Short communication

Lessons learned in implementing a graduate student-led mentoring program for student pharmacists and pharmaceutical sciences students [☆]

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Abstract

Background: Mentoring is common in academic and training settings; however, graduate students are not typically utilized to increase student pharmacists' interest in post-graduate education. Formal mentoring programs can be beneficial for both mentors and mentees, but starting such a program can be difficult without some guidance to avoid potential pitfalls.
Methods: This article describes the lessons learned from implementing and sustaining a graduate student-led mentoring program established at the Purdue University College of Pharmacy.
Results: A summary that includes strengths and roadblocks of such a program associated with recruitment, matching, and engagement/retention is presented. Program implementation is outlined and a reflection on program results and lessons learned is discussed.
Discussion: A graduate student-led mentoring program is beneficial for both student pharmacists and graduate students. Implementation of a similar program may be facilitated through incorporation of faculty involvement, large group meetings, or integration into an elective course.
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Keywords: Lessons learned; Graduate students; Mentoring; Student pharmacists/pharmacy students; Research

Introduction

Formal mentoring relationships are those where mentor/mentee pairs are assigned through a structured program and may take the form of peer, team, or mentoring circle relationships.[1] Mentoring is an essential component of the academic experience with the quality of the relationship between the mentor and the protégé impacting a protégé's professional development and future career success.[2,3] Most of the mentoring literature in pharmacy education has focused on faculty development or the mentoring relationship between senior and junior faculty members.[4–9] In addition, research in other disciplines has examined the nature and quality of mentoring relationships between faculty mentors and graduate student protégés or undergraduate student protégés.[2,10–14] However, relatively little research has focused on the mentoring relationship between a graduate student mentor and an undergraduate student

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protégé or the triadic relationship between a faculty mentor, graduate student co-mentor, and undergraduate student protégé, and the potential benefits all individuals can gain from such a relationship.[14–17] According to a study by Dolan and Johnson, developing and enhancing graduate students' mentoring skills have several benefits, including improved communication skills, increased confidence in one's research knowledge and skills, and preparation for future mentoring relationships post-graduation. Furthermore, graduate students who serve as mentors reported having a greater perspective of their field, helped diversify their field, and had a better understanding of the reciprocal nature of mentoring.[18] From the undergraduate student mentee perspective, graduate students are perceived as more accessible compared to faculty members and seen as effective role models, both in terms of their research practices and personal characteristics.[17] In addition, a graduate student mentor–undergraduate student protégé dyad can increase undergraduate students' interest in research and encourage recruitment of undergraduate students into graduate school or research-related careers.[15,17]

Fostering research skills in student pharmacists has been an area of increased interest in pharmacy education. According to the Accreditation Council of Pharmacy Education Guidelines; Guideline 23.4, "colleges and schools should implement strategies and programs to broaden the professional horizons of students in areas such as scientific inquiry, scholarly concern for the profession, [and] the relevance and value of research."[19] However, Murphy et al.[20] reported that presence of required research-related topics, coursework, or experiences was not uniform across the Doctor of Pharmacy (PharmD) curricula of U.S. colleges of pharmacy. Several methods have been employed to increase student pharmacists' research skills, including development of research-focused courses, advanced pharmacy practice experiences, as well as research-related workshops and internships.[16,21–24] These methods have been reported to increase student pharmacists' research skills and awareness of pharmacy-related research careers.[16,21,22,24] However, barriers such as time constraints in the PharmD curriculum and lack of resources to conduct research projects can limit the implementation of these strategies in colleges/schools of pharmacy.[25] Fostering interest in research through a graduate student-led mentoring is an avenue that has not been previously explored in pharmacy education literature. While studies have examined the benefits of mentoring in academic settings, none have provided details on the experiences in establishing or maintaining such programs or how to avoid potential pitfalls.

A mentoring program was developed and piloted during Spring 2011 at Purdue University, a research-intensive institution. Pilot program information, program objectives, and pilot study results are published elsewhere.[25] The goal of the program was to foster interest in research and graduate school among Bachelor of Science in Pharmaceutical Sciences (BSPS) and student pharmacists, collectively called mentees, while enhancing pharmacy graduate students'

confidence in mentoring. Graduate student mentors, hereafter called mentors, came from the College's three pharmacy departments: Pharmacy Practice, Medicinal Chemistry, and Industrial and Physical Pharmacy. Some mentors were also licensed pharmacists and had either residency or fellowship training in addition to currently being enrolled in graduate school. Based on results from the pilot program, it was improved and expanded to a full year during the 2011–2012 academic year.

The purpose of this article is to describe the lessons learned from implementing and sustaining a graduate student-led mentoring program in both the pilot and full-year phases and to guide other institutions interested in implementing a similar program.

Program modifications

Several program modifications were instituted for the 2011–2012 academic year to reflect feedback received from the pilot semester. Figure 1 provides an overview of the mentoring program's timeline. The program was expanded to encompass the entire academic year. Pre-pharmacy students were excluded based on mentor feedback during the pilot program. Mentors from the pilot program felt strongly that pre-pharmacy students were more concerned with pharmacy school admission process rather than learning about pharmacy-related research. Interested mentors and mentees completed information sheets indicating their research interests and level of interest/time commitment. After the initial group meeting for interested mentees that provided an overview of each department's research focus and introduced mentors' research interests and personal hobbies, the mentees were given the option to rank the three departments in order of interest or to request a specific mentor. Mentors were asked how many mentees they were willing to engage. To improve the matching process, mentors and mentees were matched based on mentees' possible research interests and willingness to participate in certain activities such as attending mentors' departmental seminars, working on mentors' research projects, attending mentors' group research meetings, or initiating their own research projects. Each mentor/mentee pair was expected to meet at least twice a semester. Mentors were provided with suggested topics for the first and subsequent meetings, such as initiating discussions with mentees on their professional goals or possible interest in post-graduate training and/or research, brainstorming research projects with mentees, explaining relevant research techniques, ethical considerations in the scientific process, and the role of Institutional Review Boards.

Faculty panel event

A 90-minute faculty panel discussion was organized to allow mentees to interact with faculty from multiple departments in the college of pharmacy mid-way through the program. Four faculty participants shared their post-graduate training experiences (e.g., graduate school,