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SMART Partnerships: Strategies to Support Academic-Clinical Nurse Collaborations in Behavioral Intervention Studies

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Abstract

Evidence-based nursing is in the forefront of health care delivery systems. Federal and state agencies, academic institutions, and health care delivery systems recognize the importance of nursing research. This article describes mechanisms that facilitate nursing partnerships yielding high level research outcomes in a clinical setting. A phase II multi-center behavioral intervention study with pediatric stem cell transplant patients was the context of this academic/clinical research partnership. Strategies to develop and maintain this partnership involved a thorough understanding of each nurse's focus and barriers. A variety of communication plans and training events maximized pre-existing professional networks. Academic/clinical nurses' discussions identified barriers to the research process, the most significant being role conflict. Communication and validation of benefits to each individual and institution facilitated the research process during challenging times. Establishing strong academic/clinical partnerships should lead to evidence-based research outcomes for the nursing profession, healthcare delivery systems, and patients and families.

"Research teams of the future" is one of the three key themes in the NIH Roadmap initiative to develop a more efficient and productive system of knowledge generation and

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dissemination. [1] A critical component of nursing research teams are strong clinical-academic partnerships. [2] These partnerships are essential to the design and implementation of nursing research studies that are relevant and feasible and generate findings that swiftly translate into clinical practice. [3] As nurses strive to provide care grounded in empirical evidence, the conduct of research in clinical settings becomes paramount.

Few models for successful academic/clinical research partnerships are available in the literature. In this paper, we describe the process undertaken to develop, execute, and maintain a nursing academic-clinical research partnership for an ongoing multi-site randomized clinical trial (RCT), the Stories and Music for Adolescent/Young Adult Resilience during Transplant (SMART) study. This was a cooperative group study funded by the National Institute of Nursing Research (R01NR008583), and the National Cancer Institute (U10CA098543; U10CA095861) via the Children's Oncology Group (ANUR0631) testing the efficacy of a therapeutic music video intervention compared to a low-dose control group audiobooks condition for adolescents and young adults undergoing hematopoietic stem cell transplant for cancer.

Background

To increase the likelihood of producing findings that are expeditiously transferable into practice, research partnerships must value and accommodate the unique cultural requirements and capabilities of both academic and clinical practice settings. Such carefully constructed academic/clinical partnerships are relatively more likely to have a positive impact on the health and safety of patients and families.

The Culture and Capabilities of Clinical Practitioners

Nurse executives are accountable for the development of a health care environment in which nursing practices are evaluated and changes in care are based on the results of empirical studies. In addition, front-line nurses (e.g., staff nurses) and advanced practice nurses (APNs), such as clinical nurse specialists and nurse practitioners are increasingly held accountable for much of what happens to patients during a health care episode. [4] Evidence-based practice contributes to improved patient care and efficient use of resources and also contributes to quality improvement in the nursing profession. [5]

Despite the enthusiasm for evidence-based practice, planning and implementation of behavioral clinical trials that include involvement by APNs and front-line nurses in a hospital setting have been limited. This limited involvement by practicing nurses is often related to the lack of external grant funding to provide salary support and release time for APNs and front-line nurses to be fully involved in a research study. [5] Development of academic and clinical research partnerships between nurse scientists and practicing nurses can position these newly formed teams to take advantage of funding opportunities to conduct research in the hospital setting. Because there are increasing numbers of nurse scientists in pediatric hospital settings, more opportunities for academic and clinical research partnerships should occur in the future. [6]

A major benefit of academic and clinical partnerships is that research findings from collaborative studies may provide evidence to support adoption of evidence-based practices in the hospital setting. [5] The ultimate impact of this process is the potential to ensure "best practices," which in turn promote positive outcomes for patients and families. Furthermore, adoption of evidence-based practices is essential for an institution's achievement of national recognition, such as the Magnet® status awarded by the American Nurses Credentialing Center. [7] Activities necessary to conduct intervention research include recruitment, intervention implementation, and process and outcome evaluation. Clinical nurses who are closely involved in providing care and delivering new treatment modalities have expert clinical knowledge to share with their academic researcher counterparts. Also, clinical nurses are positioned to assist in translating research findings into real-time application at the bedside. Because academic partners often lack familiarity with unit- and patient-based issues or current sub-specialty medical interventions, involvement of clinical partners is critical to successful conduct of a research study. Involvement of clinical nurse partners is often helpful in supporting the recruitment and retention goals of any research study. [8]

Relationships between nurse scientists and clinical nurses that evolve throughout a research project can have the additional benefit of fostering the professional growth of front-line nurses. For instance, front-line nurses who integrate research into practice should be able to apply their role on the research project and related dissemination outcomes to established career ladder criteria in the hospital setting for the goal of advancing their professional development. Additionally, fostering front-line nurses' professional growth can have the positive rebound effect of enhancing their commitment to the research project. [9] Involvement of clinical nurses through all phases of the research process will not only facilitate the conduct of a study, but is essential to the translation of results to evidence-based nursing care. [3] Also, inclusion of clinical nurses in the research process from the beginning ensures that the research team will benefit from the clinical nurse's expertise in identifying potential practice related obstacles and in developing a workable clinical plan to ensure the successful implementation of the planned research study.

Culture and Capabilities of Academic Researchers

When collaborative research partnerships are established between clinicians and academics, a critical linkage is made, bringing together requisite skills for success that may be limited when these groups work in isolation. [10] For the academic nurse researcher, collaborative partnerships that include cohesion, contribution, communication, commitment, consensus, and compatibility from both the academic and clinical sides have been shown to effectively enhance the goals of a study and lead to successful outcomes. [3, 5] Expert clinical nurses often lack comfort and experience with core concepts of intervention research that are necessary for study implementation and intervention fidelity. However, academic nurses have skills in grant writing that are necessary to secure funding for the clinically relevant research study. Academic nurse researchers also generally have expertise in research planning skills, such as design selection, methods to ensure consistent intervention fidelity during protocol implementation, and methods to ensure consistent quality assurance procedures (i.e., intervention evaluation) that enhance reliability and validity of the study findings.

Factors Influencing Partnerships

The literature is sparse regarding factors that influence collaborative partnerships between nurses in the hospital setting and academic nurse researchers. [3, 11] Some identified factors that may enhance academic and clinical partnerships include: (a) shared governance between the patient care centers and affiliated academic medical centers; (b) leadership by nurse-scientist investigators, and (c) a strong rapport among all involved nurse collaborators. [3, 5] Some of the identified challenges to effective collaborative partnerships include: (a) the need for investment of considerable time by front-line nurses and APNs to coordinate patient-care responsibilities with participation in a research study in the hospital setting; (b) lack of clear communication channels among the study collaborators (i.e., nurses in the hospital setting and the academic nurse researchers); and (c) lack of effective leadership among collaborators. [3,12] Hinds et al. [13] also described an innovative model to foster collaborative research partnerships in pediatric oncology by pairing academic nurse researchers with nurses who were actively involved in the Children's Oncology Group (COG).

Barriers for Clinical Nurses—Although the potential contributions of research to improve practice are widely acknowledged, translation of research findings into clinical care by nurses and participation of clinical nurses within a research team in the hospital setting remain limited. Major barriers that inhibit participation of hospital-based nurses in a research study often center on the lack of time and support during daily work-related responsibilities. [3] Too frequently, front-line nurses are not granted adequate release time or given a reduction in patient care responsibilities to participate on research teams. Other identified barriers in the literature include: (a) lack of confidence in their ability to participate in a research study, (b) lack of understanding of nursing research design and methods, (c) perceived role conflict as both a researcher and clinical nurse, (d) challenges of gaining the cooperation of clinical nursing staff to comply with clinical trial protocols, (e) difficulties in maintaining clinical research team motivation, (f) lack of relevant, clinically focused research findings to implement (i.e., results are viewed as not useful for their practice), and (g) limited mentorship opportunities with a nurse scientist who has release time from other academic responsibilities. [8,12,14,15,16]

Barriers to Academic Nurse Researchers—Researchers in academic settings also experience barriers to the effective conduct of academic/clinical partnership studies. Some commonly identified barriers include: (a) "gate keeping" by key clinical leaders (e.g., primary physician, nurse practitioner) regarding access to participants in particular clinical settings; (b) lack of knowledge of the institutional leadership that is necessary to obtain support for study implementation; (c) time and knowledge constraints related to meeting academic and clinical regulatory requirements (e.g., development of institutional contracts, review process of institutional research boards, and securing clinical access for external research team members such as project managers and research assistants); and (d) demands of academic responsibilities (e.g., faculty meetings and teaching obligations). [9] Efforts to overcome barriers often consume large amounts of time and delay the start of the study, which in turn may have budgetary ramifications. Still, the goal of conducting research to foster patient care best practices is a strong motivator for academic nurses to overcome these barriers.

Characteristics of Successful Academic-Clinical Research Partnerships

Investigators have reported collaborative partnerships between academic nurse researchers and clinical nurses to be helpful to the development and implementation of randomized controlled trials (RCTs). [3] The inherent complexity of multi-site RCTs requires a team approach and meticulous planning to foresee and address obstacles to intervention implementation within and across clinical sites. [3, 5] In our study, the COG model of pairing nurse researchers with clinicians within the group provided increased involvement of nurse researchers in the cooperative groups and gave APNs greater ability to identify position responsibilities within the practice. [17] The ultimate goal of the study has been to enhance nursing's contributions to knowledge that improves care for pediatric oncology patients and families.

Successful implementation of multi-center research studies requires a strategic approach that confronts potential barriers for all study team members. [3] An essential characteristic of collaborative research partnerships is the commitment of all research team members for the planned study. [18] Several steps can be taken in the development and implementation of a study to maximize this commitment. Clear communication of roles and associated expectations among team members has been identified as essential to the success of implementing a study. Understanding expectations begins with clear descriptions of current job responsibilities and fosters the willingness and ability of clinicians to be flexible and adaptive when balancing primary clinical responsibilities and study-related responsibilities. [11] Anticipation of potential barriers may help team members assess and proactively address them. Commitment can also be fostered by including both the academic nurse researchers and clinical nurses in study dissemination efforts. [5] This commitment includes mentoring and teamwork in the preparation of presentations and publications as well as ensuring that participating sites are acknowledged in all dissemination venues. Discussion of dissemination efforts and negotiation of research study roles should occur early in the collaborative process so that all study partners have a clear notion of their respective responsibilities to each other and to the study.

Establishing SMART Partnerships

Several strategies were used to develop academic-clinical partnerships for the SMART study. The investigators carefully planned activities during the in-person training of the research team members that included professional research group-formation and team-building activities designed to foster collaborative partnerships with all research team members. The in-person training and travel for site team members was supported by the study grant and was held at the PI's institution. A formal SMART study training curriculum, that included a review of the study protocol and team member roles and team-building activities, was delivered to all study team members. Training activities included active learning strategies and group discussions that fostered development of collaborative relationships among team members that were sustained and further enhanced during regularly scheduled site conference calls. Table 1 provides an outline of the team-building strategies used to launch the study and to foster ongoing team partnerships within and between study sites. The inclusion of pediatric oncology nurse team members at each of the participating sites provided an opportunity for core research team members to plan and

execute organized, ongoing, and collaborative team-building activities among academic nurse researchers and pediatric oncology clinicians during the SMART study.

Participating sites for the SMART study were large academic medical centers and community hospitals, including eight pediatric and three adult hospitals in six sites throughout the Midwest and southern portions of the United States. The study required consistent protocol delivery and vigilance to ensure coordination of multiple study personnel at each who would be responsible for introducing the study, implementing the intervention, and collecting data from a patient population of adolescents and young adults (AYA) undergoing an intense, high-risk medical treatment. Clear and timely communication combined with ongoing education and dialogue was paramount to the success of the SMART study that included multiple sites, varied research and clinical experience among study personnel, and a complex patient population.

The SMART study included an interdisciplinary team approach to deliver a tailored intervention to an underserved population. Initially, academic partnerships were established at several institutions and academic centers among researchers with backgrounds in nursing, music therapy, and medicine. These researchers then identified key clinical nurse experts from the pediatric and AYA stem cell transplant settings with an interest in research and a desire to participate. Next, during the grant development phase, the academic nurse researchers and clinical nurse experts began to understand and value how each research team member’s role would provide an essential component to the successful execution of the SMART study during regularly scheduled conference calls. After award funding and initiation of the study, collaborative partnership-building activities fostered a valued interdisciplinary study team that resulted in cohesive collaborative relationships among the nurse researchers and the participating clinical nurse experts.

The administrative organization for the SMART study included four teams: the executive leadership team, site primary investigators and project managers, music therapy interventionists, and evaluators. Study personnel also had the option of joining a qualitative interview and analysis team as well as ad hoc dissemination teams. From the outset, frequent communication, both in person and via biweekly scheduled conference calls, supported and fostered respectful dialogue and relationship building among the team members. A scheduled communication plan allowed the teams across all sites and within individual sites to identify and discuss solutions to the inevitable challenges of balancing primary clinical responsibilities and study-related responsibilities. Also, a systematic communication plan was implemented by the executive leadership team to foster ongoing communication about study activities. For example, one strategy was the preparation and quarterly distribution of the SMART study newsletter to foster communication with all team members within and across sites. Information provided in the newsletter included a summary of important study information (e.g., recruitment and retention rates), dissemination outcomes (e.g., presentations) of team members at each study site, and recognition of professional and personal achievements of team members. The systematic communication plan also served to help identify problems that arose due to inherent differences in the language and culture of academia and clinical practice.

A variety of structured communication and training strategies were implemented to mold the members into a cohesive and productive team, capable of conducting and executing a study of such complexity. Dissemination responsibilities and opportunities were also discussed early in the study and reinforced throughout the stages of the study. These included abstract writing, manuscript preparation, and qualitative data collection and analysis. To establish rapport and foster teamwork, recognition of the value and appreciation of individual team members' contributions were emphasized during both local and national professional meetings.

Formal and informal meetings at national professional meetings and conferences (e.g., Children's Oncology Group [COG], Oncology Nursing Society [ONS], Association of Pediatric Hematology Oncology nurses [APHON]) offered opportunities to further foster connectedness among team members. During professional meetings and conference calls with our research teams (i.e., interveners, evaluators, clinical nurses serving as project managers, academic nurses serving as principal investigators), time was set aside to engage in discussions and share knowledge based on our individual expertise. These discussions often generated ideas and plans for dissemination (e.g., presentations and publications) based on the lessons we had learned. The ideas and observations from these discussions were often further developed in smaller working groups consisting of academic nurses, APNs, and/or members from other disciplines participating in the study.

The scientific writing expertise and resources of the academic nurses, in combination with the front-line nurses' perspectives and observations from implementing the study, resulted in numerous peer-reviewed poster/conference presentations and journal articles. The multiple opportunities for disseminating outcomes encouraged ongoing partnerships within and among our academic nurses and front-line nurses. Dissemination has included national and international presentations as well as publications related to the study processes and outcomes.

Research Lessons Learned During SMART

Our nurses experienced many benefits and barriers related to participation in the SMART study. Table 2 describes these benefits and barriers from the perspectives of both the clinical and academic researchers on our team. Clinical and professional benefits included: (a) clinical practice improvement; (b) professional role fulfillment; (c) research learning opportunities; and (d) networking opportunities. Nurses on the clinical side received hospital recognition for their involvement and professional growth opportunities according to established clinical-advancement ladders and salary support. As academic nurses and clinical nurses, we came to value the unique contributions of academic and clinical roles to the research process and outcomes. Hospitals also reaped the benefits of increased support for Magnet Recognition Status, site recognition for participation in an NIH-funded study, monetary support to their participating front-line nurses and clinical research associates, and site recognition for collaboration with academic centers. Each of the COG clinical sites was also awarded Department of Cancer Prevention (DCP) Cancer Control Credits through the Children's Oncology Group. These credits correspond with the data management workload associated with the study. Both the academic and clinical nurses experienced gains in

knowledge of up-to-date practice, scientific rigor, and ways to integrate research into clinical practice. The networking across sites has provided extremely valuable collaborative learning. The networking also has promoted expansion of professional roles, including opportunities for dissemination that would not have occurred otherwise.

The most significant barrier experienced in the study was that of role conflict among clinical nurses; at times, their priorities and responsibilities to care for their patients conflicted with their research activities. For example, clinicians sometimes found it difficult or impossible to step away from pressing patient care responsibilities inherent in the care of a critically ill patient in order to participate in the pre-scheduled study-related conference calls. When such stressors were identified, supported, and resolved with mutual understanding, relationships and respect were deepened among the study team members in the various nursing roles.

Reflecting on the collaborative research partnerships we established has allowed us to gain insights into and appreciation for the similarities between the clinical and research process. For example, during clinical practice in the hospital setting, front-line nurses evaluate and begin discharge planning from the beginning of their involvement with each patient. The goal of focusing care of the patient toward an identified outcome is an inherent part of the nursing process. A similar process is inherent in the conduct of nursing research; specifically, during the early stages of planning a study, academic nurse scientists carefully plan its design and implementation so that valid and reliable research outcomes will be generated. Establishing collaborative research partnerships early and having a plan for maintaining them are also crucial. Discussion of study participant situations and addressing problems across sites led to an appreciation and respect for each individual team member's unique contribution to the SMART study, as well as an appreciation of details involved in conducting behavioral research. A clear lesson learned has been that collaborative research partnerships should include an established protocol that accommodates the specific cultural needs that exist in both the clinical and academic setting.

Conclusion

Essential to the success of all multi-site studies is dedication to establishing strong academic and clinical partnerships that will ultimately result in "win-win" relationships among key stakeholders in the participating health care organizations and universities. In this paper we have identified specific benefits and challenges to establishing collaborative research partnerships among team members in the SMART study. Ongoing self-evaluation during any study is important, but it is especially important during the implementation of a multi-center study. Also important to the success of any multi-site study is a commitment to ongoing communication among the research team members within and across all clinical sites. The benefits of our partnerships have included shared expertise across hospitals and financial support to our institutions. Further benefits to participating institutions have included identification and sharing resources. Collaborative clinical and academic nursing relationships are vital to conducting successful multi-center research studies that will lead to development of evidence to inform future nursing practice.

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Table 1

Team-building Strategies

Teambuilding Strategies
• Study team organized according to roles
• Conducted group formation activities to foster collaborative partnerships
• Emphasized group process to ensure group outcomes
• Multiple communication modes
• Scheduled conference calls for all team members and site-specific team members
• Quarterly newsletter included study updates and celebrations of personal and professional achievements
• Face-to-face meetings
• Initial grant-funding celebration
• Scheduled during attendance at national professional meetings (e.g., COG)
• Team approach to planning and preparing dissemination outcomes
• Team opportunities for involvement in qualitative analysis

Table 2

Clinical and Academic Benefits of Research Partnerships

Clinical Benefits				
Professional Role Fulfillment	**Hospital-wide**	**Learning Opportunities**	**Clinical Practice**	**Networking**
• Increases understanding and meaningfulness of research methods • Enhances publication/ pres-entation activities through collaboration • Increases valuing of nurses as “players” in RCTs	• Supports Magnet recognition status • Increases understanding re: how grants contribute to salary support • Clinicians gain insight into financial benefits of grants. • Nurses valued and recognized by grants funded	• Increases understanding of scientific rigor issues • Gain insights into clinical issues in implementing research designs • Research and grants mentoring	• Gain insights into SCT practices across sites • Discern patterns of phenomena, including patient and family behavior, across sites • Research involvement fast-tracks to develop evidence to inform future practice • Travel opportunities for dissemination activities	• Establish communication networks with clinical nurses and researchers • Attend and present at research conferences as a way to meet others • Enhances interdisciplinary collaboration opportunities
Academic Benefits				
Professional Role Fulfillment	**Institutional**	**Learning**	**Clinical Teaching**	**Networking**
• Bridges academic/ practice gap • Valued clinical partnerships/ connectedness • Enhances clinical relevance of research questions and implementation	• Establishes “cooperative group” networks for future studies • Increases interdisciplinary collaboration opportunities	• Learn from expert clinicians • Learn most up-to-date practices • Learn translation factors to consider • Learn ways to integrate research into clinicians’ workflow	• Involve graduate-student research assistants in clinical research at the bedside	• Collaboration with faculty and clinicians with similar research interests across sites • Opportunities to partner with clinicians within and across sites