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## COMMENTARY

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### Research mentoring: *Suggestions and encouragement from a reflection exercise*

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Supervisors direct people, but mentors are valued and trusted advisors. Recently, the author took a course in supervising postgraduate research, which included surveying the literature as well as discussions with colleagues who have various levels of experience in research supervision. Through this exercise, some basic ideas for best practices in research mentoring became clear, particularly for those in professions without a strong history of research and therefore lacking in trained research supervisors. The concept of mentoring, rather than just supervision, gained focus. Three main categories can be identified within the realm of research mentorship: choose your candidate wisely, be diligent, and be nurturing. The purpose of this commentary is to identify methods of supervision of graduate research degree (masters/doctorate level) candidates that may enhance the process, as well as improve the chances of completion, and to encourage academics to learn the techniques of high-quality supervision with a goal of becoming mentors. Additionally, it is hoped that this commentary may encourage students and colleagues without advanced degrees to consider pursuing them; this, in turn would likely lead to more opportunities for supervision, as well as help to create links with other academic and clinical institutions.

**Key Indexing Terms:** Chiropractic; Education, Graduate; Mentor; Research

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### INTRODUCTION

This commentary is aimed at academic chiropractors, but the discussion is not limited to that profession and may be applied across a wide variety of disciplines. The focus on chiropractic derives from the fact that the author is a chiropractor, is familiar with the deficiencies and strengths of that profession's research, and is invested in its members' adopting best practices in the conduct of research. It is hoped, however, that members of other health professions could find useful information here. This work is written optimistically, with the goal of motivating academics, where possible, to become active in supervising research candidates and to encourage budding research supervisors to become mentors, that is, trusted and valued advisors, taking a step beyond simply directing people and activities, which is the common definition of supervision.

For the first 75 years of the chiropractic profession's existence, research was carried out predominately by determined field practitioners and teaching staff members with little or no research training,<sup>1</sup> but the situation is improving,<sup>2,3</sup> including greatly improved research-funding opportunities.<sup>4</sup> For decades, authors from within the chiropractic profession have called for the development

of formally trained chiropractic researchers.<sup>5</sup> One factor in this change is that as new chiropractic teaching institutions around the world are being created within existing universities, the opportunities for research training and mentorship are increasing. However, even among calls for more research funding and the development of a research culture,<sup>3,6–9</sup> little is seen in the literature about integrative research with universities or about training PhD chiropractors for the future, although there are exceptions.<sup>3,10</sup>

Recently, the author was afforded the opportunity to more closely consider practices of graduate research supervision and reflect on them in comparison to his own experiences as a graduate degree candidate and as a research supervisor. All teaching faculty members at Murdoch University are required to participate in a course called Enhancing Postgraduate Research Supervision. The course is 1 semester long and consists of one-on-one and group meetings with the course leader, required participation in online discussions about current literature on the subject, discussions with one's own chosen research mentor, and a reflective essay. The core ideas developed by the author during this course form the source of inspiration for this commentary.

Several papers were found in the literature that discuss research supervision in depth,<sup>11-16</sup> and readers are encouraged to seek out those and other papers. The purpose here is to consider elements that are involved with best practices in the supervision of graduate degree candidates and to encourage academics to embrace them.

## DISCUSSION

The basics of good research supervision can be summarized into 3 broad categories: choose your candidate wisely, be diligent, and be nurturing.

The success of a graduate student is largely dependent on his or her relationship with supervisor(s).<sup>17</sup> Many graduate degree candidates fail to complete their degrees; in some disciplines, such as the humanities, the number of candidates who fail to complete degrees may exceed 50%.<sup>18</sup> Following good practice may help ensure completion of degrees and make the process manageable and enjoyable.<sup>12</sup>

### *Choosing Your Candidate*

It is very tempting to accept a candidate. After all, someone thinks highly enough of a teacher's abilities to ask for assistance in a significant piece of academic work: that's flattering. Also, faculty members are expected to produce research in most universities, and supervising can help boost one's scholarship portfolio. However, candidates may not be requesting supervision for the best reasons, and potential supervisors may need to be selective. Bettmann<sup>19</sup> observes that although research is driven by data, choosing a research topic and mentor are almost completely based on opinion. Knowledge of a candidate's capabilities and personality are important. A supervisor should meet with a candidate face-to-face, or if supervising long distance, via video conference, to discuss the candidate's previous work as well as career goals.

Understanding a candidate's career goals will help guide a supervisor's decision, as well as the candidate's best options along the way.<sup>20</sup> For instance, if a potential candidate ultimately would like a career in government, making health policy decisions, then a supervisor with experience only in academia or industry may not be the best match. Sometimes, however, co-supervision can be a viable option if a specialist's knowledge area matches the candidate's project well. This raises the point that all parties should understand everyone's role from the outset. There may be several people involved, including supervisors with different strengths, members of a research team, and research assistants. Full and clear communication about the makeup and function of everyone involved in a graduate degree candidacy may help avoid confusion, wasted time, and anxiety. A good supervisor should carefully explain all this to a candidate, and it has been noted that formalization of this process is advantageous.<sup>21</sup>

A supervisor may encourage a strong undergraduate to continue on an academic track as one of his or her candidates, or occasionally an organization may take the initiative. Recently, the Norwegian Chiropractors' Association undertook with some success a program to develop

graduate degree candidates from a pool of undergraduates and clinicians.<sup>21</sup> However, the goal need not necessarily be an academic position; nurses in the United Kingdom are achieving PhDs in order to become consultant nurses, to take on advanced practitioner roles, or to enhance a clinical research career.<sup>22</sup>

It has been found that access to experienced researchers is important to a candidate's success.<sup>18</sup> This creates the dilemma of newly credentialed PhDs having difficulty gaining experience, and experience is a major criterion for good supervision. This problem may be overcome with co-supervision. Co-supervision has myriad advantages,<sup>11</sup> involving the blending of individual strengths. For instance, a particular supervisor may be a good writer, and another may have a record of obtaining grants. Or one supervisor may have great technical strengths, and another may be exceptional at interpersonal communication, facilitating the acquisition of the technical skills by the candidate. In the author's own experience as a current graduate degree candidate, two official supervisors with credentials in the broad field of study are required by the university, but for advice specific to the chosen topic, he also contacted 2 international experts in the topic and asked if they would be happy to give their advice periodically over the course of the candidacy. They assented, and the author refers to them as "specialist content advisors." With new methods of electronic communication, distance supervision can be just as effective as local guidance.<sup>23,24</sup> Some institutions maintain a database of potential supervisors with varied degrees of experience and interests to help connect candidates with appropriate supervisors.<sup>25</sup>

The Role Perception Scale developed by Moses<sup>26</sup> and updated by Ryan and Whittle<sup>27</sup> can be a useful tool in setting the basis of the supervisor-candidate relationship by helping to avert miscommunication about respective responsibilities and by stimulating discussions about expectations from both sides. There are a total of 17 questions in the scale, divided into 3 sections: topic/course of study, contact/involvement, and the thesis. Within each section are several opposing statements with a 5-point Likert scale between them. Both the candidate and the supervisor(s) fill in separate copies, then compare their results. The statements include the following: "It is a supervisor's responsibility to select a promising topic/It is a student's responsibility to select a promising topic," "Student-supervisor relationships should be purely professional/Being able to talk informally with your supervisor is essential for successful supervision," and "A supervisor should decide whether to publish the thesis work/It is up to the student to decide whether the work is publishable." Finding the commonalities and differences in supervisor and candidate opinions will promote understanding and reduce the possibility of miscommunication regarding each area of responsibility.

Once established, the relationship can be monitored with the Supervisor-Doctoral Student Interaction Scale.<sup>12</sup> This is a questionnaire that provides 41 questions/statements for the candidate, such as "My supervisor always cooperates if I want something." Also included are

“My supervisor is impatient toward me” and “My supervisor immediately corrects me if I do something wrong.” Each statement is marked on a 5-point Likert scale and helps give an indication of the candidate’s perception of the quality of supervision he or she is receiving. Used in a constructively critical way, it may help overcome difficulties in the supervisor-candidate interaction.

### **Acting with Diligence**

Much of this may seem like common sense, but to paraphrase Voltaire, “Common sense is not very common.” Golde and Dore<sup>28</sup> found that, in general, doctoral supervisors have little prior knowledge of the supervisory process and fail to plan adequately for supervising. Many of the tasks involved in the supervisor-candidate relationship are areas of co-responsibility: a motivated candidate will initiate some of them, but a good mentor will guide the process.

First, realistic goals and milestones must be set. Often, candidates are enthusiastic, and why not? The prospect of a PhD or other higher degree is exciting, and a new candidate may want to change the world with his or her work. But there is an old saying that is deceptively simple: “The goal of a PhD is to get a PhD.” This means that a graduate degree is basically on-the-job training in independent research. The ultimate book on any topic is rarely someone’s thesis, and there will be plenty of time after achieving the graduate degree to write that ultimate book, using the skills acquired in the process. In other words, goals should be realistic and achievable; a supervisor is in a position to understand limitations of the graduate degree process that the candidate cannot know. A good supervisor helps a candidate understand what is feasible and realistic.<sup>29</sup> It should also be understood that even after a program of study has been agreed upon, it is a working plan and will necessarily change as the research commences, often narrowing but deepening in focus. Flexibility toward these matters will help the candidate achieve the degree with less stress on all parties.<sup>29</sup>

Regular meetings, especially early in a person’s candidacy are very important.<sup>14</sup> Embarking on a thesis is daunting, and early candidates need guidance and encouragement. The graduate degree process varies at different institutions, with more course work generally being required in the United States, but not necessarily in other parts of the world or for all courses.<sup>30</sup> Candidates may need assistance with writing skills, statistics, or the use of qualitative analysis software. A supervisor should know when the candidate is struggling and how to get him or her assistance with these matters. There is evidence that completion rate is increased when supervision is more hands-on,<sup>14</sup> but reduction of such assistance over time as the candidate gains independence may be appropriate.<sup>19</sup>

Meetings should have an agenda,<sup>31</sup> no matter how friendly the supervisor-candidate relationship is. A graduate degree is time-consuming, and most supervisors have very busy schedules themselves. An agenda, agreed on ahead of time, will help keep meetings focused. At the end of meetings, action points with outcome measures and time

lines should be set, and both parties, in writing, should agree to the contents of the meeting as well as the action points. This can be as simple as a quick e-mail after a meeting, summarizing it, with an acknowledgment from the recipient. These serve as small progress reports and points of reference should anything go awry later on. The supervisor should also set terms for meetings. For instance, letting the candidate know that 2 weeks are needed to read a paper before meeting to discuss it can help make meetings more productive. Supervisors should ensure that milestones are in place and are being met.<sup>11</sup> Some universities require a formal program of study to be submitted in writing, and annual progress reports may be required.

A good supervisor will also help bring a candidate into the culture of the discipline,<sup>11</sup> inviting him or her to meetings, seminars, conferences, and even informal gatherings.<sup>14</sup> A balance between formality and informality has been shown to help develop a trusting relationship.<sup>32</sup> In this way, collegiality, even potential future working relationships, are fostered; but more importantly, candidates will learn details about what will be required of them, and in speaking with the credentialed professionals in the discipline, possibly avoid some of the pitfalls that the professionals had experienced in their own candidacies. Stories exist of supervisors receiving papers to review by early candidates that have had no references at all. One should never take for granted even the basics.

Supervisors have to be forthright with their own goals and life events. For instance, if a supervisor is planning to take research leave, he or she should inform the candidates well in advance. Together, the team can then plan the candidate’s milestones or put in place a surrogate during the supervisor’s absence. Research supervision has an inherent power differential that should be borne in mind.<sup>33,34</sup> Supervisors should be clear with candidates about their own research agendas, and they should beware of subtly manipulating candidates toward their own, rather than their candidate’s, goals.

Toward the time of thesis submission, supervisors should encourage the candidate to give the thesis to many people to read, even nonacademics. If the institution requires an oral defense, the supervisor should help set up a mock viva for practice, with as many people as possible present to ask questions. Finally, near submission time, the supervisor should ask the candidate again about his or her career aspirations, and try to help, if possible; this has been shown to have an enhancing effect on candidates’ prospects.<sup>11</sup> For instance, the supervisor may assist the candidate in creating a high-quality curriculum vita, or in developing interview skills, or in learning where to search for the type of job that the candidate is seeking.

### **Creating a Nurturing Environment**

Candidates can be devastated by a negative word at the wrong time, so supervisors should always be constructive with criticism. They should make positive statements about a candidate’s work when appropriate.<sup>29</sup> Candidates should be encouraged to write early and often, a habit associated with a higher completion rate.<sup>14</sup> Since the end

product of a graduate degree is a sizeable piece of writing, and good writing takes practice, it is beneficial for the candidate to engage the writing process early. It is sometimes helpful for the candidate to try to obtain some early victories; sometimes papers, such as a literature reviews, can be derived from components of the overall process. Publications along the way are rewards; an acceptance to a prestigious (or, indeed, nearly any) journal is a real boost to motivation.

Supervising a graduate degree candidate is a long-term relationship, and life will intrude. Candidates and supervisors alike may get married, have deaths in the family, or experience other events that can delay or derail the process. Supervisors should be aware of this and make sure that candidates are aware, too. Again, they should allow flexibility to deal with these issues.<sup>29</sup> If difficulties of any kind arise, supervisors should give advice on how the candidate may receive assistance. Supervisors may, for instance, advise on how to suspend studies in the event of life difficulties, how to approach a journal editor who is not timely with responses, or even which is the best coffee shop in town to sit for hours editing a paper.

It should be noted here that just following these suggestions is not sufficient for good research mentoring. It is rather an enhancement of a process that will include many other factors, such as having sufficient facilities to properly support candidates, having sufficient finances in place or experience with obtaining research grants, holding a degree that is at least at the level of that which the candidate is working toward, or being part of a supervisory team in which at least some members hold that degree.

## CONCLUSION

There are many challenges to completing a graduate degree.<sup>35</sup> From an institutional perspective, private rather than university-based chiropractic teaching institutions are at a distinct disadvantage, as most do not issue PhDs; in order to even participate, links with universities must be initiated. From an individual perspective, lack of supervision, isolation in work environment, and monetary factors are significant barriers to completion.<sup>15,36,37</sup> Understanding good graduate degree supervision practices, including appropriate matching of supervisors with candidates, the benefits of a hands-on approach, and guidance with constructive criticism and encouragement, will help more chiropractors attain graduate degrees.

Readers are encouraged to consider embarking on a graduate research degree or to take on candidates to supervise. Individuals are encouraged to attend inter-professional conferences and cross-disciplinary meetings to learn the language and practices of researchers. Private chiropractic teaching institutions are encouraged to form links with other tertiary institutions that have similar research interests.

This commentary is not meant to be a comprehensive treatment of all aspects of research mentoring, but rather a summary of the salient points the author took away from a recent reflection exercise on the topic. Interested parties

who would like more in-depth knowledge are invited to read the papers referenced as well as many others that are not included here. It is hoped that the issues dealt with in this paper act as a stimulus for consideration and conversation. This is not the end of a discussion, just the beginning.

## CONFLICT OF INTEREST

The author has no conflict of interest to disclose.

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