JOURNAL OF WOMEN'S HEALTH
Volume 17, Number 6, 2008

DOI: 10.1089/jwh.2007.0647

Facilitated Peer Mentorship: A Pilot Program for Academic Advancement of Female Medical Faculty

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Abstract

Background: In the United States, female physicians working in academic medical practices are less likely to achieve the academic rank of associate professor or professor than are male physicians of comparable seniority. Lack of mentoring has been suggested as a possible contributor to this difference.
Methods: In this paper, we describe a facilitated peer mentorship pilot program that was developed to meet the unique needs of women faculty. Experienced female physicians acted as facilitators to a group of junior women who served as their own peer mentors. Outcome measures for the program included comparison of a pretest and a posttest completed by the peer mentor participants, a skills acquisition survey, published papers, and academic advancement of participants.
Results: All the peer participants realized increased academic activity in the form of published papers and promotion in academic rank, skills acquisition, and enthusiasm for continuance of the program.
Conclusions: This new model of facilitated peer mentorship demonstrated success in a small-scale pilot program. Expansion of this program and other creative solutions to the lack of mentoring for women may result in greater numbers of women achieving academic advancement.

Introduction

Challenges faced by female faculty members seeking academic advancement have been well described in the medical literature.[1] Female faculty members are less likely to advance academically than their male colleagues who are of comparable seniority.[2] Demands of clinical practice, family obligations, and lack of mentoring all have been described as having a detrimental impact on the academic careers of women.[3–5] Career development can be enhanced by mentoring.[6] Traditionally, mentoring has been thought of in terms of the dyadic model, in which an experienced mentor is paired with a less experienced mentee. Mentoring relationships serve multiple functions. In addition to assisting with career development and the acquisition of new skills, mentors act as role models who also provide emotional and psychological support to the mentee.[7] Although gender-matched mentoring is not essential to a successful mentoring relationship, junior women who seek a female mentor are limited by the sparse number of women in the upper ranks of academic medicine who are available to serve as mentors.[1,7] Additionally, in many academic medical centers, faculty members may not have the time or resources to apply to mentoring relationships because of their time commitment to clinical responsibilities.[8–10]

New approaches to developing successful mentoring relationships are needed to address faculty time constraints[10,11] and the extra challenges women face in gaining effective mentoring.[12,13] Peer mentoring has been described as an alternative to the traditional dyadic mentoring model.[10,11] We have proposed that facilitated peer mentoring further enhances the benefits of the peer mentoring model by providing more structure, guidance, and support to the peer group. Using a senior mentor in this manner also allows for amplification of the efforts of a limited resource: qualified female mentors. The group structure provides a collaborative environment for academic endeavors where the challenges imposed by busy clinical practices and the demands of home are openly acknowledged and factored into the process. Peer mentoring in other institutions has been described as a better fit for women faculty because it is more in line with the socialized gender differences that women bring to the workplace.[14]

We surveyed the female faculty members at our tertiary care academic medical institution to ascertain their level of interest in academic advancement and mentoring.[15] The

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number of women who wanted to have a mentor greatly outnumbered the number of women who felt qualified or available to act as mentors. In response to these findings, we developed a facilitated peer mentoring program. Self-selected junior female faculty served as their own peer mentoring group (referred to herein as peer mentors). Senior women facilitated this group by acting as mentors to the entire group (referred to herein as facilitator mentors). This amplified the efforts of a limited pool of senior women faculty who were willing to act in a mentoring role.

Materials and Methods

Four female internists practicing in an internal medicine division at our institution were recruited to participate in this pilot program. The goals of the program were clearly delineated (Table 1). Responsibilities of the peers and facilitators were enumerated and agreed upon (Table 2). The participants were asked to sign a contract committing them to the program for a period of 1 year.

The peer mentors were scheduled to meet weekly to monthly, depending on deadlines for manuscript submission. Peer mentors and facilitator mentors met as a group once a month, but the facilitator mentors were available on an as-needed basis. To monitor the progress of the peer group and address any program challenges, the facilitators met separately from the peer group every month.

The institution granted each peer mentor 25 hours of time to participate in the program, during which they were free of clinical responsibilities. Additionally, each peer mentor used time available to all staff for continuing medical education by attending classes that were identified as part of the peer mentor program curriculum. The facilitator mentors did not receive time for this program.

The pilot program was divided into three phases (Table 3): (1) skills acquisition and enhancement, (2) skills application (writing a review article), and (3) development of a group research protocol.

The skills acquisition and enhancement curriculum included lectures, workshops, and information-sharing sessions. Library Services staff provided individual training in advanced literature search. The peer mentors had workshops with the editors in the institution's Section of Scientific Publications before manuscript preparation to learn the process of editing, proofreading, and manuscript submission. Classes or workshops were 2 hours long and included word processing (Microsoft Word), reference management (EndNote), slide development (PowerPoint), and how to write a review article. During the skills acquisition and enhancement phase of the program, each peer mentor selected a topic for a review article or research.

Table 1. Goals of a Pilot Program of Facilitated Peer Mentorship

To develop the skills needed to start a writing group that produces academic papers worthy of publication in scholarly, peer-reviewed journals
To establish a peer mentoring curriculum that ensures the practical application, incorporation, and reinforcement of skills learned in external educational classes
To develop, maintain, and maximize peer mentoring relationships
To attain a sustainable educational program that respects the conflicting time demands of female physicians and encourages their academic advancement and maintenance of clinical productivity

The skills acquired during the first phase of the program were then applied to the development of a review paper during phase 2 (skills application). Class and workshop time were used for actual work on the topic, and participants used some of their own time to complete their manuscripts. The review papers were designed to provide a foundation for the development of future research protocols.

Facilitator mentors reviewed the suitability of topics for manuscript submission and provided preliminary editing and informal peer review of manuscripts. They also gave formative and summative feedback and were available to the peer mentors for brainstorming and problem solving on an as-needed basis.

A 26-item self-assessment survey of the academic skills and academic career satisfaction of the peer mentors (Table 4) was administered at the beginning and near the end of the first year of participation. The questions were designed to assess pertinent demographic characteristics of participants and to measure their responses to statements about their careers. The second survey also assessed satisfaction with the skills acquisition phase of the program (Table 5). Both assessment tools used a Likert scale, ranking from 1 for "strongly disagree" to 5 for "strongly agree."

Results

Peer mentors

In February 2005, 4 women physicians agreed to form a facilitated peer mentoring group. All 4 physicians were consultants in Women's Health Internal Medicine, holding academic rank at the instructor level. None had published any peer-reviewed papers before beginning this pilot program. They were all in agreement that advancement of their academic careers was a priority. They shared similar academic interests and expressed their intentions to collaborate for an extended period.

Facilitator mentors

The peer mentoring program was designed by 4 female faculty members who served as active facilitators of the peer group. All 4 of the facilitator mentors held academic rank at the assistant professor level, with one being promoted to associate professor during the year. All 4 facilitators were members of the Department of Internal Medicine.

Self-assessment survey

At the end of 10 months, the 26-item self-assessment survey (Table 4) was again administered to the peer mentor group. Three elements of the survey that were considered key indicators showed a 30% improvement overall. These key indicators were peer mentor participants' satisfaction with their academic accomplishments, their achievement of necessary skills for desired academic advancement, and their belief that they had the necessary writing skills (Fig. 1).

Table 2. Responsibilities of Participants

Peer mentors	*Peer mentor project manager*	*Facilitator mentors*
Maintain a positive attitude	Define scope of project	Provide framework
Be dogged (tenacious) in pursuit of goals	Develop an action plan	Facilitate skills acquisition
Learn to ask for what you need	Set a timeline	Coordinate protected time
Focus on the task at hand	Delegate tasks	Assist project manager with timeline management and first draft
Maintain personal and group accountability	Hold the group accountable	Construct academic career plan
Acknowledge contribution of facilitator mentors	Serve as lead (first-named) author	Measure and analyze outcomes for academic purposes
Agree to take on an intellectual challenge		Protect proprietary nature of ideas and manuscripts generated by peer mentorship group
Use humor whenever possible to defuse stressful situations		
Construct a mutually beneficial relationship with peers and facilitators		
Be willing to give and receive constructive criticism		
Work collaboratively toward stated goals		

Skills acquisition survey

All peers indicated that they found the following to be helpful (rating, 4–5): peer feedback and interaction; listing peer and mentor responsibilities; functioning as lead author; protected time for the program; group peer meetings; the process of writing; preliminary inquiries made to journals to explore publication opportunities; classes in word processing, manuscript preparation, and reference management; and instruction on how to conduct searches of the medical literature.

The peers indicated that the following areas of support were helpful, but they ranked them somewhat lower (rating, 3.5–3.75): group meeting with the representative from the Section of Scientific Publications and manuscript review and feedback by the facilitator mentors.

Academic productivity

Of the 4 peer mentors who completed the program, 3 coauthored 3 peer-reviewed manuscripts that were accepted for publication. They all achieved promotion in academic rank from instructor to assistant professor.

The completion of a research protocol proved to be beyond the scope of the first year of the peer mentor program.

Discussion

Women are continuing to seek careers in medicine, as shown by the percentage of female matriculants in U.S. medical schools.[16,17] Since 2000, approximately 48% of all first-year medical students have been women.[18] Although women are entering the medical profession in large numbers, they continue to be faced with inequalities in academic advancement and compensation compared with men.[17–19] The rate of attrition from academic medicine is also greater for women than for men.[12] It is important to find an innovative way to encourage the academic advancement and retention of female faculty members. Mentoring, which has been identified as an important element of career advancement in any field, may be one way to do so.[21]

Various mentoring models have been described: traditional one-to-one mentoring, multiple mentors, and peer mentoring models.[11,21–23] The traditional mentoring model assumes that the relationship is one between an older, more experienced mentor and a younger, less experienced mentee.[24] Women in academic medicine have many peers but few female academic mentors. With so few women at the higher academic ranks, women who prefer gender-matched mentoring have limited choices. Some women have reported excellent mentoring outcomes from working in mixed-gender pairs. The maintenance of clear professional and personal boundaries in these relationships has been cited as a key element of success.[25]

Women may respond more readily to encouragement, collaboration, and group affiliation, whereas to a greater extent men may value challenge, competition, and individual achievement.[26] Socialized gender differences in work style may be important, as traditional pair roles may not work well for women physicians.[14,21] Furthermore, women often enter academic medicine just when childbearing takes priority. Delays in academic productivity often are a natural result of conflicting work and home demands for many women. Also, tra-

Table 3. Three Stages of Peer Mentoring Curriculum

Stage 1: Skills acquisition and enhancement
Research medical literature
Learn to manage references
Utilize the Section of Scientific Publications
Learn to edit and use word processing tools
Attend faculty development workshops
Scientific writing
Peer-to-peer coaching
Stage 2: Skills application
Develop topic and outline for review article
Search the medical literature
Manage references
Divide topics and write
Review, edit, and submit manuscript
Stage 3: Development of a group research protocol
Meet with staff from the Protocol Development Office
Identify lead mentor for project
Divide tasks
Begin protocol outline
Write protocol

Table 4. Self-Assessment of Academic Skills and Academic Career Satisfaction

Item no.	*Statement*	*Rating*[a]				
1	I am satisfied with my academic accomplishments.	1	2	3	4	5
2	I have the skills necessary to effectively search the medical literature.	1	2	3	4	5
3	I am familiar with the Section of Scientific Publications.	1	2	3	4	5
4	I understand the services offered by the Protocol Development Office.	1	2	3	4	5
5	I am satified with my ability to use EndNote as a tool for managing references.	1	2	3	4	5
6	I wish to be involved in academic projects but lack the skills necessary to be successful	1	2	3	4	5
7	I have the skills necessary to take a clinical question and develop a clinical research project.	1	2	3	4	5
8	I understand the process for submitting a CR20.[b]	1	2	3	4	5
9	I have the time to attend after-hours seminars to enhance my academic skills.	1	2	3	4	5
10	I am satified with my ability to effectively use PowerPoint.	1	2	3	4	5
11	I have identified an effective academic mentor.	1	2	3	4	5
12	I would prefer to have a same-sex mentor.	1	2	3	4	5
13	I know how to apply for academic rank.	1	2	3	4	5
14	I am satisfied with my current academic rank.	1	2	3	4	5
15	I feel confident in my ability to assist residents in designing, completing, and publishing academic projects.					
16	I would like to become an effective mentor.	1	2	3	4	5
17	I have published _____ articles in my career.	1	2	3	4	5
18	I am an effective public speaker.	1	2	3	4	5
19	I would benefit from training in public speaking.	1	2	3	4	5
20	I would be interested in participating in a collaborative research project.	1	2	3	4	5
21	I have the skills necessary to write a comprehensive review paper.	1	2	3	4	5
22	I can critically evaluate the medical literature.	1	2	3	4	5
23	I am satisfied with my ability to effectively network with other physicians in this institution to find opportunities for collaboration.	1	2	3	4	5
24	I have a career goal.	1	2	3	4	5
25	I have identified specific plans to achieve my career goals.	1	2	3	4	5
26	I know how to find a good mentor.	1	2	3	4	5

[a]Rating: 1, strongly disagree; 2, somewhat disagree; 3, neutral; 4, somewhat agree; 5, strongly agree.
[b]CR20, clinical research proposal funding 20% institutionally directed nonclinical time for research proposal development.

ditionally these early years are when most mentor-mentee relationships develop. We see this facilitated model as a pathway for women to maintain their academic careers while acknowledging their natural work styles and the conflicting demands on their time. Also, we view it as a road back for women who have stepped off the academic path.

Previously described peer groups have included both men and women of various backgrounds and academic interests.[10,27] Other peer groups have relied on the peers themselves to initiate and maintain the group, adding a senior advisor later in the process.[11]

Our program was designed to provide a structure and cur-

Table 5. Skills Acquisition Survey

Item no.	*Activity for skills acquisition*	*Rating*[a]				
1	Reference management (EndNote) class	1	2	3	4	5
2	Section of Scientific Publications	1	2	3	4	5
	a. Group meeting	1	2	3	4	5
	b. Individual interaction with editor	1	2	3	4	5
3	Word processing class	1	2	3	4	5
4	Library	1	2	3	4	5
	a. Group class: How to search the medical literature	1	2	3	4	5
	b. Individual interaction with librarian	1	2	3	4	5
5	Manuscript review and feedback by mentors	1	2	3	4	5
6	Prearranged opportunities for manuscript publication	1	2	3	4	5
7	Category time	1	2	3	4	5
8	Functioning as lead author	1	2	3	4	5
9	Writing	1	2	3	4	5
10	Peer feedback and interaction	1	2	3	4	5

[a]Rating of agreement that the activity helped improve skills needed to pursue academic projects: 1, strongly disagree; 2, somewhat disagree; 3, neutral; 4, somewhat agree; 5, strongly agree.

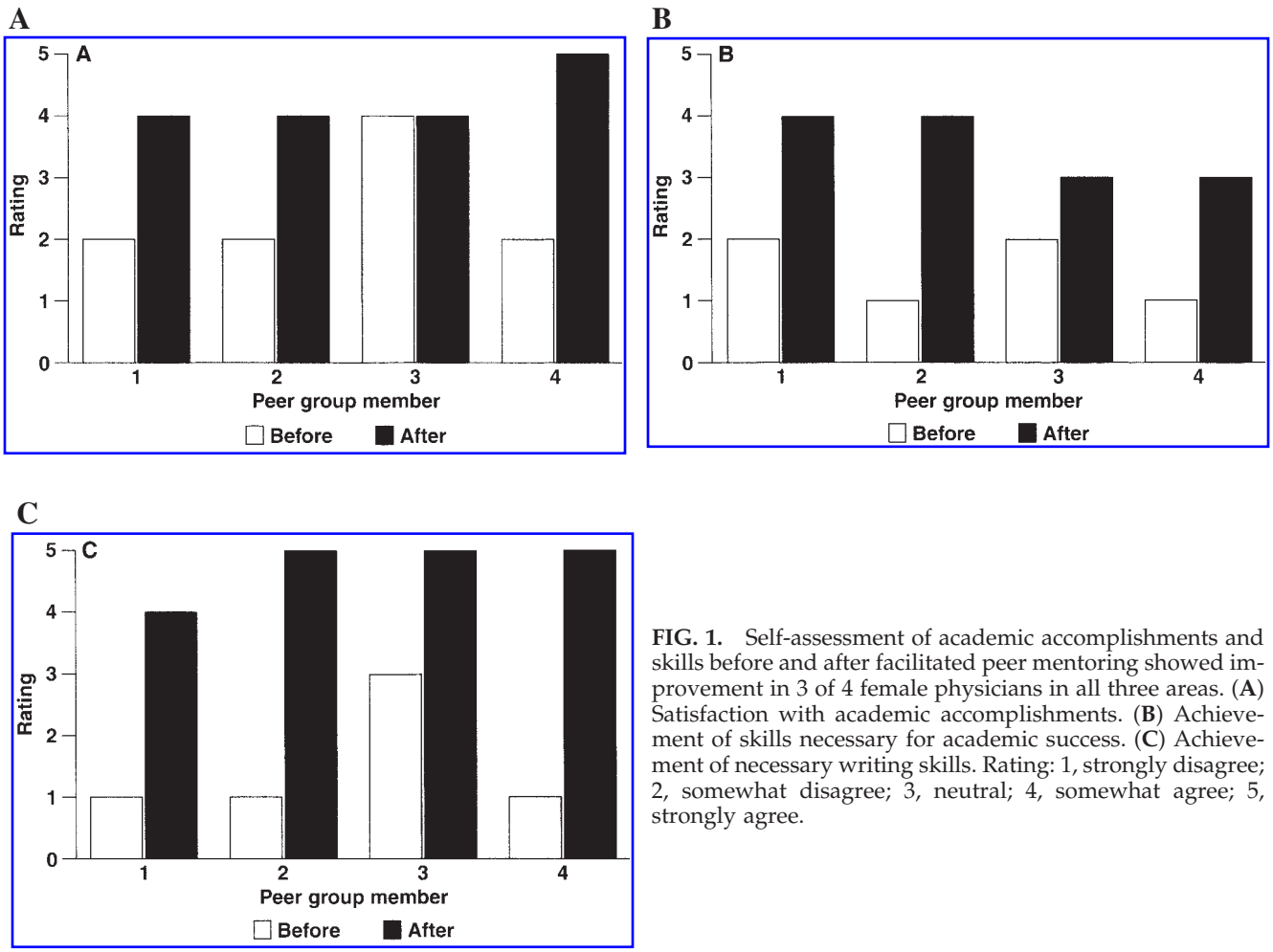

FIG. 1. Self-assessment of academic accomplishments and skills before and after facilitated peer mentoring showed improvement in 3 of 4 female physicians in all three areas. (**A**) Satisfaction with academic accomplishments. (**B**) Achievement of skills necessary for academic success. (**C**) Achievement of necessary writing skills. Rating: 1, strongly disagree; 2, somewhat disagree; 3, neutral; 4, somewhat agree; 5, strongly agree.

riculum for a group of women physicians who share similar career goals and academic interests in specific topics. Although the peer mentors had self-selected with the goal of collaborating academically, the structure provided by facilitator mentors allowed their goals to become a reality. The program was designed to provide a solid foundation with the potential for a long-term academic collaboration. Funding for this program was limited to the nonclinical time awarded to the peer mentor participants, but the outcomes were similar to those of other reported programs that involved a larger investment of time, institutional resources, and faculty involvement.[11] Additionally, our peer group included a midcareer faculty member who had delayed academic productivity in lieu of family responsibilities and clinical pursuits. Historically, these midlevel clinicians have been overlooked by the mentoring hierarchy and have been unable to meet the institutional expectations for academic productivity.[16] However, women physicians in academic settings may find that they have additional time for academic pursuits after they reach midcareer, when the conflicting demands of work and home often stabilize.[28]

The support and structure for our program came from the facilitator mentors, who did not receive financial incentives or protected time to participate in the program. No formal mentoring training was provided to them, and each brought to the group different skills and experiences. In this pilot project, we did have 4 facilitator mentor and 4 peer mentor participants, which, at first glance, appears numerically consistent with a traditional dyadic mentoring model. In reality, however, the facilitator mentors shared the mentoring responsibilities for the group. The facilitator mentors indicated early on that they did not have enough time or resources to act as mentors in the traditional dyadic model, but they were willing to participate with the peer mentoring group in a limited way. Thus, our program was designed to amplify their efforts. An unexpected outcome of the program design was the benefit to the facilitator mentors from working as peers. While working with the peer group, they gained considerable skill in conflict resolution, editing and revising of manuscripts, and collaborative partnerships. Additionally, the facilitators gained recognition within the institution as faculty members willing not only to advocate for faculty development but also to put their own time and efforts toward it. There are now 5 facilitator mentors, working with 22 junior female faculty in 6 peer groups. The demand for the program is growing.[29]

Within our academic medical institution, we are fortunate to have a number of support services (e.g., the Section of Scientific Publications, Library Services, information technol-

ogy, and the Academic Support Office [for word processing of manuscripts and curriculum vitae and for preparation of slides]) that may not be available in other settings. Despite the presence of these services, many physicians do not know how much support is available or how to access and use such services while maintaining a busy academic or clinical practice. Our program made liberal use of these services, which enabled the 4 physicians to maximize their efforts by enlisting the help already available but heretofore underused.

Physicians who are primarily engaged in a busy clinical practice run the risk of becoming isolated from their peers.[30] Peer mentoring groups provide a framework for collaboration, connectedness, and support that helps counteract the feelings of isolation that arise from a day devoted primarily to doctor-patient interactions. Our peer mentoring program fostered a sense of connectedness not only among the peers but also among the facilitator mentors, supporting the concept that women may respond to a model of interdependence and group achievement over individual achievement. This may be an alternative strategy for academic success.[31]

Throughout the project, life issues surfaced that threatened timely project completion, including pregnancies, deaths of family members, other difficult family situations, peer disagreements, and even the unforeseen dissolution of a peer-reviewed journal that had one of the manuscript submissions under peer review. We observed that when one team member was hampered by such issues, the other members rallied to that individual's support; thus, despite such hurdles, academic projects were completed, and members of the peer mentoring group expressed satisfaction with the outcomes.

Concerns about this gender-matched approach to mentoring have surfaced in conversations with some of our male colleagues. We acknowledge that many of the time pressures and challenges encountered in academic medicine are not unique to women. However, our program was developed to address the gender disparity in academic advancement. Perhaps some of the lessons learned from this program as it progresses will have broader applicability.

This peer mentoring program was designed to last 1 year. At its conclusion, all the peers except for 1 physician on maternity leave decided to continue to work together on new academic projects. This group has chosen to remain affiliated with the facilitator mentors and has achieved success in other academic endeavors. To date, they have developed two original research protocols and have linked with senior investigators in their area of interest with whom to pursue future collaborations. They have gained recognition in their field of interest and, as a result, have received invitations to speak at national meetings. They have completed additional manuscripts and are interacting with newly formed peer groups to offer support and counsel.

This pilot program contained too few participants over a relatively short time to draw conclusions about its broad applicability and long-term success. A substantial body of work has been written about the need for novel approaches to encourage academic advancement by women physicians. We conclude that, for various reasons, the dyadic mentorship model may not be the optimal solution. At our tertiary care academic medical institution, numerous women have expressed interest in academic advancement but are busy maintaining their clinical practices while actively raising families and nurturing committed relationships. Yet the results of our pilot program of facilitated peer mentoring to assist academic productivity and advancement indicate that, at least for 4 women physicians in a busy internal medicine practice, this approach has the potential to produce good results. For now, our work will focus on fostering the academic development of our current groups while expanding the concept of facilitated peer mentoring to new groups of women physicians within our institution.

Acknowledgments

Editing, proofreading, and reference verification were provided by the Section of Scientific Publications, Mayo Clinic.

Disclosure Statement

No competing financial interests exist.

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