"Mentoring International Research Ethics Trainees: Identifying Best Practices"

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Abstract

Mentoring is an important component of training in the basic and clinical sciences due to the increasing complexities associated with establishing a career.

Methods—Data relating to 466 long term trainees in research ethics training programs were obtained from the Fogarty International Center's database. Data were supplemented with survey data (n=17) and telephone interviews (n=10) of the 21 principal investigators whose programs offered long-term training. The programs most successful with mentoring involved (1) the provision of an orientation to the trainees at the commencement of training; (2) a highly structured process of mentoring that required regular meetings and task achievement timelines; (3) intensive, frequent contact with the PI; and (4) support with personal issues that were troublesome to trainees.

This paper is part of a collection of papers analyzing the Fogarty International Center's International Research Ethics Education & Curriculum Development program.

Keywords

Mentoring is increasingly important as a component of training in the basic and clinical sciences due to the increasing complexities associated with the development of a successful career trajectory. These challenges include competition for research and programmatic funding, professional networking, the preparation of manuscripts and identification of appropriate publications for their dissemination, navigation of political dynamics both internal and external to one's own institution, and the achievement of a satisfactory work-life balance. Mentoring wasonce viewed as a dyadic relationship in which knowledge and expertise were to be gained by a younger and more junior colleague from an older and more experienced mentor. However, mentoring is now understood as potentially beneficial to both the mentors and mentees (Barker, 2006; Fielden, Davidson, & Sutherland, 2009; Galbraith & Zelenak, 1991; Healy & Welchert, 1990). The mentoring relationship can provide the mentee with increased content knowledge and skills in his or her discipline, career guidance,

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assistance in establishing a professional network, and access to career opportunities. The mentor may derive new insights from the mentee, as well as assistance with his or her research. Additionally, the mentoring relationship may evolve over time into a professional collaboration between colleagues and/or a friendship that both the mentor and the mentee may enjoy.

Mentoring may be of particular importance for research ethics trainees from lowand middle-income countries. First, research ethics and even the broader field of bioethics may not have been established as a recognized discipline in their home countries. Trainees may consequently find it difficult to obtain a position that allows them to utilize their new-found skills. Some countries may not have developed a traidition of mentorship, so that trainees may face challenges in their efforts to obtain career guidance. In addition, those trainees who have left their home countries to study elsewhere may face difficulties in first adjusting to their new environment and subsequently readjusting to their home country. A mentoring relationship may provide trainees in this situation with needed emotional support. We examined the nature of the mentoring provided to trainees during and after their participation in long term international programs in research ethics that were funded by the Fogarty International Center over a period of time ranging from 4 to 13 years.

METHODS

Data Collection

Data relating to the 637 trainees of the 21 programs were obtained directly from the FIC; 466 of these records related to long-term trainees. These data were provided to FIC by each training program through a centralized electronic database, CareerTrac. A data-use agreement with the FIC safeguarded the confidentiality of the data provided. We solicited the participation of the principal investigators/program directors (PIs) of the 21 programs funded by the FIC in research ethics in a web-based survey. The survey consisted of 26 items: program; length of program existence; countries of trainee origin; location of training; credential awarded at program completion; type and models of mentoring provided during training and following program completion; mechanism(s) for mentor-mentee training and matching; and method and frequency of evaluation of mentor-mentee match and of mentoring program. The survey required approximately one-half hour to complete. Seventeen of the 21 programs responded to the survey, either through the PI or a designee. Survey data were supplemented with information provided in the progress reports submitted on an annual basis by each of the 21 programs to the FIC

Following receipt and analysis of the survey data, we solicited interviews from the 17 programs that had responded to the survey. A total of 11 programs responded to requests for in-depth telephone interviews.. The interviews lasted from 30 to 60 minutes, during which detailed notes were taken. Two of the interviewees were investigators outside of the U.S. and their programs were conducted exclusively outside of the U.S. The remaining interviews were with U.S.-based PIs. Responses from investigators participating in the survey and in the interviews allowed us to verify the accuracy of data contained in CareerTrac. Interviews allowed us to verify the accuracy of data that were unavailable through CareerTrac that had been collected through the survey.

All procedures were approved by the Institutional Review Board of Case Western Reserve University.

Measures

Program length was classified as short-term, long-term, or medium-length. We defined a short term program as one that required less than 3 months to complete. Programs that required a period of 6 months or longer to complete were classified as long term programs. Medium-length programs were those that were greater than 3 months but less than 6 months in duration.

Mentoring program structure was classified as formal, meaning a planned and structured mentoring program, or informal, referring to mentoring that is unplanned and arises as the result of the interaction between the faculty member and the trainee (Golian & Galbraith, 1996).

Respondents were asked to identify all *model(s) of mentoring* utilized in their program, as multiple models may be utilized concurrently. The following definitions were provided to respondents to facilitate a common understanding of mentoring models:

Dyadic model: one trainee paired with one more experienced mentor

Multiple mentor model: one trainee has multiple mentors (de Janasz, Sullivan, Whiting, & Biech, 2003; Wright & Cole, 2008);

Networking model: the trainee assumes the initiative to identify individuals, groups, and organizations that can provide him or her with mentoring experiences (Packard, 2003; Swoboda & Millar, 1986);

Peer or co-mentor model: the trainee receives mentoring from his or her peers and has a responsibility to provide mentoring to his or her peers as well (Eisen, 2000; Norell & Ingoldsby, 1991);

Shadowing model: pairing a trainee with an experienced mentor to learn through observation of the experienced mentor (Grossman, 2005);

Preceptor model: an experienced mentor paired with a less experienced mentee/ trainee with the goal of helping the mentee develop specific skills rather than general knowledge of the discipline (Benson, Morabian, Sachdeva, & Richman, 2002);

Respondents were also asked to indicate the *focus of the mentoring* provided. Mentoring in content was defined as mentoring designed to impart substantive knowledge. Instrumental mentoring was defined as defined as support designed to enhance the career of the mentee, e.g. sponsorship, enhancement of trainee visibility, protection of trainee time or status, and provision to the trainee of career-related opportunities (Ensher, Heun, & Blanchard, 2003; Kram, 1985; Scandura, 1992). The term psychosocial mentoring was used to refer to the provision of support as the trainee attempts to adapt to his or her new environment and during the process of repatriation to his or her home country.

We defined *trainee success or achievement* as "continued conscious contribution to the field of bioethics and research ethics." Success or achievement was evidenced by data in CareerTrac, PI/PD progress reports, or PI/PD interview that indicated: that a trainee contributed to bioethics or research ethics through teaching; establishment of or service on an ethics review committee; conduct of empirical research in bioethics; publications; presentations in professional venues; drafting of relevant legislation, regulations, or policy; or development of the ethics component of empirical research studies.

Interview questions focused on the major challenges faced in providing mentoring, strengths of the training program and its mentoring approach, the extent to which the PI/PD received institutional support for the mentoring component of their program, PIs/PDs assessment of the extent to which mentoring helped their trainees "contribute to the field of bioethics and research ethics" specifically and, more generally, to achieve their career goals, and whether their trainees experienced unanticipated difficulties following their repatriation.

Analysis

We included in the analysis only programs that provided long-term training opportunities (n=21). Short-term and medium-length training programs were not included in the analysis because, based on the extant literature relating to mentoring, it would have been r unlikely that the development of a mentoring relationship would have occurred during these relatively brief periods. Survey and CareerTrac data were integrated and analyzed for descriptive program information relating to program length and geographical location of the training. Survey and interview data allowed us to triangulate data obtained from CareerTrac to ensure accuracy of program length and training location.

The CareerTrac and survey data were supplemented with the qualitative data obtained through interview responses. A coding framework was developed for the data, which consisted of approximately 20 categories (Strauss & Corbin, 1998). Each category consisted of a short phrase that summarized an excerpt of the interview, e.g., "post-training difficulties," "mentoring approach," "trainee achievement." Categories were developed to ensure that all relevant issues were included. ATLAS.ti 5.0 was used to apply the coding framework to all interview notes and to generate reports of coded text segments for further analysis.

RESULTS

A total of 17 of the PIs or their designees responded to the survey (81.0%). Analysis utilized these data together with the data provided from progress reports and CareerTrac. Program length and geographical focus of the 21 programs is provided in Table 1. Two programs reported that they provided web-based training in addition to face-to-face components. Two programs included in the analysis no longer receive funding and at least three programs reconfigured the structure of their curriculum since their inception.

Fourteen of seventeen programs (82.4%) responding to the survey reported that they provide some form of mentoring, with the majority of mentoring occurring on an informal basis. The

characteristics of the programs' mentoring approaches and components are detailed in Table 2.

The majority of programs utilize multiple models of mentoring. Ten programs reported that the mentoring frequently occurs via Skype or other internet-facilitated means. The PIs of 9 of these 14 programs offering mentoring and 1 of the 3 programs that did not provide mentoring (33.3%) participated in subsequent telephone interviews.

Survey responses indicate that during the course of training, the majority of the 14 programs that provide mentoring to their trainees offer both content mentoring to facilitate the acquisition of knowledge in research ethics (64.3%) and instrumental mentoring, while a minority of programs provide any form of psychosocial support. One PI emphasized in the subsequent interview the importance of providing support to trainees who may be experiencing difficulties adjusting to their new environment or conflict between their personal and professional obligations: "It is really important to provide practical guidance. This informal guidance is critical." Following completion of training, most programs provide their trainees with one or more forms of assistance. (See Table 2.) Interviews suggest that this post-program support is often sporadic and is most frequently provided in response to a trainee request.

The intensity and frequency of mentoring during the course of training varies significantly across programs. Interview data suggest that many of the programs that provide content mentoring do so primarily related to a specific required outcome or product, such as a required paper or program project. Four programs provided trainees with structured, formal, intensive mentoring since the inception of these programs; one of the four programs had begun its mentoring component in this manner and over time moved to a less structured and more informal approach. As an example of this structured approach, one PI/PD reported that each trainee meets every two weeks with his or her mentor who is either the PI or the co-investigator, every 4 to 6 weeks with the investigator who is not the assigned mentor, and is additionally required to present his or her work in progress every 6 weeks. A second program required biweekly individual meetings between each of the trainees and the PI-mentor. In addition, the trainees were required to attend a weekly seminar at which trainees rotated responsibility for leading a discussion about how their learning was relevant or not to the situation in their home countries, progress in the development of a re-entry project to be implemented upon their return home, and any academic or professional difficulties that they might be encountering.

Most mentors are either the principal investigator or a co-investigator of the training program or drawn from faculty in the department in which the training grant is housed. Some mentors were selected on the basis of their grant funding in either research ethics or international research. The majority of programs do not provide any form of incentive to mentors. None of the 14 programs reporting mentoring provide any form of training to the mentors, but almost one-half provide some form of orientation to the mentees. The matching of mentors and mentees is most frequently effectuated based on a common area of or training in the same underlying discipline. None of the programs consider factors such as sex, native language, or minority group status in the matching process. Matching most

frequently occurs through mutual selection by the mentor and mentee. Less frequently, the mentor and mentee are matched by members of a committee with oversight responsibility for the program.

The majority of the 14 programs with mentoring do not evaluate the quality of the mentoring provided, the mentor-trainee match, or the outcome of the mentoring process. Of those that do, the mechanisms utilized include a trainee questionnaire or interview, a mentor interview, and/or evaluation by an oversight committee or an independent evaluator. (See Table 2.)

All of the PIs whose programs provide mentoring indicated the difficulty associated with efforts to evaluate the ultimate success of mentoring efforts. First, trainees enter the training program with varying levels of knowledge and experience. As a result, it is difficult to ascertain whether trainee post-program achievements are attributable to the mentoring provided or their pre-program foundation that enabled them to more easily capitalize on mentoring. Second, because the time available to trainees post-repatriation for bioethics-related activities such as grant and manuscript preparation is often limited due to competing obligations such as a clinical practice, academic obligations such as teaching and research, family responsibilities, and administrative activities, the positive impact of mentoring and an individual's commitment to pursue bioethics-related activities may diminish over time. Finally, as one PI noted, "It is difficult to measure the contribution of mentoring to trainees' success. It is a package deal [together with course work and practica]."

Despite these challenges, most of the PIs whose programs provide mentoring felt that the mentoring was generally successful. One PI spoke warmly about the "learning bond" that developed between the PI-mentors and the trainees as well as among the trainees. Notably, the four programs that reported highly structured, intensive mentoring components also reported higher levels of post-program collaboration and contact between trainees and their mentors. However, as one PI noted, even intensive mentoring does not invariably lead to trainee success.

DISCUSSION

Several themes resonate from the surveys, the CareerTrac data, and the interviews. While these findings cannot establish a causal relationship, they may provide a framework for future, more broadly based research relating to the mentoring of international trainees generally and those being trained in research ethics specifically. First, those programs that appear to have been most successful with trainee mentoring, as evidenced by the PI interview responses and trainee productivity data derived from CareerTrac and PI interviews, are characterized by four features: (1) the provision of an orientation to their responsibilities as mentees to trainees at the commencement of training; (2) a highly structured, formalized process of mentoring that required regular meetings and task achievement timelines; (3) intensive, frequent contact with the PI; and (4) support with personal issues that were troublesome to trainees. Our findings are consistent with the extant literature, which suggests that mentoring is most effective when there is consideration of and planning for the various phases of the mentoring relationship and when mentor-mentee meetings occur with greater frequency (Ragins, Cotton, & Miller, 2000). Past research also

suggests that frequent mentor-mentee meetings and mentor assistance in addressing personal issues may be critical for international mentees to help reduce levels of insecurity and uncertainty in their new environment and to increase their comfort level in an organization (Chatman, 1991; Feldman, 1976; Heimann & Pittenger, 1996; Morrison, 1993; Ostroff & Kozlowski, 1993).

Second, most programs reported only intermittent mentoring post-program completion. This finding is unsurprising and expected in view of the changing nature of the mentoring relationship over time. The mentoring relationship is not static, but rather is subject to renegotiation, redefinition, and realignment as the mentee's abilities evolve both during and following program completion (Barker, 2006; Fox, Rothrock, & Skelton, 1992; Kram, 1985). Because the ultimate goal of mentoring is to prepare mentees to function independently in their fields of endeavor (Healy & Welchert, 1990), mentees' consultation with and reliance upon their mentor(s) is likely to diminish as the time since program completion increases.

However, research regarding international mentees indicates that mentees are most likely to be successful if linkages with their home country are maintained during that period of time when they are in the study country (the on-site phase of learning) and if mentees have several concurrent mentors, one in the home country and one in the country of study. These mentors together can address the mentee's varied developmental needs (Mezias & Scandura, 2005) and assist the mentee with physical or psychological transitions, first to the country of study, and subsequently to their home country following the conclusion of the formal training component (Crociotto, Sullivan, & Carraher, 2006; de Janasz & Sullivan, 2004). A trainee's integration of newly acquired knowledge and skills into their professional role at home may be a particular challenge (Ioan, 2011). Only one of 14 programs with a U.S-based component consistently provided for such concurrent mentoring. Our data do not allow the determination of whether increased frequency or intensity of post-training mentoring or reliance by the programs on alternative models of mentoring enabled trainees to better address the various personal and professional conflicts faced upon their return to their home countries. However, in view of this research and the study findings, it is suggested that programs investigate the potential to establish such concurrent mentoring mechanisms and implement procedures for the evaluation of such mentoring efforts.

Third, almost one-half (42.9%) of the programs indicated that they do not evaluate the quality of the mentoring provided, the mentor-trainee match, or the outcome of the mentoring process. This lack of evaluation results in a significant gap in our collective understanding of the mentoring needs of international trainees in bioethics and the relative success of various approaches. The data do not allow us to identify an optimum approach to the evaluation of mentoring models, matching processes, or mentoring outcomes. Nevertheless, it is strongly recommended that all bioethics training programs adopt and implement an evaluation strategy in order to better understand the impact of the mentoring currently provided and examine the additional mentoring needs of their program trainees.

It is possible that some of the programs that reportedly did not provide mentoring, and some of the four programs that did not respond to the survey, may have actually provided

mentoring but did not understand it as such. As one PI interviewee stated, "Mentoring is not developed as a concept in some countries. Because of the hierarchical structure, trainees wouldn't dream of having a personal relationship with their instructor." This suggests the need both to train PIs to provide mentoring, particularly whose past experiences or systems of higher education do not encompass mentoring and to develop culturally appropriate mentoring models.

Our conclusions are necessarily limited by the relatively small number of programs and the available data. Assessment of the relationship between the provision of mentoring and trainee post-program career achievement was difficult due to a variety of factors, including the changing structure of many of the training programs over time, the variation in training goals across the many programs, intervening factors in trainees' personal lives and in the political situations in their home countries, and the relative sparseness of post-program data contained in CareerTrac for the 466 long-term trainees. We did not have a means of evaluating mentor experience which potentially could have had an effect on trainee productivity and career trajectory and we did not obtain data from the trainees themselves. Nevertheless, our study is characterized by various strengths, including the survey participation of 17 of the 21 programs offering long-term training opportunities, the interview participation of 9 of the 14 programs that reported having mentoring components, and the inclusion of both U.S-based and non-U.S.-based programs.

BEST PRACTICES

Our findings suggest that success among trainees in bioethics programs may be enhanced when the training programs (1) establish concurrent mentoring in the home and study countries of trainees who participate in programs that occur primarily outside their country of origin; (2) provide their trainees with an orientation at the commencement of their training to their responsibilities as mentees; (3) require trainee participation in regular meetings and establishing timelines for the achievement of tasks; (4) provide intensive, frequent contact with the PI or other designated individual; (5) provide trainees with support with difficult personal issues that may impinge on their progress and achievement during and immediately following their training; (6) provide training to the mentors, particularly those who are unfamiliar with the tradition of mentoring; and (7) establish procedures for the evaluation of their mentoring components.

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1

Table Characteristics of Training Programs in Research Ethics (n=21)

Length of Training[*]	n	%
Long-term only	4	19.0
Long term and medium-length	7	33.3
Long-term and short-term	8	38.1
All lengths	2	9.5
Location of training		
Wholly or predominantly outside of US	14	66.7
US and home country	7	33.3
Region of trainee origin[**]		
Wholly or in part in Africa	12	57.1
Asia	6	28.6
Latin America and Caribbean	3	14.3
Eastern Europe	2	9.5

[*] Long-term: 6 months; medium length: >3 months & < 6 months; short-term: <3 months

[**] totals >21 because some programs provided training in more than one region

2

Table Characteristics of Responding Programs with Mentoring Component (n=14)

	n	%
Mentoring model utilized by program[*]		
Dyadic	8	57.1
Multiple mentors	7	50.0
Networking	6	42.9
Peer	5	35.7
Preceptor	7	50.0
Focus of mentoring provided[*]		
Content mentoring	9	64.3
Instrumental	8	57.1
Psychosocial support	5	35.7
Post-program assistance provided[*]		
Manuscript preparation	12	85.7
Establishment of bioethics curriculum or committee	7	50.0
Grant preparation	6	42.9
Post-home country re-entry psychosocial support	6	42.9
Provide mentor incentive		
No	5	35.7
Honorarium	4	28.6
Salary support	3	21.4
Trainee research assistance	2	14.3
Trainee preparation for mentoring		
None	8	57.1
Short orientation	4	28.6
Formal training on responsibilities	2	14.3
Mechanism for mentor-mentee matching		
Common area of interest	6	42.9
Training in same discipline	8	57.1
Evaluation of mentoring[*]		
No	6	42.9
Trainee questionnaire	4	28.6
Oversight committee	2	14.3
Independent evaluator	2	14.3
Trainee interviews	2	14.3
Mentor interviews	1	7.1

[*] Totals >100% due to multiple possible selections