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Immersion Research Education: Students as Catalysts in International Collaboration Research

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Abstract

Background—This paper describes an international nursing and health research immersion program. Minority students from the United States of America (USA) work with an international faculty mentor in teams conducting collaborative research. The Minority Health International Research Training (MHIRT) program students become catalysts in the conduct of cross-cultural research.

Aim—To narrow the health care gap for disadvantaged families in the U.S.A. and partner countries.

Methods—Faculty from the U.S.A, Germany, Italy, Colombia, England, Austria, and Thailand formed an international research and education team to explore and compare family health issues, disparities in chronic illness care, social inequities, and health care solutions. U.S.A. students in the MHIRT program complete two introductory courses followed by a three-month research practicum in a partner country guided by faculty mentors abroad. The overall program development, student study abroad preparation, research project activities, cultural learning, and student and faculty team outcomes are explored.

Results—Cross-fertilization of research, cultural awareness, and ideas about improving family health occur through education, international exchange, and research immersion. Faculty research and international team collaboration provide opportunities for learning about research, health disparities, cultural influences, and health care systems. The students are catalysts in the research

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effort, the dissemination of research findings, and other educational endeavours. Five steps of the collaborative activities lead to programmatic success.

Conclusions—MHIRT scholars bring creativity, enthusiasm, and gain a genuine desire to conduct health research about families with chronic illness. Their cultural learning stimulates career plans that include international research and attention to vulnerable populations.

Keywords

cross cultural understanding; family health; international research collaboration; minority students; research education; student exchange; vulnerable populations

Introduction

The goal of increasing the understanding of other cultures' worldviews has resulted in increased numbers of study abroad programs for university students in nursing and health-related disciplines (Crump et al. 2010; Janes 2008; Koskinen & Tossavainen 2004; Wheeler et al. 2008). Concurrently, goals to increase family health promotion and decrease health disparities in vulnerable populations have become global concerns. Much of the vulnerability seen in global populations is directly related to chronic health conditions, social inequities, and a lack of health promotion services available to families (Whitehead & Dahlgren 2006; WHO 2011). In an effort to understand the complexity of chronic illness and its impact on vulnerable families, an international research partnership to conduct cross-cultural research was created. The intent was to explore and compare family health issues, disparities in existing chronic illnesses, social inequities, and health care solutions in multiple countries.

A greater number of trained international researchers are believed to narrow the health care gap for families in the U.S.A and collaborating countries. Working toward this goal, the research training effort involves pairing minority college students from the USA with international nursing faculty. Partner universities in Germany, Italy, Austria, the United Kingdom (U.K.), Colombia, Thailand, and the U.S.A participated in the development of this research education project and continue program maintenance and upgrades. This paper describes the concept of the research training program, its education and research components, and selected student and faculty outcomes. It also explains how students have become catalysts in the collaborative research of the faculty. This information may encourage readers to embark on their own collaborative research or education of students with the aim of increasing research knowledge and cultural awareness and sensitivity to the health issues of vulnerable populations.

Background

International education—While the literature includes diverse aspects of study abroad programs in nursing and health, there is little mention of hands-on research experiences. A major part of the literature focuses on increasing student cultural awareness and cultural competence with international exchange programs (Duffy et al. 2005; Koskinen & Tossavainen 2003; Ruddock & Turner 2007; Taylor et al. 2011; Walsh & DeJoseph 2003). Authors from the UK (Lee 2004), China, and Hong Kong (Lee et al. 2007) report professional and personal student development as outcomes. For example, Inglis et al. (1998) describe the success of a clinical placement program in Thailand as learning related to community health practice concepts. Development of clinical skills in assessment, health promotion, and patient care in underserved areas are mentioned frequently as outcomes as a result of faculty teaching and supervision (Balandin et al. 2007; Mill et al. 2005).

The study abroad literature also emphasizes learning methods. Hermeneutic analysis of student experiences of “being a foreigner” was one example of a method to teach cultural adaptation (Greatrix-White 2007). Medical students’ success abroad was based on adequate preparation and positive relationships with supervisors (Niemantsverdriet et al. 2005). Similarly, Callister (2006) emphasized that increased global consciousness was an important benefit of a carefully guided study abroad program for nurses.

McElmurry et al. (2003) in a paper about international research education mention basic principles that compare to the MHIRT program. Overall, however, the literature offers little insight about outcomes for faculty and students through longitudinal international health research training and placement abroad. Our program addresses such outcomes.

Student programming—In order to increase the number of trained researchers with awareness of cultural values and health behaviors of vulnerable population groups in the U.S.A, the National Institute for Minority Health and Health Disparities (NIMHD) in the National Institutes of Health (NIH) financially supports the education of minority researchers who would eventually work in their own communities and address family health and health disparities. To achieve that goal, the *Minority Health International Research Training (MHIRT)* project (Anderson & Friedemann 2005–2009, Anderson 2009–2013) offers students a three-month research education immersion in another country. Undergraduate and graduate trainees must be of African, Asian, Hispanic, Native Americans, Alaskan, or Hawaiian/Pacific Islands origin. They must be socio-economically disadvantaged, be fully admitted to a nursing or health-related university degree, have an above average academic record, and have an interest in health disparities research (NIMHD 2008). This MHIRT program is designed to facilitate the students’ access to health disparities research careers and to develop leadership potential. Even though MHIRT is designed for students from disadvantaged communities, readers should be aware that all types of students interested in health careers can benefit from this type of a mentored international health research experience.

The MHIRT program provides hands-on research training as students in nursing and health-related disciplines work with international nurse researchers to benefit international collaboration. Faculty research teams at the partner universities conduct research along a defined mission. This mission in combination with knowledge transmission to students is consistent with Freshwater’s (2003) mandate to address common concerns in international research in collaboration with students.

Program Features and Aims

Two aspects make this international faculty-student program a cross-cultural project. Cross-cultural is defined as dealing with or interactivity between members of disparate cultural groups (Merriam-Webster.com, n. d.). The first aspect is the collaborating faculty’s sharing of experiences in research and learning about each other’s ideas and approaches to health and nursing care.

The second aspect concerns the international faculty’s work with U.S.A students. Collaboration with faculty and students from other cultures offers valuable new perceptions, insights, and experiences, and consciously or unconsciously promotes a process of thinking based on cultural awareness. Students and faculty learn from each other about customs, culture, education, work ethics, values, and beliefs. Mixing cultural dynamics while learning about research, health care systems, health disparities, and work in different health care environments, creates a platform where MHIRT program goals can be met. Future thinking is developed, and research-based interventions improve the health and life quality of families with chronic illness.

The Partners' Conceptual Connections

With the original partner universities located in Germany, England, Italy, and Colombia, the research activities occur in Witten, Osnabrück, Rheine, and Freiburg (Germany), London (UK), Rome (Italy), Lima (Peru), and Chihuahua (Mexico). In 2011, partners were added in Khon Kaen (Thailand) and Vienna (Austria).

Cross-cultural research is particularly beneficial if it compares contextual factors and the effect of differing health care systems on vulnerable families (Amaya-Rey 2007). This research program links chronic illness, family care of chronically ill members, and family health (Anderson & Valentine 1998; Chesla 2005). The definition of chronic illness used is “the irreversible presence, accumulation, or latency of disease states or impairments that involve the total human environment for supportive care and self-care, maintenance of function, and prevention of further disability” (Lubkin & Larsen 2006, p. 5). A person with a chronic illness is a member of a family. The person is guided by cultural values and beliefs that influence health behaviors and communication about health and illness. Cultural and community contextual factors (e.g., access to health care, transportation, racism, language barriers, diet, income, environmental hazards, and social support) that influence health and health care are explored.

The entire family is affected when chronic illness occurs. The less assistance families receive from the health care system, the more they are responsible for managing their own health and dealing with unfamiliar medical conditions. Much physical and emotional energy is expended to gain access to quality care and deal with unfamiliar health systems while maintaining family life. Care may be available to some, but other families all over the world, even in industrialized countries, are often left outside this system (Institute of Medicine, IOM 2003, 2006; Settles 2004). Routinely, the dynamics that influence health care decisions and practices of families are not included in health care discussions or research (Anderson & Friedemann 2010). The view of the family as an ecosystem forms the basis of the research efforts of the international teams and becomes a foundation for student learning.

The MHIRT international collaborative research program evolved from the studies conducted by each of the research partners (Table 1). The German research program examines facets of the health care system and care of patients and families with chronic illness (e.g. diabetes, cancer and dementia). In Rome, studies focus on family dynamics in grief, the impact of Alzheimer's disease on caregivers, and effects of earthquake disasters. The Colombian research explores health and health risks in poor families. In London, research examines populations with mental illness and dual diagnoses. The U.S.A projects include care arrangements for families with elders, and family care concerns in situations of chronic illness and health disparities. The new partners focus on gender, family health, and community programs for families (Thailand) and family-focused care interventions (Austria).

Methods

Minority Student International Training Program

The MHIRT program created a platform for a common research approach. The program unites the partners in yearly meetings, telephone and Skype conferences, site visits, and intellectual interactions. U.S.A minority undergraduate and graduate students receive a preparation in applied research strategies and a semester of hands-on research experience with U.S.A faculty mentors prior to their international immersion. This research learning serves as preparation, and the project abroad is coordinated by both the local and international faculty mentors. Upon return to the U.S.A, students are again guided by a local mentor in the dissemination of the research findings from abroad. The MHIRT students (70

students to date) play a vital connecting role in the cross-cultural research process. To date, the American students are representative of Hispanic (52), African/Caribbean Black (11), Asian (4), and mixed (3) races/ethnicities.

Preparing to go abroad—Undergraduate and graduate students apply to the MHIRT program during their basic research course semester. In the semester immediately prior to travel, they complete a MHIRT course in applied research that reviews basic research methods and designs, includes responsible research conduct, and informs of day-to-day expectations of conducting research abroad. The same course also offers an introduction to families with chronic illness, global health, and addresses multicultural and health disparity concerns in the U.S.A. and worldwide. In addition, the students participate in a three-week cultural immersion online seminar that introduces them to cultural, family, and health values of their host country. U.S.A students are coupled with a student or staff person at the host university and engage in e-mail exchanges about host country life as a student. Each mentor faculty provides basic information about the assigned research topic and the relative projects prior to the students' departure. This allows the students to begin a focused literature review before they travel.

Immersion activities abroad—While abroad, students work 40 hours per week on the assigned research project(s), complete research activities, and meet regularly with their faculty mentor to discuss the research and to receive guidance. Learning the host country's social mores, economic conditions, ethnic composition, and health care issues of various disadvantaged population groups occurs through conversations with mentors, observational experiences, and development of a paper on health disparities in their host country. Students evaluate their learning and compare research findings in the host country to disparities and health issues in the U.S.A.

As part of the research activities, they conduct a comprehensive literature review on their topic of focus and develop a paper for publication under the supervision of international and home research mentors. Immersion in the culture occurs simultaneously as students interact with the team and explore their new environment. Students write weekly journals that address learning in research, observations of cultural differences, and personal development.

Post travel activities—After the practicum abroad, students return to the U.S.A to focus on research dissemination. They share research project involvement, outcomes, and cross-cultural insights with the other students and faculty; prepare an abstract for a professional conference; and contribute to or complete publications initiated while abroad. Student discussions during bi-weekly group meetings with the MHIRT faculty include ideas for replicating or adapting studies to different conditions in partner countries, or for identifying international findings useful for the development of local implementation studies. Students also offer suggestions for future MHIRT cohorts. Such discussions further cross-cultural research fertilization.

Faculty Partnership Planning for the MHIRT Programs

The mentoring process of novice research students, the research education, and the preparation for international travel, while time and energy intensive for all involved, are highly valued. Since the structure of the funding does not allow for reimbursement of international faculty efforts, other incentives are critical. The incentives include the opportunity for collaborative research, educational development of international students, dissemination of findings through publications, and creation of innovative interventions to address vulnerable population issues. These incentives are important to sustain partner motivation and maintain involvement.

Developing the program—Initially, all partners provided a summary of their research projects with vulnerable populations and proof of Ethics Committee approval of the projects to fulfil the U.S.A Human Subjects Committee's requirements for student participation. At the initial workshop, the partners developed guidelines and strategies for working together. Subsequently, U.S.A faculty made visits to each partner institution when the collaborative research process and student research activities were refined. All partners developed an infrastructure for student integration and cross-cultural research at their respective universities. Student integration included matriculation, peer mentor assignment, university affiliation agreements, integration in educational programming, library and media usage, safety and housing, extracurricular activity planning, and transportation, consistent with the guidelines for host institutions, trainees, and sponsors in global health training suggested by Crump et al. (2010).

The program expectation that students would be catalysts for cross-cultural research was met with the first student group. With subsequent groups, the faculty refined the program infrastructure, student activities, objectives, and expected learning outcomes to allow for more effective faculty to student mentoring. The faculty team's regular collaborative discussions have provided feedback to enhance both student and faculty experiences. Concurrently, while MHIRT student scholars are realizing their objectives of becoming more knowledgeable about research, to study abroad, and to learn about another culture, the faculty mentors' research activity is being supported as publications are developed.

Program operations abroad—Depending on the research programs at the host universities, students receive plans that specify their activities. These plans are developed by the international faculty partners together with U.S.A or other international faculty. They are then converted into a learning contract to guide students in specific research activities and personal development. The contract includes student learning objectives, specific research strategies, desired student research outcomes, cultural adjustment, personal development objectives, and evaluation criteria. To facilitate success, international faculty supervise the students, communicate with them regularly about their progress, and provide evaluations along the contract's specifications.

In discussions about health disparity and social inequity, faculty highlight specific chronic illness and family dynamic issues in their studies. Research activities that further the international studies include tasks (Table 2) from completing literature reviews to disseminating findings. Throughout the entire semester abroad, communication about progress and feedback on student journal entries is on-going between the student and the U.S.A faculty. Before returning, students meet with their mentor to evaluate the study abroad practicum. Together, they review the drafted manuscript about the conducted research, complete reports on health issues and cultural experiences, and make plans for future interaction to prepare the paper for publication. A summary of the meeting and evaluation are forwarded to the MHIRT U.S.A faculty.

Results

Student Research Outcomes

Student outcomes encompass research products, personal growth, and role development. Weekly journal reports, papers, documentation of achievements, faculty evaluation reports with student input, and end of experience student summative evaluation surveys all contribute to determining that program outcomes have been met. An outcome exemplar is the dissemination of research data. All students complete literature reviews on their research topic. Topics have included family visiting in the ICU, anxiety and depression in persons with multiple sclerosis, support of families who have a child with cancer, the psychosocial

impact of caregiving with family members with Alzheimer's disease, and ecological influences on poor families in Peru.

Students become lead or co-authors on these topic-related manuscripts that include their findings from the literature. To date, four student-initiated articles have been published. With a German mentor, a MHIRT scholar completed a review article on sensitive approaches to dealing with incontinence, published in the leading German nursing journal *Pflege* (Hayder et al. 2009). Students who participated in research activities in England have published articles in the *International Journal of Nursing Studies* (Patel et al. 2009) and in *Advances in Dual Diagnosis* (Robson et al. 2008) and a paper from Italy in *Professioni Infermieristiche* (Varela et al. 2011). Three more articles are in press; three manuscripts are currently in review and several are in development. Completing the editorial process requires intense commitment by both students and faculty. In addition, 30 refereed student presentations and posters have been delivered at local, regional, or international conferences. Students also present their literature review results to the host university research team and, upon return, to students and faculty in their home university.

Students contributed to the development of research and curriculum at their host universities. They compiled instruments suitable for use with vulnerable populations. In Germany and Italy, they located such instruments in the English literature and assisted in the evaluation of their validity. In Italy, they also participated in the back-translation of instruments translated by local professionals. These instruments are now used for data collection in the team's research studies. As MHIRT students worked with host country students, they all enjoyed cross-cultural interactions and learned from each other. Several students from partner sites have consequently travelled to the U.S.A to learn more about health care, attend classes of interest, and participate in short term research activities.

Cohort support and camaraderie—The on-going MHIRT student research group from each year's cohort meets regularly until the students graduate. It serves several functions in the education and professional growth of those involved. Individuals benefit from belonging to a core-sharing group while they learn new skills and acquire new experiences. They learn to respond to cultural differences within their student group. MHIRT teaming facilitates interactive learning, mutual support, and socialization to cultural and researcher roles. In addition, the group serves as a safe place to summon the courage to express (often for the first time) thoughts and feelings about new topics.

Professional and personal development—All students described their progress in terms of research becoming alive for them. They reported excitement with engagement in research in contrast to non-MHIRT classmates who generally view research as something to avoid. Referring to her growth process, one student stated in an evaluation, "I was moulded and refined. In this course I feel like I came into a chamber and came out a different person." In their written summative evaluations, students described gaining a worldview that they did not have prior to their travel abroad. They expressed their amazement at the intricacies of being on a research team. They verbalized a great appreciation of the effort required and pride when receiving praise for their contributions. They recognized great improvement in their ability to explain the research they were involved in, and enjoyed the success of completing a draft manuscript. Students learned to overcome initial difficulties with accepting constructive feedback in their work and writing. They learned how to present their research orally and as a poster and exhibited enthusiasm, confidence, and professionalism when they discussed their research findings with other students and faculty at conferences. Two students, who initially had difficulties speaking more than a few words in the classroom, six months later successfully led a podium presentation about their MHIRT experience with an audience of 100 people at a local conference.

In terms of awareness of their own and other health care systems, students reported learning to articulate U.S.A health care strengths and weaknesses and seeing political perspectives in new ways. They recognized evidence of health disparities and provided suggestions for changes that could be applied in the U.S.A.

Personally, many students described becoming more independent and gaining a sense of confidence about their ability to meet goals and outcomes by working on a project. They saw their own growth in the process. Many described challenges in returning to live at home again after achieving personal independence.

In spite of not always returning to their student cohort in the main curriculum, all students graduated from their respective universities as planned and passed their national licensing or certification exams. They are now practicing their profession. Several students decided to work directly in research roles with five assuming a paid research position.

After returning to the U.S.A, undergraduates verbalized the intent to seek advanced degrees. Students reported a research career as something desirable. Their feedback documented engagement in leadership activities, research involvement in the workplace, and admission to graduate programs. Currently seven students have entered doctoral study, six BSN graduates are in masters' programs, two have completed a master's degree, and three are applying to doctoral programs. The students' enthusiasm for the program is exhibited in on-going efforts to assist faculty with the recruitment of new students to the program.

Cross-Cultural Collaboration Research Outcomes

Faculty-led student research activities propel faculty research. With the international placement of three months, specific research tasks performed by students are intended to help faculty research activities. Student questions often lead to a rethinking of research methods. Faculty learned that often activities needed to be well-detailed for students to understand how to fill in research knowledge gaps, so projects could move forward. Students and faculty educated each other about health disparities in the host countries and the U.S.A Faculty literature review efforts were enriched by student literature reviews in the English language. Student insights stimulated the application of research findings. In several cases, findings became the basis for changes in practice in the host country.

The mentor group has learned a great deal about their cultural differences between them and the students and ways to facilitate student adjustment to a new culture. Both faculty and students have learned to pay attention to behavioural adjustments needed for culturally smooth interaction, productivity, and individual and group success

The collaborative and/or cross-cultural research process continues to develop. Faculty track the accomplishments in their respective research projects. One research team in Germany is working on a review of the literature comparing homecare delivery systems in Germany, Spain, and the U.S.A with measures for quality development, assurance, and outcomes for vulnerable families. A plan for collaboration with all partners to replicate a U.S.A qualitative study is in progress. The university in Colombia sent a doctoral student to work with MHIRT faculty for a semester. Together, they validated a Colombian culture-congruent family risk assessment tool. The MHIRT students studying in Peru and Mexico compiled data to describe the demographic and epidemiological background of the project community by conducting 500 family interviews at each site working with local nurses.

In the annual evaluation meetings, the faculty partners discuss research topics of primary concern. This past year, a collaborative research review of family intervention research was identified for the first faculty team collaborative project. All research partners, with the help

of students, are conducting a literature review specific to their country, to be followed by a comparison across countries. Initial findings were presented at the 2011 conference of the International Family Nursing Association conference in Kyoto, Japan. The team envisions further research to include replication studies with vulnerable populations in other countries, intervention research with families dealing with chronic illness, and other projects reflecting the common research interests across international sites.

Discussion

This international research collaboration program focuses on chronic illness, vulnerability in families, and promotion of health in families and engages students in research study abroad. The inclusion of U.S.A MHIRT students in international research education exemplifies a strategy to achieve Freshwater's (2003) mandate to understand health and nursing care on an international level by bringing together nurses to advance nursing and health care knowledge. Planning for and actualizing this research program followed the *Guidelines for International Collaborative Research* (International Research Committee 2003). Program results indicate that students learned about research and culture. This is consistent with McElmurry et al.'s (2003) outcome of their international research training. Their novice students paid attention to culture and gained valuable experiences while participating in international research. The returning students in this project consistently report that their goals for a research practicum abroad were achieved and that it was a life-changing experience. The opportunities offered by the MHIRT experience lead students to value research and makes them proud of their research accomplishments. Consistent with other study abroad program reports (Rolis et al.1997; Ruddock & Turner 2007), MHIRT students state that their self-perception and self-confidence have been reshaped.

Five steps were involved in implementing the international collaborative research partnership. Step 1: interested faculty partners became committed to a research project along common areas of interest (chronic illness, vulnerable families, and promoting family health) and agreed to include students who were early in their education career in faculty research. Including students at a novice research level meant significant input on the part of faculty to facilitate student integration into their research team, to guide learning about research, and to assist students in orienting themselves to a new culture abroad. Step 2: research goals and activities were identified, and the infrastructure to accomplish the goals was established. Step 3: a research collaborative group ethos was created that included demonstrating respect for each other's expertise and contribution, assuring that all had a voice. The international faculty research partnership enhances the advancement of individual and group research goals. In addition, learning about cultural, educational, and practice differences between the countries enriched the ability to help students adjust culturally.

Step 4: a commitment was made to further collaborative and individual research goals. This agreement was instrumental to designing research activities, supporting student learning, providing needed mentoring, and actualizing research outcomes. Considerable time and effort is required to organize and facilitate student activities into on-going research projects. Active guidance to complete research tasks, present and publish dissemination research products is continuing work. Step 5: consensus was established on evaluation measures. The completion of evaluation activities supports the effort of the research team and collaborative project, documents outcomes, inspires further planning, and gives opportunities for input to all participants. It takes time to identify what works well and involves open and frequent communication to achieve project goals.

The project evaluations support that students learn about the conduct of research and adopt a culturally expanded view after immersion abroad. Students recognize differing aspects of

health disparities and seek solutions to address those issues. Their involvement with research projects and significant findings motivates them to continue their research involvement and enter graduate education. These outcomes are consistent with the goals of the MHIRT program.

Concrete limitations create some challenges. Frequently the period of time for U.S.A semesters and the international universities do not coincide and accommodations must be made. Arranging group meetings across time zones and online reception can sometimes offer challenges. Helping students and parents adjust to prospective travel abroad requires at times more guidance than anticipated. However, dedication to the principles and the process of international research collaboration, education of students, and development of knowledge for practice to impact families and improve health outcomes sustain motivation.

Conclusion

Through the MHIRT program, we are actualizing cross-cultural collaborative research. This MHIRT student immersion in an international research culture provides substantial benefit for the student and furthers faculty and student team research efforts. Through student learning activities to achieve project goals, students serve as catalysts in facilitating research and crossing cultural barriers. As they provide input and feedback, they assist in executing the research with vulnerable populations and working with the international faculty partners in disseminating findings. The students serve as a link between research faculty of differing cultures and enhance project success, while learning about research.

The collaborative efforts of faculty and students facilitate the growth of the international partner research base. With faculty guidance and student assistance, knowledge and insights useful for addressing health care gaps in vulnerable population groups in the U.S.A and in partner countries are being developed. The international faculty collaboration has led so far to project development and research team growth, cultural understanding, and research outcomes on many levels. Therefore, we suggest to other international research teams to regard our approach as a blueprint to consider and encourage replication of aspects of this program to meet their own research ideas and goals.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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