

**Sigma's 30th International Nursing Research Congress**  
**The Research Cycle: Research to Advance Non-Communicable Disease**  
**Management in Low- and Middle-Income Countries**

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**Introduction:** The increasing burden of non-communicable diseases in low and middle-income countries (LMIC) is a global concern (Engelgau et al., 2018). As in many LMICs, in spite of the burden of heart failure (HF) in Nepal, there is scant data, resources, and culturally appropriate interventions.

**Purpose:** The purpose of this presentation is to help prepare and support nurse investigators who take on challenge and reward of conducting global health research by describing research cycle and author's experience in conducting a research in LMIC, Nepal.

**Methods:** Case study methodology, a reflexive account of transactions and processes, is used to describe the research process and experience (Yin, 2017). The unit of analysis was the preparation and conduct of research in Nepal. Though we present the research experience in Nepal, similarities in social, cultural, political and economic characteristics make Nepal a representative country for other LMICs, especially in South Asian countries.

*Brief introduction of the research study-*The aims of the research study was to translate and culturally validate the Self-Care of Heart Failure Index into the Nepali language, examine the context of HF self-care, factors influencing HF self-care, and the relationship with health-related quality of life among patients living with HF in Nepal. The study collected data from three leading hospitals providing cardiovascular services in Kathmandu, Nepal: Shahid Gangalal National Heart Center, Manmohan Cardiothoracic Vascular and Transplant Center, and Norvic International Hospital.

**Results:**

*Literature review-* The search of the literature on HF in Nepal generated a handful of studies. Those studies were limited to the clinical profiles of the patients and medication use (Dubey, Sharma, & Chaurasia, 2012; Regmi, Maskey, & Dubey, 2017; Shrestha et al., 2015). There is a need for a big push on HF research in Nepal to help generate needed evidence on disease burden, help identify, develop, and tailor appropriate management strategies and improve health outcomes of patients living with HF.

*Key stakeholder engagement-* The study involved key contact and gatekeepers from Nepal early in the planning phase. Key contacts include a professor, former dean, and senior/renowned cardiac doctor who helped researchers identify gatekeepers. The gatekeepers were assumed in several roles: key informants and facilitators to access the hospitals, to obtain the host country's ethical approval and inform timing, to assist in questionnaire translation and validation and participant recruitment process, to identify research assistants and to help navigate through the unfamiliar system, hierarchy, and culture. To reach key contact and gatekeepers, at first researcher tried to explain about self and research interest using formal emails. With no responses for weeks, the

researcher opted to use informal, online social networking sites common in the community (for e.g. Facebook and Viber); this played a profound effect in hearing back. *Translation of instruments-* Combination of recommended methods for cross-cultural validation studies such as translation, back translation, synthesis of back translation, and experts (Nepali cardiologists and cardiovascular nurses) review were conducted to develop Nepali version of SCHFI (Beaton, Bombardier, Guillemin, & Ferraz, 2000; Bowden & Fox-Rushby, 2003; Deek et al., 2016). Translation of the instrument has demonstrated face and content validity. Access to reliable, valid and culturally appropriate instruments is critical in describing the state of the problem as well as developing tailored and targeted interventions.

*Data collection-* Ethical approval for the study was received from the institutional review board of sponsoring country (US), data collection sites and Nepal Health Research Council (a central body under the Ministry of Health, with the regulating authority of all the health research activities in Nepal). Once the ethical approval received, the researcher met with hospital directors for the final clearance and requested collaboration to start participant recruitment and data collection. Data collection then began with the help of research assistants. Collaboration with hospital nurse in-charge and supervisors from the hospitals helped identify research assistants, qualified staff to assist in research; the duties of those staffs were arranged to facilitate training and data collection activities. A total of 221 patients living with heart failure were recruited for the study.

**Discussion/Conclusion:** The conduct of global nursing research in LMICs is challenging, especially for the novice researcher. It is not uncommon to find perplexities in resource-limited settings considering geopolitical stability and regulatory process which may result in a significant delay in recognition of the regulatory requirements and expectations. Despite the challenges, there are meaningful opportunities for education, research policy, and practice which is crucial because the global demographics of disease burden continue to shift and impact poorest and vulnerable population. Lessons learned during the cycle of the study include the importance of preplanning, engaging key stakeholders from an early phase of the study, being flexible, establishing a good rapport, and respectful relationships with collaborators, appreciating individual and cultural differences, having a backup plan(s) and sharing findings.

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#### **Title:**

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#### **Keywords:**

low- and middle-income countries, non-communicable disease management and research cycle

## References:

- Beaton, D. E., Bombardier, C., Guillemin, F., & Ferraz, M. B. (2000). Guidelines for the process of cross-cultural adaptation of self-report measures. *Spine (Phila Pa 1976)*, 25(24), 3186-3191.
- Bowden, A., & Fox-Rushby, J. A. (2003). A systematic and critical review of the process of translation and adaptation of generic health-related quality of life measures in Africa, Asia, Eastern Europe, the Middle East, South America. *Soc Sci Med*, 57(7), 1289-1306.
- Deek, H., Chang, S. W., Nouredine, S., Newton, P. J., Inglis, S. C., Macdonald, P. S., . . . Davidson, P. M. (2016). Translation and validation of the Arabic version of the Self-care of Heart Failure Index. *Nurse Researcher*, 24(2), 34-40.  
doi:10.7748/nr.2016.e1455
- Dubey, L., Sharma, S. K., & Chaurasia, A. K. (2012). Clinical profile of patients hospitalized with heart failure in Bharatpur, Nepal. *J Cardiovasc Thorac Res*, 4(4), 103-105. doi:10.5681/jcvtr.2012.025
- Engelgau, M. M., Rosenthal, J. P., Newsome, B. J., Price, L., Belis, D., & Mensah, G. A. (2018). Noncommunicable Diseases in Low- and Middle-Income Countries: A Strategic Approach to Develop a Global Implementation Research Workforce. *Glob Heart*, 13(2), 131-137. doi:10.1016/j.gheart.2018.05.001
- Regmi, S. R., Maskey, A., & Dubey, L. (2017). Heart Failure Study: Profile of Heart Failure Admissions in Medical Intensive Care Unit. *Nepalese Heart Journal*, 6(1), 32-34.
- Shrestha, U. K., Alurkar, V. M., Baniya, R., Barakoti, B., Poudel, D., & Ghimire, S. (2015). Profiles of heart failure in the western region of Nepal: prognostic implications of the MELD-XI score. *Internal Medicine Inside*, 3(1), 1.
- Yin, R. K. (2017). *Case study research : design and methods*. Thousand Oaks, Calif.: Sage Publications.

## Abstract Summary:

The problem of non-communicable diseases in the low and middle-income country (LMIC) is a global concern. Conducting nursing research in LMICs comprises a variety of challenges and opportunities. The experience of researchers who completed studies in diverse cultural contexts are important to advance global research and build capacity, and sustainability.

## Content Outline:

### A. Introduction

The increasing burden of non-communicable diseases in low and middle-income countries (LMIC) is a global concern. As in many LMICs, in spite of the burden of heart failure (HF) in Nepal, there is scant data, resources, and culturally appropriate interventions. With a purpose to establish sociodemographic and clinical factors influencing HF management, the researchers conducted a research study among patients living with HF in Nepal. The specific aims of the study were:

Aim 1: translate and culturally validate the Self-Care of Heart Failure Index into the Nepali language,

Aim 2: describe the context of HF self-care in Nepal and

Aim 3: examine the factors influencing HF self-care, and the relationship with health-related quality of life.

The study collected data from 3 leading hospitals with cardiovascular services in Kathmandu, Nepal: Shahid Gangalal National Heart Center, Manmohan Cardiothoracic Vascular and Transplant Center, and Norvic International Hospital. This presentation will go through the research cycle/process used to successfully complete the study.

### **B. Body of Presentation**

The presentation will highlight the research process, researchers experience, challenges and identified solutions during a conduct of research in a low- and middle-income country, Nepal under the following sections:

- Literature review
- Key stakeholder engagement
- Translation of instruments
- Data collection

### **C. Conclusion**

- The conduct of global nursing research in LMICs is associated with various challenges. Despite the challenges, there are meaningful opportunities for education, research policy, and practice.
- The experience of researchers who completed research in a low and middle-income country will help prepare and support novice nurse investigators who take on challenge and reward of conducting global health research.

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**Author Summary:** Binu is a doctoral candidate at Johns Hopkins School of Nursing. Her research interests include cardiovascular health, palliative care, global health and older adults. Her recent research experience is focused to support heart failure management, accelerate palliative care competencies among advanced practice registered nurses and prevention and management of delirium. She has recently received Sigma Theta Tau-Nu Beta 2018 Nursing Research Award, 2018 Dissertation Award and 2018 NLN Foundation for Nursing Education Scholarship Award.

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