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Service learning within community-engaged research: Facilitating nursing student learning outcomes

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Abstract

The objective of this manuscript is to describe a method of integrating baccalaureate nursing student service-learning experiences within a randomized controlled trial conducted in a community setting to facilitate student learning and expose students to the nursing scientist role. Placing students in a research service-learning experience involved several steps beginning with finding a nursing program for potential collaboration where this service-learning opportunity would be a natural fit with course content and formalizing the collaboration between the two institutions. Upon receipt of research grant funding, researchers and course faculty worked to navigate logistics and place students within the service-learning experience. After research training, 35 students assisted with intervention delivery and completed course assignments to document their learning. The collaboration described between a community-engaged research team from a research-intensive university and course faculty from a distant institution could be replicated with all types of nursing research.

Keywords

Children; Families; Nutrition; Nursing Education; Nursing Research

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The NU-HOME trial and student engagement within the trial was approved by the Institutional Review Board.

The NU-HOME trial is registered at [clinicaltrials.gov](https://clinicaltrials.gov/ct2/show/study/NCT02973815): NCT02973815

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Engaging Nursing Students in Research

Developing the next generation of nursing leaders and scientists is paramount to the future of nursing and nursing science. Although important for nursing students at any educational stage, aligned with the AACN's Baccalaureate Nursing (BSN) Education Essentials (2008), it is particularly critical to engage undergraduate BSN students in research. As enrollment in Nursing PhD programs continues to plateau nationally (AACN, 2019), the nursing profession must excite and educate the next generation of nurse researchers. Furthermore, nursing students must understand the basics of research to successfully incorporate evidence-based research findings into their daily practice. Thus, BSN student involvement in research is not only crucial for the profession but also has many potential benefits for student academic (e.g., knowledge and application of the research process) and future career growth (e.g., pursuit of graduate degrees, continued involvement in research; Abbott-Anderson, Gilmore-Bykovskyi, & Lyles, 2016; Ayoola et al., 2017; De Jong, Meijer, Schout, & Abma, 2018; Kessler & Alverson, 2017; Slattery et al., 2016). While best practice strategies for engaging BSN students in research throughout the curriculum have been recommended (Ayoola et al., 2017; Christie, Hamill, & Power, 2012; Jansen et al., 2015), finding ways to embed applied research experiences within and throughout existing BSN curricula remains challenging.

Authentic Learning Environments – Service-learning

Authentic learning environments immerse students in real-world application of classroom knowledge/skills in settings similar to those of their future careers. These activities can facilitate student learning outcomes (Almeida et al., 2018; Murray, 2013) and include simulations, clinical practice, and service-learning experiences. Service-learning is an educational method that actively engages students in organized reflection and community service experiences designed to address ongoing need and enhance academic and personal learning (National and Community Service Act of 1990, 1990). However, because not all nursing courses are affiliated with authentic learning experiences, it is possible students may see course content as less applicable to their future careers and/or may not feel comfortable in applying the didactic course content in real world situations.

Embedding research experience as part of course service-learning activities is a unique opportunity to further engage BSN students in research while also facilitating didactic course learning in courses not attached to a clinical or simulation experience. Furthermore, courses with integrated service-learning activities focused on health promotion, prevention, lifestyle change interventions, and early detection of alterations in physiologic integrity may be more readily conducive to application of classroom learning in community settings. Such foci are important components of primary and tertiary prevention of diseases and conditions commonly found in the population and are likely targets for nursing care as students enter their careers.

Purpose

This manuscript describes a unique application of service-learning within a randomized control trial (RCT) delivered in a community setting, which has transferability to many different types of clinical- or community-based research projects. Specific steps will be outlined to detail how those conducting nursing research in community settings can collaborate with nursing faculty to provide opportunities for nursing student engagement in research to facilitate course learning.

Planning

Background on the Trial and Identifying the Service-Learning Opportunity

The New-Ulm at HOME (NU-HOME) trial aimed to test the effectiveness of an obesity prevention intervention with 7–10 year-old children living in rural communities (n=114 families). Recruitment occurred in two cohorts (2017–2018 and 2018–2019). After baseline assessments, 58 families were randomly assigned to the NU-HOME intervention program and 56 families were allocated to the wait-list control condition. Based on previous research (Flattum et al., 2015; Fulkerson et al., 2015, Fulkerson et al., 2017), the interactive, hands-on, NU-HOME intervention program engaged families to promote healthfulness of family meals, snacks and the home food environment and positive family activities (e.g., family physical activity, cooking together).

The intervention was delivered monthly over a seven-month period to multiple family groups assigned to the intervention condition. Based on previous trial experience, it was deemed the intervention was best delivered to 5–7 families at a time, as all family members were invited to attend and groups could get large. Thus, to accommodate up to 28 families each month, the program was offered four times per month. This scheduling allowed for all families to fit in the space and participate in program activities. Program activities included: a parent group that had facilitated discussion on key nutrition and physical activity topics, strategies, and behaviors; a child group with hands-on learning related to nutrition, cooking, and physical activity; evening meal preparation; and physical activity breaks (Flattum et al., 2015; Fulkerson et al., 2015).

In the team's previous research, nursing and public health students were successfully engaged in intervention delivery (Flattum et al., 2015; Fulkerson et al., 2015). Based on this success, the NU-HOME study researchers sought a way to engage BSN students in valuable hands-on experience through service-learning with the NU-HOME study by working with families in the rural community setting to promote healthful nutrition and lifestyles. The students would also provide useful assistance in the NU-HOME intervention delivery. This service-learning opportunity would keep research intervention costs down and enhance research program sustainability in the community.

Establishing a Collaboration for the Service-Learning Opportunity

After identifying the potential service-learning opportunity would be beneficial for student learning and the trial, the researchers sought a collaboration to facilitate the service-learning opportunity. While some researchers may be able to seek a collaboration within their own

department/institution, for the NU-HOME study, there was also a distance-related logistical challenge—the intervention took place about 100 miles from the NU-HOME researchers' institution. Thus, the researchers reached out to a BSN program near the location of the NU-HOME trial to propose a collaboration and to find a course in which this service-learning opportunity would be a natural fit with course content and processes.

A match was made with an institution of higher education near the site of the intervention delivery and a BSN course was identified for the service-learning opportunity. The BSN course identified was an innovative nursing course focused on health promotion, prevention, and early detection of alterations in physiologic integrity that utilized service-learning in community programs. This first-semester BSN course is four credits (two credits theory, two credits experiential learning) and requires completion of 60 hours of experiential learning. In this course, students are assigned to a wide variety of experiential learning activities, many of them service-learning. In discussion with BSN course faculty, it was determined that the NU-HOME study would provide an excellent student service-learning opportunity to allow students to gain family health promotion experiences. The collaboration between the researchers, course faculty and institutions was formalized in a support letter by College of Allied Health and Nursing, Minnesota State University Mankato for the NU-HOME study grant application. During the grant writing and awaiting funding period, researchers kept course faculty abreast of the research grant status.

Development of the NU-HOME Service-Learning Activity

After grant funding was awarded, the researchers contacted course faculty to logistically plan for student service-learning involvement in the research study. Both groups worked to ensure a close match between the service-learning activities, course content and course objectives/requirements (e.g., to plan the schedule so students would obtain the required hours of service-learning experience, to outline the students' role/activities). In addition, roles/responsibilities of the researchers and course faculty were outlined.

For the NU-HOME project, the researchers and course faculty determined that the students would assist with the intervention once each month during the semester with a consistent group of participating families. At the students' assigned monthly intervention session, it was planned that students would spend 5–6 hours preparing, setting up, interacting with families, and cleaning up. Students were also given credit for time spent in orientation and training (see below). Course faculty planned for students to participate in oral and written reflection during and at the end of their experience. Faculty sought verbal confirmation from the research team to verify student participation during the project. At the end of the semester, students turned in a reflective log including proposed nursing diagnoses and descriptions of the interventions used in this experiential learning to address the nursing diagnoses. In addition, students assessed and documented how their work with the NU-HOME study met their course objectives and learning outcomes in an end-of-the semester reflective assignment. These assignments were graded on a pass/fail basis. Feedback received from the coordinator at the partner institution and grading of the final reflections verified the students' successful completion of the activity.

Navigating Logistics

The researchers and course faculty also navigated logistics of two institutions and the physical distance separating them. These logistics included the researchers working with course faculty to ensure students had on file completed background checks and HIPAA confidentiality training completions. Researchers also coordinated plans with course faculty for required student trainings (i.e., to the study, research ethics, food safety). Course faculty used researcher-designed and narrated slides to introduce the study and service-learning opportunity to students in class. Course faculty also facilitated student sign-up for NU-HOME intervention shifts, which happened on the first day of class in the semester. Course faculty then sent the researchers the list of student names and assigned intervention shifts.

Student Training and Orientation to Service-Learning within NU-HOME

The researchers reached out by email to the students on the NU-HOME research service-learning project to coordinate orientation and training. Orientation and training to the study and research ethics were hosted by video conference. Students were also required to complete the Collaborative Institutional Training Initiative (CITI) Research Ethics and Compliance Training. This training completion was documented at the researchers' human subjects review board. To ensure students completed the correct CITI training modules, students used a step-by-step training guide developed by the researchers. Finally, as part of training, students were required to view and document completion of a food safety training module and financial conflict of interest report.

Implementation of the Research-based Service-Learning Opportunity

In total, 35 students completed their service-learning hours with the NU-HOME study, and the number of students participating each semester ranged from 5 to 12. While schedules were set at the beginning of the semester, research intervention staff provided reminders and just-in-time communication with students through text or email about any schedule changes on an ongoing basis. Research intervention staff also met with students prior to each NU-HOME intervention session to provide hands-on training to students before engaging with families; this meeting allowed time to set up, review session objectives, and assign student roles. In the intervention sessions, student engagement included welcoming families and assisting the intervention staff during groups. Student assistance during the child group was particularly important because children in the intervention ranged from 7 to 10 years old and sometimes needed assistance to complete child group activities. Additionally, students worked one-on-one with families during the cooking portion of the intervention when whole families were assigned to a recipe and a cooking space. Families and students prepared the assigned recipe for the large group family-style meal at the end of the intervention session.

Research staff communicated with faculty about the students' service-learning work, and students completed their assigned reflection activities about their experience with the NU-HOME study as part of their course. Through their NU-HOME study experience, students reflected they met the following course objectives: examining major health concerns in the framework of the public health prevention model, incorporating nutritional assessment and care, demonstrating evidence-based practices in providing societal level care, and utilizing

evidence-based care of patients and families with preventable alterations in physiological integrity. In addition, students also developed written nursing care plans focused on one nursing diagnosis for the population with which they worked.

Discussion

This paper describes a course-related, service-learning opportunity for BSN students within a research study. This service-learning activity allowed students to integrate knowledge of behavioral, biological, physical, and nursing sciences in evidence-based care of patients/families with preventable alterations in physiological integrity, particularly focused on healthful nutrition and physical activity behaviors. This opportunity also allowed students to gain experience communicating with families, demonstrate using evidence-based practice in providing societal level care, and practice therapeutic relationship and communication skills. Finally, students were immersed in community-engaged research, intervention delivery, research ethics, and development of evidence-based practice. Aligned with the BSN Essentials (AACN, 2008), this experiential research engagement helped students see how they can apply evidence in practice and how to contribute to research that informs evidenced-based practice.

This service-learning opportunity with the NU-HOME study intervention also greatly benefited the families participating in the NU-HOME trial. Because students were engaged in the intervention, families received individualized attention during the cooking and group activities that would not have otherwise been possible. This one-on-one time with students allowed for the group intervention to be tailored to specific needs of the individual families within the group. For example, the family-student pairings helped to ensure the families' needs were being met and provided families a space to ask questions specific to their family or questions they may not have preferred to share with all families. The children also saw the students as role models; if a child was reluctant to try the vegetable of the month or one of the dishes at dinner, encouragement from the students facilitated the child's willingness to try it.

Students were enthusiastic about this service-learning experience, even signing up for extra shifts beyond course requirements. In written and oral reflections about their experiences required for the course, students made connections between class learning outcomes and their research engagement. They promoted healthful, nutrient-dense meals to families, both applying and recognizing the levels of prevention. Students became teachers, which was empowering for them and participating families. The importance of building teamwork skills is critical to developing effective nurses and was also accomplished through this activity.

Challenges

Although the experience was well-received by students and instrumental to conducting the research trial, integrating service-learning and research environments was not without challenges. For example, the researchers contacted the course faculty and their institution for a letter of support, but because grant funding is limited and competitive, it was several grant review cycles before the grant was funded so definitive plans could not be made. Also, because the research was grant-funded, the research option for service-learning was bound

by the aims/scope/timeline of the grant and opportunities for sustainability were not completely clear once funding ended. Fortunately, the researchers connected course faculty with partners in the rural community of the NU-HOME trial for potential additional collaborations of service-learning through program sustainability efforts and other health programming. There was also a research-related challenge by engaging students who were not formally trained intervention researchers, because students assisting with the intervention could pose a risk to the trial's intervention fidelity. However, in conjunction with the professional research staff, the students were wholly capable of being successful within the scope of their responsibilities (after receiving formal and just-in-time training), as documented through the periodic monitoring of intervention fidelity. Finally, the intervention ran for seven straight months for two school years in a row, spanning four academic semesters. While this schedule allowed for more student involvement, it also required the research team to plan around the students' scheduled breaks (i.e., winter break) and allow for extra time to get new students trained and approved by the IRB each semester.

Conclusion

Ultimately, the collaboration described between the community-engaged research team from a research-intensive university and course faculty from a distant institution provided a unique and powerful student service-learning activity and instrumental support for ongoing research. This type of collaboration could be replicated with all types of nursing research to provide mutual benefit to nursing students and research projects. Such collaborations facilitate student learning of research and didactic content, provide integral support to nursing research, expose students to the nurse-scientist role, and potentially contribute to the development of the future generation of nursing researchers.

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Highlights

- Many types of nursing research can provide service learning opportunities
- Learning outcomes can be enhanced with service learning in research settings
- Service learning students can provide integral support for nursing research
- Student engagement in research can help develop future nurse scientists