

## Female and Underrepresented Minority Faculty in Academic Departments of Family Medicine: Are Women and Minorities Better Off in Family Medicine?

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**Background:** Several studies have shown that the percentage of women represented in senior academic positions at US medical schools is lower than the percentage of men in senior positions. Similarly, the percentage of minority faculty members represented in senior academic positions is lower than that of their majority counterparts. This study assessed whether these findings were also present in departments of family medicine and identified any factors related to the institution or department that favored academic success for women and minorities. **Methods:** Data regarding faculty workforce composition, including faculty rank and rank for women and underrepresented minorities, were extracted from a comprehensive survey of departments of family medicine at US allopathic medical schools. The data are based on faculty workforce in 1997 and include responses from 58 (51%) of all schools with a department of family medicine. **Results:** Faculty in departments of family medicine were more likely to be female (41% versus 25%) and an underrepresented minority (9% versus 4%), compared with all academic medicine disciplines. However, women in full-time positions were less likely than men, and minorities were less likely than nonminorities, to be either an associate or full professor. We could find no institutional or departmental characteristics that were associated with academic success for women or minority faculty members. **Conclusions:** While women and underrepresented minorities are more common to the faculty workforce in family medicine, members of both of these groups are not well represented in senior faculty ranks.

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Several studies have noted that the academic rank and career success of women in academic medicine lags behind that of their male colleagues.<sup>1-3</sup> Despite the observation that women are more likely to pursue academic careers, women are more likely to remain at lower rungs on the academic ladder.<sup>1</sup> Some have suggested that this difference occurs because women may place different levels of value on some of the processes associated with achieving promotion and tenure in academic

environments.<sup>4</sup> For example, women have been reported to take on clinical and teaching roles to satisfy goals they find personally rewarding, rather than concentrating on areas such as research that are more heavily favored in promotion and tenure decisions.<sup>3,4</sup>

Findings similar to those for female academicians also have been found for minority-group academicians at US medical schools. In a recent report of the Association of American Medical Colleges (AAMC), only 3.9% of all US medical school faculty are members of underrepresented minority groups<sup>6</sup> (designated as blacks, Mexican-Americans, mainland Puerto Ricans, and American Indians as minorities underrepresented in medicine). Because institutions with more minority faculty are more likely to have larger numbers of underrepresented minority students,<sup>7</sup> the lack of

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sufficient faculty role models overall may impair recruitment of minorities into the medical profession, which decreases the total minority physician pool. As of 1995, it was estimated that underrepresented minorities constituted only 3% of the total physician supply in the United States.<sup>8</sup> Minority faculty members are more likely to hold junior academic rank and are promoted at between a third and half the rate of their majority counterparts.<sup>9,10</sup> Qualitative studies have discussed cultural factors that, along with poor representation of minorities among faculty ranking, may be responsible for the difficulty of minority faculty members attaining academia success and dissatisfaction with their faculty roles.<sup>11</sup>

A possible reason why a lower percentage of women and minorities are represented at higher academic ranks may be the availability of suitable role models.<sup>12-15</sup> In some cases, mentors are available, but both women and minority faculty members at junior ranks have expressed difficulty in finding mentors of similar gender and race.<sup>12-14</sup> The availability of more senior female and minority faculty members also may cause problems for learners. Medical students often rely on role models when selecting a future career path.<sup>16</sup> The ability to recruit and retain women and underrepresented minorities in primary care academic roles may be important in assuring that women and minority students select primary care career paths and gain satisfaction from their future careers.

While many studies have looked at the role of women in academic medicine, there have been few studies on minorities in academic medicine and no studies that have examined the role of women or underrepresented minorities in academic family medicine. The environment in academic family medicine may differ from other medical fields for several reasons. First, women in primary care academic roles are less likely to perceive sexual harassment than women in other academic medicine departments.<sup>5</sup> Further, the evidence that women in academic medicine value success in clinical care and teaching more highly than men<sup>4</sup> might suggest that women would be more successful in primary care academic roles, where clinical care and teaching rather than research are emphasized.

This report examines the role and academic positions of women and minorities in departments of family medicine at US medical schools. This analysis determined the percentage of women and minority physician faculty in family medicine in senior academic ranks and identified characteristics of departments in which women and minorities are more likely to be represented in the higher academic ranks.

## Methods

We conducted a Internet-based survey of chairs of allopathic academic departments of family medicine in the United States. Departments of family medicine

at the 113 US medical schools that have a department constituted the population for this study.

We contacted each department chair in April 1999 with an e-mail message that included a description of the study and an explanation that the study was being conducted in cooperation with both the Association of Departments of Family Medicine (ADFM) and the Health Resources and Services Administration (HRSA). The message included a hyperlink to the Web site for the questionnaire. Some of the institutions were also sent, via regular US mail, an introduction letter and location of the Web site with the questionnaire.

A secure Web site was created that contained a gateway to the questionnaire. Each institution had an assigned password to access the questionnaire. This procedure allowed the respondent to enter data on one occasion and come back later to complete the questionnaire of correct responses if necessary. It also allowed responses to be monitored by the investigators as they were entered. Determination of nonrespondents was tracked through this electronic medium, as well as completed questionnaires. Follow-up e-mail messages from the research team were sent to the respondents on a periodic basis, indicating the questions that still needed to be completed and encouraging participation.

The study was approved by the Institutional Review Board of the Medical University of South Carolina.

## Instrument

The survey instrument was developed after searching the literature and pretesting the content at nine academic departments of family medicine.<sup>17</sup> The portion of the instrument that pertains to this study included questions about the academic rank and roles of women and minorities in the departments.

## Analysis

The analysis for this section of the report is based on responses from 58 departments of family medicine (51% response rate) in the United States, excluding Puerto Rico, that completed the portions of the survey related to the rank and roles of women and minorities; included in this total is one of the four historically black medical colleges.

Initially, descriptive statistics were computed. Many of the variables demonstrated extremely wide distributions, with a non-normal distribution. Because of the wide variance and skewing of the distribution, medians are presented.

For our analysis of female physician faculty in family medicine departments, outcomes that we examined were the percentage of women in the department at various levels of academic rank and the ratio of female associate professors and full professors to all women in the department. For both women and underrepresented minority physician faculty, we performed analyses with departments dichotomized into those with

more than the median number of senior level women or underrepresented minorities on the faculty and those below the median. Factors examined that we hypothesized might be associated with greater representation of women and minorities at senior ranks included institutional organization (public versus private ownership), primary mission of the department (clinical, residency education, predoctoral education, or research), distribution of roles of faculty (clinical educators, investigators), research productivity of the department (grants funded and papers published), and public grant funding through Title VII programs.

Groups were compared using the Wilcoxon Rank Sum test. A two-tailed  $P < .05$  was selected to indicate statistical significance.

## Results

### *Academic Rank of Women*

We found that women comprised an average of 41% of full-time and 49% of part-time physician faculty members in the 58 departments of family medicine that responded to the survey. Table 1 shows that in terms of academic appointment level, women were one fourth as likely as men to be professors (4% versus 13%) and about half as likely to be an associate professor (14% versus 31%) than their male counterparts. While nearly every department had at least one male professor, 75% of departments of family medicine had no female full professors, and almost half had no female associate professors.

Academic rank did not differ between men and women who were part-time faculty members (Table 1); the majority of these individuals were at the lowest academic rank. About 4% of both male and female part-time physician faculty were full professors, and close to 15% were associate professors. When departments were separated into those with the highest and lowest numbers of female associate professors based on the median, we found no differences in any of the institutional, departmental, or faculty role characteristics (Table 2). Departments with more women at senior faculty ranks were all less likely to have existing Title VII funding in all areas except residency training, though this finding was not statistically sufficient.

### *Academic Rank of*

### *Underrepresented Minorities*

When we first reviewed results, we noted that one institution was an outlier, compared with all others. This institution had 12 minority professors and 19 minority assistant

professors, which was the sum total of their physician faculty. No other institution had more than one minority professor or eight minority assistant professors. Although the respondents were guaranteed confidentiality, we presumed that this institution was the one historically black medical college that responded to the survey. Because of the uniqueness of this institution, we analyzed data separately with and without including this institution.

According to data from the survey, approximately 12% of department of family medicine faculty are members of underrepresented minorities. However, when the presumed historically black college was excluded, only 9% of faculty members were minorities. Most underrepresented minority faculty members were in the lowest academic ranks (Table 3). With the historically black college included, 3% of faculty members with seniority (associate or full professor) were underrepresented minorities. However, when this institution was excluded, only 1% of senior ranked family medicine faculty were underrepresented minorities. All comparisons were statistically significant ( $P < .00001$ ).

When we examined the representation of minority faculty at any senior position (associate or full professor), we found the odds ratio for minority faculty being in these ranks, compared with nonminority faculty members, was .40 (95% CI=.25, .62). When the presumed historically black college respondent was excluded from analysis, this odds ratio fell to .26 (95% CI=.14, .48). There was no statistically significant difference in department characteristics, Title VII funding, institutional funding, percentage of faculty in particular tenure tracks, or research productivity between departments with higher ranks and minority faculty representation (Table 4).

Table 1

Distribution in Academic Rank by Gender for All Full-time Family Medicine Physician Faculty Members, 1997

Rank	All Faculty # (% of total)	Male Faculty # (% of total)	Female Faculty # (% of total)	P Value
Full time faculty				<.001
Professor	150 (13%)	129 (17%)	21 (4%)	
Associate professor	298 (26%)	233 (31%)	65 (14%)	
Assistant professor	694 (61%)	385 (52%)	309 (66%)	
TOTAL	1,142 (100%)	747 (100%)	395 (100%)	
Part-time faculty				.73
Professor	12 (5%)	7 (5%)	5 (4%)	
Associate professor	37 (14%)	17 (13%)	20 (16%)	
Assistant professor	208 (81%)	106 (82%)	102 (80%)	
TOTAL	257 (100%)	130 (100%)	127 (100%)	

## Discussion

Our results indicate that based on AAMC data regarding all medical school departments, similarly low proportions of women and underrepresented minorities occupy senior faculty positions, in family medicine departments in comparison to men. A notable exception is that women in part-time positions have a similar distribution of academic ranks as men, in part-time positions. Overall, however, part-time faculty were less likely to occupy senior positions than their full-time colleagues. This is notable since a large number of female faculty members occupy part-time positions because of competition between full-time job commitments and family responsibilities.<sup>18-20</sup> Further, the greater representation of women in the part-time ranks leads to a greater disparity in the absolute number of women attaining academic promotion, compared with men.

## Minorities

We found that the representation of minority faculty members in departments of family medicine is low. After excluding an outlier department that we believed represented a historically black institution, approximately 9% of family medicine faculty are members of underrepresented minorities. This is, however, 2.3 times as high as the rest of US medical school faculty, based on data from the AAMC.<sup>6</sup>

While representation of minorities on the faculty of family medicine departments is higher than in

Table 2

### Characteristics of Departments of Family Medicine With Higher and Lower Percentages of Women Achieving Promotion

<i>Variable</i>	<i>Above Median Percentage of Women as Associate or Full Professors (n=28)</i>	<i>Below Median Percentage of Women as Associate or Full Professors (n=28)</i>	<i>P Value</i>
Institutional ownership			
Publicly funded school	73%	59%	.20
Department's highest priority			
Clinical care	9%	22%	.20
Residency education	62%	63%	.90
Predoctoral education	41%	30%	.60
Research	5%	7%	.70
Faculty roles*			
% clinician-educators in department	45%	40%	.80
% investigators in department	5%	10%	.30
Faculty scholarship*			
# of funded grants in the last 2 years	4.5	3	.30
# of articles published in the last year	14	14	.90
Title VII training grant funded now			
Department (academic units) grant	43%	55%	.60
Residency grant	41%	67%	.07
Predoctoral grant	71%	60%	.70
Faculty development training grant	57%	78%	.60

\* Data are expressed as median of department responses

Table 3

### Distribution in Academic Rank of All Family Medicine Faculty and Minority Family Medicine Faculty, 1997

<i>Rank</i>	<i>All faculty # (% of total)</i>	<i>Non-minority # (% of total)</i>	<i>Minority # (% of total)</i>	<i>P Value</i>
All respondents				<.001
Professor	150 (13%)	134 (13%)	16 (13%)	
Associate professor	298 (26%)	285 (28%)	13 (11%)	
Assistant professor	694 (61%)	591 (59%)	103 (78%)	
TOTAL	1,142 (100%)	1,010 (100%)	132 (100%)	
Excluding outliers*				<.001
Professor	138 (12%)	134 (13%)	4 (4%)	
Associate professor	296 (27%)	285 (28%)	11 (11%)	
Assistant professor	675 (61%)	591 (59%)	84 (85%)	
TOTAL	1,109 (100%)	1,010 (100%)	99 (100%)	

\* Outliers are likely to represent historically black medical colleges

medical school overall, the representation of minority faculty members in departments of family medicine is still low, and the presence of minorities at senior faculty levels is and remains far below that of nonminority faculty (odds ratio of .40 for minority faculty members occupying a senior faculty position in comparison to nonminority faculty). This finding is similar to findings from studies of overall medical school faculties. For example, using a survey methodology, Palepu et al found an unadjusted odds ratio of .33 for African-American faculty members at a sample of 24 US medical schools.<sup>9</sup> Using cohort data adjusted for productivity and several other variables, Fang et al reported an adjusted relative risk of .68 for the promotion of underrepresented minority faculty from the assistant professor level to more senior ranks.<sup>10</sup> Thus, family medicine may appear to do a better job than others in academic medicine at recruiting minority faculty but does no better at promoting them to senior academic ranks.

In addition to lower promotion rates, representation of minorities at higher academic ranks may also be affected by retention of minority individuals in faculty positions. Data from the survey conducted by Palepu et al showed that minorities in academic positions had lower career satisfaction scores and were more likely to leave academic medicine within 5 years.<sup>3</sup> The reasons for this dissatisfaction are not well understood. One potential cause that has been speculated is that minorities may have greater difficulties in academia because of cultural and racial issues. A study by Davis and Davis sought to explore reasons for poor retention of minorities in faculty positions in nursing programs.<sup>11</sup> Using qualitative in-depth interviews to explore issues that affect minorities in faculty positions at majority institutions, the Davis study found seven themes describing the "bi-cultural" experience of nursing faculty members: (1) finding out the organization's true climate and level of receptivity to minority faculty, (2) exerting efforts to establish validity or authority, (3) fitting in, (4) defending one's own culture, (5) distancing from

environment thought to be detrimental to one's well-being, (6) not being acknowledged by majority culture, and (7) mentoring for minority students. It is reasonable to assume that difficulties faced by minority faculty in nursing programs would be similar to those faced by minority medical faculty.

Despite the aforementioned research, the reasons for the lower number of underrepresented minorities in senior faculty ranks are unclear. In an analysis of a cohort of faculty that entered academic medicine in the 1980s, promotion discrepancies persisted for minority academicians even after controlling for a number of institutional and productivity variables, such as the garnering of NIH grants.<sup>10</sup> Similarly, our own analysis of institutional and department factors did not reveal any factors that were associated with higher levels of minority representation in higher academic ranks. It is known that 40% of minority faculty are concentrated in 10% of institutions, including the minority institutions. With such a skewed distribution, it is conceivable that there may be particular characteristics of departments of family medicine that are more conducive to the recruitment, retention, and promotion of underrepresented minority faculty. In our study, the ability to discern differences between departments with higher percentages of minorities at senior academic

Table 4  
Characteristics of Departments of Family Medicine With Higher and Lower Percentages of Minority Faculty

Variable	Departments With Senior Minority Faculty (n=10)	Departments Without Senior Minority Faculty (n=46)	P Value
Institutional ownership			
Publicly funded school	79%	74%	.70
Department's highest priority			
Clinical care	16%	19%	.90
Residency education	64%	56%	.70
Predoctoral education	40%	31%	.20
Research	12%	4%	.50
Faculty roles*			
% clinician-educators in department	35%	67%	.07
% investigators in department	10%	6%	.70
Faculty scholarship*			
# of funded grants in the last 2 years	3	4	.40
# of articles published in the last year	8	20	.30
Title VII training grant funded now			
Department (academic units) grant	40%	50%	.70
Residency grant	50%	69%	.17
Predoctoral grant	73%	64%	.90
Faculty development training grant	78%	63%	.60

\* Data are expressed as median of department responses

ranks is limited because there were so few departments with minorities in higher ranks. A larger sample that includes departments with more minorities in senior positions would be needed for such a comparison. Additional study needs to be done to determine what may differ about departments that are successful in creating and maintaining a diverse faculty.

It has been found that institutions with more minority faculty members are more likely to have larger numbers of underrepresented minority students.<sup>7</sup> The lack of minorities in academic positions may, therefore, be a barrier to increasing the total number of minority physicians, since minority role models and mentors are necessary for the recruitment and retention of minorities into medicine. The lack of total minority physicians may also affect health care for the underserved, since minority physicians serve a disproportionate number of patients from their own racial/ethnic group and serve a significant percentage of Medicaid recipients.<sup>21</sup> The shortage of minority physicians may affect access to care for minorities, especially in underserved urban and rural areas. It has been speculated that the health disparities between minorities and nonminorities are affected by the lack of sufficient numbers of minority physicians.<sup>22,23</sup> Since primary care providers are more likely to serve underserved and rural areas, the optimal strategy to meet the access needs of underserved minority patients would be to train increased numbers of minority primary care physicians.

### *Women*

For women, issues associated with difficulties in attaining academic success have been more closely examined. Foster et al, in a study of 507 faculty members at the University of Wisconsin, found that women believed that the medical school and their department were insufficiently supportive of female faculty members.<sup>18</sup> In particular, women believed that the lack of support and recognition of part-time faculty roles impaired their ability to balance family needs with a career. Carr et al also found that women believed that their institutions tolerated hostile attitudes toward women in academics.<sup>5</sup> Buckley also reported that female faculty members at the Virginia Commonwealth University were less aware of promotion and tenure procedures at that institution, compared with men.<sup>4</sup> In general, women also had different measures of success: women valued recognition from their patients and learners highly, while men ascribed higher value to national recognition, scholarship, and promotion.

Carr also reported that one of the biggest obstacles to productivity and promotion for women was having children.<sup>19</sup> While having children did not alter the career goals of female faculty members, women with children were less likely to be promoted and had fewer publications and other academic successes than men

with children. Women who had children also spent a greater amount of time on child care issues and reported more trouble with working weekends and off hours than men with children. These findings appear to validate the opinions of women from an earlier study that reported that 81% of women reported significant conflicts between their professional and personal lives.<sup>20</sup> Carr's data further demonstrate the importance of the responsibilities of caring for children with their observation that women who had no children achieved equal success with men.

There is some evidence that attention to the issues behind the lack of success for women can make a difference. One small study from a single institution suggests that if attention is given to the factors that contribute to differences in the promotion rate for women, the chances for academic success for women can increase.<sup>24</sup> In that study, over a 5-year period, the department of medicine at Johns Hopkins Medical School increased the promotion rate for women by 550% by showing greater attention to the issue of differential duties and opportunities for women and improving mentoring of female faculty members. Further, at the end of the observation period, more women occupied positions on tenure tracks, and the general attitudes of women toward promotion and tenure had improved. The interventions undertaken in that study were not very stringent or dramatic, suggesting that simple changes could be implemented in any academic department to improve academic success of female faculty.

### *Limitations*

The results of this study are subject to limitations. First, because we examined aggregate data about large departments, some differences in roles and productivity of women and minorities within departments may be obscured. Other studies suggest that women are more likely to be appointed in clinical tracks that offer less opportunity for advancement and promotion.<sup>3,4</sup> While our data show that departments with higher numbers of successful women have just as many clinician-educators and investigators as those with fewer women who are in senior faculty ranks, this does not mean that the roles of women and underrepresented minorities are equally distributed among these positions in the departments that responded to our survey.

Second, because this is a cross-sectional study, we could not calculate rates of success in promotion of female and minority faculty. Women and underrepresented minority faculty may depart from academic positions early in their career or at a higher rate than the comparison groups. This would lead to a smaller pool eligible for promotion. Similarly, the overrepresentation of women and minorities at lower ranks could reflect recent efforts to recruit more women and minorities as faculty members; the higher numbers of

these individuals at lower ranks could simply reflect the lack of time needed to attain promotion. Also, the small number of departments that responded limits the power of the study to detect small, but important, differences that might exist among departments. In addition, the cross-sectional nature of the data does not allow us to determine when or if individuals transitioned from full-time to part-time status.

Finally, the relatively low response rate for the entire survey may indicate that these data have only limited generalizability to all departments of family medicine in the United States. While we found no differences in the characteristics of respondents and nonrespondents in the variables that we could validate (public versus private ownership), a large percentage of respondents indicated that they currently have Title VII funding. This could suggest that departments with success obtaining this source of funding may have been more likely to respond to the survey. This could skew the sample toward departments that had greater success with other grants or have characteristics that are atypical of other departments.

## Conclusions

We found few departments of family medicine in which women and minority faculty members are well represented in higher academic ranks. Because of the limitations of the sample size, we were unable to identify factors that distinguish departments with and without women and minorities at higher academic ranks. Future research is necessary to learn what kinds of environments and attitudes are most useful in promoting the success of female and minority faculty members in family medicine.

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