Revitalization of Research Education in Psychiatry: Implications for Training During Residency

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The importance of research education is dualistic in nature. On an individual level, research training promotes a mindset that fosters advanced acquisition of clinical knowledge (1,2) and stimulates scientific inquiry (3,4). In the broader arena of the profession, it protects against stagnation of a field’s scientific growth as it stirs individuals in training to pursue academic/scientific careers (4–9). Finally, it emphasizes the necessity of evidence-based practice in patient care (2,10,11). Knowing this, the ACGME indicates in its requirements for psychiatric residency training that residents must be taught the design and interpretation of research studies and that programs must provide scientific opportunities for residents interested in conducting psychiatric research (12). Although such guidelines have been set, many residency programs have found it difficult to incorporate the necessary research training and curriculum (13). To meet these new requirements, we have instituted a novel model of research education in our Psychiatry Residency program at SIU School of Medicine that includes six key elements: 1) committee oversight; 2) specific research and educational goals and requirements; 3) structured training; 4) foundational research curricula; 5) research advisorship; and 6) research mentorship.

A Revised Model of Research Education

Committee Oversight

At the outset, a committee of faculty members with expertise in research and research training was created under the title of the Residency Research Committee. Establishment of a leadership with research expertise to spearhead the educational planning and structure was crucial and was suggested by previous findings (14, 15). Whereas others have relied on a single director of research (14, 16–18), we have found that using a committee has promoted diversity of thought on how the program should be organized. Also, the fact that concepts are put into place through a democratic process anecdotally appears to have the advantage of increasing faculty buy-in, as it comes by way of a group of colleagues. This committee was entrusted with not only developing the research training program, but also maintaining oversight over resident progression. In our program, some of this responsibility has also been disseminated to the research mentors (discussed below), who complete quarterly reviews of the residents’ progress by utilizing a standardized form.

Specific Research and Educational Goals and Requirements

The literature has demonstrated that residents want research goals, expectations, and timetables to be laid out in a clear fashion (16,19). Consistent with this, we solidified goals and requirements that, while feasible, were consistent with what committee members felt fulfilled essential research training requirements. Within our program, this has two limbs: One is related to the successful completion of the designated research curriculum delivered via a 6-week research seminar; the second consists of residents’ completing scholarly projects, including a hypothesis-driven, original research study that is submitted for publication, as well as a quality-improvement study. Although these two projects can be feasibly completed at any point during the residency after the second year, a more specific timetable is provided.

Upon being matched with a research mentor at the end of the PGY-1 year, residents and mentors decide on a research project (Conceptualization stage) and complete the initial Developmental stages (i.e., literature review, IRB submission, feasibility determination, etc.). This can be an original concept developed by the resident or can entail the resident’s working on existing research of the mentor. Interdepartmental funds established to support research projects may be sought out on a case-by-case basis and granted approval from the Chair of the Department. Eventually, a prospectus will be developed in the form of a theoretically-based, scholarly poster that will be presented to their fellow residents and the faculty at an intra-departmental research symposium, during which they will be expected to field questions about the previous literature and potentially defend the proposed methods to be undertaken. This will
occur within the last quarter of their PGY-2 year. In doing this, adaptations may be made on the basis of feedback. Over the course of the PGY-3 year, they will collect data and eventually conduct the analyses (i.e., the Implementation stage). Finally, in the PGY-4 year, they will deliver an hour-long Grand Rounds presentation that discusses the entirety of the project. This will represent an oral presentation of their manuscript that must be submitted to a peer-reviewed journal of acceptable quality (i.e., the Completion stage). By requiring residents to present and defend their work, they are encouraged to learn the methodology at a higher level. Some projects undertaken by residents thus far include, but are not limited to, the relationship of serum leptin levels to cognitive impairment in schizophrenia versus major depression, competencies in dual-trained physicians in medicine and psychiatry, and the underlying psychological and personality profiles of patients with fibromyalgia.

Structured Training

One of the most important features of the research education curriculum is that training is offered in a structured manner. This includes fixed benchmarks in the form of regular meeting times and evaluations, as well as specific time-frames by which particular requirements must be completed (e.g., submission of the original research project). A protected, independent-learning environment, dedicated research time, and a structured educational experience and curriculum are highly desired by residents (15). Also, because the educational experience occurs over several years, there is a greater long-term yield in regard to development of a sustainable skill-set (20).

Foundational Research Curriculum

At the beginning of the PGY-2 year, residents complete a 6-week research didactic that introduces them to the foundational concepts pertaining to conducting scientific research (e.g., research methodology and design, basic statistical analysis, hypothesis development, literature review, scholarly writing, etc.). This has been determined by residents in other programs as highly valuable to their research training (9). Required training in psychiatric research ethics (12) is also offered via this seminar. Mentorship then builds upon this foundational curriculum. Currently, this course is taught by a Ph.D. researcher within our program.

Research Advisoryship

Upon entering the psychiatry residency, all residents are assigned to a research advisor, who is entrusted with meeting three broad goals: 1) introduce the research education; 2) determine each resident’s experience and competency in research; and 3) assist residents in focusing their broad areas of potential scientific interest. Regarding the last, this includes matching the resident with an appropriate mentor. These goals are achieved through bimonthly meetings beginning in December of the PGY-1 year.

The research advisor may also supplement the foundational curriculum by discussing basic principles of conducting literature reviews, developing research ideas and hypotheses, and navigating the initial phases of the research endeavor (e.g., IRB submission, determining method of data collection, etc.). These steps will eventually be refined and solidified through work with the research mentors. This can be essential, as residents commonly present with varying backgrounds and established skills in research.

Research Mentorship

Research mentors have been identified as the most crucial piece of research training and education (4,16,19). Within the described program, the success of residents’ educational experiences is dependent upon the mentor–mentee relationship. Mentors are identified among the faculty as those who have themselves demonstrated independent productivity in peer-reviewed publication at a level deemed acceptable by the established committee. Through meetings with the research advisor, residents are matched with a mentor on the basis of shared scientific interests. Mentors then provide residents direction and oversight in their projects. This promotes advancement of their research skills through an experiential process (i.e., “learning by doing”). Also, it allows training to be tailored to each resident’s skills at all times. Research has suggested this is an important and desirable trait of such training (20). Residents meet with their mentor for face-to-face supervision on at least a monthly basis, but some more frequently if so desired. These meetings permit time for the resident and mentor to discuss progress of the project, plan future steps, and engage in supervision. On a quarterly basis, the mentor completes a structured, online evaluation (i.e., New Innovations) that assesses the residents’ progression in their project and elements of their research training. Completed evaluations are then forwarded to the Chair of the Committee to review and digitally sign. This step allows for any deficiencies to be identified early, at which time the committee can collectively recommend remediation options after consulting with the Residency Director. Also, residents are required to evaluate their mentor. At any point during the process, if residents feel they are not being properly mentored, they may report this to the Research Committee,