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Family Practice Residency Behavioral Science Training: Influence on Graduate Practice Activity

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Background and Objectives: *The educational efficacy of family practice residency behavioral science training and how various educational approaches might influence graduate practice activity are poorly understood. In this study, we compare a traditional didactic and clinical block rotation approach to a problem-based learning (PBL) and clinical, experiential behavioral science curriculum.* Methods: *Surveys of pre- and post-intervention cohorts were used to assess graduates' perceptions of their understanding of broad behavioral science concepts, their competence to manage specific behavioral conditions, and their behavioral science practice activity. The two cohorts were University of California, Irvine family practice residency program graduates from 1984–1988 (58) and residency graduates from 1993–1995 (27). American Board of Family Practice (ABFP) In-service Training Examination scores were also compared.* Results: *No significant differences were detected in self-perceived competence and ABFP examination performance. Residency graduates in the post-intervention cohort more often included depression, marital counseling, and eating disorders in their practice and reported more frequent practice activity for situational stress and sexual dysfunction. The post-intervention group reported less involvement with alcohol and substance abuse problems. This group also reported practice activity that exceeded perceived levels of competence for attention deficit disorder, learning disorders, and eating disorders.* Conclusions: *Participants in a PBL-clinical experiential curriculum reported higher levels of practice activity for several common behavioral problems. It seems unlikely that these differences were due to curriculum changes. Further investigation of the influence of educational and other factors on residency graduate practice activity is needed.*

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The importance of family medicine graduate training in behavioral sciences stems from a number of considerations. First, mental health-related conditions constitute a major segment of ambulatory primary care practice. It is estimated that up to 35% of patients encountered in primary care present with mental health-related diagnoses and that nearly 50% of all mental health services are provided in the primary care setting.[1,2] Second, mental health concerns often represent important factors in the care of patients with medical diagnoses. Consideration of such issues in the context of the biopsychosocial model has come to represent a fundamental tenet of family practice.[3] Finally, it is well recognized that the behavioral aspects of the patient-physician relationship influence patient care outcomes.[4] Indeed, high-quality patient-physician relations represent, to many, the therapeutic essence of family practice.

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As a result, much attention has been paid to the content of family practice residency behavioral science curricula and the methodologies used for behavioral science instruction.[5-9] A clear consensus has emerged regarding the broad behavioral science competencies desired of a residency-trained family physician.[10] Yet, the effectiveness of family practice behavioral science education continues to be subject to question. A 1992 survey of behavioral science educators found that faculty often felt that family practice residency training may not effectively teach residents an awareness of family, the relevance of psychosocial and developmental issues, and the influences of social and cultural factors. Further, many faculty in the 1992 study believed that family physicians were not sufficiently well trained to manage problems associated with family and social function and chronic mental health conditions, particularly anxiety and depression.[11]

A parallel survey of family practice residency graduates published in the same report found that be-

Table 1

Survey Responses on Broad Behavioral Science Competencies

	RESPONSES–1990 COHORT					RESPONSES–1996 COHORT				
	1	2	3	4	5	1	2	3	4	5
Management Competency	*# (%)*	*# (%)*	*# (%)*	*# (%)*	*# (%)*	*# (%)*	*# (%)*	*# (%)*	*# (%)*	*# (%)*
Awareness of family issues	4 (14)	0 (0)	8 (28)	10 (34)	7 (24)	0 (0)	1 (4)	4 (17)	11 (48)	7 (30)
Psychosocial assessment	3 (10)	1 (3)	6 (21)	13 (45)	6 (21)	0 (0)	1 (4)	2 (9)	15 (65)	5 (22)
Psychosocial management	4 (14)	0 (0)	12 (41)	8 (28)	5 (17)	0 (0)	1 (4)	7 (30)	9 (39)	6 (26)
Understand psychological development	1 (3)	0 (0)	12 (41)	13 (45)	3 (10)	0 (0)	0 (0)	8 (35)	10 (43)	5 (22)
Understand dynamics of personal and professional relationship	3 (10)	0 (0)	13 (45)	8 (28)	5 (17)	0 (0)	2 (9)	8 (35)	10 (43)	3 (13)
Use therapeutic aspects of physician-patient relationship	0 (0)	0 (0)	10 (34)	11 (38)	8 (28)	1 (4)	1 (4)	7 (30)	10 (43)	4 (17)
Understand influence of social/ cultural factors	NA	NA	NA	NA	NA	0 (0)	0 (0)	2 (9)	10 (43)	11 (48)

1—Poorly prepared
2—Marginally prepared
3—Adequately prepared
4—Well prepared
5—Very well prepared

havioral science education was often perceived to be deficient in the areas of psychosocial assessment and psychosocial management.[11] Other studies have indicated that referrals of patients with psychosocial problems by family practice residency graduates are often attributable to a combination of physician perceptions of insufficient expertise and insufficient time available to provide behavioral health services.[12,13]

Relatively little is known about how various behavioral science teaching methods influence the development of resident competence to manage specific behavioral conditions and how such training might ultimately affect residency graduates' practice activity. In this paper, we compare traditional didactic instruction and a block rotation behavioral science clinical curriculum to a combined problem-oriented learning and longitudinal clinical experiential approach for family practice residency behavioral science education. Assessments are made of residents' self-perceived competencies, patterns of residency graduates' behavioral science clinical activity, and senior residents' performance on the psychiatry section of the American Board of Family Practice (ABFP) In-service Training Examination.

Methods

The Family Practice Residency Program at the University of California, Irvine had its inception in 1975. Between 1975 and 1984, the training program's behavioral science curriculum evolved and came to include a year-one ambulatory psychiatry rotation, a year-one family practice center behavioral science resident observership program, a 3-year core behavioral science didactic curriculum, an ongoing 3-year family practice center behavioral science consultation program, and a core behavioral science block rotation.

In 1990, a needs assessment survey was mailed to all 58 residency program graduates from the years 1984 through 1988 (henceforth referred to as the 1990 cohort). While the survey was primarily oriented toward behavioral sciences, it also included questions about geriatrics and community medicine training. Respondent identities were blinded to the investigators.

In 1992, we introduced a reorganized behavioral science curriculum that replaced most didactic instruction with problem-based learning (PBL) modules. The PBL modules included child and adolescent development, anxiety disorders, depression and grief, alcohol and substance abuse, human sexuality, culture and health, family and marital problems, brief therapy, patient counseling, and family therapy. We also eliminated our core behavioral science block rotation and replaced it with longitudinal counseling clinic sessions. Second- and third-year residents participated in two counseling clinic sessions per month. Residents in these sessions provided direct patient care using a co-therapy approach with a member of the

Table 2

Survey Responses on Specific Behavioral Science Competencies

	RESPONSES–1990 COHORT										*RESPONSES–1996 COHORT*									
	1		2		3		4		5		1		2		3		4		5	
Management Competency	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
Situational stress	1	(3)	3	(10)	8	(28)	14	(48)	3	(10)	0	(0)	0	(0)	3	(13)	17	(74)	3	(13)
Anxiety disorders	0	(0)	0	(0)	10	(34)	17	(59)	2	(7)	0	(0)	0	(0)	4	(17)	14	(61)	5	(22)
Depression	0	(0)	3	(10)	6	(21)	15	(52)	5	(17)	0	(0)	0	(0)	1	(4)	14	(61)	8	(35)
Alcohol/ substance abuse	1	(3)	4	(14)	6	(21)	11	(38)	7	(24)	1	(4)	2	(9)	9	(39)	10	(43)	1	(4)
Marital counseling	4	(14)	0	(0)	8	(28)	10	(34)	7	(24)	0	(0)	5	(22)	8	(35)	8	(35)	2	(9)
Sexual dysfunction	0	(0)	13	(45)	8	(28)	6	(21)	2	(7)	1	(4)	6	(26)	9	(39)	7	(30)	0	(0)
Child abuse	0	(0)	5	(17)	11	(38)	10	(34)	3	(10)	2	(9)	5	(22)	9	(39)	5	(22)	2	(9)
Eating disorders	1	(3)	10	(34)	12	(41)	5	(17)	1	(3)	1	(4)	7	(30)	10	(43)	4	(17)	1	(4)
Attention deficit disorder		NA		NA		NA		NA		NA	1	(4)	10	(43)	7	(30)	5	(22)	0	(0)
Learning disorders		NA		NA		NA		NA		NA	2	(9)	11	(48)	7	(30)	3	(13)	0	(0)

1—Poorly prepared
2—Marginally prepared
3—Adequately prepared
4—Well prepared
5—Very well prepared

behavioral science faculty. Patients for the counseling clinic sessions were derived by referral from the resident continuity practices.

A post-intervention survey was mailed in 1996 to all 27 residency graduates from the years 1993 through 1995 (1996 cohort). In contrast to the 1990 survey, this survey was limited only to behavioral science training. Once again, respondent identities were blinded to the study investigators.

Both surveys used 5-point Likert scales to assess resident perceptions regarding the quality of their training in both the broad content of psychosocial issues and specific patient problems (Tables 1 and 2). Response options about self-perceptions of competence included: 1—poorly prepared, 2—marginally prepared, 3—adequately prepared, 4—well prepared, and 5—very well prepared. The wording of the broad behavioral science competencies in the 1990 survey varied somewhat from that of the 1996 survey, which more closely followed published Society of Teachers of Family Medicine (STFM) guidelines.[10] Thus, items referable to specific behavioral competencies varied on the two surveys. However, only identical items from the two surveys (with the exceptions of questions about attention deficit disorder and learning disorders) were used for this study.

Both surveys also used Likert scales to determine whether or not graduates included management of various specific behavioral conditions in their practices and to estimate the frequency with which they provided primary patient care for these conditions. While each survey used slightly different descriptors relative to the frequency of practice activity, the data from each survey were found to be easily separable into the categories "never cared for in my practice," "rarely cared for in my practice," "occasionally cared for in my practice," and "frequently cared for in my practice."

To provide some objective assessment of the educational impact of the behavioral science curriculum changes, we also compared the average PGY-III exam scores of the 1990 and 1996 cohorts on the psychiatry section of the ABFP In-service Training Examination.

Data Analysis

Survey data from the two cohorts was initially evaluated empirically. Statistical comparisons using Fisher exact tests or chi-square analyses were used only when large discrepancies between responses were apparent. Areas of statistical analysis included comparisons between the 1990 and 1996 cohorts regarding inclusion in practice of selected behavioral conditions, frequency of practice activity for selected behavioral conditions, self-perceived competence and reported practice activity for selected behavioral conditions, and in-training examination scores.

Results

Twenty-nine of 58 graduates (50%) responded to the 1990 survey, and 23 of 27 graduates (85%) responded to the 1996 survey. Demographic characteristics of the two cohorts were similar with the exception that the 1990 cohort had, on average, 2 years' greater mean practice experience than did the 1996 cohort (3.3 versus 1.3 years mean practice experience).

Graduates' self-perceptions of competency with respect to the STFM Task Force on Behavioral Science basic behavioral science competencies[10] are shown in Table 1. Perceptions of competency among the two cohorts were high, and no significant differences were found.

Self-perceived management competencies for various specific behavioral science conditions are shown in Table 2. Overall, both cohorts reported relatively high levels of self-perceived competence in managing a variety of specific behavioral conditions, with the exceptions of sexual dysfunction and eating disorders. Moreover, there was a high degree of congruence in the responses of the two cohorts.

As Table 3 shows, 1996 cohort respondents reported more frequent inclusion of depression ($P< .01$), marital counseling ($P<.01$), and eating disorders ($P<.02$) in their practice than did respondents in the 1990 cohort. An analysis of the relative frequencies of practice activity also indicated that the 1996 cohort respondents more frequently cared for patients with situational stress ($P=.05$) and sexual dysfunction ($P=.03$), while 1990 cohort respondents more frequently cared for patients with alcohol and substance abuse problems ($P=.03$).

Comparisons of self-perceptions of competence to reported practice activity indicated high levels of congruence within each cohort, with the exceptions that the 1990 cohort reported higher levels of perceived competence than practice activity for marital counseling ($P<.01$), while the 1996 cohort reported higher levels of practice activity than perceived competence for attention deficit disorder ($P<.01$), learning disorders ($P<.05$), and eating disorders ($P<.05$).

Third-year resident ABFP In-service Training Examination scores for the psychiatry section averaged 490 for the 1990 cohort and 500 for the 1996 cohort.

Discussion

The intent of introducing PBL and clinical-experiential methods into our behavioral science training program was to increase the level of behavioral science practice activity among our graduates. Many medical educators feel that PBL provides an excellent format for the application of didactic lessons to the clinical setting.[14] As an application of adult learning theory, PBL offers a student-centered format that emphasizes an active approach to learning and facilitates the development of a sound model of lifelong education.[15] While concerns have been raised in undergraduate medical education regarding its comprehensiveness,[16] the application of PBL to well-defined domains such as behavioral sciences seems ideal.[17] Similarly, active learning in the clinical setting also appears to be superior to learning derived from passive observational experiences.[18] Longlett and Kruse have suggested that resident-faculty cocounseling is a potentially powerful and significantly underutilized technique in family medicine behavioral science training.[11] Ideally, in our curriculum, the lessons learned in the PBL sessions are directly applied to the clinical setting in the context of resident-faculty cocounseling sessions.

The high degree of self-reported competence in the STFM broad behavioral science skills and the corresponding high degree of congruence among the two cohorts suggest that a wide variety of educational methodologic approaches are effective relative to the application of the biopsychosocial model and enhancement of patient-physician relationship skills. Although competence in understanding the impact of social and cultural issues was not assessed in the 1990 survey, it is quite likely that it would have been high, given the medically underserved and multicultural milieu of our residency program.[19]

The lack of difference between the two study cohorts in self-perceived competence in managing a wide variety of specific behavioral conditions, and their similar performance on the ABFP In-service Training Examination, reinforces the notion that numerous educational approaches probably have equivalent efficacy. While significant differences were found in this study between the two cohorts in the frequencies of care provided for specific behavioral condi-

Table 3

Survey Responses on Frequency of Primary Care Provision for Behavioral Conditions

	RESPONSES–1990 COHORT				*RESPONSES–1996 COHORT*			
	Never	Rarely	Occasionally	Frequently	Never	Rarely	Occasionally	Frequently
Management Competency	*# (%)*	*# (%)*	*# (%)*	*# (%)*	*# (%)*	*# (%)*	*# (%)*	*# (%)*
Situational stress	6 (21)	8 (28)	11 (38)	4 (14)	0 (0)	9 (39)	4 (17)	9 (39)
Anxiety disorders	4 (14)	5 (17)	13 (45)	7 (24)	0 (0)	9 (39)	4 (17)	9 (39)
Depression	8 (28)	3 (10)	16 (55)	2 (7)	0 (0)	9 (39)	2 (9)	12 (52)
Alcohol/substance abuse	3 (10)	7 (24)	15 (52)	4 (14)	4 (17)	11 (48)	5 (22)	3 (13)
Marital discord	17 (59)	5 (17)	6 (21)	1 (3)	4 (17)	13 (57)	4 (17)	2 (9)
Sexual dysfunction	10 (34)	16 (55)	1 (3)	2 (7)	3 (13)	10 (43)	6 (26)	4 (17)
Child abuse	18 (62)	9 (31)	2 (7)	0 (0)	9 (39)	11 (48)	2 (9)	1 (4)
Eating disorders	15 (52)	10 (34)	4 (14)	0 (0)	3 (13)	16 (70)	2 (9)	2 (9)
Attention deficit disorder	NA	NA	NA	NA	2 (9)	15 (65)	3 (13)	3 (13)
Learning disorders	NA	NA	NA	NA	4 (17)	15 (65)	1 (4)	3 (13)

tions, it is not clear that the revised residency curriculum produced these changes. Small sample sizes and the low response rate found in the 1990 cohort may be distorting our results. Further, the slight variation in the design of the surveys could also be a source of bias.

Although not addressed in the 1990 survey, we have included the 1996 survey data regarding perceived competence and reported practice activity for attention deficit disorder and learning disorders. This is included because of the intriguing finding that practice activity significantly exceeded perceived competence for these conditions and for eating disorders as well. It is possible that PBL, which facilitates lifelong patterns of active learning, may encourage graduates to undertake certain patient care activities despite a relative degree of uncertainty regarding their competence to do so. If this is true, one only hopes that our graduates' experience with PBL will enhance their ability to undertake additional education in the context of their daily practice activities.

Perhaps the fact that the PBL-clinical, experiential cohort had on average 2 fewer years in practice accounts for the differences in practice activity found in this study. More time might have been available for graduates in this cohort to provide care to patients with behavioral problems. Behavioral science counseling is well known to be extremely time intensive, and Brown and Weston have shown that time demands in practice are a crucial constraint to the provision of mental health services by family physicians.[13]

It is most likely, however, that the differences in practice activity found between the two cohorts results from changes occurring in the delivery of health care services. Our region has undergone a profound transition during the study period, with managed care now accounting for greater than 80% of clinical practice activity. Managed care systems, which emphasize primary care case management rather than referred care, may encourage graduates to assume greater management responsibility for behavioral problems, even when they are less than totally competent to do so. Indeed, provision of mental health services is emerging as a critical concern relative to the evolution of a health care delivery system based on managed care principles.[20] Contrary to conventional wisdom, our study suggests that a continued critical, albeit somewhat different role for family physicians in the delivery of behavioral sciences services, may be evolving. Perhaps eventually, family physicians will focus more intensively on the management of conditions such as depression, anxiety disorders, attention deficit disorder, and eating disorders, which are particularly amenable to pharmacologic therapy.

Transitions in clinical practice occurring coincidentally with changes in contemporary health care delivery systems have important implications about the content of family medicine behavioral sciences and, for that matter, numerous other elements of family practice residency education. Further investigations are critically needed to reassess the relevance of residency training to contemporary family practice and to determine the most effective means of assuring the applicability of its educational content to everyday clinical practice activities.

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