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Establishing good collaborative research practices in the responsible conduct of research in nursing science

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ABSTRACT

Background: Team science is advocated to speed the pace of scientific discovery, yet the goals of collaborative practice in nursing science and the responsibilities of nurse stakeholders are sparse and inconclusive. The purpose of this study was to examine nurse scientists' views on collaborative research as part of a larger study on standards of scientific conduct.

Methods: Web-based descriptive survey of nurse scientists randomly selected from 50 doctoral graduate programs in the United States.

Results: Nearly forty percent of nurse respondents were not able to identify good collaborative practices for the discipline; more than three quarters did not know of any published guidelines available to them. Successful research collaborations were challenged by different expectations of authorship and data ownership, lack of timeliness and communication, poorly defined roles and responsibilities, language barriers, and when they involve junior and senior faculty working together on a project.

Conclusion: Individual and organizational standards, practices, and policies for collaborative research needs clarification within the discipline.

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Introduction

Training in the responsible conduct of research (RCR) has become a mainstay within U.S. academic institutions. This training generally focuses on two main areas: scientific misconduct, particularly as it pertains to falsification, fabrication, and plagiarism, and professional rules of conduct at institutional, federal, and professional levels (Kalichman, 2014; Panel on Scientific Responsibility and the Conduct of Research, 1992). Although training in RCR is necessary to promote transparency and the integrity of the research process, consensus on its goals and how best to achieve them is

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lacking (Kalichman, 2007). It has been almost a decade since Kalichman and Plemmons (2007) interviewed RCR instructors to better understand the educational goals of RCR training. Their respondents reported over 50 distinct goals concerning knowledge, skills, attitudes, and behavior important to the integrity of science, including knowledge about data management, human subjects, animal subjects, authorship, misconduct, collaboration, ethics, law, psychology, intellectual property, grant writing, knowledge systems, resources, and more. Kalichman and Plemmons (2007) rightfully argued, "If the goals of RCR instructors are so highly variable, then it is unlikely that their diverse efforts at RCR education will result in a common set of outcomes" (p. 848).

Similar to professionals in other disciplines, nurse scientists are required to receive RCR training; they are fundamental contributors to all areas of scientific discourse. Nurse scientists are not, however, immune to ethical challenges in the conduct of research. We know very little about their standards of conduct, their views on the integrity of science, and the goals of RCR training for the discipline. As independently funded scientists, nurse researchers work collaboratively both within and outside their discipline to extend critical lines of scientific inquiry. In fact, collaboration or working together with others on a research project (as defined by our research team) can yield powerful results, but it can potentially lead to ethical conflicts. These conflicts can vary, ranging from ineffective team leadership in advancing the goals of the collaborative project to scholarly differences on handling intellectual property, authorship, and dissemination.

The "wicked problems" that researchers encounter today include those that are unique in character, defy complete definition, raise uncertainty about their resolution, and are value laden (Sharts-Hopko, 2013). These research problems not only require different epistemological and empirical approaches but also standards of collaborative research practices that guide the ethical conduct of research. As part of a larger study that was conducted with four different disciplines on the standards and practices of RCR in three domains (i.e., authorship, collaboration, and data management), the purpose of this study was to describe nurse scientists' views of collaborative standards and practices in nursing science. For participants, we defined standards as accepted practices or approaches to the responsible conduct of research. These standards can be written (e.g., regulations or guidelines) or unwritten (customs or practices; Kalichman, Sweet, & Plemmons, 2013).

Methods

Survey Development

Data from nurses were collected as part of a larger survey of scientists (i.e., microbiology, neuroscience, psychology, and nursing) who were participating in a study on standards of responsible conduct that included the domains of authorship, collaboration, data management, and teaching and learning. The methods for the full study are described in detail elsewhere (Kalichman et al., 2013). The survey was developed in several phases, including assembling a panel of research ethics experts, conducting focus groups and interviews, selecting graduate programs and faculty, and pilot testing.

Thirteen focus groups with faculty participants from the various professional disciplines were initially conducted to ascertain common practices of scientists related to our three prominent areas of responsible conduct (authorship, collaboration, and data management). Two of those focus groups were conducted with nursing participants. Focus group information was audiotaped, transcribed, and reviewed to identify recurring themes for survey item development.

Focus groups were followed by a series of telephone interviews with 22 randomly selected U.S. research faculty from the top 10 disciplinary departments, as ranked by *U.S. News and World Report*. Eleven nursing faculty members (ranging in rank) were interviewed to provide input on each survey item and to clarify the content as needed. The final survey consisted of five sections with a total of 132 items and used both closed and open-ended questions. All of the topic domains as well as the term *standards of conduct* were defined for the respondents.

Finally, working with the Virginia Commonwealth University Survey and Evaluation Research Laboratory, we conducted a pilot study with a random sample from the larger study to assess any concerns related to the nature of the survey and the mode of electronic dissemination. There were no concerns related to the pilot study; minimal changes were made to the survey, and an instruction on estimated completion time was provided. All study aspects were approved by the University of California, San Diego, Institutional Review Board.

Selection of Nursing Graduate Programs

We identified nursing, psychology, neuroscience, and microbiology graduate programs from Peterson's website (www.petersons.com), which provides information on U.S. graduate programs, including the name, city, and state of the academic institution. After identifying a list of nursing graduate programs and excluding those that had little or no information that we could find on the web or that were solely clinical, we randomized program names and then selected the first 50 graduate nursing institutions. We deleted any duplicate nursing programs on the list and subsequently replaced them with the next program in the list of 50. We then searched the selected institutional websites for faculty information. We included any faculty members who were broadly listed as professor, scientist, adjunct, or researcher, and we excluded those who were emeritus, retired, or clinical faculty. Further, if we could not find e-mail addresses for more