Creative Education, 2014, 5, 1314-1321
Published Online August 2014 in SciRes. http://www.scirp.org/journal/ce
http://dx.doi.org/10.4236/ce.2014.514150

Scientific Research

Above All, Do No Harm: Educating the Ethical Practitioner Using Research Pedagogy in an Osteopathic Master's Course

Sandra Grace[1], Gopi McLeod[1], Paul Orrock[1], William E. Boyd[2,3], Raymond Blaich[1], Julie Streckfuss[1]

[1]School of Health & Human Sciences, Southern Cross University, Lismore, Australia
[2]Human Research Ethics Committee, Southern Cross University, Lismore, Australia
[3]School of Environment, Science & Engineering, Southern Cross University, Lismore, Australia
Email: sandra.grace@scu.edu.au, gopi.mcleod@scu.edu.au, paul.orrock@scu.edu.au, raymond.blaich@scu.edu.au, julie.streckfuss@scu.edu.au, william.boyd@scu.edu.au

Received 11 July 2014; revised 12 August 2014; accepted 19 August 2014

Abstract

Post-graduate students of osteopathic medicine are required to engage in research-based work-integrated learning as educational preparation for clinical practice. This requires students to develop research projects related to clinical practice, and engage the principles and practice of the University's Human Research Ethics Committee protocols. However, students who enrol in osteopathic courses may not appreciate or engage with research projects. The aim of this paper was to undertake an initial evaluation of pedagogical processes that attempt to bridge the gap between students' research projects and clinical practice. Responses (n = 34) from an online student survey were analysed using descriptive statistics. Open ended-survey responses, transcriptions from two focus groups and written reflections from academics supervising student-led research projects were thematically analysed. Results suggested that research-based projects were a useful pedagogical tool for students' learning about ethical clinical practice. We recommend 1) making the connection between ethical behaviour in research and in clinical practice explicit from the outset; 2) conducting clinically relevant projects; and 3) providing opportunities for students to reflect on their experiences as researchers.

Keywords

Work-Integrated Learning, Research Ethics, Critical Reflective Practice, Osteopathy

How to cite this paper: Grace, S., McLeod, G., Orrock, P., Boyd, W. E., Blaich, R., & Streckfuss, J. (2014). *Above All, Do No Harm*: Educating the Ethical Practitioner Using Research Pedagogy in an Osteopathic Master's Course. *Creative Education, 5,* 1314-1321. http://dx.doi.org/10.4236/ce.2014.514150

1. Introduction

> *In* 1906, *Stimson wrote, "among the apothegms in which our professional forebears were accustomed to express the principles of practice is one, primum non nocere* (*above all do no harm*) *which may serve as a text for that which is here to be said*". *While "Above all, do no harm" is attributed to Hippocrates, its origin is unknown*; *it appeared in print in* 1860, *and is now widely accepted as a core principle of health-care practice* (Smith, 2005).

Academic research conducted at Australian universities that engages people as participants requires human research ethics approval. Such approval is awarded by the institution, following the review of a submission. The submission, its review and the award of human research ethics approval are guided by the Australian government's National Health & Medical Research Council's *National Statement on Ethical Conduct in Human Research* (2007). At one university, this approval is known as Human Research Ethics Committee (HREC) approval. There is some debate about where the boundaries of approval should lie—some academics claim that only formal research, that is, research conducted by qualified academics in the course of their employment at the university should require HREC approval. However, with the growth of postgraduate research-based studies, notably Masters, PhD and Professional Doctorate studies, it is clear that projects using research as the primary pedagogic method involving human participants should also seek and receive HREC approval before commencing research.

Conventionally, HREC approval has been seen to be a primarily bureaucratic requirement, placing a barrier in the path of a research project, and was considered to be a necessary evil for postgraduate research-based students. This view is changing with ethics application and approval being recognised as having a legitimate role in research methodology training and project development (Boyd, Healey, Hardwick, & Haigh, 2008). Under such conditions, writing a research ethics application can be considered to be closely related to, while different from, the writing of a research proposal. This dichotomy presents both a fundamental challenge to, and an opportunity for, early career academics and doctoral and other research students. On the one hand, their due diligence in writing a detailed project proposal can lead to dismay and embarrassment when their ethics application, based closely on that project proposal, is criticised by the ethics review committee. On the other hand, where the guidelines for ethics applications are also used to guide the planning of the research, they may enhance the learning of research planning skills. Research proposals are typically written under the usual headings: title, literature review, problem definition, aims, objectives, methods, timing, special features, references (Boyd, 2009). However, a research ethics proposal, rather than simply reproducing these—their function, after all, in a project proposal is different from their function in an ethics proposal—needs to take the proposal as a foundation, and present it as evidence that the research meets the principles of ethical research, and will in fact *do no harm* to the participants, researcher or the community at large.

In Australia, for human research, researchers must reflect on specific principles that are embedded within the *National Statement* (research merit and integrity, justice, beneficence, and respect) and address issues of risk and its balance against significance of the research and the management of risk (National Health and Medical Research Council, 2007). In addressing these principles, the researcher often finds that modification to research design and proposed method is necessary. The writing of the research ethics proposal, therefore, often acts as a trigger for early reflection—reflection even before the research has really started—by the researcher on their research practice, and by the supervisor, on their professionalism and expertise invested in the proposal (Boyd, Parry, Burger, Kelly, & Smith, 2013).

Students are not always aware of the complex nature of clinical decision making, or of the consequences of their decisions and actions. An extension of this complexity arises for students undertaking research that involves human participants. As students face the onerous task of deciding on a research topic and the various stages of planning a project, it comes as a surprise to many that considering the ethical implications of their research poses an even greater challenge. Determining what is ethical is not always straightforward, as the process requires moral reasoning, from careful consideration of the case in its context (Benatar & Singer, 2000). However, it is an essential professional skill that requires not only deliberate teaching and learning in degree courses but also development of a well-informed pedagogical culture within research-based curriculum (Wagner, Garner, & Kawulich, 2011).

During the final two years of a Master of Osteopathic Medicine course, while undertaking clinical placement in the university health clinic and in external private clinics, students are required to undertake research related

to health care from an osteopathic perspective. Aligned with the role of providing patient care in the clinical setting, the research component aims to equip students with skills to conceptualise and design a methodological approach to address questions of critical concern to osteopathic practice. Such research design often involves the preparation and submission of an ethics application to the university's HREC. These projects provide a valuable opportunity for the osteopathy coursework co-ordinators and lecturers, and the university's HREC Chair, to work together to develop appropriate curriculum and pedagogical material, and for students to develop principle-driven research plans. A pragmatic approach to research ethics review and approval was adopted. That is, approval was based on principles of good research practice that required students to demonstrate how they had designed research to be as good and as fair as possible. However, engaging osteopathic students in their research project planning and implementation proved challenging, as students did not always appreciate their relevance to clinical practice. Seehusen & Weaver's (2009) review of the literature on teaching research to family medicine residents reported a similar attitude among students. Success in promoting the value of research projects to students was consistently associated with having experienced faculty mentors in the program, a formal research curriculum, a forum to present projects, technical assistance, dedicated research time, and funding support. The aim of this paper is to undertake an initial evaluation of pedagogical processes that attempt to bridge the gap between research projects and clinical practice in post-graduate osteopathic students at an Australian university.

2. Method

This study was informed by Brookfield's (1989) theory of critical self-reflection. This framework was appropriate because critical self-reflection encourages a deep evaluation that considers multiple and perhaps not-so-obvious reasons for thinking and acting in a particular way, and ways to think and act differently. Critical self-reflection can help reveal pedagogical processes that connect students' research projects with clinical practice. Invitations were sent to five academics who supervised students' research-based projects in the osteopathy course. All five agreed to participate in a series of activities in which they individually and collectively reflected on the effectiveness of research-based projects as a pedagogical tool for learning about ethical clinical practice (Brookfield, 1995). Two focus groups were conducted with the five academics from the osteopathy program and the HREC Chair. After the focus groups, the five academics from the osteopathy program were asked to write a short piece summarising their reflections.

An online survey of 34 current and recently graduated students collected both qualitative and quantitative data. The qualitative data consisted of students' responses to questions about their knowledge of ethical principles and behaviour and the extent to which undertaking a research project had made them aware of ethical principles and behaviour. Students were also asked if such an experience enhanced awareness of ethics related to clinical practice. Quantitative data were also obtained to establish students' views on specific areas of study that had provided them with training in ethics.

To facilitate development of the survey, all units of study within the osteopathic program were categorised into five key subject groups: biomedical sciences, clinical preparatory units (non-osteopathic), osteopathic specific theory and practice, osteopathic medicine (problem-based learning) units, and a two year long clinical placement that included their research project. Students were asked to indicate to what extent they felt they learned about ethics in each subject group using a 5-point Likert scale.

Quantitative data obtained from surveys were analysed using descriptive statistics. Transcripts of focus groups and written reflections were read and re-read independently by members of the research team to identify recurring concepts. The team then met to share their preliminary analyses. Concepts were repeatedly compared until consensus was reached and key themes had emerged from the data (Miles & Huberman, 1994). This project was conducted with approval of Southern Cross University's Human Ethics Higher Degree Research Training Committee (Approval Number: ECN-12-096).

3. Results

3.1. Students' Feedback

The student survey was distributed to three cohorts: 5th year students 2011 (n = 13), 4th year students 2011 (n = 14) and 4th year students 2012 (n = 25), a total of 52 students. Thirty-four students responded to the survey, a response rate of 65%. Each item (unit of study/subject) in the Likert scale was analysed separately to calculate the frequency of each score, which was then summated and converted into a score out of 10 for ease of reporting.

For each subject area the total score was cross-tabulated (Table 1).

Findings from the survey suggest that the subject area in which students felt they learned the least about ethics was the *biomedical sciences* subjects (mean 4.8/10), suggesting that students received little exposure to ethics training in the biomedical sciences. Biomedical sciences was the only subject area that received a "not at all" rating. The subject category in which students felt they received the most instruction in ethics was the osteopathic practice-specific subjects (mean 7.9/10), which was followed by the clinical practice and research subjects (mean 7.7/10).

Qualitative data were gathered to understand students' personal meanings of ethics, the extent to which the experience of conducting human research contributed to this understanding and whether the process of conducting research had helped them relate ethics to clinical practice and patient care. Students' understanding of the nature of ethics fell into two main categories: adherence to codes of conduct, and personal values and beliefs leading to moral reasoning in specific contexts.

3.1.1. Adherence to Codes of Conduct

Some students understood ethics to be based on socially constructed norms, specifically the Codes of Conduct to which their behaviour as students and practitioners was bound. For example, as part of their training in second year, students were introduced to the formal codes published by the Australian Health Practitioner Regulatory Board (2004); and as part of the process of applying for ethical clearance for their research they were required to study the ethical codes for conducting human research published by the National Health Medical Research Committee (2007). These students saw professional codes as the basis of professional behaviour: "Abiding by a morally sound code of professionalism to respect the profession, patients and yourself" (Student 3), "Codes of conduct for professional behaviour—to be aware of and respect patients' decisions" (Student 1). These students considered ethical behaviour as regulated behaviours that were externally imposed and separate from their own reflections and interpretations of specific situations.

3.1.2. Personal Values and Beliefs Leading to Moral Reasoning in Specific Contexts

For a number of students, the basis of their ethical behaviour derived from their own personal values and beliefs. One student wrote, "[ethical behaviour is] behaviour that is just and principled, based on my own morals and beliefs" (Student 13). For another student, the personal values of respect and trust were the basis of all ethical behaviour and were based on "how I would like to be treated" (Student 12). For these students, ethical behaviour was context bound. Ethical decisions required reflection on a particular situation in the context of their own values and beliefs: "Appreciating patient-practitioner relationships and behaving ethically within this context" (Student 28); "Codes of conduct may conflict with personal values/beliefs. It can be a grey area" (Student 4). Students were asked if, and in what ways, completing a research project had informed their clinical practice.

Two students reported that they had not gained any insight into clinical practice through the process of conducting their research projects. Comments included: "I felt the ethics form was standard and formal and didn't represent behaviour" (Student 31), and "Some research ethics don't directly apply to clinical practice" (Student 16). However, for many students the process of obtaining ethics approval for research projects and the subsequent interactions with research participants apparently brought about personal growth, a growing appreciation of their responsibilities, and an increasing appreciation of the vulnerability of participants and patients. Forty-seven per cent of students commented on this transformative process:

Table 1. Students' ratings of ethics training provided in specific areas of study within the course (n = 34).

	Units of study/subject	Not at all	Very little	Some	Quite a bit	Very much	Mean score (/10)
1	Basic medical sciences	(17.6%)	32.3%	44.3%	2.9%	2.9%	4.8
2	Clinical preparation units (non-osteopathy)	0	38.2%	50.0%	8.8%	2.9%	5.6
3	Osteopathic studies/medicine	0	2.9%	23.3%	50.2%	23.4%	7.9
4	Research project	0	5.8%	20.7%	52.9%	20.6%	7.7
5	Clinical practice	0	8.8%	20.5%	47.2%	23.5%	7.7

> After conducting interviews I noticed how my interactions with patients and other practitioners changed. [They were] more respectful of confidentiality and opinions of others. (Student 15)

> [Undertaking research] taught me to look into the safety and privacy aspects of interactions with participants to ensure no danger for anyone. (Student 21)

> [Undertaking research] taught me about informed consent, confidentiality, "do no harm", benefits verses risks, and evidence-based practice. (Student 9)

> [Conducting research] made me consider the ramifications of even simple situations, how they affect others. (Student 29)

3.2. Academics' Feedback

Academic staff acknowledged the pedagogical value of research-based projects in a clinic program and considered research-based pedagogy as a legitimate part of the coursework teaching and learning. One staff member commented: "I became aware of the importance for clinicians to understand the scope of ethical implications … I was fascinated by the degree of moral reasoning and reflective consideration such guidelines [the National Statement] evoked in me, despite my many years of clinical practice" (Academic 1). However, they expressed concerns about the perceived conflict between training practitioners and training researchers. Other findings included staff concerns of student apathy towards research, a lack of undergraduate preparation studies, and delays to completion because of procedural issues such as data collection.

A key finding from the academics' reflections was that many of the fourth year students had expressed concern that the research-based projects requirement would be time consuming and take time away from their clinical practice training. They argued against being trained as researchers when their primary interest was to become an osteopathic practitioner. Academics also noted, however, that students' attitudes towards research changed as they progressed with their research projects and the relevance of the research to their clinical practice became clear. One member of staff reflected on his changing view of the role of research in the curriculum:

> I was hesitant and also sceptical about the benefits of this (research project) because of a perceived conflict between training clinicians or training researchers, and had developed a view that they are very different pedagogical pathways. It felt like the tail (the regulators/accreditors) was wagging the dog (the curriculum development team). When I interview and supervise students as they near the end of fifth year, I have noticed a clear progression in the level of these [research] skills. It appears to me that they engage in a form of problem-based learning both in the classroom and in conducting their research projects; facing issues they have not learnt about in theory, but working their way forward independently and in teams. (Academic 2)

Research-based projects were perceived by staff to enhance a number of qualities and skills in students: teamwork, creativity, identifying gaps in the literature, project design, implementation, management and completion within timelines and budgets, ethical practice in diverse applications, and development of an enquiring attitude, all of which can be carried into professional practice. Academics commented on the tension between theoretical and applied understanding of ethics: students seemed to understand ethical practice theoretically, but needed personal experience of ethical practice to truly assimilate it. It appeared that this could be achieved through both clinical practice and research practice.

It was noted that actively engaging in the ethics application process helped students take ownership of their projects and provided greater clarity in their methodology. From the perspective of the HREC Chair, while the students' research projects had to pay heed to the National Statement principles and risk assessment requirements, they must serve their primary purpose—that of teaching and learning—and secondarily to create new knowledge. The project proposals are currently for modest projects, suitable for student skill and knowledge development. Importantly, they are meritorious, just, beneficial and respectful.

Academic reflections confirmed that ethical practices should underpin the whole osteopathic curriculum: "This experience has influenced my role as an academic" (Academic 1), "I am passionate about embedding learning experiences into the curriculum that have the potential to inspire students to undertake a similar level of ethical evaluation and consideration of the welfare of their future patients and research participants" (Academic 4).

By inviting the HREC Chair to give an ethics lecture to the students, staff felt they were demonstrating the

high priority placed on ethical practice in the school. However, they acknowledged that completing ethics application forms was challenging for some students. The thoroughness of the application caught many by surprise. The focus on task, for some students, could obscure the connection between ethical clinical practice and ethical conduct of research, although activities like emailing potential participants and constructing information sheets and consent forms provided students with valuable experiences of ethical practice.

4. Discussion

The findings of our research suggest that research-based projects in an osteopathic master's course were an effective educational strategy for enhancing students' learning and conduct of ethical behaviour. In contrast to the view of many that ethics cannot be taught (Velasquez, Andre, Shanks, & Meyer, 2014) our research supported findings from the literature that undertaking studies that enhance an understanding of ethics (Grady et al., 2008) and preparing an ethics application for the HREC can be a profound opportunity for students to gain insight into the significance of ethical behaviour which further strengthens their awareness of the complexity of clinical practice. To support a learner-centred experiential approach the research projects were based on clinically relevant research questions, frequently involved direct engagement with practitioners and patients, and had the potential for making important contributions to the osteopathic profession. Curriculum content to support students' understanding of ethical behaviour included lecture materials, group work and assessments provided by the osteopathy lecturers and lectures from the HREC Chair.

As well as developing ethical behaviours in students, our research also found that research-based projects were seen to provide other benefits for students, such as enhanced teamwork and project management skills which could be carried into professional practice. These findings are consistent with research by Riley et al. (2013) that investigated medical students' research projects. However, while it is apparent that there are positive personal gains for students who undertake study at post-graduate level related to professional and personal qualities, little is known about measurable benefits to patients, or about potential constraints that may adversely affect the ability when in practice to apply acquired knowledge and skills (Cotterill-Walker, 2012). Future research projects could explore these areas.

Although ultimately perceived by academics and students as an effective strategy for developing awareness of ethical behaviours, our study supported the view from the literature that not all students value research-based projects at the outset (Siemens, Punnen, Wong, & Kanji, 2010). Many of our students initially failed to make the connection between ethical research and ethical clinical practice and argued against any suggestion of being trained as a researcher rather than as a practitioner. However, most students' reflections on the project acknowledged the relevance of their research-based projects to their clinical practice, including ethical practice. It appears that making the transition from theory to ethical practice is a challenge that may be best met by facilitating many opportunities for students to observe ethical practice, to participate in ethical enquiry, to practise ethical decision-making, and to critically reflect on these matters. Research-based projects can provide such an opportunity when educators and clinical supervisors facilitate the reconstruction of knowledge for students across the academic/work-based learning environments (Allan & Smith, 2010).

Student feedback suggested that some students did not fully appreciate the convergence between ethical clinical practice and ethical research, despite the use of the same ethical principles and language used to describe them in both learning environments. It is likely that the relevance of research ethics in professional education, including osteopathy, can be enhanced if the connection between researching as a moral practice and ethical clinical practice is made explicit: "To engage in research ... is working the terrain as a moral practitioner" (Groundwater-Smith, 2010: p. 83). Health care educators, as they guide students through the transition from student to beginning practitioner, are responsible for preparing students for successful performance in clinical settings (Callister, Ravert, Stoneman, & Matsumura, 2004; Kirsch, 2010; Stewart & Gonzalez, 2006). A key task for all staff is to make explicit to students at the outset that the same ethical principles underpin both research projects and clinical practice, and to emphasize that applying ethical principles to their research is a process of revisiting ethical concepts made familiar during the undergraduate component of the course.

In our project the effect of the research-based pedagogy on ethical clinical practice was sought from students' and academics' feedback of their experiences. Based on this feedback, we propose the following strategies to strengthen such a research-based pedagogy:

- Make explicit to students the relevance of the processes involved in conducting ethical research and core aspects of clinical practice like ethical behaviour. Numerous opportunities arise across our curriculum to do

this, including group work, practical classes and reflective journaling.

- Choose clinically relevant projects that pose clinically relevant research questions (where possible initiated by students) and foster constructive collaborations with practitioners and other stakeholders.
- Provide adequate opportunities for students and academics to reflect on their experiences as researchers, supervisors, enquiring students/beginning practitioners. Articulating such reflections in safe and supportive environments can catalyse transformative learning experiences.

5. Conclusion

In requiring post-graduate osteopathic students to develop research projects related to clinical practice, students are exposed to research as a mode of enquiry which can develop their skills in evidence-based practice. Research projects engage a critical part of scholarly research at universities, namely the human research ethics approval process, which has provided an important opportunity for a research-based pedagogy that integrates ethical practice in student research projects as educational preparation for ethical professional practice. Our evaluation of this pedagogical approach has demonstrated that, while not all students recognised the connection between ethics in clinical practice and ethics in research, or accepted the premise that the two were closely enough related for the research project to be relevant to their clinical training, the majority demonstrated a growing understanding of the processes of ethical clinical practice through the course of their research projects. This growing understanding aligned with academics' expectations for the pedagogical role and outcomes associated with students engaging in scholarly research.

This study evaluated both students' and academics' opinions of the effectiveness of using research-based pedagogy to strengthen the convergence between ethical clinical practice and ethical research. It appears that this connection needs to be made explicit to students from the first introduction of ethical principles in the curriculum. Suggestions to achieve this include drawing attention to the use of the same ethical principles and language in both learning environments, undertaking clinically relevant research, and providing opportunities throughout the course for students to reflect on their learning of ethical behaviour.

References

Allan, H., & Smith, P. (2010). Are Pedagogies Used in Nurse Education Research Evident in Practice? *Nurse Education Today, 30,* 476-479. http://dx.doi.org/10.1016/j.nedt.2009.10.011

Benatar, S., & Singer, P. (2000). A New Look at International Research Ethics. *British Medical Journal, 321,* 824-826. http://dx.doi.org/10.1136/bmj.321.7264.824

Boyd, W. (2009). Developing the Research Proposal. In S. Baban (Ed.), *Research: The Journey from Pondering to Publishing* (pp. 93-120). Kingston: Canoe Press.

Boyd, W., Healey, R., Hardwick, S., & Haigh, M. (2008). None of Us Sets out to Hurt People. The Ethical Geographer and Geography Curricula in Higher Education. *Journal of Geography in Higher Education, 32,* 37-50. http://dx.doi.org/10.1080/03098260701731462

Boyd, W., Parry, S., Burger, N., Kelly, J., & Smith, J. (2013). Writing for Ethical Research: Novice Researchers, Writing, and the Experience of Experiential Narrative. *Creative Education, 4,* 30-39. http://dx.doi.org/10.4236/ce.2013.412A1005

Brookfield, S. (1989). *Developing Critical Thinkers. Challenging Adults to Explore Alternative Ways of Thinking and Acting.* San Francisco, CA: Jossey-Bass.

Brookfield, S. (1995). *Becoming a Critically Reflective Teacher.* San Francisco: Jossey-Bass.

Callister, L., Ravert, P., Stoneman, E., & Matsumura, G. (2004). Ethical Reasoning in Capstone Students. *International Journal for Human Caring, 8,* 54-60.

Cotterill-Walker, S. (2012). Where Is the Evidence That Master's Level Nursing Education Makes a Difference to Patient Care? A Literature Review. *Nurse Education Today, 32,* 57-64. http://dx.doi.org/10.1016/j.nedt.2011.02.001

Grady, C., Danis, M., Soeken, K. L., O'Donnell, P., Taylor, C., Farrar, A., & Ulrich, C. M. (2008). Does Ethics Education Influence the Moral Action of Practicing Nurses and Social Workers? *American Journal of Bioethics, 8,* 4-11. http://dx.doi.org/10.1080/15265160802166017

Groundwater-Smith, S. (2010). Researching Ethically? In J. Higgs, N. Cherry, R. Macklin, & R. Ajjawi (Eds.), *Researching Practice* (pp. 75-85). Rotterdam: Sense.

Kirsch, N. (2010). Ethics in Practice: So Close and Yet So Far: When a Near-Graduate Still Has Much to Learn. *PT in Motion, 2,* 38-40.

Miles, M., & Huberman, A. (1994). *Qualitative Data Analysis.* Thousand Oaks: Sage.

National Health and Medical Research Council (2007). *National Statement on Ethical Conduct in Human Research.* Canberra, ACT: Australian Government.

Riley, S., Morton, D., Ray, D., Swann, D., & Davidson, D. (2013). An Integrated Model for Developing Research Skills in an Undergraduate Medical Curriculum: Appraisal of an Approach Using Student Selected Components. *Perspectives on Medical Education, 2,* 230-247. http://dx.doi.org/10.1007/s40037-013-0079-7

Seehusen, D., & Weaver, S. (2009). Resident Research in Family Medicine: Where Are We Now? *Family Medicine, 41,* 663-668.

Siemens, D., Punnen, S., Wong, J., & Kanji, N. (2010). A Survey on the Attitudes towards Research in Medical School. *BMC Medical Education, 10,* 4. http://dx.doi.org/10.1186/1472-6920-10-4

Smith, C. (2005). Origin and Uses of Primum Non Nocere—Above All, Do No Harm! *Journal of Clinical Pharmacology, 45,* 371-377. http://dx.doi.org/10.1177/0091270004273680

Stewart, S., & Gonzalez, L. (2006). Instruction in Professional Issues Using a Cooperative Learning, Case Study Approach. *Communication Disorders Quarterly, 27,* 159. http://dx.doi.org/10.1177/15257401060270030401

Velasquez, M., Andre, C., Shanks, T., & Meyer, M. (2014). Can Ethics Be Taught? http://www.scu.edu/ethics-center/aboutcenter

Wagner, C., Garner, M., & Kawulich, B. (2011). The State of the Art of Teaching Research Methods in the Social Sciences: Towards a Pedagogical Culture. *Studies in Higher Education, 36,* 75-88. http://dx.doi.org/10.1080/03075070903452594

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