, and mainly: 1) role playing of common types of 10-minute encounters with a patient or a family, followed by discussions[24] in small groups of 3 to 5 participants. These discussions were conducted by the participants alone, or with one of the facilitators rotating among various groups. Concomitantly, the second facilitator discussed with a participant alone his/her individual difficulties, such as in communicating with specific types of patients, or in defining the boundary between respect of patient's preferences and physician commitment to sound medical practice. 2) Analysis of the playback of videotaped doctor-patient encounters of the GP participants, obtained as detailed below before the teaching program, and of the recall of their feelings and state of mind in small groups of 3 to 5 participants, led by a facilitator skilled in providing feedback.[25] 3) Balint groups, in which 10 to 11 GP participants shared with others their feelings and attitudes toward patients.[26,27] For example, participants were encouraged to describe what they felt when a patient asked for a second opinion or to be referred to a complementary medicine practitioner. The breaks during interactive teaching were longer than those in the didactic teaching group, in order to permit informal discussions among the participants and between them and the facilitators.

Evaluation

An unselected sample of 685 walk-in patients, whose permanent physician was either on vacation or on reserve army duty, was seen in their primary care clinic by a course participant, who was temporarily replacing their family physician. The use of temporary replacements for absent family physicians is a common practice; it was authorized by the patients' health plan, and all patients except for two gave their written consent to have their encounter with the substitute physician videotaped for evaluation of the physician's performance. We evaluated the participants' performance as substitute physicians rather than in their own primary care milieu in order to ensure that each encounter was with a new patient. There were 369 encounters 1 month before and 316 encounters 6 months after the teaching intervention. Depending on the patient load in the specific primary care clinic, each GP participant saw 4 to 15 (mean 10) patients before and after the teaching intervention. Of the total of 369 videotaped encounters before the teaching intervention, 65 patients were selected randomly and asked to complete a satisfaction questionnaire (Appendix A). Of these, 58 agreed and produced 56 usable responses. Of the total of 316 videotaped patient encounters after the teaching intervention, 67 were asked, and 57 agreed and produced 47 usable responses.

An attempt was made to ensure a uniformity and standardization of the evaluation by exposing the course participants to a simulated patient. Unbeknown to the participants, each of them saw before and after the teaching course, together with the real patients, a professional actor who impersonated a visibly anxious patient with shoulder pain. The actor was trained to reveal, only if asked, that he recently resumed smoking after a prolonged cessation, that he was in the midst of divorce proceedings and that he hit his wife on repeated occasions after suspecting she was seeing another man.

Dependent Variables

The dependent variables were patient satisfaction, the duration of the encounter, and whether the participant had prescribed any medication(s), ordered any test(s) (such as urinalysis, throat swab, and x-rays), referred the patient to a consultant (such as dieticians, physiotherapists, and cardiologists), and gave one or more pieces of advice/psychosocial instructions (such as stress management, conflict management, and crisis management in cases of separation from children, bereavement, and divorce).

Patient satisfaction was assessed by the sum of the patients' grading on a 1 to 5 scale in response to questions 2, 3, 4, 5, 7, 8, 10, and 11 in the questionnaire (Appendix A), and the rating of each encounter was presented as a percent of the maximum possible grading ($8 \times 5 = 40$). For each GP participant, we calculated the average satisfaction rating of his/her encounters with patients, and the numbers in the tables are the average satisfaction ratings of all GP participants. The duration of the encounters (seconds) was measured using a stopwatch during the review of the videotaped GP participant performance. Prescribed medications (yes/no), tests ordered (yes/no), referrals to a consultant (yes/no), and psychosocial advice and instructions (yes/no) were similarly derived from the videotaped GP participant performance. For each GP participant, we determined the proportion of encounters in which s/he prescribed medication(s), ordered laboratory test(s), referred to a consultant, and gave one or more pieces of advice/psychosocial instructions. The evaluation of each videotaped performance was carried out by observers who were blinded to the timing of the encounter (before or after the teaching intervention) or the method of instruction (didactic or interactive). There were no cases of disagreement between the observers on these variables. A detailed description of the remaining variables assessed in the course of the videotape review and of the validity and reliability of this assessment will be presented in a separate paper.

Analysis

Comparisons before versus after the teaching program and between groups were done with the χ^2 test for binary variables, t test for normal continuous variables, and the Mann-Whitney test for continuous nonnormal variables.

For the normal variables, the mixed model was used to compare periods (before vs after the course) and to compare this change between the groups. The generalized mixed model with a logit link was used when proportions were the dependent variable (procedure GENMOD of SAS). All statistical calculations were done with SAS (SAS Corporation, Cary, NC).

RESULTS

Before the teaching interventions, there were no differences between the two groups of GP participants in their BPS knowledge and attitudes (data not shown), and in their performance with real patients as measured by the number of pieces of advice/instructions, patient satisfaction, and the duration of the encounters (Table 1). The groups were similar in attendance in the course (data not shown), and the average duration of the encounters with real patients increased from 568 to 604 seconds after the course in the didactic group and from 564 to 606 seconds after the course in the interactive group.

In the didactic group, the proportion of real patients who received medications declined from 54% before the course to 43.5% ($P = .015$); the proportion of patients who received psychosocial instructions/advice increased from 17% to 29% ($P < .001$). The average patient satisfaction increased from 34.2 to 55.7 ($P = .001$). There were no significant differences in tests ordered and referrals to specialists before and after the teaching intervention. The effect of the teaching intervention was more pronounced in the interactive group. After the course, the interactive group prescribed fewer medications than did the didactic group (31% vs 43.5%; $P < .02$), offered psychosocial advice more often (57% vs 29%; $P < .0001$), and elicited higher scores of patient satisfaction (69.2 vs 55.7; $P = .006$) (Table 1).

These findings were replicated in the encounters with the simulated patient (Table 2). Here again, the effect of the teaching intervention was more pronounced in the interactive group. After the course, the interactive group ordered fewer tests than did the didactic group (13.6% vs 22.7%; $P = .02$), prescribed fewer medications (72.3% vs 81.8%; $P < .0005$), offered psychosocial advice more often (77.2% vs 18.2%; $P < .00005$), and elicited higher scores of patient satisfaction (84.2 vs 49.4; $P = .014$).

DISCUSSION

After participating in a course aimed at translating the theoretical precepts of the BPS orientation into a practical manual, general practitioners provided more psychosocial advice/interventions and prescribed fewer medications

Table 1. Medications Prescribed, Laboratory Examinations Ordered, Referrals for Consultations, Duration of the Doctor-Patient Encounter, and Patient Satisfaction During Encounters Between 44 Israeli General Practitioners and Real Patients Before and After a Teaching Course Aiming to Promote a Biopsychosocial Orientation (Averages and Significance of Differences)

Variable	Interactive Group* (*N* = 22)			Didactic Group† (*N* = 22)			Significance in Differences Between the Interactive and Didactic Group Averages	
Number of Encounters	Before 203	After 150	*P* Value	Before 166	After 166	*P* Value	Before	After
Medications prescribed during encounter (% of patient encounters)	48	31	<.0001	54	43.5	.015	0.2	0.02
Laboratory examinations ordered during encounter (% of patient encounters)	19	13	.02	19	15	.84	0.84	0.17
Referrals for consultations during encounter (% of patient encounters)	10	8	.31	14.1	14	.47	0.57	0.46
Advice/psychosocial instructions given during encounter (% of patient encounters)	11	57	<.0001	17	29	<.001	0.39	<0.0001
Duration of the doctor-patient encounter (seconds)	564	606	.004	568	604	.004	0.52	0.43
Patient satisfaction (±SD)	33.9 (5.2)	69.2 (7.3)	.0005	34.2 (4.8)	55.7 (8.1)	.001	0.88	0.0064

** The "didactic" method of instruction consisted of reading assignments, lectures, and small group discussions.*

† The "interactive" method of instruction included small group discussions, role playing of doctor-patient consultations, one-to-one meetings with one of the instructors, Balint groups, and analyses of videotaped doctor-patient encounters of the participants.SD, standard deviation.

Table 2. Medications Prescribed, Laboratory Examinations Ordered, Referrals for Consultations, Duration of the Doctor-Patient Encounter, and Patient Satisfaction During Encounters Between 44 Israeli General Practitioners and a Simulated Patient Before and After a Teaching Course Aiming to Promote a Biopsychosocial Orientation (Averages and Significance of Differences)

Variable	Interactive Group* (*N* = 22)			Didactic Group† (*N* = 22)			Significance in Differences Between the Interactive and Didactic Group Averages	
Number of encounters	Before 22	After 22	*P* Value	Before 22	After 22	*P* Value	Before	After
Medications prescribed during encounter (% of patient encounters)	100	72.3	.01	98.3	81.8	.04	0.10	0.0005
Laboratory examinations ordered during encounter (% of patient encounters)	40.9	13.6	.05	54.5	22.7	.03	0.24	0.02
Referrals for consultations during encounter (% of patient encounters)	27.4	0	.001	22.7	4.5	.10	0.19	0.040
Advice/psychosocial instructions given during encounter (% of patient encounters)	0	77.2	.0001	0	18.2	.04	0.15	0.00005
Duration of the doctor-patient encounter (seconds)	425	648.7	.001	467.3	660	.002	0.82	0.51
Patient satisfaction	29.7	84.2	.004	36	49.4	.80	0.67	0.014

* *The "didactic" method of instruction consisted of reading assignments, lectures, and small group discussions.*
† *The "interactive" method of instruction included small group discussions, role playing of doctor-patient consultations, one-to-one meetings with one of the instructors, Balint groups, and analyses of videotaped doctor-patient encounters of the participants.*

with an increase in patients' satisfaction, thereby supporting some but not all of our prior hypotheses. The changes in physician behavior were noted as late as 6 months after the intervention. As already noted by other authors,[28] an interactive teaching method enhanced this effect. Compared to the didactic group, the interactive group prescribed even fewer medications, ordered fewer laboratory examinations, offered psychosocial advice even more often, and elicited higher scores of patient satisfaction. We do not know which of the three elements of the interactive teaching approach (the Balint groups, the review and feedback to the videotaped encounters, or the role-playing exercises) should be credited for its higher efficacy. Judging from the informal feedback of the participants, this improved effectiveness was due mainly to the role-playing exercises (learning by doing),[29] which combined clinical performance with self-awareness and peer feedback. For example, we believe that didactic teaching of empathy is ineffective not only because it is inconsistent with the prevailing indoctrination of "detached concern,"[30] but also because it fails to challenge the student to reflect on "what does it mean to be in the patient's shoes?" in the context of a simulated doctor-patient encounter.[31] It is also possible that the improved effectiveness of interactive teaching was due to the consideration of the unique individual needs of each of the GP participants, thereby encouraging a similar attitude to patients.

The teaching interventions improved the performance of the GP participants with the simulated patient (Table 2) more than with real patients (Table 1). This was probably due to the differences in the types of patents: the simulated patient was a prototype of a somatic presentation of severe emotional and social distress. He was programmed to challenge the ability to diagnose and manage the type of problems that was the focus of the teaching intervention. Most GP participants succeeded in correctly identifying and managing this problem as evidenced by the marked prolongation of the doctor-patient encounter, increase in advice/psychosocial instructions given during the encounter, and decrease in medications prescribed, tests ordered, and referrals after the teaching intervention (Table 2). On the other hand, the real patients were representative of the general population, with the entire gamut of disorders and with varying degrees of emotional and social concerns. Not all of them needed advice/psychosocial instructions, and many of them did need medication and further testing, thereby "diluting" the effect of the teaching intervention.

Our findings suggest that a BPS approach may reduce costs and enhance patients' satisfaction without markedly prolonging the duration of the doctor-patient encounter. The reduction in medications prescribed and the concomitant increase in psychosocial instructions suggest that the latter may have substituted for medications, in line with Balint's notion of "the doctor as a drug."[32] The reduction

in laboratory tests ordered suggests that by encouraging patients to share emotions and concerns and by using management tools such as empathy, the course participants appeared to improve their diagnostic self-efficacy. An example of an effective BPS approach to the entire family[33] included help and support for the wife of a patient with Alzheimer's disease by involving the couple's adult children in the management of their father, separating the sleeping rooms, and recommending effective drug therapy to reduce the husband's violent spells. This approach resulted in the complete resolution of the palpitations and shortness of breath, which were the chief complaints of his wife on repeated previous visits and which had failed to respond to medication and coronary angioplasty. Indeed, research on the sociophysiology of caring suggests that an empathic relationship has physiologic effects that could benefit both parties in the doctor-patient relationship.[34]

The videotaped encounters differed in two aspects from the usual primary care practice. First, the patients were aware that they were meeting an unfamiliar "substitute" doctor, and those who preferred to wait for their usual family physician or avoid being videotaped (less than 6% of all the attendees) were not included in this study. Second, the videotaped encounters took place in a clinic, which was unfamiliar to the GP participant, in a "new patient, new doctor" context. These deviations from normal practice may have introduced a bias; however, this bias was identical in the patient encounters before and after the teaching course. On the other hand, it may be argued that seeing a patient for a first time eliminated the bias of preconceived ideas formed during previous encounters. After the course, GP participants frequently commented that they approached many of their known patients (and especially the "difficult patients") as "a new patient," and changed interaction modalities into more effective and satisfying relationships.

Our teaching intervention consisted of a rather extensive course totaling 52 hours. Whether other interventions trying to meet the same goals by other techniques will have different effectiveness needs to be studied further. Hopefully, we might find shorter and more effective means of producing similar results.

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REFERENCES

1. Smith RC, Hoppe RB. The patient's story: integrating the patient- and physician-centered approaches to interviewing. Ann Intern Med. 1991;115:470–7.
2. Holmes TH, Rahe RH. The social readjustment rating scale. J Psychosomat Res. 1967;11:213–8.
3. Fiscella K, Franks P. Poverty or income inequity as a predictor of mortality. A longitudinal cohort study. Br Med J. 1997;314:1724–7.
4. Guralnik JM, Land KC, Blazer D, Fillenbaum GG, Branch LG. Educational status and life expectancy among older blacks and whites. N Engl J Med. 1993;329:110–6.
5. House JS, Landis KR, Umberson D. Social relations and health. Science. 1988;241:540–5.
6. Engel GL. The need for a new medical model. A challenge to biomedicine. Science. 1977;196:129–36.
7. Engel GL. The clinical application of the biopsychosocial model. Am J Psychiatry. 1980;137:535–44.
8. Ong LML, de Haes JCJM, Hoos AM, Lammes FB. Doctor-patient communication: a review of the literature. Soc Sci Med. 1995;40:903–18.
9. Levinson W, Roter DL, Mullooly JP, Dull VT, Frankel RM. Physician-patient communication. The relationship with malpractice claims among primary care physicians and surgeons. JAMA. 1997;277:553–9.
10. Stewart MA. Effective physician-patient communication and health outcomes: a review. Can Med Assoc J. 1995;152:1423–3.
11. Enelow AJ, Forde DL, Brummel-Smith K (eds). Interviewing and Patient Care. Oxford, UK: Oxford University Press; 1996.
12. Novack DH, Volk G, Drossman DA, Lipkin M. Medical interviewing and interpersonal skills teaching in US medical schools. Progress, problems, and promise. JAMA. 1993;269:2101–5.
13. Hargie O, Dickson D, Boohan M, Hughes K. A survey of communication skills training in UK schools of medicine: present practices and prospective proposals. Med Educ. 1998;32:25–34.
14. Smith RC, Lyles JS, Mettler JA, et al. The effectiveness of intensive training for residents in interviewing. Ann Intern Med. 1998;128:118–26.
15. Roter DL, Hall JA, Kern DE, Barker LR, Cole KA, Roca RP. Improving physicians' interviewing skills and reducing patients' emotional distress. A randomized clinical trial. Arch Intern Med. 1995;155:1877–84.
16. Levinson W, Roter D. The effects of two continuing medical education programs on communication skills of practicing primary care physicians. J Gen Intern Med. 1993;8:318–24.
17. Eshet I, Margalit A, Almagor G. SFAT-AM: short family therapy in ambulatory medicine. Treatment approach in 10–15 minute encounters. Fam Pract. 1993;10:178–87.
18. Brown JB, Boles M, Mullooly JP, Levinson W. Effect of clinician communication skills training on patient satisfaction. A randomized, controlled trial. Ann Intern Med. 1999;131:822–9.
19. Clark NM, Gong M, Schork MA, et al. Impact of education for physicians on patient outcomes. Pediatrics. 1998;101:831–6.
20. Bertakis KD, Roter D, Putnam SM. The relationship of physician medical interview style to patient satisfaction. J Fam Pract. 1991;32:175–81.
21. Smith RC, Lyles JS, Mettler JA, et al. A strategy for improving patient satisfaction by the intensive training of residents in psychosocial medicine: a controlled, randomized study. Acad Med. 1995;70:729–32.
22. Levinson W, Gorawara-Bhat R, Lamb J. A study of patient clues and physician responses in primary care and surgical settings. JAMA. 2000;284:1021–7.
23. Marvel MK, Epstein RM, Flowers K, Beckman HB. Soliciting the patient's agenda: have we improved? JAMA. 1999;281:283–7.
24. Levine HG, McGuire CH. The use of role playing to evaluate affective skills in medicine. J Med Educ. 1970;45:700–5.
25. Lundevall S, Njolstad I, Aaraas L. Stop the video and involve the observers: an inter-reflective method to stimulate doctors' learning about their own consultations with patients. Med Teach. 1994;16:189–95.
26. Henbest RJ, Stewart MA. Patient-centeredness in the consultation 1: a method for measurement. Fam Pract. 1989;6:249–54.
27. Henbest RJ, Stewart MA. Patient-centeredness in the consultation 2: does it really make a difference? Fam Pract. 1990;7:28–33.
28. Davis D, O'Brien MA, Freemantle N, Wolf FM, Mazmanian P,

Taylor-Vaisey A. Impact of formal continuing medical education: do conferences, workshops, rounds, and other traditional continuing education activities change physician behavior or health care outcomes? JAMA. 1999;282:867–74.
29. Schon DA. Educating the Reflective Practitioner. London: Jossey-Bass; 1987.
30. Evans BJ, Stanley RO, Burrows GD. Measuring medical students' empathy skills. Br J Med Psychol. 1993;66:121–33.
31. Margalit APA, Eshet I. SFAT-AM: Short (Term) Family Therapy in Ambulatory Medicine. A Biopsychosocial Handbook for Primary Care Providers. Tel Aviv: Yozmot-Hilliger; 1997.
32. Balint M. The Doctor, His Patient and the Illness. Madison, Wis: International Universities Press, Inc.; 1964.
33. Baird MA, Margalit APA. Family interviewing and assessment. In: Jones R, Britten N, Culpepper L, et al., eds. Oxford Textbook of Primary Medical Care, volume 1. New York, NY: Oxford University Press; 2004.
34. Adler HM. The sociophysiology of caring in the doctor-patient relationship. J Gen Intern Med. 2002;17:874–81.

APPENDIX A

Patient Satisfaction Questionnaire

Age

Gender

1. What was the main reason for your visit in the clinic today?

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2. To what extent did this visit meet your expectations? (1 = not at all; 5 = the visit outcome exceeded my expectations)

3. To what extent did the physician understand your problem? (1 = not at all; 5 = the physician understood my problem extremely well)

4. How attentive was the physician to your need? Did s/he address your concerns? (1 = not at all; 5 = the physician was very attentive to my needs/addressed my concerns extremely well)

5. How much did the physician help you understand the cause of your problem? (1 = not at all; 5 = the physician helped me understand the cause of my problem extremely well)

6. Were you examined? Yes/no

7. How thorough was this examination? (1 = not at all thorough; 5 = very thorough)

8. How much did the physician help you in matters you did not expect him/her to? (1 = not at all; 5 = the physician helped me extremely well also in matters I did not expect his/her help)

9. What did the physician offer you? (Medication/lab exams/referral/good advice/comfort)

10. To what extent did the physician ask your consent for the treatment s/he offered? (1 = not at all; 5 = the physician asked for my consent after repeatedly ascertaining I understood him)

11. How good was the rapport between you and the physician? (1 = poor; 5 = excellent)