Evidence Base for Mentoring Women in Academic Medicine

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In this issue of the *Journal of Graduate Medical Education*, Welch et al[1] describe a mentoring program for female residents and faculty in an academic emergency medicine department. The mentoring intervention included role modeling and mentoring by local area alumni of the residency program as well as faculty. Vertical and peer group mentoring occurred in the form of sessions focused on topics specific to women in medicine, which supplemented formal academic mentoring at the department. The program ran from 2004 to 2010 as structured 2-hour sessions in noninstitutional settings every other month. Regular sessions were supplemented by other meetings, including wellness workshops and an annual statewide breakfast with a national female leader in emergency medicine. Residents, faculty, and alumni who participated in the mentoring program perceived it to be valuable and to provide an emotionally supportive and encouraging environment for professional and personal development. The analysis of qualitative responses of program participants identified social networking, inclusiveness, and the supportive nature and solidarity of the group as the most appreciated features of the program. Other themes identified were the benefits of networking with mentors who served as role models and addressing barriers specific to a woman's career in academic medicine. Work-life balance was the most valued session topic.

The study is an important contribution to the growing body of evidence for successful interventions in mentoring women in residency and academic medicine and complements recent efforts in designing effective programs in other disciplines. A pilot study of mentoring female academics in psychiatry by senior academic colleagues for 1 year improved the aspects of job-related well-being, self-esteem, and self-efficiency.[2] Another study of peer mentoring in academic skills of female faculty at the Department of Medicine at Mayo Clinic[3] in Rochester, Minnesota, showed a positive effect on the number of research articles submitted and/or published in peer-reviewed journals, as well as the increased satisfaction with academic achievement, improved skills in literature search and critical appraisal, and increased confidence in the ability to write a comprehensive review article.

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Each of these studies addressed one of the 3 research themes we identified in our 2006 systematic review of academic mentorship: (1) effects of mentorship on education-based careers of physicians, (2) effects of mentorship strategies for women in medicine, and (3) comparison of formal versus informal mentoring and of multifaceted versus single-component strategies.[4] These studies also used an uncontrolled prospective study design at a single location. The critical next step in mentorship research is collaborative research across multiple sites, with a fair comparison group. Although difficult, collaboration among institutions and professional organizations in academic medicine will be essential to move the field forward.

Survey research in mentorship interventions would also benefit from more uniformity in assessment instruments. An example of a potentially useful survey tool is the Mentor Role Instrument for assessing perceptions of mentoring relationships,[5] which has validity evidence for academic medical settings.[6] The need for more robust study designs in testing mentorship interventions[4] is based on the premise that faculty development and education are major responsibilities of medical schools and residency programs and, thus, require serious and rigorous evaluation.

Future studies in mentoring should also clearly define the mentorship intervention. There is significant confusion, both in everyday language and in scientific discourse, about the meaning of *mentoring* versus other forms of academic personal relationships: peer support (*peer mentoring*), tutoring, teaching, coaching, supervising, advising, counseling, sponsoring, role modeling, and precepting.[7] When mentoring or mentoring-like interventions are not defined clearly, feedback from participants, such as provided in a survey, will not be reliable. Similarly, other studied outcomes cannot be reliably attributed to a particular mentoring strategy. Without an operationalized definition of the mentoring intervention, we cannot be sure which process or relationship is under evaluation nor whether it can be generalized to other settings and situations. This is a crucial conceptual problem in many studies; our systematic review showed that only 4 out of 34 survey studies of mentorship (12%) used a clear definition of mentors and mentorship.[4]

We have proposed that mentorship must have certain features to be rightfully termed as mentoring: (1) the *structural* feature of a dyadic relationship between a more experienced and a junior person, established formally or

informally and primarily involving institutional proximity; (2) the *interactional* feature of a holistic approach to educational, personal, and professional aspects of development; and (3) the *temporal* feature of development and evolution of the mentoring relationship over time.[4]

Although it may be unrealistic to formulate a single definition of such a complex and elusive phenomenon as mentoring, qualitative studies may help to identify the characteristics and dynamics of mentoring in the different contexts of undergraduate and graduate medical education, and academic medicine. In our recent systematic review of qualitative studies, we identified 4 major themes in mentoring relationships.[8] The desired ***characteristics of mentors*** included *personal, relational, and professional dimensions*. Mentors embody the following desired characteristics, among others: altruism, understanding, patience, honesty, responsiveness, trustworthiness, reliability, as well as being nonjudgmental, motivating, and an active listener (*personal dimension*). They also should be accessible; sincerely dedicated to mentoring and offering help; compatible with the mentee in view of practice style, vision, and personality; and be able to identify potential strengths of mentees and assist them in defining and reaching their goals (*relational dimension*). Finally, mentors should be senior and well respected in their fields, as well as knowledgeable and experienced (*professional dimension*). ***Structure of the mentoring relationship*** refers to the preferred sex/race/ethnic composition and the number of participants in the mentoring relationship. The available evidence on the need for congruence for these factors in a mentoring relationship is inconclusive; the sensitivity of the mentor is considered more important. ***Characteristics of the mentoring relationship*** describe mentoring as a personal connection in the context of a supportive environment for self-exploration: the presence of honesty, trust, mutual respect, open communication, and confidentiality. Finally, ***barriers to mentoring*** should not be overlooked. Barriers can occur at the personal level, related to either mentor or mentee. Relational barriers include mentee vulnerability; lack of fit between mentor and mentee; racial, ethnic, or gender differences; mentors who take advantage of a mentee or bossy mentoring; and competition between mentee and mentor. Structural problems range widely: time constraints, lack of continuity, lack of mentor incentives, conflicts of interest (such as when clinicians mentoring students also participate in residency selection), and lack of available mentors.

To address these conceptual and practical difficulties, future studies of mentoring should take into consideration possible strategies to improve mentoring using the same taxonomy of mentoring characteristics.[8] At the personal level, several actions may be relevant for training and education: discussing mentoring early, training faculty to mentor, coaching programs for mentors, and workshops for trainees to learn about mentoring. The relational dimension of mentoring can be addressed by fostering relationships, such as creating a ''space'' for mentoring, regular mentoring contacts and meetings, and written partnership agreements or progress reports. At the structural level, institutions or training programs can increase the choice and availability of mentors and promote mentoring through enhancing the value of mentoring for faculty and providing incentives, such as formal evaluation, protected time, and awards.

Just as mentoring is a long-term process of development and evolution, research on mentoring, including programs for female residents and faculty, requires long-term studies. The 6-year study by Welch et al,[1] which used area alumni, a relaxed social environment, and discussion topics focused on mentee interests, adds to our growing understanding of this critical area.

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