

Stresses and Workplace Resources for Academic Junior Faculty: Track and Gender Comparisons

LISA M. BELLINI, STEPHANIE ABBUHL, JEANE ANN GRISSO, RISA LAVIZZO-MOUREY, and JUDY A. SHEA

Despite the increasing numbers of women at all levels of academic medicine, women remain significantly less likely than are men to achieve senior rank or leadership positions.¹⁻⁴ Possible explanations for the differences include limited access to mentoring, fewer rewards such as promotions, lower salaries, and less appropriate recognition.⁵⁻⁷ The slower progress of women faculty has also been related to fewer hours worked and decreased academic productivity related to childbearing,⁷⁻¹⁰ although studies have disputed this finding.^{4,11}

The academic track has also been the focus of recent studies.^{6,12} Faculty with more than 50% clinical activity have less time, resources, and mentoring for academic career development.^{10,13} As academic medical centers have become more dependent on clinical revenue, expectations for clinical productivity of faculty have increased. Faculty in clinician-educator tracks might feel more stresses than those in more research-oriented tracks. Accordingly, the purpose of this study was to examine the experiences of assistant professors with respect to both gender and academic track to determine whether previously documented differences persist. We were also interested in examining how home responsibilities and support systems related to stress and productivity.

Method

Respondents. There are 1,338 faculty in the School of Medicine at the University of Pennsylvania Medical Center. All standing faculty, including physicians and non-physicians, are on one of two promotional tracks: the clinician-educator track (80% clinical and 20% education/scholarship) or the physician-scientist track (80% research and 20% clinical/education). Department of Medicine faculty were surveyed in spring-summer 1999 and the remainder of the School of Medicine faculty were surveyed in winter 2000. Although the medical center faced financial issues, no significant change occurred in the School of Medicine between the two administrations. Questionnaires were sent via first-class mail, with a cover letter from the department chair or dean. Responses were anonymous. Two follow-ups were sent approximately three and six weeks after the initial mailing. The overall response rate was 70%. Assistant professors, the focus of this study, had a response rate of 75%.

Surveys. Content of the survey was drawn from similar instruments identified in the literature^{8,9,14} with input and review by several division chiefs, department chairs, and members on three task forces concerned with improving the status of junior faculty and women. Drafts of the survey were reviewed, pilot-tested, and revised numerous times to improve clarity and breadth. The institutional review board approved the final six-page, 51-question instrument.

Questions required various forms of responses, such as entering counts, making ratings on scales, and indicating endorsement. Items were grouped into demographics, support systems, perceptions of worklife, general attitudes (21 Likert-type statements), impact of work on personal life, and work activities.

Analyses. Standard univariate statistics (frequencies and percentages) were used to characterize the sample. Chi-square and *t*-tests were used to test for differences between subgroups based on gender and track. Nonparametric median comparisons were made for non-normal distributions.

Results

Demographics. A total of 381 assistant professors in the clinician-educator and physician-scientist tracks responded to the survey: 263 men and 118 women; 123 clinician-educators and 258 physician-scientists. There was no significant gender difference with respect to age [men: mean = 39.0 years (SD = 4.3), women: mean 39.1 years (SD = 4.7), $p = .88$]; years on faculty [men: mean = 4.0 years (SD = 2.3), women: mean = 3.8 years (SD = 2.4), $p = .51$]; or having a second advanced degree (men: 30%, women: 21%, $p = .07$). There was a difference for track (men: 64% clinician-educator, 36% physician-scientist, women: 75% clinician-educator, 25% physician-scientist; $p = .03$). More women (6%) than men (2%) were underrepresented minorities ($p = .04$). Overall job satisfaction on a ten-point scale was 6.8 (SD = 1.9) for men and 6.9 (SD = 1.9) for women ($p = .66$). Fewer men (43%) than women (55%) indicated they were likely to leave the institution within the next five years ($p = .03$).

Support systems. Overall, 76% of the men and 83% of the women identified a mentor ($p = .65$). We did not explicitly define "mentor," as we were interested in the percentage of faculty members who thought they had one. The percentages of men and women who received support/advice from their mentor, department chair, or division chief were equal in many areas. For men and women respectively the percentages were: career development (56% versus 62%), promotion issues (47% versus 48%), critique of work (42% versus 47%), suggestions to enhance visibility (41% versus 44%), facilitation of involvement in activities such as editorial boards (10% versus 6%), chairing committees or conference sessions (18% versus 14%), opportunities for research (49% versus 52%), and co-authoring (41% versus 49%) (all $p > .05$). Additionally, there was no significant difference in the availability of private offices ($p = .89$), individual computers and printers ($p = .25$), and secretarial support ($p = .52$).

Perceptions of worklife. There was no gender difference in the self-reported understanding of promotion criteria ($p = .84$)—the majority, 72% of the men and 73% of the women, believed that they understood the requirements. The men (57%) felt more prepared for independent research than did the women (44%) ($p = .015$), but the perceived likelihood of promotion was not different (men: 57%, women: 45%; $p = .08$). Equal percentages of men (82%) and women (86%) thought they held rank equal to that of their colleagues with equivalent training and responsibilities ($p = .27$). However, more men (70%) than women (60%) perceived salary equity ($p = .02$); the women were more likely to think they were paid less.

General attitudes. In seven of 21 areas, there were significant gender differences in general attitudes about worklife (Table 1, columns 3 and 4). The women reported more difficulties than did the men in six areas: balancing family or home and work responsibilities, time pressures, difficult promotion criteria, inadequate time for academic pursuits, feeling stressed beyond a comfortable level, and feeling isolated at work. However, in many areas majorities of both men and women reported difficulties (Table 1, column 2).

Impact of work on personal life. Striking gender differences were observed when looking at the impact of work on personal life issues. Fewer men than women expressed that having meetings before 8 AM (48% versus 70%, $p = .0006$), after 5 PM (42% versus 67%, $p = .0006$),

TABLE 1. Percentages of Junior Faculty Agreeing with Worklife-attitude Statements*

Statement	% Total	% Men	% Women	<i>p</i>	CE†	PS‡	<i>p</i>
Difficulty balancing family/home/work responsibilities	78	78	79	.05	80	74	.48
Too many time pressures	78	76	81	.05	80	73	.21
Concern with burnout	67	65	69	.31	71	57	.002
Inadequate recognition for clinical work	61	62	61	.64	69	39	.0001
Inadequate recognition for teaching	58	57	62	.31	66	42	.0001
Too many clinical practice hassles	59	61	54	.02	63	46	.003
Too many clinical requirements/paperwork	58	59	55	.70	62	44	.02
Feel overloaded all the time	63	61	69	.33	65	60	.52
Inadequate salary	54	55	52	.08	57	46	.004
Promotion criteria too difficult to attain	60	56	69	.05	61	57	.71
Insufficient protected time for research	57	55	62	.24	67	37	.001
Inadequate time for academic pursuits	54	49	63	.04	65	29	.001
Lack of support for research (e.g., space, staff)	50	47	57	.23	56	38	.0013
Insufficient job security	45	46	43	.85	41	52	.09
Feel stressed beyond a comfortable/energizing level	52	47	63	.01	53	51	.78
Too little control over daily work life	46	44	50	.25	54	29	.0001
Too much pressure to obtain extramural support	44	43	48	.18	43	48	.68
Inadequate colleague support/collaboration	32	30	36	.30	32	31	.49
Feel isolated at work	31	26	42	.0001	29	36	.35
Lack of leadership opportunities	31	29	36	.32	34	24	.0035
Personality conflicts	18	17	20	.58	20	14	.25

*Chi-square comparisons were done by grouping responses into three categories: 1 = strongly disagree and 2 = disagree; 3 = neutral; 4 = agree and 5 = strongly agree. The percentages are shown for the "agree" and "strongly agree" category.

†Clinician-educator faculty.

‡Physician-scientist faculty.

= .0001), and on weekends (59% versus 77%, $p = .0031$) was difficult. The men were also less troubled by the lack of on-site child care (men = 23%; women = 45%, $p = .0001$), part-time positions (men = 10%; women = 41%; $p < .0001$), and emergency child care (men = 28%; women = 44%; $p = .0023$). The majority of men and women agreed that work affected their family or personal time before work (men = 65%; women = 70%; $p = .35$); after work (men = 91%; women = 93%; $p = .52$); and on weekends (men = 93%; women = 94%; $p = .74$).

Work activities. The men worked more hours per week than did the women, 64 (SD = 11.3) versus 59 (SD = 14.5) respectively ($p < .0001$). Differences in academic productivity were significant. The median numbers of presentations were eight for men and five for women ($p = .03$). The median numbers of publications were eight for men and four for women ($p = .0005$).

Potential explanations for the differences in hours worked per week were examined. There was no significant difference between the percentages of men and women who had children at home (79% versus 79%, respectively, $p = .99$). Among faculty with children, the women reported significantly more hours per week performing child care activities (25 hours versus 49 hours, $p < .0001$). There was a large difference between the percentages of men and women with a spouse or partner who was either a part-time or full-time homemaker (50% versus 10%, respectively, $p < .0001$). Having children and a full-time working partner versus having children and a part-time or stay-at-home partner meant more stress with early meetings ($p < .05$) and work on weekends ($p < .05$), shorter hours at work (59 versus 65, $p < .0001$), and more hours in child care (41 versus 21, $p < .0001$). The median number of publications was 7.5 for those who had full-time working partners versus 11 for those whose partners stayed home ($p = .02$), and the median numbers of presentations were eight and 14 ($p = .005$), respectively.

When comparing responses for faculty in the physician-scientist track ($n = 123$) with those in the clinician-educator track ($n = 258$), there was no difference in demographic characteristics except that more individuals in the physician-scientist track held a second advanced degree, 42% versus 20% ($p = .0001$). There was no difference in support systems, general perceptions regarding equity, or

the impacts of work on personal life (all $p > .05$). There were expected differences between physician-scientists and clinician-educators in grant activity (85% versus 53%, $p < .0001$), rates of participation in basic science research (88% versus 34%, $p = .0001$) and clinical trials (29% versus 73%, $p = .0001$), and feeling prepared for independent research (75% versus 43%, $p = .0001$). The median number of presentations was not higher (10 versus 8, $p = .125$), but the number of publications was (12 versus 6, $p = .0001$). In ten of 21 areas, there were large and significant differences in attitudes about worklife (Table 1, columns 6-8). Clinician-educators reported more difficulties than did physician-scientists in: concern with burnout, inadequate recognition for clinical work, inadequate recognition for teaching, too many clinical practice hassles, too many clinical requirements, inadequate salary, insufficient protected time for research, inadequate time for academic pursuits, lack of support for research, and too little control over daily work life.

Finally, to control for track, gender differences were examined among clinician-educators. Women were more troubled by off-hour meetings and reported more hours devoted to childcare. Almost all other differences in attitudes and productivity were no longer apparent.

Discussion

Much has been written about the barriers to advancement of women in academic medicine, but few have examined similar issues related to the advancement of men or the impacts of faculty track and partner roles on academic productivity. Possible explanations for barriers to successful advancement of junior faculty can be grouped into professional issues, academic climate, and personal issues.

Professional issues include preparation for research, support services, hours worked per week, and academic productivity. Like others, we found no differences in career preparation or support services.¹⁴ Although our junior faculty reported a great variety of supports from their mentors and department chairs, significant gen-

der differences in academic productivity were already apparent, replicating others' findings.^{8,13,15}

Academic climate includes issues related to mentoring, networking, and the professional environment.^{5,13,15} We found no difference in either incidences of or activities associated with mentoring. While there were some areas in which women perceived inequities, the majority of men and women agreed about many issues, suggesting a similar, albeit stressful, academic climate. When we compared academic tracks, we found profound differences in attitudes, with clinical faculty being much less happy, suggesting the academic climate affects clinical and scientist faculty differently. Our finding that within the clinical track there were few differences in attitudes and no difference in productivity related to gender supports the conclusion that many of the observed differences can be attributed to worklife demands.

Personal issues include those related to childbearing and family responsibilities. Regardless of gender or track, junior faculty who had children and full-time working partners were significantly more stressed by off-hour professional activity and spent more hours in child care, which translated into less academic productivity as measured by publications and presentations. The presence of a full-time working partner creates less flexibility in such instances where children are sick or school is closed. The majority of faculty in this situation are women. Although there was no difference between the numbers of men and women who had children at home, the women spent more time providing child care. This supports the notion that regardless of career, women remain the primary caregivers for children.

There are several limitations of the study. First, it was conducted at a single school of medicine. Second, the analyses were confined to assistant professors. The definition and criteria for this rank may differ among schools. Third, non-responders may have been hindered by concerns over anonymity and confidentiality. Fourth, a formal mentoring program was implemented by the dean of the School of Medicine just months prior to the survey; thus, the results regarding mentoring likely look better than they would have months earlier.

At our school, academic advancement is strongly related to academic productivity. Although academic productivity seemed to be greater for faculty who had full-time partners at home, it was not different between men and women in the clinical track. We recognized that there are striking differences in academic climate between clinician-educators and physician-scientists. This finding is important in helping focus future research on the barriers to advancement of both men and women in academic medicine. The academic climate for clinical faculty may be a significant barrier for advancement. Contributing to that climate is probably the need for increased clinical productivity, which decreases flexibility and time available to devote to scholarly activities. Focus should be placed on interventions designed to support junior faculty during the early period in their careers. Possibilities include the elimina-

tion of off-hour professional activities, development of flexible scheduling, maintenance of mentoring programs, provision of faculty development programs focusing on time management, reduction of clinical duties, and adequate recognition for teaching and administration. Additionally, eliminating mandatory promotion and timelines may reduce the burnout in junior faculty struggling to maintain the pace necessary for academic advancement.

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Correspondence: Lisa Bellini, MD, University of Pennsylvania, 100 Centrex, 3400 Spruce Street, Philadelphia, PA 19104.

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