

Improving Residents' Confidence in Using Psychosocial Skills

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OBJECTIVE: To evaluate an intensive training program's effects on residents' confidence in their ability in, anticipation of positive outcomes from, and personal commitment to psychosocial behaviors.

DESIGN: Controlled randomized study.

SETTING: A university- and community-based primary care residency training program.

PARTICIPANTS: 26 first-year residents in internal medicine and family practice.

INTERVENTION: The residents were randomly assigned to a control group or to one-month intensive training centered on psychosocial skills needed in primary care.

MEASUREMENTS: Questionnaires measuring knowledge of psychosocial medicine, and self-confidence in, anticipation of positive outcomes from, and personal commitment to five skill areas: psychological sensitivity, emotional sensitivity, management of somatization, and directive and nondirective facilitation of patient communication.

RESULTS: The trained residents expressed higher self-confidence in all five areas of psychosocial skill ($p < 0.03$ for all tests), anticipated more positive outcomes for emotional sensitivity ($p = 0.05$), managing somatization ($p = 0.03$), and nondirectively facilitating patient communication ($p = 0.02$), and were more strongly committed to being emotionally sensitive ($p = 0.055$) and managing somatization ($p = 0.056$), compared with the untrained residents. The trained residents also evidenced more knowledge of psychosocial medicine than did the untrained residents ($p < 0.001$).

CONCLUSIONS: Intensive psychosocial training improves residents' self-confidence in their ability regarding key psychosocial behaviors and increases their knowledge of psychosocial medicine. Training also increases anticipation of positive outcomes from and personal commitment to some, but not all, psychosocial skills.

KEY WORDS: psychosocial teaching; residents; confidence; self-efficacy; biopsychosocial.

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Governing bodies in primary care require trainees to show competence in psychosocial medicine.¹⁻³ The American Board of Internal Medicine has required this since 1983.¹ Recently, the Residency Review Committee for Internal Medicine (RRC) greatly increased its emphasis on psychosocial training,⁴ setting the stage for increased teaching.

Increased attention to psychosocial training is war-

ranted. Residents' psychosocial skills, relative to their biomedical skills, remain limited,⁵ reflecting in part that only eight to 13 hours of training yearly are required.⁶ A compelling reason for correcting this imbalance is that psychosocial training produces more scientific as well as more humanistic physicians, as reviewed by Smith and Hoppe.⁷ Competence in psychosocial medicine has been shown to improve patient satisfaction,⁸⁻¹⁶ cooperation,^{9-11, 10, 19} knowledge and recall,^{9-10, 18, 20} and health outcomes.^{16-18, 20-23} Decreases in physician shopping and litigation have also been found.^{24, 25} With the anticipated increase in psychosocial training in response to RRC recommendations, evaluation of training outcomes will be essential.

The present evaluation involves a series of steps, including assessments of knowledge, attitudinal variables, and behavior with outpatient clinic and simulated patients. The primary measure of teaching impact in this study is the learner's self-efficacy, or confidence in successfully using psychosocial skills. High self-efficacy is fundamental because it is empirically related to successfully using newly learned skills and thereby can serve as a proxy for behavioral measures of skill. Research by Bandura and others has shown that confidence to perform successfully is a dependable predictor of the use of new skills,^{26, 27} and of actual performance.²⁸⁻³⁷ Although most research on self-efficacy has been conducted in other fields, Tresolini and Stritter have shown the relevance of self-efficacy to medical education.²⁹

Given the importance of self-efficacy, it is important to understand what types of teaching enhance it. The following educational approaches improve confidence to perform successfully and could provide important guidelines for resident training in psychosocial medicine: observation of teachers and peers (modeling), successful performance, persuasion and support by teachers, a relaxed atmosphere, cognitive understanding, learner self-

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Table 1
Representative Attitude Items and Alpha Coefficients

1. Psychological Sensitivity to Patients (alpha = 0.90; nine items):
 - a. How confident are you that you can detect whether the patient has serious suicidal tendencies? (0.81)
 - b. How confident are you that you can gather enough information to determine whether the patient has a substance abuse problem? (0.81)
2. Emotional Sensitivity to Patients (alpha = 0.85; six items):
 - a. How confident are you that you can identify unexpressed feelings for the patient (e.g., "That sounds like a sad time for you")? (0.81)
 - b. How confident are you that you could recognize your own negative feelings toward the patient? (0.74)
3. Recognition and Management of Somatizing Patients (alpha = 0.84; three items):
 - a. How confident are you that you can help the patient if the patient is somatizing? (0.87)
 - b. How confident are you that you can judge whether a patient is somatizing? (0.86)
4. Nondirective Facilitation of the Interview (alpha = 0.81; six items):
 - a. How confident are you that you can refrain from interrupting the patient? (0.76)
 - b. How confident are you that you can avoid making the patient feel rushed? (0.72)
5. Directive Facilitation of the Interview (alpha = 0.77; five items):
 - a. How confident are you that you can shift the agenda from the patient's to your own at the appropriate time? (0.72)
 - b. How confident are you that you can maintain the flow of the interview; i.e., "move it along"? (0.70)

direction, training in specific strategies, explicit performance-related feedback, setting specific short-term objectives, attributing learner success to work rather than innate ability, and tying rewards to specific accomplishments.^{36, 37}

Similar approaches to residency education have already been recommended to correct current psychosocial skill deficiencies.³⁸⁻⁴⁰ Indeed, research suggests that a consistent pattern of intensive, experiential training using learner-centered approaches is effective.^{38, 40} A review of these intensive programs by Smith et al.³⁸ however, shows that such research is in its infancy and there is a need for more rigorous study. No program evaluation has employed completely randomized controlled designs, which strengthen the ability to adequately distinguish teaching impact from nonspecific influences such as the ambience of the program and institution.

The intensive, experiential, and learner-centered training program reported here is one of few with an ongoing research component, and this is the first completely randomized controlled study of an intensive program to be reported. This program is additionally unique in actively addressing self-awareness of the resident in both teaching and research. Improved self-awareness

positively influences residents' attitudes, confidence in using skills, use of skills, and physician-patient relationships.^{26, 37, 40-47} This report focuses on the attitudinal dimension of our work and is the first reported evaluation of self-efficacy in an intensive program. Also evaluated are closely associated attitudes of commitment to using psychosocial skills and the perceived importance to patient care of using those skills (outcome expectation). Evidence that commitment and outcome expectation are important determinants of goal-directed action is reviewed elsewhere.^{34, 48} We hypothesized that intensive, experiential training would improve residents' confidence in successfully using many psychosocial skills (self-efficacy), their commitment to applying these skills to practice, and their expectation of positive patient outcomes when such skills are applied.

METHOD

Participants

We selected two first-year resident classes in internal medicine and family practice for study. The psychosocial medicine rotation is mandatory for first-year residents. Residents were approached prior to the rotation and asked to participate in the evaluation. Eighteen men and 11 women agreed to take part; one resident refused. The residents were paid \$100 for participating in the evaluation. Three residents did not complete both pre- and posttests, resulting in a total of 26 valid subjects.

Procedures

The complete evaluation of the psychosocial medicine program included the administration of several questionnaires, video-recorded simulated patient interviews, and audio-recorded clinic patient interviews. We report here the results from two key questionnaires that were administered before and after the psychosocial teaching intervention.

Using stratified random procedures, the residents were assigned to receive the one-month psychosocial training program either in the first six months of the year (training group) or in the second six months of the year after having participated in the program evaluation as control subjects (control group). The sample was stratified on gender and medical education (U.S. vs international medical school graduates). 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 men and seven women, of which six were international graduates and nine were U.S. graduates. The control group was composed of 11 men and three women, of which five were international graduates and nine were U.S. graduates. Statistical models were used that permit valid comparisons of the training group and the control group, despite the different gender mixes in the two groups (described below).

The training group residents were assigned in groups of two or three to the four-week psychosocial training program from September through November each of the two years. Appropriate numbers of control group residents were matched to treatment group residents regarding the time of the evaluation. Each resident in the control group was evaluated at the same time of year as was the training resident to whom he or she was matched. Posttraining period data were collected immediately following each training program. Pretraining period data were collected immediately prior to the training experience in 1991 and in July 1992.

Psychosocial Training Program

The psychosocial training program is an experiential, skills-oriented, four-week block rotation guided by competency-based objectives. Objectives are learner-centered and teacher-centered. Learner-centered objectives derive from those unique problems that the learner wants to address, such as how to work better with difficult patients, how to deliver bad news, and how to negotiate "do-not-resuscitate" orders.^{36, 37, 49} Teachers guide this process by encouraging learners to convert such general objectives into specific behaviors. Teacher-centered objectives fall into four general categories, each with many specific behavioral objectives: interviewing, somatization, patient education, and self-awareness. Residents are provided with explicit learning models for many of these objectives.^{37, 47, 50, 51}

The teaching has three components: core learning experiences, interviewing, and patient management. The core learning experience occurs three times weekly in the privacy of a conference room. During these sessions a brief intellectual background for the skill being considered that day is addressed, followed by demonstration, modeling, and practicing the skill using role-play. Residents thus achieve significant mastery of new, complex, and often counterintuitive skills before ever trying them at the bedside. This is designed to enhance their confidence or self-efficacy. The remaining two components of the teaching occur at the bedside on a daily basis. Interviewing focuses on data gathering, emotion handling, and patient education. The predominant emphasis is on the personal, psychosocial aspects of the patient. Finally, patient management rounds focus on how to manage the newly acquired personal data the resident has obtained, such as depression, somatization, anxiety, grief, stress, or fear of cancer.

Measurement

Knowledge of Psychosocial Medicine

We developed a 35-item multiple-choice test to assess basic knowledge of topics in psychosocial medicine. Items assessed the areas of patient-centered interviewing, personality types, somatization, emotion-handling skills, and patient education, which literature has sug-

gested are important areas of psychosocial knowledge affecting patient care.^{7, 38-40, 52}

Attitudes toward Psychosocial Medicine

We developed a 38-item, seven-point Likert scale to assess residents' attitudes toward psychosocial skills used in medical care. Sample items are shown in Table 1. Item domains were suggested both from the psychosocial medicine literature^{39, 40, 52} and specifically from our psychosocial curriculum. Each questionnaire item was written in three forms to assess: 1) how confident the resident was in using the skill described (self-efficacy); 2) how important he or she thought using that particular skill was to patient care (outcome expectation); and 3) how committed he or she felt about using the skill with patients (commitment). From this we obtained three forms of the 38-item attitude questionnaire.

The questionnaire was administered to 71 medical faculty, residents, and medical students prior to its use in the evaluation project. Five scales were formed after determining the mathematical ordering of items using factor analysis. Table 1 shows representative items for each scale (factor), their factor loadings (indicating how strongly each item is related to the scale), and the Cronbach's alpha coefficient for each scale. (The Cronbach's alpha coefficient is a measure of a test's internal consistency and reliability.) The same items were used to derive scales for the self-efficacy, outcome expectation, and commitment forms of the attitude questionnaire.

Intercorrelations between individual self-efficacy items and outcome expectation items ranged from $r = 0.09$ to $r = 0.57$, with a mean correlation of $r = 0.36$; intercorrelations between self-efficacy items and commitment items ranged from $r = 0.27$ to $r = 0.71$, with a mean correlation of $r = 0.46$; and intercorrelations between outcome expectation items and commitment items ranged from $r = 0.26$ to $r = 0.82$, with a mean correlation of $r = 0.57$.

Statistical Analysis

Measures of attitudes toward psychosocial medicine and knowledge of psychosocial medicine were obtained for each resident prior to and following the psychosocial training period. The attitude measures were computed by taking the mean scores of items on each of the attitude scales. Measures of psychosocial knowledge were computed as the number of knowledge questionnaire items answered correctly.

The primary statistical model was the analysis of covariance, with group (trained vs untrained residents) and gender as the factors and the pretraining measure as the covariate. Gender was included in the model because of the disproportionate distributions of women between the two groups, because of the potential confounding this creates, and because gender is a theoretically interesting variable. The analysis of covariance model allowed for the disproportion of women in the

Table 2
Attitudes by Group and Gender: Means* and F Tests

Measure	Untrained		Trained		Untrained vs Trained†		Women vs Men‡		Group × Gender Interaction§	
	Women (n = 3)	Men (n = 8)	Women (n = 8)	Men (n = 7)	F	p	F	p	F	p
Self-efficacy										
Psychological sensitivity	4.59	5.06	5.38	5.57	6.49	0.010	1.53	0.230	0.27	0.612
Emotional sensitivity	5.06	5.26	6.20	5.47	7.21	0.007	2.17	0.155	6.72	0.017
Somatization	3.74	4.90	5.56	5.37	13.04	0.001	1.77	0.198	4.79	0.040
Nondirective facilitation	4.53	4.91	5.39	5.33	4.08	0.028	0.17	0.688	0.46	0.503
Directive facilitation	4.74	5.12	5.66	5.50	4.98	0.019	0.09	0.763	0.71	0.408
Outcome expectation										
Psychological sensitivity	5.97	5.82	6.19	6.19	1.75	0.100	0.06	0.810	0.09	0.773
Emotional sensitivity	5.89	5.27	6.04	5.72	2.83	0.054	3.13	0.091	0.21	0.653
Somatization	6.15	5.16	6.09	6.03	4.21	0.027	2.50	0.129	2.60	0.122
Nondirective facilitation	5.26	4.91	5.55	5.90	4.94	0.019	0.09	0.764	1.18	0.289
Directive facilitation	5.84	5.25	5.81	5.91	1.59	0.111	0.26	0.615	1.15	0.297
Commitment										
Psychological sensitivity	6.06	5.88	6.21	6.02	0.23	0.320	0.34	0.564	0.01	0.980
Emotional sensitivity	5.65	5.36	5.97	5.80	2.81	0.055	0.95	0.341	0.02	0.892
Somatization	6.00	5.24	6.17	6.00	2.77	0.056	1.46	0.240	0.49	0.490
Nondirective facilitation	5.54	5.64	5.84	5.57	0.03	0.435	0.16	0.695	0.28	0.600
Directive facilitation	5.94	5.63	5.87	5.97	0.66	0.213	0.70	0.795	0.65	0.430

*Posttest means adjusted for pretest scores.

†Tests of group differences (trained vs untrained residents).

‡Tests of gender differences (women vs men residents).

§Tests of interactions between the effects of training (group differences) and gender.

training group and control group. By using this model, it was possible to evaluate the influence of residents' gender on the results, and determine whether the training experience had a greater impact on one gender than it did on the other.

Because we made directional hypotheses based on previous research, a one-tailed rejection region of 0.05 was selected for tests of the group factor. A two-tailed rejection region of 0.05 was selected for tests of gender and group-by-gender interaction. Adjusted mean attitudes and level of knowledge at the end of training were unrelated to whether the resident had obtained his or her medical education in the United States or abroad, so scores for these two groups were pooled for the analyses reported.

RESULTS

The means and statistical test results for psychosocial attitudes appear in Table 2. The means are post-training period values adjusted for group differences in pretraining period values. (Pretest means, unadjusted posttest means, and their standard deviations are available from the first author on request.)

The residents in the training program expressed higher confidence (self-efficacy) in their psychosocial medical skills on all five dimensions of skill (psychological sensitivity, emotional sensitivity, somatization, nondirective facilitation, and directive facilitation), com-

pared with the residents who were not in the training program and served as control subjects ($p < 0.03$ for all tests). The trained residents also expressed a higher level of expectation that the skill in managing the somatizing patient and in nondirectively facilitating the clinical interview would improve their patient care ($p < 0.03$ both tests). They tended to expect that higher emotional sensitivity would improve their professional effectiveness, as well ($p = 0.054$). The trained residents tended to be more committed to 1) being emotionally sensitive toward patients ($p = 0.055$) and 2) managing somatization clinical problems skillfully ($p = 0.056$), compared with the residents who had not had the training experience.

The men and women residents did not differ in psychosocial attitude strength at the end of the training period for any of the attitudes measured (Table 2). They did differ, however, in the effect of the training program on attitude change for two attitudes: confidence in their ability to be emotionally sensitive to patients ($p = 0.017$, for group by gender interaction) and confidence in their skill in managing somatization problems ($p = 0.040$). At the end of the training period, these two attitudes tended to be stronger for women than for men who had taken the training program, and weaker for women than for men who had not taken the program (means in Table 2).

The residents in the training program had more knowledge of psychosocial medicine at the end of the training than did the residents who were not in the

program, mean 23.56 items correct on the psychosocial knowledge questionnaire compared with 17.18 items correct ($F = 22.55$, $p < 0.001$). The men and women residents did not differ in psychosocial knowledge ($F < 1$), nor was the effect of the training program on knowledge related to gender of the resident ($F < 1$ for group-by-gender interaction).

DISCUSSION

We observed marked differences between the trained and untrained residents in their confidence in being psychologically sensitive to patients, being emotionally sensitive to patients, recognizing and managing somatizing patients, and directly and nondirectly facilitating clinical interviews. The trained residents reported higher self-efficacy in all of these psychosocial skills. Differences in the outcome expectations and commitment of the trained and untrained residents were observed for some skills. The trained residents evidenced more knowledge of psychosocial medicine than did the untrained residents.

We also observed differences between the men and women in the effects of training on self-efficacy regarding emotional sensitivity to patients and management of somatizing patients. At the end of the training period, the trained women expressed higher confidence in using these skills than did the trained men, while the untrained women expressed less confidence than did the untrained men. While the training increased the confidence of both the men and the women, this effect was greater for the women. Interactions between training and gender were observed, however, in only two of the 16 variables tested in this study, and it is possible that these findings occurred by chance. The relationship between training and gender is being examined further in the continued evaluation of this program.

The self-efficacy measures are of special interest because past research has shown a close relationship between self-efficacy and behavior: people who are more confident that they can carry out an action are more likely to actually carry it out.^{26, 27, 34} Consequently, the present findings lead to the expectation that trained residents are more likely to be psychosocially skilled in their actual interactions with patients. To the degree that this is true, the psychosocial training program will produce its intended effect. As noted earlier, self-efficacy is not the only important determinant of behavior. The training program tended to strengthen the residents' commitment and outcome expectations, though these effects were less consistent across psychosocial skill areas than were gains in confidence.

The present study is the first to evaluate intensive psychosocial training in a completely controlled randomized design. This design enabled us to distinguish the specific effects of psychosocial training from more general effects of the residency experience. The present study was conducted in residency programs that have a long

tradition of valuing psychosocial medicine, where we would expect that even without specific training residents would informally learn to value a psychosocial approach. The present training program produced specific effects over and above these general effects, highlighting the importance of focused, formal training. Likewise, some contamination between the study groups can be expected in a study of this nature, despite efforts to minimize it (e.g., not conducting noon conferences about psychosocial medicine, collecting data as early in the residency year as possible before residents have much opportunity to get to know each other). Although contamination between the study groups decreases the power of the study to detect changes resulting from the training, such results were still observed.

The primary limitation of this study is the absence of directly measured behavioral outcomes. Self-efficacy has been shown to be a good predictor of actual behavior in a variety of contexts,³⁴ but its ability to predict physician behaviors with patients has yet to be shown and is now being evaluated in our program. Furthermore, this study is limited by the immediacy of the posttest measures, which were taken immediately following completion of the training program. A one-year follow-up study is currently under way to assess the long-term impact of this training. The present study is also limited by restricting participation to residents in primary care disciplines. While there is reason to believe that the training will be effective with residents in other disciplines, this is an issue that should be addressed in the future.

More work is needed to determine the practical relevance of these attitudinal changes to actual patient care.³⁵ Future studies should include measures of residents' behavior and patient outcomes. The stability of the changes over time, and the generality of these effects to residents who take their training in a wide variety of clinical settings, should also be investigated.

In conclusion, this study is significant because it provided evidence that intensive training increased residents' confidence in exercising several key psychosocial skills. This is a fundamental attitudinal change because of the close link between self-efficacy and use of newly learned skills. The next step in research on intensive psychosocial training programs is to evaluate behavioral change among residents while they interact with patients, and improved outcomes among patients.³⁴ Until more definitive work is available, this training program helps provide research-based guidelines for meeting the requirements of the American Board of Internal Medicine and the RRC.

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