

## Depression in Family Medicine Faculty

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**Background and Objectives:** *Depression among family medicine faculty may contribute to decreased effectiveness in patient care, decreased effectiveness in teaching, and career changes. The present study determined the nationwide prevalence of depression and related risk factors among family medicine residency program faculty. Methods:* All full-time US family medicine faculty, program directors, and behavioral scientists listed as members of the Society of Teachers of Family Medicine in October 2000 were surveyed. The survey included demographics, clinical practice characteristics, the Beck Depression Inventory II, the Social Readjustment Rating Scale (SRRS), and a scale to measure stress within the residency program. **Results:** *Surveys were completed by 1,418 faculty members. Seven percent of survey respondents scored mildly depressed, and 5% scored moderately to severely depressed. Seven percent of respondents scored highly stressed on the SRRS. Significant predictors of depression scores included being single, being a member of an underrepresented minority group, having increased stress scores, and having a greater amount of time devoted to teaching. Conclusions:* Program directors and department chairs need to be aware of the prevalence of depression among faculty, since it may affect their performance of patient care and teaching responsibilities.

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Stress, anxiety, and depression in primary care physicians are important concerns, considering their potential effect on patient care, teaching, and the health and well-being of physicians. Over the past 15 years, several articles have appeared in the American and British literature concerning depression, job satisfaction, and job stress among general practitioners and family physicians. Rates of depression up to 15% and rates of anxiety up to 22% have been reported. These studies were conducted in clinical practice settings, and most of the stressors identified were found to be related to the unique demands of clinical practice. Concern has been expressed about the scope of this problem, and counseling has been recommended for physicians who suffer psychological pressure from their work.<sup>1-7</sup>

May and Revicki found that physician reports of depression were highly related to all factors on a physician stress scale.<sup>1</sup> As occupational stress increased, so did depression. Cooper et al found that job stress

was predictive of lack of psychological well-being among physicians.<sup>2</sup> The factors found to contribute the most to job stress were job demands and patient expectations, interference of work with family, interruptions at home and work, and practice administration.

Similar problems in academic faculty have also been described. Academic faculty may be particularly vulnerable to the deleterious effects of a stress-filled environment. Compared with practicing clinicians, academic faculty report working longer hours, taking less vacation, spending more time teaching, having more conflict between work and personal life, and having more time pressures.<sup>8</sup>

Serious consequences that may result when physicians are stressed or depressed include substandard delivery of health care, inability of practices to retain physicians, and decreased quality of teaching. De Voe et al found that career dissatisfaction among depressed physicians impaired their ability to deliver quality care to patients and caused them to decrease their accessibility to certain patient populations.<sup>9</sup> Barton et al found that physicians who had considered changing roles in their departments or moving to another institution reported higher levels of stress and more frequent feelings of being overstressed than did physicians not con-

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sidering a role change or moving.<sup>10</sup> McMurray et al found that the career choices of medical students are influenced by their perceptions of the workload and stress on their teachers.<sup>11</sup> Residents, nurses, and staff rated teaching quality of faculty more highly for faculty who report high levels of job satisfaction.<sup>12</sup>

Although stress among academic faculty has been examined, these studies have generally been done in a single institution or a small group of affiliated institutions.<sup>8,10,12,13</sup> There has never been a national study of depression among family medicine faculty. Kay and D'Amico recently published a national study of 383 family medicine faculty that assessed job satisfaction but did not address the issue of depression.<sup>14</sup> Linzer et al found a higher degree of satisfaction in academic physicians than in managed care physicians, but depression was not assessed.<sup>15</sup> If the prevalence of depression is high enough, preventive measures and proactive programs to address risk factors might be of value.<sup>9-16</sup>

The present study's purpose, therefore, was to determine the nationwide prevalence of depression in family medicine faculty. A second purpose was to determine the relationship of depression to related risk factors, occupational stress, and life stress in family medicine residency program faculty.

## Methods

### Sample

Potential study participants included all full-time faculty family physicians (n=2,347), family medicine residency program directors (n=475), and family medicine behavioral scientists (n=392) from US residency training programs listed as members of the Society of Teachers of Family Medicine (STFM) in October 2000 (total n=3,214). Forty-four of these STFM members were excluded because their residency program was not located in the continental United States, resulting in a sample of 3,170 subjects.

### Instrument

A self-administered questionnaire was developed and tested by the Department of Family Medicine's Office of Research at the Northeastern Ohio Universities College of Medicine (NEOUCOM). Survey items included demographic information (gender, age, race, degree, marital status), respondents' present position, the number of years in that present position, the number of years in academic medicine, hours worked per week at their job site, work-related hours at home, and type of residency program (community based, medical school based, etc). Respondents were asked to indicate the percent of time devoted to clinical, teaching, administration, research, and other activities; whether they felt they were an underrepresented minority in their job setting; if they felt that their pay was adequate for the

work they do; and the current stability of their program (stable, some recent change, or significant recent change).

Three empirical measures on the questionnaire were used to assess stress and depression. Current job stress was measured with a 25-item survey developed by the Department of Family Medicine Office of Research based on interviews and discussions with family physicians from hospital-based family medicine residency training programs. In this survey, respondents were asked to evaluate the effect of all items using a 5-point Likert scale (ranging from 1=minor stress to 3=moderate stress to 5=major stress). Stress outside of work was measured using the Social Readjustment Rating Scale (SRRS) developed by Holmes and Rahe.<sup>17</sup> The SRRS is a standardized measure of stress based on the occurrence of life events over the past 12 months. Level of depression was measured using the Beck Depression Inventory II (BDI-II).<sup>18</sup>

### Survey Procedures

The first mailing of questionnaires was sent July 27, 2001, to all 3,170 subjects. A second mailing to nonrespondents was sent January 2, 2002. The mailings included (1) a cover letter from the principal investigator explaining the purpose and significance of the study, (2) a required Institutional Review Board Information Sheet describing the purpose of the study, procedures and duration, risks/benefits, cost, contact information, and information about confidentiality of results and voluntary participation, (3) the questionnaire, and (4) a self-addressed, stamped envelope to return the questionnaire.

Response envelopes were coded with identification numbers to track respondents to prepare for the second mailing. To protect respondent confidentiality, all questionnaires were removed and separated from the return envelopes and were assigned new code numbers prior to data entry. The NEOUCOM Institutional Review Board reviewed and approved the study protocol.

### Data Analysis

Descriptive statistics, analyses of variance, and regression modeling were performed with SAS<sup>®</sup> statistical software (SAS Institute, Inc. Release 8.02 for Personal Computers, Cary, NC). Analysis of variance was used to compare program directors, faculty, and behavioral scientists on BDI-II scores and SRRS scores. To identify factors related to depression scores on the BDI-II, regression models were developed separately for program directors, faculty physicians, and behavioral scientists. Multiple regression models predicting overall BDI-II scores were developed for all three groups, and a logistic model was developed for faculty physicians predicting moderate to severe depression (score  $\geq 20$  on the BDI-II). Logistic models were not developed

for program directors and behavioral scientists due to insufficient sample size. Only three program directors and four behavioral scientists scored 20 or above on the BDI-II.

**Results**

A description of the sample is shown in Table 1. Of the 3,170 surveys mailed, 172 were returned as undeliverable, and four individuals were listed twice, resulting in a potential maximal response of 2,994. A total of 1,418 people responded to the survey, for a response rate of 47.4%.

Sixty-two percent of respondents were male, 85% were married, 91% were white, and 74% were faculty physicians. The average age was 46 years. Compared to all individuals on the STFM mailing list, women were more likely to respond than men ( $\chi^2=14.4, df=1, P=.0001$ ). Sixty-seven percent of faculty on the STFM list were male; 62% of faculty respondents were male ( $\chi^2=7.6, df=1, P=.006$ ). For program directors, 80% of the STFM list were male versus 70% male respondents ( $\chi^2=7.3, df=1, P=.007$ ) and for behavioral science directors, 56% of the STFM list were male versus 47% male respondents ( $\chi^2=3.8, df=1, P=.066$ ).

Table 1  
Description of the Sample

Total number of respondents=1,418	
Gender	
Male .....	877 .....62%
Female.....	538 .....38%
Marital status	
Single .....	123 .....9%
Married.....	1,201 .....85%
Other .....	91 .....6%
Race	
White.....	1,240 .....91%
Other .....	124 .....9%
Age .....	Mean=46 years, SD=7.8
Years in academic medicine .....	Mean=11 years, SD=7.0
Years in present position .....	Mean=8 years, SD=5.9
Job site hours per week .....	Mean=48 hours, SD=11.6
Home hours per week.....	Mean=7 hours, SD=6.1
Feel you are an underrepresented minority	
Yes.....	161.....12%
No.....	1,236.....88%
Feel you are adequately reimbursed	
Yes.....	887.....64%
No.....	380.....27%
Not sure.....	128.....9%

SD—standard deviation

Respondents spent an average of 11 years in academic medicine and 8 years in their present position. They worked an average of 48 hours per week at their job site and 7 hours at home. Twelve percent felt that they are an underrepresented minority, and 36% felt that they do not or are unsure whether they receive adequate pay.

Program directors constituted 16% (230/1,397) of respondents, faculty physicians 74% (1,030/1,397), and behavioral scientists 10% (137/1,397). Forty-six percent (654/1,414) of respondents came from community-based/medical school-affiliated programs, 31% (434/1,414) came from medical school-based programs, 12% (171/1,414) from community-based programs, 10% (143/1,414) came from community-based/medical school-administered programs, and 1% (12/1,414) came from military programs. Forty-one percent (575/1,399) of respondents indicated that their programs were stable, 31% (427/1,399) have experienced some recent change, and 28% (397/1,399) have experienced significant recent change.

*Stress and Depression*

Fifty-eight percent of respondents (823/1,418) scored low (0–149) on the SRRS, 35% (494/1,418) scored medium (150–299), and 7% (101/1,418) scored high (300+). The average SRRS value was 147.5 (high end of the low-stress category).

The average score on the BDI-II was 6.4, which classifies as minimal depression, the lowest category of depression on the BDI-II. Eighty-eight percent of respondents (1,239/1,404) scored in the minimal depression category (score of 0–13), 7% (98/1,404) scored as mildly depressed (score of 14–19), and 5% (67/1,404) scored as moderately to severely depressed (score of 20).

Table 2 presents ratings of stressors in the residency setting. The most stressful items were reported to be the amount of paperwork/bureaucracy required, time pressures between work and home, and not enough time to do academics. The least stressful items were patient and student appreciation (or lack thereof) and patient expectations of physician expertise.

There were no significant differences between program directors (mean=6.5), faculty (mean=6.5), and behavioral scientists (mean=5.7) on the BDI-II. There were no significant differences between program directors (mean=151), faculty (mean=148), and behavioral scientists (mean=135) on the SRRS.

The results of regression models to compare depression scores of program directors, faculty physicians, and behavioral scientists are presented in Tables 3, 4, and 5, respectively.

As indicated in Table 3, the best regression model for program directors included marital status, the interaction of marital status and age, physicians' belief that

Table 2

Evaluation of Stressors in the Family Medicine Residency Environment

	Mean*	SD
Amount of paperwork/bureaucracy	3.63	1.09
Time pressure between home and work	3.29	1.29
Not enough time to do academics	3.26	1.21
Time spent charting	2.90	1.21
Lack of hospital administrative support	2.67	1.34
Patient expectations on physician availability	2.66	1.16
Residents' expectations of physician	2.63	1.09
Social inequities	2.59	1.23
Responsible for residents without control over outcomes	2.52	1.14
Coworker control issues	2.47	1.24
Medical liability issues	2.31	1.14
Conflict between being teacher and clinician	2.30	1.19
Inadequate reimbursement	2.25	1.20
Peers' appreciation or lack thereof	2.23	1.15
Directors' expectation on amount of work expected	2.18	1.19
Residents' appreciation or lack thereof	2.17	1.09
Patients' expectations on cost of care	2.17	0.97
Limits imposed on medication use	2.12	1.12
Students' expectations of physician	2.10	0.96
Salary of teaching versus private practice	2.04	1.17
Family's appreciation or lack thereof	2.03	1.16
Limits imposed on referrals	2.02	1.07
Patients' appreciation or lack thereof	1.73	0.91
Students' appreciation or lack thereof	1.71	0.86
Patient expectations of physician expertise	1.58	0.79

\* All items were rated on a 5-point Likert scale with 1=minor stress, 3=moderate stress, and 5=major stress.

SD—standard deviation

they were being underpaid, recent change in the program, and the SRRS score. Program directors were more likely to have higher BDI-II scores if they were married (especially younger and married), if they felt they were being underpaid, if their program experienced recent change, and if they had higher SRRS scores. This model accounted for 19% ( $R^2=.1885$ ) of the variance in BDI-II scores for program directors.

Table 4 presents the regression models for faculty physicians. Faculty physicians who had higher BDI-II scores included women, single individuals, non-white single men (white married men had the lowest BDI-II scores), non-white older single physicians (BDI-II scores of either race, white or other, decreased with age among married people), underrepresented minorities, feeling that they were underpaid, those from community-based and community-based/medical school-affiliated programs, those from programs with recent change, those who work longer job site hours, and those scoring higher on the SRRS. This model accounted for 25% ( $R^2=.2532$ ) of the variance in BDI-II scores for faculty physicians.

When logistic regression was performed on the responses of the 6% of faculty whose BDI-II score indicated moderate to severe depression, several factors

Table 3

Best Regression Model for Program Directors

Multiple Regression on BDI-II Score

Variable	Standardized Coefficient	t Value	P Value	R <sup>2</sup> for Model
Intercept	0	0.81	.4208	0.1885
Marital status	-1.20	-2.48	.0139	
Age	-0.07	-1.09	.2765	
Marital, age*	1.18	2.45	.0150	
Underpaid	0.16	2.41	.0168	
Program stability	0.17	2.62	.0094	
SRRS score	0.27	4.16	<.0001	

BDI-II—Beck Depression Inventory II

\* Interaction of marital status and age

Table 4

Best Regression Models for Faculty Physicians

Multiple Regression

Variable	Standardized Coefficient	t Value	P Value	R <sup>2</sup> for Model
Intercept	0	-0.90	.0044	0.2532
Gender	0.10	2.94	.0034	
Marital status	0.10	2.92	.0035	
Race	0.01	0.18	.8536	
Age	0.03	0.87	.3871	
Gender, marital, race*	-0.17	-2.81	.0051	
Race, marital, age*	0.14	2.17	.0301	
Underrepresented minority	-0.07	-2.06	.0397	
Underpaid	0.07	2.31	.0213	
Community-based program	0.06	1.90	.0572	
Community-based/medical school-affiliated program	0.06	1.85	.0646	
Program stability	0.12	3.72	.0002	
Job site hours	0.06	1.80	.0725	
SRRS score	0.37	11.75	<.0001	

Logistic Regression (Predicting Moderate/Severe Depression)

Variable	Coefficient	Odds Ratio	95% CI	P Value
Intercept	-4.44	—	—	<.0001
Marital status	0.61	3.41	1.52–7.65	.0029
Underrepresented minority	0.49	2.65	1.27–5.52	.0097
% teaching time	0.02	1.02	1.01–1.04	.0161
SRRS score	0.01	1.01	1.01–1.02	<.0001

CI—confidence interval

SRSS—Social Readjustment Rating Scale

\* Interaction of these variables

were noted. Single people were 3.4 times more likely to have moderate to severe depression, underrepresented minorities were 2.7 times more likely, and the odds of having moderate to severe depression increased with increasing time devoted to teaching and increasing SRRS scores.

Table 5

## Best Regression Model for Behavioral Scientists

Standardized Variable	Coefficient	t Value	P Value	R <sup>2</sup> for Model
Intercept	0	3.44	.0008	0.3116
Gender	-0.04	-0.52	.6011	
Race	-0.06	-0.54	.5931	
Gender, race*	0.27	2.47	.0150	
Underrepresented minority	-0.37	-4.50	<.0001	
Job site hours	0.14	1.86	.0655	
SRRS score	0.29	3.72	.0003	

SRRS—Social Readjustment Rating Scale

\* Interaction of these variables

As indicated in Table 5, among behavioral scientists, non-white women, underrepresented minorities, those who work greater job site hours, and those who score higher on the SRRS, scores are higher on the BDI-II. This model accounted for 31% ( $R^2=.3116$ ) of variance in BDI-II scores.

### Discussion

In this study, we measured the prevalence of depression among family medicine faculty members and examined the relationship of depression with demographics, clinical characteristics, occupational stress, and life stress factors. Studies such as this one can provide important insights into the mental health and well-being of faculty members as it affects clinical care and teaching performance. We found a slightly lower prevalence of depression in our sample than had been reported previously, with only 7% scoring mildly depressed and 5% scoring moderately to severely depressed. Previous studies among physicians identified rates of clinical depression up to 15%.<sup>1-7</sup>

The present study needs to be interpreted in the context of the sample obtained, which may account for the differences between our study and others. STFM members may not be entirely representative of all family physicians, and they are certainly not representative of all physicians in all specialties. Our STFM sample was also slightly overrepresented by women. We are not aware of a study comparing the demographics of STFM members with nonmembers. It is possible that academic physicians may have a lower prevalence of depression than community-based physicians. Or perhaps the prediction models we developed may not be relevant in some community-based settings because the stressors, issues, and concerns in private offices may be quite different than in academic settings. Additionally, the 47% response rate may indicate a response bias (eg, survey nonrespondents may be more or less depressed than respondents).

### Conclusions

Our study supports previous research and verifies that depression exists among family medicine faculty members. Program directors should be aware of this possibility and work with their faculty to develop work schedules that assure an adequate balance of professional and personal time. Further studies are needed to determine if such balanced work schedules can influence the rate of depression among faculty.

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