



ELSEVIER

Patient Education and Counseling 39 (2000) 27–36

PATIENT EDUCATION
AND COUNSELING

www.elsevier.com/locate/pateducou

Evidence-based guidelines for teaching patient-centered interviewing

Robert C. Smith*, Alicia A. Marshall-Dorsey¹, Gerald G. Osborn, Valerie Shebroe, Judith S. Lyles, Bertram E. Stoffelmayr, Lawrence F. Van Egeren, Jennifer Mettler, Karen Maduschke, Jennifer M. Stanley, Joseph C. Gardiner

From the Departments of Medicine, Family Practice, Communication, Psychiatry, Psychology, and Epidemiology, Michigan State University, East Lansing, MI 48824, USA

Received 5 January 1999; received in revised form 20 July 1999; accepted 3 September 1999

Abstract

In a rare study of effectiveness of an interviewing method, we previously reported a randomized controlled trial demonstrating that training in a step-by-step patient-centered interviewing method improved residents' knowledge, attitudes, and skills and had a consistently positive effect on trained residents' patients. For those who wish to use this evidence-based patient-centered method as a template for their own teaching, we describe here for the first time our training program – and propose that the training can be adapted for students, physicians, nurse practitioners, physician assistants, and other new learners as well. Training was skills-oriented and experiential, fostered positive attitudes towards patient-centered interviewing, and used a learner-centered approach which paid special attention to the teacher–resident relationship and to the resident's self-awareness. Skills training was guided by a newly identified patient-centered interviewing method that described the step-by-step use of specific behaviors. © 2000 Elsevier Science Ireland Ltd. All rights reserved.

Keywords: Communication; Doctor–patient relationship; Interviewing; Patient-centered

1. Introduction

It has been proposed that physicians, allied health professionals, and students integrate patient-centered approaches into their interviews and relationships

with patients if they want to be most scientific and humanistic [1]. Integration avoids the singular disease focus of isolated doctor-centered interviewing and makes the patient as a person the primary interest. Compelling data support integrating patient-centered [2–6] with doctor-centered approaches: increased patient satisfaction [7–9] and compliance [8–10], decreased law suits [11,12] and doctor-shopping [13], and, most importantly, improved health outcomes [14–16]; e.g., lower glycohemoglobin levels in diabetics [14].

Much training, however, remains focused narrow-

*Corresponding author. Tel.: +1-517-355-6516; fax: +1-517-432-1326.

E-mail address: smithrr@pilot.msu.edu (R.C. Smith)

¹Dr. Marshall is now in the Department of Social and Behavioral Health, Texas A&M University, College Station, TX 77843.

ly on biomedicine, with well-known dangers of diminishing the personhood of the patient. Nevertheless, educators have had at least two understandable explanations for not changing this focus [17,18]. First, there previously were no behaviorally-defined descriptions of how one actually conducted a patient-centered interview, step-by-step, from beginning to end. Second, most interviewing recommendations in texts and elsewhere, patient-centered or otherwise, had little or no research data to support their recommendations.

One of the authors (RCS) took advantage of a rich patient-centered interviewing literature [2–6] and synthesized its parts into a unified, complete interview that described exactly what behaviors were required by new learners, step-by-step [1]. Our group then studied the effectiveness of training in this systematic patient-centered interviewing method in 63 PGY1 residents [17]. Using a randomized, controlled design, we found significant improvement in trained residents' knowledge, attitudes, self-confidence, skills in interviewing patients and dealing with relationships, skills in managing and communicating with somatizing patients, and skills in educating patients; there also were consistent trends towards improvement in patient outcomes [17].

This paper provides a template for teachers who wish to follow our approach for teaching patient-centered interviewing and provider–patient relationship skills. While the supporting research has been published earlier [17], we present here the first description of our actual training program. We propose that this curriculum can provide evidence-based guidelines for teaching patient-centered interviewing to physicians, allied health professionals, and students.

2. Theoretical background

In formulating the specific, behaviorally-defined patient-centered method and the teaching program, our overarching theoretical base was general system theory [19–24] and its medical derivative, the biopsychosocial model [25–31]. To operationalize this guiding model of medicine, we relied upon a rich base in patient-centered medicine [1–5,17,32–37]. To be patient-centered means facilitating understanding of the patient's needs, interests, concerns,

ideas, requests, and emotions – and integrating these data into one's understanding of disease problems [1]. Within the interaction itself, to be patient-centered means that the interviewer inserts no new ideas into the conversation and, rather, facilitates the patient to lead the conversation and originate material for discussion; in the doctor-centered process, the interviewer can of course insert new information [1]. In formulating our basic patient-centered method (and two related methods), we were guided by the above definitions for being patient-centered. We selected from the literature specific skills that fulfilled these criteria. We then ordered and prioritized the skills to produce a sequence of behaviorally-defined skills that, in aggregate, further enhanced the patient's lead of the conversation and the provider–patient interaction to produce the patient's individual story of illness. We avoided requiring specific questions or a rote performance of skills and, instead, developed explicit signposts throughout the interview and provided examples of different questions appropriate for each of these steps and substeps. The guidelines were intended to provide an infrastructure for new interviewers, not an endpoint. Upon initial mastery of the basic method, interviewers were encouraged to experiment with several variations. For example, one often would want to alter the sequence and, at times, even omit certain steps and substeps.

3. Goals

Our *goals* were twofold: that trained residents be *willing* as well as *able* to use an integrated patient-centered and physician-centered approach. This required a focus on *attitude* as well as *skill* development [38,39], especially important because negative attitudes toward patient-centered approaches are common and problematic [38,40–47].

4. Skill development

4.1. Basic patient-centered interviewing method

We believed that the patient-centered dimension of interviewing, which places the patient's needs foremost [1–6], was the most essential skill and that the

physician–patient relationship was a central but often ignored aspect of interviewing [48]. Using a behaviorally explicit, step-by-step method [1], our teaching focused on the usually unfamiliar patient-centered process because residents already were familiar with doctor-centered interviewing to make disease diagnoses. Table 1 summarizes the basic patient-centered interviewing method.

4.2. Patient-centered interviewing method for managing somatizing patients

Chronic somatization is a poorly recognized,

extremely common problem in primary care that is attended by great disability for patients and high costs for payors [49]. Somatic complaints also obscure physicians' recognition of frequently occurring comorbid psychiatric conditions, such as depression, and account for over 50% of undetected psychiatric illness [49]. One of the authors (RCS) developed a method, based on cognitive-behavioral and relational principles, for interacting with chronic somatizing patients in a patient-centered way rather than the usual doctor-centered approach that works so poorly [50]; a list of these objectives also is available from the authors.

Table 1

Basic patient-centered interviewing method^a

The learner will understand the following skills and demonstrate them in role play and with real patients in the sequence described:

I. Setting the stage for the interview (Step 1)

- A. Welcome the patient
- B. Use the patient's name
- C. Introduce self and identify specific role
- D. Ensure patient readiness and privacy
- E. Remove barriers to communication
- F. Ensure comfort and put the patient at ease

II. Chief complaint/agenda setting (Step 2)

- A. Indicate time available
- B. Indicate own needs; e.g., take history and perform physical examination
- C. Obtain list of all issues patient wants to discuss; e.g., specific symptoms, requests, expectations, understanding
- D. Summarize and finalize the agenda; negotiate specifics if too many agenda items

III. Nonfocused interviewing (Step 3)

- A. Open-ended beginning question
- B. 'Nonfocusing' open-ended skills: silence, neutral utterances, nonverbal encouragement
- C. 'Focusing' open-ended inquiry also appropriate if needed to get patient talking: echoing, summary, requests
- D. Closed-ended questions for clarification
- E. Obtain additional data from the following sources: nonverbal cues, physical characteristics, autonomic changes, accouterments, and environment

IV. Focused interviewing (Step 4)

- A. Obtain personal description of the physical symptoms [Focusing open-ended skills]
- B. Extend the story to the broader, personal context of the symptoms [Focusing open-ended skills]
- C. Develop an emotional focus [Emotion-seeking skills]
- D. Address the emotion(s) [Emotion-handling skills]
- E. Use the cycle of 'core dynamic skills' repeatedly (focused open-ended skills, emotion-seeking skills, emotion-handling skills) to better identify and deepen the story
- F. Conclude and address other current issues

V. Transition to the doctor-centered process (Step 5)

- A. Brief summary
- B. Check accuracy
- C. Indicate that both content and style of inquiry will change if the patient is ready

^a Used by permission: Smith RC, The patient's story [1].

Table 2

Patient-centered interviewing method for patient education^a

The learner will understand the following skills and demonstrate them in role play and with real patients in the sequence described:

A. Establish an information base and motivate the patient

1. Determine knowledge base and readiness for change
2. Clearly inform about adverse potential of health habit needing change
3. Make brief, explicit recommendation for change
4. Motivate patient
 - a) Inform of health and other benefits from change
 - b) Use knowledge of personality
 - c) Highlight patient's capacity for change
 - d) Emphasize that help is available
 - e) Indicate that past failures do not bode poorly
5. Check understanding and desire for change

B. Obtain a commitment

1. Reinforce commitment
2. Set expectations for success
3. Reaffirm commitment
4. (Manage a decision against advice)

C. Negotiate a specific plan

1. Start with detailed understanding of role the habit to be changed plays in the patient's life
 2. Involve patient actively in plan, including when to begin and the specific details of its implementation
 3. Include medical interventions where applicable
 4. Check understanding and reaffirm plan
 5. Set follow-up
-

^a Used by permission: Smith RC, The patient's story [1].

4.3. Patient-centered interviewing method for patient education

Persuading a patient to take a course not previously chosen, such as losing weight or stopping cigarette smoking, can lead to poor results and conflict between physician and patient unless the resident is skillful with patient-centered approaches, including negotiation. The interviewing method used to guide training, summarized in Table 2, was developed by one of the authors (BES) and informed by the work of many others [51].

4.4. Patient-centered interviewing method for giving bad news

Although not included in our original objectives, a frequent objective of learners was to more effectively give bad news to patients. To teach this difficult subject, we adapted the method formulated by Quill and Townsend [52].

4.5. Mental status evaluation method

To enhance familiarity with ubiquitous and often overlooked organic mental syndromes, residents learned to conduct the brief mental status evaluation formulated by Folstein et al. [53].

4.6. Noninterviewing objectives

Noninterviewing teaching objectives, a detailed list also available from the authors, included self-awareness of previously unrecognized, potentially harmful personal reactions [54–56], the ability to make psychiatric diagnoses needed in primary care [57], skills with practical psychopharmacology in a primary care environment [57], and treating anxiety, depression, and somatization in primary care [57].

5. Influencing attitudes

Facilitating attitudinal changes required a safe,

respectful setting. Residents' openness and expressivity was fostered, appropriate to the situation, by teachers' self-disclosure and sharing of their own vulnerabilities and uncertainties.

5.1. Learner-centered learning

A learner-centered approach, integrated with a teacher-centered approach, facilitates learners' identification of their own needs and interests [58] and leads to attitudes of self-efficacy and a greater sense of autonomy and self-direction [58]. Learner-centered learning is the teaching counterpart of the patient-centered methods being taught to the learners.

5.2. Resident-teacher relationship

A good relationship predicts a positive teaching outcome and models how to conduct a healthy, professional relationship, thereby enhancing residents' attitudes towards their own relationships with patients [55]. Teachers systematically addressed the following three areas to enhance the relationship [55]. (1) By observing the resident's personality style [1], the teacher could adapt her/his teaching to it; e.g., complimenting obsessive residents on their organization and precision. (2) Teachers also used open-ended skills and emotion-handling skills to elicit and respond to residents' personal stories, a powerful way to build any relationship [1]. (3) Teachers' own reactions to the resident were carefully monitored because they can lead to negative behavioral responses [55].

5.3. Teaching self-awareness

Throughout training we assigned the highest priority to facilitating residents' self-awareness of attitudes, emotions, and thoughts that could interfere with communication and the relationship [1,54–56]. We directly addressed negative attitudes and tried to replace them with healthier, more patient-centered attitudes [1,54–56]. We addressed self-awareness issues first at most critiques of a patient interaction by open-endedly inquiring about the resident's own

emotional responses. Over many sessions, teachers and each resident almost always synthesized a unique story of interfering attitudes and emotional responses; e.g., fear of loss of control (leading to overcontrol of the interview), fear of death (leading to avoidance of this topic when raised repeatedly by the patient). Although some harmful responses disappeared once recognized, others required specific strategies to change them, if the resident chose to do so [1,54–56]. Discussion and role-playing the desired new response were effective tools for change.

6. Specific teaching methods

6.1. Critiquing interviewing and patient management skills

Following *directly observed* resident-patient interviews (usually inpatients), critiques occurred in a conference room, lasted approximately 30 min, and typically began with inquiry about the resident's personal reaction to the patient as part of self-awareness work. After a few minutes, the resident would be asked for a self-assessment of her/his success with whatever skills were being addressed. Then, resident colleagues provided feedback. We encouraged residents to give feedback in behavioral, nonpersonal terms, limit it to 2–3 items that could be accomplished, and frame it positively in the context of things the learner was doing well [59]. Although initially the teacher took the major role, groups usually evolved so that group members provided much of the feedback. Teachers monitored and open-endedly explored the interviewer's reactions during the critique, which further enhanced self-awareness and identification of interfering issues. At the conclusion, the interviewer was encouraged to identify the skills s/he wanted to work on for the next exercise. *Audiotapes* of resident-patient interactions (usually residents' own outpatients) were reviewed in 30 min sessions. Before critiquing, as just described for directly observed interactions, we negotiated with the resident who would control the tape and encouraged stopping the tape frequently to identify problems, especially early in the rotation and with residents having difficulty.

6.2. Group work

In addition to providing feedback about skills, members of each group often addressed their own personal issues and personal reactions to patients, and they provided feedback and support to other residents addressing personal, self-awareness material. This support group approach was guided by confidentiality, positive regard, support, speaking only for oneself and only when ready, and the importance of expressing current emotional reactions [60].

6.3. Reading material

We provided a syllabus, available from the authors, that contained an orientation letter, schedule for the month, objectives, learning agreement forms, journal guidelines, a list of various emotions, and readings in the following sequence which were distributed over the 4 weeks: three chapters on the basics of patient-centered interviewing [1]; Table 1; an annotated patient-centered interview; self-awareness and nonverbal communication reading materials [1]; a full mental status examination [61] and the mini-mental status examination [53]; somatization reading materials [50]; readings on psychoactive drugs and electroconvulsant therapy [57]; patient education and giving bad news material [1]; readings on informing and motivating patients [51]; Table 2; information about negotiating with patients [62]; psychiatric emergencies information [63]; personality styles [1,64]; a list of medical drugs that cause psychiatric symptoms [65]; and the CAGE questionnaire [66].

7. Teachers

Teachers were from four departments: communication (PhD), family practice (PhD in psychology), psychiatry (DO), and medicine (MD). All had training in psychosocial medicine. Faculty held regular monthly meetings and also met 1–3 times weekly on an ad hoc basis to discuss residents' progress, problems and feedback, and to make necessary adjustments. Faculty were funded for this project which required 24 resident contact hours

weekly for 6 months; i.e., a total of 0.3 FTE per year was required to teach 3–4 residents monthly for 6 months. Residency programs paid residents' salaries. Systematic formative evaluation revealed very high degrees of acceptance of the training by residents and others.

8. Specific conduct of the training

We trained a total of 63 first year primary care residents, 3–4 at a time, on a required 1 month rotation where the only competing duty was residents' regular half-day clinic. One week prior to the rotation, residents received a letter that explained the rotation, encouraged them to begin thinking about learning objectives, and asked them to complete a preliminary learning agreement. At the initial orientation session, extensive introductions and much discussion of residents' own objectives occurred. Initial learning agreements were reviewed and faculty assisted in formulating behaviorally-defined objectives. Self-awareness work and confidentiality were discussed.

8.1. Core learning experience

Core learning sessions lasted 3 hours, were conducted by different faculty, and focused on the various patient-centered interviewing methods. Although the themes for the core experience sometimes were teacher-centered, the specific direction usually was learner-centered. Themes for each week were: **Week 1** – basic patient-centered interviewing (Table 1) and organic mental syndromes; **Week 2** – basic patient-centered interviewing, patient-centered approach for somatization, psychiatric diagnoses, management of psychological problems, psychopharmacology, and drug detoxification; **Week 3** – basic patient-centered interviewing, patient education (Table 2), crisis management, and personality types; **Week 4** – giving bad news and review.

After brief discussion of readings, the interviewing methods were practiced repeatedly in role play. Residents could perform each patient-centered method in role play and with real patients by the end of the rotation, and could perform the basic patient-centered interview (Table 1) in 3–5 min with most

patients. Core learning exercises also generated many questions which, at residents' requests, we pursued in greater depth; e.g., community resources, physicians' personality structure and its attendant problems and strengths [67], mind–body integration, and spiritual issues.

8.2. Inpatient rounds and audiotape reviews

Most critiques of interviewing and management skills training occurred during inpatient rounds and audiotape review, as detailed in Specific Teaching Methods. Each resident received more than 20 supervised interactions during the rotation and participated in many more colleagues' critiques. The five-step patient-centered interviewing method described in Table 1 was the early focus. Following satisfactory progress with basic patient-centered interviewing, teaching emphasis shifted to interacting with chronic somatizing patients, patients who needed help to change negative health habits, and patients with possible organic mental syndromes.

Residents also were supervised in therapeutically applying newly acquired psychosocial information. With time to establish closer than usual relationships, residents followed patients daily with cancer, AIDS, and other new or chronic problems. This continuity experience provided the opportunity to understand the depths of patients' circumstances and emotions. Management involved medications (e.g., use of neuroleptics and antidepressants; drug detoxification) as well as the personal dimensions. Residents learned to support and counsel patients; e.g., a depressed patient with AIDS, a young woman resisting the reality of paraplegia following a recent traffic accident.

9. Comment

Three behaviorally-defined patient-centered interviewing methods (basic interviewing, somatization management, patient education) and other aspects of psychosocial training were shown to be effective in a previously reported randomized controlled trial [17]. This article provides a template for those wishing to teach these evidence-based patient-centered methods to residents. Because first year residents are similar

to many students, post-residency physicians, nurse practitioners, physician assistants, and other medical personnel in their levels of patient-centered expertise, the study at least provisionally identifies a research-based method for these caretakers as well. Specific study of each group will of course be needed to confirm this assumption. Our and others' by now extensive experience using the basic step-by-step patient-centered method (Table 1), however, fully corroborates the research findings with these other groups. While we recommend the block rotation as described, it can be tailored to local needs; e.g., for the same number of hours over a longer period of time. A longitudinal component of training, however, should be added to the block component.

We believe that the basic patient-centered interviewing method (Table 1) was the primary factor producing our positive impact. Because this teaching method involved the most important and most proximate skills, it received considerably more attention than our other methods – and also was integrated into the other methods. For programs with less time available for teaching interviewing, we recommend restricting the teaching focus to the basic patient-centered interviewing method. We do not recommend an isolated focus on the other methods unless learners have demonstrated facility with basic patient-centered interviewing.

Educators implementing such programs will need to consider the following issues: developing a positive attitude towards an interviewing curriculum; providing time for primary care teachers to teach interviewing; administrative and fiscal problems; finding time in the existing schedule; involving colleagues in communication, psychiatry, and other mental health disciplines as co-teachers if needed; and needs for space and training materials [68].

Formal training in interviewing and psychosocial medicine (a wide range of training programs of varying length and intensity are available from the Society of Teachers of Family Medicine and the American Academy on Physician and Patient), co-teaching with mental health professionals and/or health communication specialists, and supervision of one's teaching by a trained teacher are desirable and strongly recommended for teachers without previous expertise [54,55,68]. But their absence should not deter one from making a start. The most important

requirements for faculty are personal: ability to establish good relationships with learners, interest, sensitivity to others, respect for learners, good communication skills, maturity and common sense, self-awareness, and a willingness to take advantage of many existing resources; for physician faculty, good biomedical skills are essential as well.

We believe that teachers can follow the training guidelines described above with the expectation of significant benefits and no untoward effects. The ability of others to apply the interviewing methods in their own settings was not empirically tested by us, but active implementation is the logical next step.

In summary, implementation of the training presented here can help physicians, students, and allied health professionals return the patient to their proper place at the center of medicine. By training learners in evidence-based, behaviorally-defined patient-centered methods, we can better operationalize the biopsychosocial model [25,26] – and we can expect patients to benefit: improved satisfaction and compliance, reduced doctor-shopping and litigation, and improved health outcomes [7–17]. This paper provides a template for those wishing to teach a course in evidence-based patient-centered interviewing.

Acknowledgements

We wish to acknowledge the decisive support we received from the Fetzer Institute in Kalamazoo, Michigan. Without their unflagging interest and ongoing encouragement, this work would not have occurred. We also acknowledge the strong, enduring influence of the biopsychosocial programs at the University of Rochester and of the American Academy on Physician and Patient. We also thank many people at Michigan State University who supported this program in so many ways from its inception, especially our residents.

References

- [1] Smith RC. The patient's story: Integrated patient–doctor interviewing. Boston: Little, Brown and Company (now Lippincott Williams and Wilkins), 1996.
- [2] Levenstein JH, McCracken EC, McWhinney IR, Stewart MA, Brown JB. The patient-centered clinical method. 1. A model for the doctor–patient interaction in family medicine. *J Fam Pract* 1986;3:24–30.
- [3] McWhinney I. The need for a transformed clinical method. In: Stewart M, Roter D, editors, *Communicating with medical patients*. London: Sage Publications, 1989, pp. 25–42.
- [4] Levenstein JH, Brown JB, Weston WW, Stewart M, McCracken EC, McWhinney I. Patient centered clinical interviewing. In: Stewart M, Roter D, editors, *Communicating with medical patients*. London: Sage Publications, 1989, pp. 107–20.
- [5] McWhinney I. *An introduction to family medicine*. New York: Oxford University Press, 1981.
- [6] Stewart MA. What is a successful doctor–patient interview? A study of interactions and outcomes. *Soc Sci Med* 1984;2:167–75.
- [7] Roter DL, Hall JA, Katz NR. Relations between physicians' behaviors and analogue patients' satisfaction, recall, and impressions. *Med Care* 1987;25:437–51.
- [8] Hall JA, Roter DL, Katz NR. Meta-analysis of correlates of provider behavior in medical encounters. *Med Care* 1988;26:657–75.
- [9] Roter D. Which facets of communication have strong effects on outcome – a meta-analysis. In: Stewart M, Roter D, editors, *Communicating with medical patients*. London: Sage Publications, 1989, pp. 183–96.
- [10] Lazare A. Hidden conceptual models in clinical psychiatry. *New Engl J Med* 1973;288:345–51.
- [11] Vacarino JM. Malpractice – the problem in perspective. *J Am Med Assoc* 1977;238:861–3.
- [12] Huycke LI, Huycke MM. Characteristics of potential plaintiffs in malpractice litigation. *Ann Intern Med* 1994;120:792–8.
- [13] Kasteler J, Kane RL, Olsen DM, Thetford C. Issues underlying prevalence of 'doctor-shopping' behavior. *J Health Soc Behav* 1976;17:328–39.
- [14] Kaplan SH, Greenfield S, Ware JE. Impact of the doctor–patient relationship on the outcomes of chronic disease. In: Stewart M, Roter D, editors, *Communicating with medical patients*. London: Sage Publications, 1989, pp. 228–45.
- [15] Egbert LD, Battit GE, Welch CE, Bartlett MK. Reduction of postoperative pain by encouragement and instruction of patients – a study of doctor–patient rapport. *New Engl J Med* 1964;270:825–7.
- [16] Shear CL, Gipe BT, Mattheis JK, Levy MR. Provider continuity and quality of medical care – a retrospective analysis of prenatal and perinatal outcome. *Med Care* 1983;21:1204–10.
- [17] Smith RC, Lyles JS, Mettler J et al. The effectiveness of intensive training for residents in interviewing. A randomized, controlled study. *Ann Intern Med* 1998;128:118–26.
- [18] Smith RC. Comprehensive research-based interviewing guidelines in general practice settings. *Epidemiologica E Psichiatria Sociale* 1999; in press.
- [19] von Bertalanffy L. *General system theory: foundations, development, application*. rev. ed. New York, NY: George Braziller, 1968.

- [20] Wilson EO. *Sociobiology: the new synthesis*. Cambridge, MA: Belknap Press, 1975.
- [21] Mayr E. *The growth of biological thought: diversity, evolution, and inheritance*. Cambridge, MA: Belknap Press of Harvard University Press, 1982.
- [22] Weiss PA. *The science of life: the living system – a system for living*. Mount Kisco, NY: Futura Publishing, 1973.
- [23] Hofer M. *The roots of human behavior: an introduction to the psychobiology of early development*. San Francisco: WH Freeman, 1981.
- [24] Schwartz MA, Wiggins OP. Systems and the structuring of meaning: contributions to a biopsychosocial medicine. *Am J Psychiatry* 1986;143:1213–21.
- [25] Engel GL. The need for a new medical model: a challenge for biomedicine. *Science* 1977;196:129–36.
- [26] Engel GL. The clinical application of the biopsychosocial model. *Am J Psychiatry* 1980;137:535–44.
- [27] Engel GL. The care of the patient: art or science? *Johns Hopkins Med J* 1977;140:222–32.
- [28] Brody H. The systems view of man: implications for medicine, science, and ethics. *Perspect Biol Med* 1973;17:71–92.
- [29] Foss L, Rothenberg K. *The second medical revolution: from biomedicine to infomedicine*. Boston: Shambhala, 1987.
- [30] Kimball CP. *The biopsychosocial approach to the patient*. Baltimore: Williams and Wilkins, 1981.
- [31] Engel GL. Foreword – Being scientific in the human domain: from biomedical to biopsychosocial. In: Smith RC, editor, *The patient's story: integrated patient–doctor interviewing*. Boston: Little, Brown and Co, 1996, pp. ix–xxi.
- [32] Rogers CR. *Client-centered therapy*. Boston: Houghton Mifflin, 1951.
- [33] Kassirer JP. Incorporating patients' preferences into medical decisions. *New Engl J Med* 1994;330:1895–6.
- [34] Inui TS. What are the sciences of relationship-centered primary care? *J Fam Pract* 1996;42:171–7.
- [35] Greenfield S, Kaplan SH, Ware Jr. JE, Yano EM, Frank HJL. Patients' participation in medical care: effects on blood sugar control and quality of life in diabetes. *J Gen Intern Med* 1988;3:448–57.
- [36] Langewitz WA, Eich P, Kiss A, Wossmer B. Improving communication skills – a randomized controlled behaviorally oriented intervention study for residents in internal medicine. *Psychosom Med* 1998;60:268–76.
- [37] Suchman AL, Botelho RJ, Hinton-Walker P, editors, *Partnerships in healthcare: transforming relational process*. Rochester, NY: University of Rochester Press, 1998.
- [38] Parle M, Maguire P, Heaven C. The development of a training model to improve health professionals' skills, self-efficacy and outcome expectancies when communicating with cancer patients. *Soc Sci Med* 1997;44:231–40.
- [39] Flaherty JA. Attitudinal development in medical education. In: Rezler AG, Flaherty JA, editors, *The interpersonal dimension in medical education*. New York: Springer, 1985, pp. 147–82.
- [40] Walker EA, Katon WJ, Keegan D, Gardner G, Sullivan M. Predictors of physician frustration in the care of patients with rheumatological complaints. *Gen Hosp Psych* 1997;19:315–23.
- [41] Epstein RM, Christie M, Frankel R, Rousseau S, Shields C, Suchman AAL. Understanding fear of contagion among physicians who care for HIV patients. *Fam Med* 1993;25:264–8.
- [42] Novack DH, Suchman AL, Clark W, Epstein RM, Najberg E, Kaplan C. Calibrating the physician: personal awareness and effective patient care. *J Am Med Assoc* 1997;278:502–9.
- [43] Curtis JR, Patrick DL. Barriers to communication about end-of-life care in AIDS patients. *J Gen Int Med* 1997;12:736–41.
- [44] Rezler A. Attitude changes during medical school: a review of the literature. *J Med Educ* 1974;49:1023–30.
- [45] Burra P, Kalin R, Leichner P et al. The ATP 30 – a scale for measuring medical students' attitudes to psychiatry. *Med Educ* 1982;16:31–8.
- [46] Tucker GJ, Reinhardt RF. Psychiatric attitudes of young physicians: II The effects of postgraduate training and clinical practice. *Am J Psychiatry* 1969;126:167–70.
- [47] Reinhardt AM, Gray RM. A social psychological study of attitude change in physicians. *J Med Educ* 1972;47:112–7.
- [48] Watzlawick P, Bavelas JB, Jackson DD. *Pragmatics of human communication: a study of interactional patterns, pathologies, and paradoxes*. New York: WW Norton, 1967.
- [49] Katon W, Russo J. Somatic symptoms and depression. *J Fam Pract* 1989;29:65–9.
- [50] Smith RC. Somatization disorder: defining its role in clinical medicine. *J Gen Intern Med* 1991;6:168–75.
- [51] Stoffelmayr B, Hoppe RB, Weber N. Facilitating patient participation: the doctor–patient encounter. *Primary Care* 1989;16:265–78.
- [52] Quill TE, Townsend P. Bad news: delivery, dialogue, and dilemmas. *Arch Intern Med* 1991;151:463–8.
- [53] Folstein MF, Folstein SE, McHugh PR. Mini-mental state: a practical method for grading the cognitive state of patients for the clinician. *J Psychiatric Res* 1975;12:189–98.
- [54] Smith RC. Use and management of physicians' feelings during the interview. In: Lipkin M, Putnam SM, Lazare A, editors, *The medical interview*. New York: Springer-Verlag, 1995, pp. 104–9.
- [55] Smith RC. Teaching Supplement for 'The Patient's Story – Integrated Patient–Doctor Interviewing'. B306 Clinical Center, Michigan State University. East Lansing, MI 48824: Robert C. Smith, 1996.
- [56] Marshall AA, Smith RC. Physicians' emotional reactions to patients: recognizing and managing countertransference. *Am J Gastroenterol* 1995;90:4–8.
- [57] Andreason NC, Black DW. *Introductory textbook of psychiatry*. Washington, DC: American Psychiatric Press, 1991.
- [58] Knowles MS. *The modern practice of adult education: from pedagogy to andragogy*. New York: Cambridge, The Adult Education Company, 1980.
- [59] Ende J. Feedback in clinical medical education. *J Am Med Assoc* 1983;250:777–81.
- [60] Yalom ID. *The theory and practice of group psychotherapy*, 3rd ed. New York: Basic Books, 1985.

- [61] Department of Psychiatry. Objectives for the mental status examination. Rochester NY: University of Rochester, School of Medicine and Dentistry, 1989.
- [62] Quill TE. Partnerships in patient care: a contractual approach. *Ann Intern Med* 1983;98:228–34.
- [63] Gerson S, Bassuk E. Psychiatric emergencies: an overview. *Am J Psychiatry* 1980;137:1–11.
- [64] Viscott D. Taking care of business. New York: Wm. Morrow, 1985.
- [65] Medical Letter. Drugs that cause psychiatric symptoms. *Med Lett* 1993;35:65–70.
- [66] Clark WD. Alcoholism: blocks to diagnosis and treatment. *Am J Med* 1981;71:275–86.
- [67] Gabbard GO. The role of compulsiveness in the normal physician. *J Am Med Assoc* 1985;254:2926–9.
- [68] Williamson PR, Smith RC, Kern DE et al. The medical interview and psychosocial aspects of medicine: block curricula for residents. *J Gen Intern Med* 1992;7(2):235–42.