Published in final edited form as:

Nurs Outlook. 2015 ; 63(4): 462–473. doi:10.1016/j.outlook.2015.02.003.

A practical fieldguide to conducting nursing research in low and middle-income countries

Virginia LeBaron, PhD, APRN, FAANP [Postdoctoral Research Fellow],

Dana-Farber Cancer Institute, 450 Brookline Avenue, LW 517, Boston, MA 02215-5450

Sarah Iribarren, PhD, RN [Postdoctoral Research Fellow],

Columbia University, School of Nursing, si2277@columbia.edu

Seneca Perri, PhD, RN [Postdoctoral Research Fellow], and

University of Utah, Biomedical Informatics, Adjunct Faculty Instructor, School of Nursing and Health Sciences, Westminster College, iptsam@gmail.com

Susan L. Beck, PhD, APRN FAAN [Professor]

Robert S. and Beth M Carter Endowed Chair in Nursing, University of Utah, College of Nursing, susan.beck@nurs.utah.edu

Abstract

Purpose—To offer practical guidance to nurse investigators interested in international research in low and middle-income countries (LMICs). Lessons learned and strategies for planning and implementing an international research project are addressed.

Method—Four nurse researchers who conducted studies in diverse international settings (Argentina, India, South Africa and Tanzania) describe their collective experiences regarding study planning and implementation, data collection using a variety of methods, and cultural, contextual and ethical considerations.

Discussion—Nurses who undertake international health research projects—particularly in LMICs—can face unique challenges and opportunities. Recommendations for success include: advance planning, remaining flexible, having a back-up plan, cultivating an attitude of curiosity and cultural humility, establishing collaborative and respectful partnerships, and budgeting adequate time.

Conclusions—Nurse scientists often receive little training and support to conduct international research. Guidance to undertake research projects in LMICs can build capacity for nurses to make significant contributions to global health.

Corresponding Author: virginia_lebaron@dfci.harvard.edu, Phone: 617-632-6386, Fax: 617-582-8550.

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Disclosures: The authors declare no conflicts of interest.

Selected aspects of this manuscript were presented in a poster presentation at the Western Institute of Nursing 46th Annual Communicating Nursing Research Conference in Seattle, WA April 2014.

Introduction

Opportunities to improve global health are unprecedented, particularly in low-and-middle income countries (LMICs) where the dual burden of infectious and non-communicable diseases is significant, and growing. Nurses are well positioned to make important contributions to global health (Gantz et al., 2012), and many nursing institutions are actively working to increase their international involvement via research collaborations, student exchanges, and volunteer projects (Ketefian, 2000). Additionally, the International Council of Nurses (ICN) encourages global partnerships to promote innovation and capacity building (ICN, 2014). Despite these goals and opportunities, nurses generally receive little training or support to conduct international research; nurses who do undertake global research projects often confront unique and complex challenges—particularly in resource-constrained settings (Armer, 2012; Chen et al., 2013; George & Meadows-Oliver, 2013; Suhonen et al., 2009; Webb, 1998).

The literature related to international nursing research primarily addresses topics of ethics (Harrowing et al., 2010; Hays, 2011; Ketefian, 2000; Olsen, 2003), methodological rigor (Im et al., 2004) and personal/professional development (Armer, 2012; Hunter et al., 2013; Jooste, 2004; Zanchetta et al., 2013). There is little emphasis on how to successfully implement nursing studies in LMICs. This paper addresses this gap by providing practical guidance and strategies to help nurses conduct healthcare research in LMIC settings. Relevant issues related to study planning, data collection, cultural, contextual and ethical considerations, as well as general lessons learned and pitfalls to avoid, are discussed. The recommendations are based upon the authors' collective experiences as primary nurse investigators, crossing continents and methods. Perspectives and specific examples from both novice and senior nurse researchers are presented (Table 1).

General Planning

An interest in conducting international research typically stems from a prior global health experience, or an abiding interest in world health. Project specifics are often based on practical considerations such as who the researcher knows and where, priority health issues in the host country, and the relevance of the research question to local (host country) collaborators. It is also vital to consider whether the research will involve a new or established project, the amount of time and funding available, and potential sociopolitical factors in the host country that could disrupt, delay, or preclude data collection.

The importance of advance planning and allotting more time than usual in the study timeline to conduct international research cannot be underestimated. Learning about nursing and the country's healthcare system, reading relevant academic articles and lay literature, and watching popular movies can provide an invaluable sense of cultural, historical and social contexts during the planning phase. Global health or medical anthropology coursework can help build the skills needed to conduct global research, and introduce helpful new theoretical frameworks and perspectives. Conducting research in LMICs can be extremely challenging; flexibility, persistence, cultural humility, patience, and passion for the project are essential.

Establishing a Research Site and the Roles of Local Collaborators

Networking, serendipity, and on-the-ground help from local collaborators in the host country are indispensable to develop the study and establish a research site. It is recommended to engage local collaborators early in the planning phase, as without their strong support a project cannot even begin. Local collaborators may assume a variety of different roles; they can be key informants, the formal host sponsor, or members of the research team, and may facilitate access to the research site, assist with participant recruitment and translation, and help navigate an unfamiliar culture and system. All authors relied heavily on multiple local collaborators throughout all stages of their research projects. For example, SI established a connection with a regional tuberculosis director while conducting a qualitative study during her time as a Fogarty International Clinical Research Scholar in Argentina. She maintained contact with the director and started the conversation regarding a potential research project. This established collaborator was an integral partner throughout the development of SI's National Institutes of Health National Research Service Award (NRSA) grant proposal. VL met a physician through previous international work; she then sent an email of inquiry to gauge the interest of this individual (Dr. P) serving as the host sponsor for her Fulbright research project and to explore the possibility of the cancer hospital serving as the primary fieldsite. Dr. P. agreed and served in a crucial role as a local collaborator and facilitator of the research before, during and after VL's fieldwork.

Selection of the research site depends on a number of related factors, including access to participants, variables related to the research question(s), previous connections and work at the fieldsite, logistic feasibility and strong support from a local collaborator or host country sponsor. Some funders will require formal, documented support from a country sponsor (Fulbright, 2014) for a successful application, and all grant reviewers will look for strong letters of support from the host institution. Obtaining letters of support from LMIC institutions may take longer than anticipated due to personnel turn-over in leadership positions or other logistic factors, such as language barriers; again, this reality underscores the importance of allowing extra time in the planning phase. Flexibility (e.g., willingness to consider an alternative research site/s) and persistence (e.g., not giving up if initial emails are not returned) are often needed to secure access to a fieldsite.

Depending on the country and fieldsite's previous experience with research, there may be reluctance or uncertainty about participating in the project. Establishing oneself as a credible, reliable and ethical researcher is paramount, and building trust and rapport with local collaborators is crucial in this process. Similarly, making government or ministry of health officials aware of the research can generate support and add credibility to the research proposal, and may be politically necessary.

In addition to leveraging global contacts from prior work, strategies to establish international collaborations include attending global health conferences, joining relevant email distribution lists and on-line forums (see Table 1), sending inquiries to researchers with similar interests, or querying university international studies programs. Applying for global health programs, such as the Fogarty International Clinical Research Program (Fogarty, 2014), can facilitate access to a research community with mentored support and funding.

Particular to doctoral students, it is crucial to have a supportive mentor/dissertation chair, preferably one with previous international research experience and contacts.

Funding the Study

Funding mechanisms for international research *are* available for nurses (Table 2), but are highly competitive and require advance planning. Having a back-up plan in case preferred funding does not come through is recommended, as financial support from multiple grants may be necessary. “Piggybacking” onto existing funding with organizations or investigators doing similar research can be another strategy to offset costs.

Living Abroad

Having important logistics arranged prior to departure can make the transition to living abroad for an extended period of time easier. However, being flexible is key, as one can never anticipate every possible scenario. Setting up a new life in a different culture, especially if one is doing it alone, can be more stressful than anticipated; allowing adequate time (at least 2-3 weeks) to acclimate before starting the research project is suggested.

Securing living arrangements abroad may be particularly challenging, depending on the researcher’s specific situation. SB and SI were able to arrange housing ahead of time with help of their host program and contacts through colleagues. In other cases, it may be necessary to arrive in country and verify that the housing actually exists, is as advertised, and is in a safe and convenient location before agreeing to any financial transaction. VL was advised to find living arrangements after arriving in-country and had a particularly difficult time. This resulted in a longer than anticipated hotel stay, which impacted her planned budget. After about a month VL found a safe and convenient room to rent through intensive networking. Travel guides, trusted local contacts, and online resources, such as CouchSurfing.com or ex-patriot Facebook pages, can identify safe areas of town, potential roommates and available apartments. Renting a room in a family home is an option to strengthen language skills, learn cultural nuances, and enjoy local cooking, but a family stay can also have its own set of challenges in regards to personal space, requests of time, and eating schedules and preferences.

One key aspect of selecting housing is to consider its proximity to the research site. All co-authors experienced significant transportation challenges related to cost, time, infrastructure, and safety. Living near the research site reduces time spent stuck in traffic, money spent on transportation, and traveling long distances alone; proximity also improves efficiency of data collection.

Obtaining IRB approvals

Conducting international research requires additional steps for Institutional Review Board (IRB) approval, including translating consent forms (and other related documents) into the local language/s. It is important to be proactive with both the home and host institution and allow plenty of time for obtaining necessary signatures and approvals, as IRB approval at the home institution will often be contingent upon approval from the international (host) IRB. Also, the host institution may not have a traditional IRB; instead, they may have an

ethics committee or similar body that approves research projects and they may meet infrequently. Approvals may be needed at multiple levels, such as with the City Medical Office and the supervisors from each of the clinical sites (SP). Also, in some countries (VL & SP) government approval of the study protocol is required to obtain the necessary visa. Carrying hard copies of IRB approvals is recommended in case questions arise.

Language and Translation Issues

Issues related to language and translation permeate all aspects of the research project from study planning to interacting with local collaborators to dissemination of findings, and require thoughtful consideration. Being able to communicate in the local language will help build rapport with local collaborators, research participants and assist with daily life. Learning the local language (ideally, before departure) is strongly recommended, even if others suggest it will not be necessary due to widespread proficiency in English. For example, in India, Tanzania, and South Africa, it quickly became apparent that many nurses—despite being trained in English—had limited comfort with the language and very few patients spoke English. Furthermore, multiple languages may be spoken in the same region, complicating communication and translation needs. For example, in South Africa, there are 11 languages and in Pretoria, Afrikaans (not English) was more commonly spoken. Local collaborators can play an important role in helping translate in the field, or assisting with translation of research-related documents. For example, VL had significant translation help from a variety of local collaborators, both within and outside the hospital. However, it is important to recognize that assisting with translation takes time, and may divert local collaborators from their other responsibilities. Compensating appropriately for translation help is essential.

It is also important to have translated documents reviewed by collaborators in the host country. For example, SI found that documents translated in the U.S., where Mexican Spanish is more common, required modification due to variations in Argentinian Spanish. Locating the right resources to assist in translation can be challenging. Local university language departments, international students, professional nursing organizations, or networking via local collaborators, the host sponsor or embassy are examples of potential resources to seek translation services.

The researcher must also consider whether fluency in English should be part of the study inclusion criteria; requiring participant fluency in English may severely limit study recruitment and may not be a realistic inclusion criteria. For participants with limited English proficiency or low literacy, native speakers may be needed to help administer questionnaires/surveys or co-conduct interviews. In SP's study, quantitative feedback interviews (recall) were conducted by a native speaker, and then translated by an American who was a native Swahili-speaking translator after data collection; this process was essential for capturing colloquial terms. Verifying the accuracy of translation, albeit time consuming and costly, is important to maintain internal validity. For example, in VL's study, interview audio files where the local language was used by participants, and a translator assisted, were initially transcribed and translated by a native speaker; VL then sent the transcriptions and audio files to a third-party to verify the accuracy of translation and clarify any discrepancies.

It is important to allocate a large portion of time and budget for translation and transcription fees, especially if multiple languages or speakers are involved and if background noise affects audio quality.

Study Implementation

Preparing for Start-Up

Initial contact with local collaborators is commonly established over email prior to the researcher's arrival; Skype and other free messaging services (such as 'WhatsApp' or Viber) can also help facilitate communication, depending on internet/phone capabilities. While this advance dialogue and planning is essential, real progress towards study implementation generally happens once the researcher is on-site. For example, sometimes a translator or research assistant can be arranged ahead of time, but more often one needs to be in the field first to identify the most effective individuals for these roles.

Study planning also involves securing necessary equipment and supplies, which should all be tested ahead of time. Electronic equipment may be difficult to find or replace (e.g., the right type of cord/battery or transformers for different electrical currents), so packing extras, as feasible, is recommended. Power surges can damage computers, and frequent power outages may create challenges in charging electronic equipment; it is important to double-check memory capacity and battery levels to avoid unpleasant surprises in the field. In contrast, sometimes certain equipment needs to be purchased locally. For example, SI found that the modem purchased in the U.S. did not function as effectively as one later purchased locally.

Establishing Rapport

Establishing trust and general rapport with research participants, fieldsite staff and local collaborators is crucial, and will take some time. The more of a cultural 'outsider' one is, the longer it may take. It is also important to remember that the role of nurse researcher may be unfamiliar, as advanced nursing degrees may be unavailable or uncommon in the host research setting. For example, SI was often introduced as a biologist versus a PhD nursing student, and SP was commonly introduced as a PhD student rather than a nurse, possibly due to the increased prestige given to doctoral students and to mitigate potential confusion in understanding respective project roles. VL and SI were the first nurses to conduct research in the hospital where they did their fieldwork, and many were initially confused by their role.

A researcher's life or lifestyle may be very different than what participants and local collaborators know, and sometimes this can be awkward. For example, in India being an unmarried female without children is extremely unusual. If one's lifestyle is dramatically different than cultural norms, other ways to build rapport will be necessary (see Table 1). Most of all, one should not hesitate to be friendly, genuine, and personable (within culturally and professionally appropriate boundaries).

Recruiting Study Participants

Successful study recruitment depends on trust from potential participants, and local collaborators can help forge connections between the researcher and participants. Providing information about the research project clearly, early and to the appropriate key stakeholders can mitigate potential challenges related to participant recruitment. It is important for the researcher not to make assumptions about interdisciplinary communication and collaboration. For example, VL was unaware the nursing superintendent of the hospital had not been fully informed about the research project; this initially hindered recruitment efforts until a one-on-one meeting with the nursing superintendent and a translator could be organized. Other challenges to recruitment included finding space to meet with potential participants and identifying deviations in patient/participant flow through the system. For example, SI learned that one physician bypassed the usual medication allocation process and collected the medication for patients himself, negating an opportunity to recruit potential participants.

Various practical and cultural factors may influence participant willingness to engage in the research project, and may take some time to uncover. For example, after several months of fieldwork VL learned that many contract-based nurse employees were hesitant to be formally interviewed because of fears related to job security, but were willing and eager to share valuable data informally. Successful strategies the co-authors employed to increase participant recruitment included organizing meetings or presentations with written information sheets translated into the local language to clarify goals of the research, hiring an effective and culturally acceptable translator, and being regularly present on-site to gently remind staff of the on-going study. VL found two strategies particularly effective in boosting participant recruitment: focusing first on collecting observational data by rotating through each ward of the hospital for 1-2 weeks to build trust and rapport before attempting to recruit participants for formal interviews, and organizing and teaching requested classes on general cancer care at which she passed around sign-up sheets for anyone interested in being interviewed. Additionally, factors such as seasonal fluctuations in infectious diseases, weather, festivals, or transportation strikes may influence study recruitment.

Data Collection

To review all possible methodological considerations related to data collection in LMICs is beyond the scope of this paper. However, there are specific implications relevant to the data collection methods used by the authors that warrant discussion.

Recording Fieldnotes—Timely and detailed fieldnotes are critical for capturing participant observations. Cultural norms in the host country may require special efforts to maintain privacy and confidentiality when recording field observations, such as for ethnographic projects. Taking notes on an encrypted laptop or electronic tablet (SP) or using a very small notebook with perforated pages so daily notes can be torn out each evening (VL) reduces the risk of unauthorized personnel finding and reviewing field observations. One strategy VL found particularly useful was to text message herself reminders of observations and conversations that occurred in the field; this approach was much less threatening than taking notes in front of participants, as mobile phones were ubiquitous and

accepted. Also, being diligent about reflecting and documenting observations on a regular basis, such as the end of each day, is helpful.

Conducting Interviews—Interviews require careful consideration of language and translation issues as well as cultural norms, such as those related to privacy and gender. For example, it may be uncomfortable for a male participant to be interviewed alone by a female researcher and participants may be more comfortable being interviewed as a small group, versus individually. It may take special effort to identify a translator who is able to handle the sensory experiences of a medical environment and who can accurately translate and explain abstract concepts, such as ‘conscience’ or ‘advocacy’ (VL). Similarly, to elicit genuine and meaningful data during interviews translators must be trusted and culturally acceptable; gender and social status may be important considerations in selecting a translator. It is important to train the translator, and re-iterate as needed the study purpose, general research approach, questions that will be asked, and the importance of maintaining confidentiality of data and identity of participants (which may not be culturally normative). VL and SP had to continually remind their translators that interview questions were designed to be open-ended, and to check the translator’s tendency to “help” participants by “filling in the blanks.” Participant bias (such as social desirability bias or demand characteristic bias) can be problematic, especially when interviewing participants unaccustomed to sharing their individual opinions and views, and in settings where strong cultural norms may exist related to wanting to please a foreign researcher.

Coordinating time, space, and privacy for interviews can be challenging and very time consuming. Unexpected gatekeepers or bureaucratic hurdles may be encountered when attempting to secure space to conduct interviews, and may highlight pre-existing sensitivities related to politics of space. Private rooms may simply be unavailable and, out of necessity, interviews may occur in areas with significant ambient noise (traffic, crowds, construction, prayer calls). Purchasing high quality audio recorders is a worthwhile investment. In some settings, audio recorders will be viewed suspiciously and taking notes during the interview may be a necessary alternative.

Some participants may not feel comfortable acknowledging they need a translator. VL realized this during some of her early interviews when it became apparent that a translator was needed for a productive interview, even though the participant had insisted it was unnecessary. Because there was somewhat of a stigma associated with not speaking English fluently, VL made a decision to have the paid translator available during all interviews with primary participants as a way to normalize the experience, even though this increased costs.

Gathering Artifacts—Gathering artifacts (such as hospital documents, pictures, newspaper articles) can augment data collection, but accessing documents in LMICs can present challenges. For example, VL hoped to obtain a copy of the job description of a nurse. However, after multiple failed attempts to obtain the document, it was eventually acknowledged that the document did not actually exist in written form, and was instead a word-of-mouth agreement. Copying documents can be difficult if copiers are not readily available or operational. If planning to use the printer/copier at the host institution, providing the paper or printer cartridge may be necessary and greatly appreciated. Other options

include bringing one's own portable printer, or requesting permission to take the document to a local, outside copying shop. Good judgment should always be exercised, as well as seeking at least verbal consent, if taking photos of individuals or of potentially sensitive material.

Administering Survey Instruments and Questionnaires—It is optimal to select tools that have been previously translated and validated in the population of interest. If this is not possible, standards for translation include forward and backward translation by a team of at least two bilingual translators in each direction, each with a different first language (Cha et al., 2007). Scales and instruments can have different conceptual or cultural equivalence in different cultural contexts; expert input from research colleagues and local collaborators may be needed to verify cultural relevance of the instrument items. For example, in certain cultures and populations, understanding and using scales to report symptom intensity may be confusing and unfamiliar to participants and yield poor quality data. SB found that in rating pain, low literacy patients in South Africa tended to dichotomize the ratings as either 'high' or 'low' versus using the entire range of a scale.

Collecting Clinical Observations—Collecting clinical observation data may also present challenges. During initial instrument pilot testing, SP discovered that the local field worker hired to collect clinical observation data was marking down events that did not actually occur during the patient's clinical encounter. It was discovered that this "help" was being given by the field worker because the purpose of the research was not fully understood. Though the field worker spoke excellent English, and the researcher believed that the intention and method of collecting data had been successfully communicated during training, it was clear that there remained a language barrier that prevented the field worker from fully understanding what data were to be collected and how. Additional training to clarify and reassure the field worker that items not observed did not reflect poorly on the clinicians being observed resolved the problem.

Data Extraction from Medical Records—In LMICs paper-based documentation is often the standard; this can make collecting outcome data from chart review much harder. For example, extensive time was needed by the data collector to locate, check-out, and sift through the paper based medical charts in SI's study. The data collector was required to travel to another section of the hospital during specific times to request charts; as not all charts could be immediately located, this necessitated multiple repeat trips. Moreover, key outcome variable data were commonly missing. The World Health Organization recommends sputum-smear testing be conducted after two months of tuberculosis treatment; however, SI found that providers failed to order the test and either made no mention in the chart of the reason for not ordering the recommended follow-up test or simply noted 'no cough.' As a result, an addendum to the study protocol was needed to collect final treatment outcome data. This required additional time (4-6 months) and a second chart review.

Considerations Related to an Intervention Study—Maintaining fidelity of the intervention is essential and unique for each intervention trial; specific challenges can arise with technology-based interventions. For example, prior to initiating the intervention, SI and

her team established a set of educational text messages, determined the order in which they would be delivered, and agreed on the days of the week they would be received. However, due to modem issues the initial text message notifications and responses were not consistently received until the problem was identified and remedied.

Intervention studies in which it is not possible to conceal the intervention (SI) can result in control group participants seeking additional support than what may constitute usual care. This occurrence may be exacerbated in LMICs where few staff are available and there is a high patient census. In SI's study control group participants would sometimes drop by the study room to request additional assistance, information, and advice from research staff regarding their treatment course.

Contextual and Cultural Considerations

Time and Schedules

Different cultural norms related to scheduling and times often exist, and may cause disruptions in data collection. For example, it may be difficult to coordinate interviews when appointment times are viewed as flexible and fluid. When VL taught classes at her fieldsite, she learned to distribute flyers stating the class would begin at 12:30pm, but planned that the class would actually begin at 1:30pm. Festivals and holidays can interrupt work schedules and availability of certain resources or personnel. For example, Tanzania has 16 and Argentina 18 public holidays, plus several unofficial holidays, during which almost everything is closed and the research staff cannot be expected to work, except in extreme cases and for double pay. Public hospitals or clinics often close earlier in the day because employees go to second jobs or have private practices in the afternoon.

Safety and Health

Personal health and safety may be a considerable risk in some international settings. Data collection may need to occur in low-ventilation and crowded wards where the risk of contracting TB is increased, or exposure to chemotherapy agents or a needle-stick may be a real danger due to limited personal protective equipment (PPE) and unsafe handling of biohazards. In some settings it may be necessary for the researcher to bring his/her own PPE, such as masks, gloves, and hand sanitizer. Situations where recommended PPE is limited, or absent, can create ethical dilemmas, such as when the researcher has a face mask to wear, but other staff do not. For example, SI was often the only healthcare professional that wore a face mask when talking with newly diagnosed TB patients, as N95 face masks were not always available for staff, and basic face masks were inconsistently put on newly diagnosed patients. While there are no easy answers to these dilemmas, the coauthors recommend taking judicious precautions to reduce the risk of contracting a serious illness during fieldwork and to ensure one remains healthy and able to carry out the research.

Limited access to running water and soap may make it difficult to practice good hand hygiene, and illness can result from poor air or water quality or problematic food preparation and storage. Taking appropriate preventative measures to protect against potentially fatal illnesses, such as obtaining vaccinations (CDC, 2014), and using mosquito nets, is recommended. Day-to-day life in a LMIC can also increase the likelihood of more common

ailments; for example, respiratory problems or sinus infections due to increased levels of air pollution. Bringing prescription medications from home may be useful to cope with these issues (as well as any baseline medical problems), but many prescription medications are available over-the-counter in LMICs at low prices. As feasible, the research timeline should account for delays related to unexpected illness. General safety issues (unrelated to personal health) are also important to consider. For U.S. researchers, registering with the local U.S. embassy upon arrival is recommended. Enrollment in the Smart Traveler Enrollment Program provides specific travel advisories or warnings for the registered country/region from the U.S. State Department (Department, 2014). Being aware of one's surroundings and noteworthy landmarks can be helpful in settings where traditional addresses are not used.

Hierarchy, Power, Gender, Race and Religion

Cultural norms and attitudes related to hierarchy, power, gender, race and religion, and how they intersect with the research endeavor, are extremely complex. A full discussion of these important issues in various cultures is beyond the scope of this article, but being informed ahead of time (as much as possible) about the historical basis of these issues and how they may affect the research project is strongly encouraged. Many of these long-held beliefs are deeply embedded within the culture and significantly influence how people interact. Thoughtful discussions with local collaborators can increase the researcher's understanding of these important issues, and help inform needed adjustments for future trips. Striving to remain open-minded, maintaining cultural humility, asking questions of trusted informants/mentors, and acknowledging that some elements of a foreign culture may never be fully accepted by the researcher are important strategies. For example, SB was in South Africa shortly after the end of apartheid. She tried in her conversations to understand apartheid versus judge her informants based on her own beliefs about this system.

As female investigators, all co-authors found gender to be a particularly crucial factor in navigating daily life. Misperceptions about foreign women and assumptions about promiscuity can be challenging. For example, in India, there may be little context for platonic relationships between the sexes. Subsequently, VL had to significantly adjust Western-oriented behavior when interacting with men, as eye contact or a friendly pat on the arm could be misinterpreted. Research related procedures—such as interviewing a male in a private room or utilizing a male translator—can be problematic and fuel rumors. Effective coping strategies used by the co-authors included dressing modestly in traditional clothes, hiring a same-gender translator, wearing a wedding band even if unmarried, avoiding fraternizing with male colleagues, and generally being more conscious of interactions with the opposite sex. Men or lesbian/gay/bisexual/transgender investigators may encounter different challenges, depending on the cultural context, which may require alternative approaches.

Cultural Faux Pas

Despite one's best efforts to be culturally sensitive and aware, cultural misunderstandings and missteps are inevitable. All co-authors inadvertently committed "cultural faux pas" while in the field and at times struggled to accept, or understand, cultural norms related to the larger social context. For example, one may learn through trial and error that it is critical

to greet elders with proper titles (SP), hold extensive greeting conversations or give customary kisses with colleagues at the onset of every workday (SI), and stay covered to below the knees and to the elbows (SP, VL). SB was reprimanded by a medical records department clerk for not engaging in the traditional pleasantries and introductions before requesting a patient's chart, and VL learned that asking the details of one's last meal was a common way to begin conversation. Thankfully, as a foreigner more leeway and forgiveness is often granted when faux pas occur. In addition, it is important to acknowledge that it is impossible to handle every situation perfectly. Seeking cultural guides, even examples provided by children, can serve to improve cultural awareness.

Culture Fatigue and Isolation

'Culture fatigue' may be more relevant than 'culture shock' when living for extended periods in foreign settings (Zapf, 1991). Continually coping with a radically different culture, poverty, crowds, extreme weather, safety issues, and unpredictable infrastructure, all while trying to rigorously collect data, can take a psychological and physical toll, even on a seasoned traveler. Although often easier said than done, being adaptive and adjusting expectations, keeping a sense of humor, taking breaks, and cultivating an attitude of curiosity will make these challenges easier.

In some cultures it is common and accepted to ask strangers personal questions or make blunt observations about their personal appearance, such as weight. VL, SP and SI were all frequently asked personal questions about money (sometimes accompanied by requests for financial assistance), relationships, and their physical health and appearance. Politely changing the subject, setting boundaries (with humor), or asking similar questions of the other person can help deflect invasive lines of questioning. Also, having a clear plan for handling requests for money, and enacting it consistently, is recommended.

Furthermore, one may experience isolation from professional colleagues, friends and family. Skype, email, and social media can help maintain connections back home (assuming adequate internet access), but it is important not to spend so much time on-line that one misses experiencing the culture. Honestly sharing thoughts and feelings regarding personal struggles with a trusted mentor can help reduce feelings of isolation. (VL found talking with an anthropology professor particularly helpful.) Scheduling short trips and assuming the role of tourist is another strategy to decompress, take a break from the research, and increase appreciation for the cultural diversity of the country and region.

Confronting Poverty

Confronting abject poverty in LMICs can be humbling, highly distressing and overwhelming. VL struggled with seeing very young, disfigured children begging for money, and SP encountered challenges coping with the high infant mortality rate that affected friends and colleagues. For all co-authors the stark contrast between the 'haves' and the 'have-nots' was profound. Although extremely difficult, witnessing the effects of poverty first-hand can strengthen one's resolve and add enhanced purpose and meaning to the research project.

Ethical Considerations

General Considerations

Conducting ethically responsible research applies across all cultures and types of research projects. However, these important topics are particularly relevant in post-colonial societies where vulnerable populations have a history of exploitation by dominant groups. It is crucial that one is sensitive and attentive to hegemonic factors such as language, race, ethnicity and class that can influence the dynamics between researcher and participant in a LMIC. Obtaining IRB approval is the first key step, and as discussed previously under “Study Planning”, it is important to start this process early and in conjunction with local collaborators. One must avoid a ‘fly-in, fly-out’ type of approach where data are ‘extracted’ with minimal attention given to how the researcher can contribute to the fieldsite in a meaningful way. Ideally, international research projects in LMICs are designed to meet needs identified by local collaborators and are structured with the intent for sustainable, longitudinal involvement. Local collaborators can be particularly helpful in navigating the IRB/ethics board approval process in the host institution, advising on issues such as the cultural appropriateness of participant compensation, meaningful ways to contribute to the fieldsite, and suggestions for dissemination of findings.

Privacy, Confidentiality, Data Security

Although a plan to assure privacy, confidentiality, and data security will be outlined in the IRB application, in many LMIC healthcare settings the high volume of patients and lack of space can make it extremely difficult, or impossible, to uphold privacy and/or confidentiality to typical Western standards. Strategies for data security include protecting laptops with high-level encryption and passwords, using a quality laptop lock, hiring a locksmith to install locks on a bedroom cabinet to secure research materials, backing up all data on an external hard-drive or remote secure server/cloud, and being extra vigilant when traveling with research data, especially in airports where one may be separated from personal belongings during security screening.

Informed Consent and Compensation

Issues related to informed consent may need to be adapted for the local context; for example, a waiver of written informed consent may be appropriate in certain settings, with diligent documentation of verbal informed consent that is re-confirmed throughout the study period. Compensating participants with money may be problematic in very impoverished areas and seen as coercive. Consulting local collaborators and expert mentors about culturally appropriate ways to thank participants for their time is highly recommended.

Contributing to the Research Setting

Primary strategies the co-authors used to contribute and give back to the research setting and participants included teaching classes, participating in fundraising events, and donating supplies, medications, or educational materials/books. However, it is suggested that one exercise restraint, and very careful consideration, before distributing gifts or supplies, as these well-meaning gestures can have unintended consequences. For example, VL brought

toys to donate to the pediatric ward in the hospital, but she did not anticipate such a high volume of children, who each desperately wanted their own individual toy. Not having enough of the same item to give each child created unexpected chaos and bad feelings among all involved. Also, a donation of alcohol swabs was problematic once it was determined that there was no way to ensure a continuous supply.

Role Tension

Having a clinical background as a nurse can conflict with one's role as researcher, as participants and patients may expect medical advice or help with procedures. The tension of when to intervene is an important issue to consider for all nurse researchers, but is especially problematic in another country as there may be legal considerations if one is not licensed to provide care in that setting. When faced with such dilemmas, SB tried to clearly recommend to patients when they needed to report an issue to their health care team. In one case of severe mucositis, SB received permission of the patient to notify the physician. When VL was asked to document in patient records and insert intravenous lines, she clarified her role and explained she was unable to help with these tasks. However, VL did at times assist with very basic patient needs (e.g., helping a patient sit up in bed) and gently suggested alternative courses of action in certain situations where safety was a key issue, such as after chemotherapy spilled on the floor.

Dissemination of Research Findings

Dissemination of research findings is an important ethical obligation and certain questions warrant thoughtful consideration, such as: have the 'right' people been included as authors and have they met the criteria to be listed as co-author? How should one involve collaborators in manuscript preparation that do not speak English? (SI provided the option for collaborators to write their thoughts in Spanish and then SI translated and incorporated the information.) For sensitive information, such as that related to race and apartheid (SB), or patient safety (VL), what are the most appropriate ways to protect participant or fieldsite identity? A full discussion of these issues is beyond the scope of this article, but excellent resources exist and should be consulted as needed (Ellis, 1995, 2007; Kayser-Jones, 2002, 2003; Lipson, 1997; Madison, 2005), as well as discussed with local collaborators and trusted mentors.

It is important not only to disseminate findings in relevant journals and professional forums, but also to ensure that participants can access the final results. Such dissemination can be complicated due to geographical, technological and language barriers, but is an important aspect of conducting ethical research in LMICs. For example, VL held 2 sessions (open to all hospital staff) at the end of her fieldwork to discuss initial research findings and themes; these sessions served as an important form of member checking. Similarly, SI and SB presented study progress at a hospital-based conference. Both SB and VL wrote research summaries and executive reports, had them translated into the local language (VL), and distributed copies to key stakeholders and participants. Publishing in open-source journals is another important consideration to increase access to findings.

Conclusion

Conducting research in LMICs is complex, as illustrated by the numerous real-world examples provided by four nurse investigators who completed studies in diverse cultural contexts, using various methodological approaches. Key lessons learned include advance planning, remaining flexible, having a back-up plan(s), cultivating an attitude of curiosity and cultural humility, establishing respectful relationships with local collaborators, and allowing adequate time for all aspects of the study--from start to finish. Respectful collaborations are especially crucial for success, and require engaging partners early in study planning, sharing findings and authorship opportunities, and appreciating cultural differences. Nursing research in LMICs will become an even greater need as the global demographics of disease burden continue to shift, increasingly impacting the world's poorest and most vulnerable populations. This paper helps meet the call to prepare and support nurse investigators willing to take on the many challenges of conducting research in LMICs by providing practical methodological guidance.

Acknowledgments

Financial Support: The original research projects referenced in this article were supported by: American Cancer Society Grant # 117214-DSCN-09-141-01-SCN and Grant # 121673-DSCNR-09-141-03-SCN, University of Utah Graduate Program, and the Fulbright Program (Virginia LeBaron); National Institute of Nursing Research NRSA (F31NR012614), Sigma Theta Tau Gamma Rho Chapter, research collaboration established through NIH/Fogarty International Clinical Research Scholar program (Sarah Iribarren); NIH Fogarty Center International Challenge Award Grant # 5RC1TW008567-02 (Seneca Perri) and CIES/Fulbright Research Scholar Program Sub-Saharan Africa (Susan L. Beck). Drs. LeBaron and Iribarren are both currently funded by NIH grants (1U54CA156734; 1T32NR014205-01, respectively).

References

- Arner J, Wanchai A. Contributions of international nursing research. *Western Journal of Nursing Research*. 2012; 34(7):859–861. [PubMed: 23026941]
- Beck SL. A systematic evaluation of opioid availability and use in the Republic of South Africa. *Journal of Pharmaceutical Care in Pain & Symptom Control*. 1998; 6(4):5–22.
- Beck SL. Health policy, health services, and cancer pain management in the new South Africa. *Journal of Pain and Symptom Management*. 1999; 17(1):16–26. [PubMed: 9919862]
- Beck SL. An ethnographic study of factors influencing cancer pain management in South Africa. *Cancer Nursing*. 2000; 23(2):91–99. [PubMed: 10763279]
- Beck SL, Falkson G. Prevalence and management of cancer pain in South Africa. *Pain*. 2001; 94(1): 75–84. [PubMed]. [PubMed: 11576747]
- CDC. Centers for Disease Control and Prevention: Traveler's Health. 2014. Retrieved March 16, 2014, from <http://wwwnc.cdc.gov/travel/destinations/list>
- Cha E, Kim KH, Erlen JA. Translation of scales in cross-cultural research: issues and techniques. *Journal of Advanced Nursing*. 2007; 58(4):386–395. [PubMed: 17442038]
- Chen WT, Shiu CS, Simoni JM, Chuang P, Zhao H, Bao M, Lu H. Challenges of cross-cultural research: lessons from a U.S.-Asia HIV collaboration. *Nursing Outlook*. 2013; 61(3):145–152. [PubMed: 23419838]
- Department, U.S. State. Travel Warnings and Travel Alerts. 2014. Retrieved March 16, 2014, from <http://travel.state.gov/content/passports/english/alertswarnings.html>
- Ellis C. Emotional and ethical quagmires in returning to the field. *Journal of Contemporary Ethnography*. 1995; 24(1):68–98.
- Ellis C. Telling secrets, revealing lives relational ethics in research with intimate others. *Qualitative Inquiry*. 2007; 13(1):3–29.

- Fogarty. Global Health Program for Fellows and Scholars. 2014. Retrieved March 16, 2014, from <http://www.fic.nih.gov/Programs/Pages/scholars-fellows-global-health.aspx>
- Fulbright. Fulbright: Institute of International Education. 2014. Retrieved March 16, 2014, from <http://www.iie.org/fulbright>
- Gantz NR, Sherman R, Jasper M, Choo CG, Herrin-Griffith D, Harris K. Global nurse leader perspectives on health systems and workforce challenges. *Journal of Nursing Management*. 2012; 20(4):433–443. [PubMed: 22591145]
- George EK, Meadows-Oliver M. Searching for collaboration in international nursing partnerships: a literature review. *International Nursing Review*. 2013; 60(1):31–36. [PubMed: 23406234]
- Harrowing JN, Mill J, Spiers J, Kulig J, Kipp W. Culture, context and community: ethical considerations for global nursing research. *International Nursing Review*. 2010; 57(1):70–77. [PubMed: 20487477]
- Hays JC. The ethics of international studies. *Public Health Nursing*. 2011; 28(5):387–388. [PubMed: 22092421]
- Hunter A, Wilson L, Stanhope M, Hatcher B, Hattar M, Hilfinger Messias DK, Powell D. Global health diplomacy: An integrative review of the literature and implications for nursing. *Nursing Outlook*. 2013; 61(2):85–92. [PubMed: 22999856]
- ICN. International Council of Nurses, Global Health Nursing. 2014. Retrieved March 16, 2014, from http://www.ghdonline.org/uploads/Global_Health_Nursing_by_the_International_Council_of_Nurses_2014.pdf
- Im E, Page R, Lin L, Tsai H, Cheng C. Rigor in cross-cultural nursing research. *International Journal of Nursing Studies*. 2004; 41(8):891–899. [PubMed: 15476762]
- Iribarren SJ, Sward K, Beck SL, Pearce PF, Thurston D, Chirico C. Qualitative evaluation of an mHealth intervention to support patients with active tuberculosis: Implementation considerations. *JMIR mHealth and uHealth*. 2015; 3(1):e:21. [PubMed: 25802968]
- Iribarren SJ, Beck SL, Pearce PF, Chirico C, Etchevarria M, Cardinale D, Rubinstein F. TextTB: A mixed method pilot study evaluating acceptance, feasibility, and exploring initial efficacy of a text messaging intervention to support TB treatment adherence. *Tuberculosis Research and Treatment*. 2013; 2013 Article ID 349394, doi:10.1155/2013/349394. [PubMed]
- Iribarren SJ, Beck SL, Pearce PF, Chirico C, Etchevarria M, Peliza N, Laborde G, Cardinale D, Rubinstein F. mHealth intervention development to support patients with active tuberculosis. *Journal of Mobile Technology in Medicine*. 2014; 3(2):16–27.
- Jooste K. Leadership: a new perspective. *Journal of Nursing Management*. 2004; 12(3):217–223. [PubMed: 15089960]
- Kayser-Jones J. Malnutrition, dehydration, and starvation in the midst of plenty: the political impact of qualitative inquiry. *Qualitative Health Research*. 2002; 12(10):1391–1405. [PubMed: 12474910]
- Kayser-Jones J. Continuing to conduct research in nursing homes despite controversial findings: reflections by a research scientist. *Qualitative Health Research*. 2003; 13(1):114–128. [PubMed: 12564266]
- Ketefian S. Legal and ethical issues: Ethical considerations in international nursing. *Journal of Professional Nursing*. 2000; 16(5):257. [PubMed: 11033934]
- LeBaron VT, Beck SL, Black F, Palat G. Exploring the relationship between moral distress and opioid availability: An ethnography of cancer nurses in India. *Cancer Nursing*. 2014a; 37(5):331–344. [PubMed: 24918627]
- LeBaron VT, Beck SL, Black F, Maurer M, Palat G. An ethnographic study of barriers to cancer pain management and opioid availability in India. *The Oncologist*. 2014b; 19(5):515–522. [PubMed: 24755460]
- Lipson, JG. The politics of publishing: Protecting participants' confidentiality. In: Morse, JM., editor. *Completing a Qualitative Project*. Sage Publications; Thousand Oaks, CA: 1997.
- Madison, DS. *Critical ethnography: Method, ethics, and performance*. Sage Publications; Thousand Oaks, CA: 2005.
- Olsen D. Ethical considerations in international nursing research: A report from the International Centre for Nursing Ethics. *Nursing Ethics*. 2003; 10(2):122–137. [PubMed: 12659484]

- Perri, S.; Hedt, B.; Routen, T.; Lesh, N.; Shao, A.; Rambaud-Althaus, C.; Swai, N.; Mitchell, N. Results of Communication Enhancement Used in eIMCI Mobile Decision Support for Treatment of Children Under Five in Tanzania; Podium presentation, mHealth Summit Conference; Washington DC. December 3-5, 2012;
- Suhonen R, Saarikoski M, Leino-Kilpi H. Cross-cultural nursing research. *International Journal of Nursing Studies*. 2009; 46(4):593–602. [PubMed: 18947827]
- Webb C. Nursing research in a developing country: A different edge. *Journal of Clinical Nursing*. 1998; 7(6):485–487. [PubMed: 10222942]
- Zanchetta M, Schwind J, Aksenchuk K, Gorospe IV, Frankline F, Santiago L. An international internship on social development led by Canadian nursing students: Empowering learning. *Nurse Education Today*. 2013; 33(7):757–764. [PubMed: 23684525]
- Zapf MK. Cross-cultural transitions and wellness: Dealing with culture shock. *International Journal for the Advancement of Counselling*. 1991; 14(2):105–119.

Highlights of the Manuscript

- The growing global burden of disease will increasingly affect low and middle-income countries, and the nurses who care for patients in these settings.
- Nurses are well positioned to make a significant impact on global health, but nurse scientists tend to receive little training or support to conduct international research; those who do often confront unique and complex challenges—particularly in resource-constrained settings.
- This paper discusses the collective experiences of both novice and senior nurse researchers who conducted varied types of research projects in different continents and cultures (Africa, Asia, and South America) and provides practical, methodological guidance for nurse investigators who wish to conduct international research in low and middle income countries.
- Nursing research in LMICs must become a greater priority as the global demographics of disease burden shift, increasingly impacting some of the world's most vulnerable populations. Providing tools and practical resources to support nurse investigators willing to take on the many challenges of international research is paramount to meet global health needs.

Table 1

Key recommendations, lessons learned, and strategies to help establish rapport.

General Planning   • Start planning early (join the listserv GHDonline http://www.ghdonline.org/ and attend globally oriented conferences, such as the International Society of Nurses in Cancer Care)   • Be flexible, persistent and patient   • Work with a supportive mentor(s)   • Learn as much as you can ahead of time about the culture you will be living in, and give yourself time to adjust once you arrive
Study Implementation   • Expect everything to take longer than you think it will   • Always have a back-up plan   • Maximize collaboration and rapport with local collaborators, fieldsite staff and participants   • Be aware that your role as nurse researcher may be unfamiliar and not valued   • Do not underestimate the importance of translation and language barriers, and have a plan to verify translation of study data
Contextual and Cultural Considerations   • Expect some degree of culture fatigue, even if you are a seasoned traveler and have been to the country before   • Prioritize your safety and health   • Recognize that feelings of loneliness and isolation are normal, then move on (use it to be productive or grow personally)   • Be prepared for different cultural norms related to time, class, gender, religion, etc.   • Take breaks from your role as researcher (e.g., be a tourist)   • Cultivate an attitude of curiosity and cultural humility
Ethical Considerations   • Find effective and culturally congruent ways to honor privacy, confidentiality and to ensure data security   • Look to contribute to the fieldsite in meaningful ways   • Have a plan for role tension in the field (e.g., researcher versus clinician)   • Thoughtfully consider dissemination of your findings
Strategies to Establish Rapport With Participants and Local Collaborators   • Establish some degree of proficiency in the local language   • Make an effort to accept invitations and attend social events, such as morning tea or a colleague's wedding   • Share, prepare and eat food together, particularly foods unique to your culture   • Show appreciation for assistance with your research project (e.g., by hosting a nice lunch, sharing expertise by teaching classes, providing resource books for nurses, etc.)   • Wear traditional clothes and adornments   • Show an interest in local and national current events   • Participate in festivals or local holidays   • Share music and pictures of family or friends from home   • Titles and qualifications may be seen as important validations of a person's legitimacy, and business cards are often exchanged and distributed as a way of establishing credibility. Pack a generous supply of business cards.

Table 2

Summary of author international research projects.

LeBaron
Country/Dates: India, September 2011 – June 2012 (9 months, PhD student) Project: Nurse moral distress and cancer pain management: An ethnography of oncology nurses in India (LeBaron et al., 2014a; 2014b) Funding: Fulbright-Nehru Research Award for India (www.iie.org/fulbright and http://www.cies.org/ ; American Cancer Society Doctoral Degree Scholarship in Cancer Nursing www.cancer.org/research/applyforaresearchgrant/index)
Iribarren
Country/Dates: Argentina, October 2012 – July 2013 (9 months, PhD student) Project: Evaluation of a text messaging based intervention for patients with tuberculosis in Argentina (Iribarren et al., 2013; 2014; 2015) Funding: National Institute of Nursing Research NRSA http://grants.nih.gov/training/F_files_nrsa.htm ; Sigma Theta Tau Gamma Rho Chapter http://nursing.utah.edu/sigma-theta-tau/ ; Fogarty International Clinical Research Scholar program http://www.fic.nih.gov/programs/pages/scholars-fellows.aspx
Perri
Country/Dates: Tanzania, April 2010 – May 2011 (13 months, PhD student) Project: Using electronic medical decision support to enhance provider-caretaker communication for treatment of children under five in Tanzania (Perri et al., 2012) Funding: NIH Fogarty International Center Challenge Grant award http://www.fic.nih.gov/Funding/Pages/default.aspx
Beck
Country/Dates: South Africa, January 1996 – September 1996 (8 months, Senior Scholar) Project: Management of cancer pain in South Africa (Beck, 1998, 1999, 2000; Beck & Falkson, 2001) Funding: Fulbright Research Award for Sub-Saharan Africa www.iie.org/fulbright and http://www.cies.org/