

Sotaro Shimada
Sasakawa Nursing Fellowship 2025 Progress Report

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Sotaro Shimada
University of Illinois Chicago
School of Nursing
PhD program
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First and foremost, I sincerely appreciate the generous support from the Sasakawa Health Foundation, which has enabled me to fully dedicate myself to my PhD program. This prestigious fellowship has provided not only financial support but also invaluable connections with many exceptional fellows, fostering an inspiring and supportive community. I would like to express my heartfelt gratitude to the outstanding faculty at UIC, my energetic and supportive cohort, and all my advisors, collaborators, and colleagues for their valuable insights into my research.

Introduction

I would like to present my annual report for the second year of my doctoral studies at the University of Illinois Chicago (UIC). My long-term goal is to contribute to building a society in which individuals can live according to their own values while effectively managing illness. To pursue this goal, I have chosen pain as the primary focus of my dissertation research and am conducting this work under the supervision of my advisor at UIC. During the past year, I focused on deepening my expertise in pain research while expanding my knowledge of advanced analytical techniques and diverse research methodologies. Through these efforts, I aim to conduct impactful, cutting-edge research that contributes meaningfully to improving health and quality of life in society.

Coursework

During this academic year, I completed all required coursework except for one remaining course so that I can fully focus on my dissertation research in the coming academic year. The required courses included training that helped us clarify our academic goals, such as grant writing and career development, as well as research methodologies in

both quantitative and qualitative approaches, and symptom management. These courses prepared me to develop a nursing research perspective and a broader range of methodological skills commonly used in nursing research. They also provided insight into the professional life of a nursing researcher and prompted me to reflect on what I hope to achieve in my future career.

I also took an elective course, *Design of Clinical Trials*, during the fall semester, which was highly valuable for researchers. The course was taught by a faculty member who previously served as president of the Society for Clinical Trials and has extensive experience publishing in leading academic journals such as the *New England Journal of Medicine*. The course included hands-on sessions, allowing us to learn not only the theory and methodology of clinical trial design but also practical skills such as randomization, sample size calculation, interim analyses, and final statistical analyses.

This year, I took the preliminary examination, also known as the qualifying examination, and successfully passed it. Passing this examination allowed me to advance to doctoral candidacy and move forward with my dissertation research toward graduation next year. At UIC, there are three options for the preliminary examination: responses to questions prepared by the committee, a dissertation grant proposal, or two comprehensive formal papers. After intensive discussions with my supervisor and committee members, I chose the proposal option because it directly builds on my previous research and allows the work to be naturally transferable to my dissertation project. It was a substantial challenge to develop a comprehensive research plan while simultaneously participating in multiple research projects and completing coursework; however, with the support of my

committee members, I successfully completed it. During this process, I also learned a great deal about how team science works to achieve successful outcomes.

My dissertation topic is to identify the moderators of complementary and integrative health therapy on pain among adults with chronic pain. Chronic pain is a major public health issue that is associated with depression, anxiety, and impaired physical/social activities. Economic burden due to the loss of productivity and treatment for chronic pain in the United States is also tremendous. Although complementary and integrative health therapies, such as yoga, acupuncture, and massage, are shown to be effective approaches for complementing conventional treatments with minimal invasiveness, it remains largely unknown which factors modify treatment effects. Therefore, I will use real-world data from the electronic health database to examine the factors contributing to heterogeneity in treatment effects. I believe the findings of this study will provide valuable insights for clinicians in determining which treatments are likely to be most effective for specific patients before initiating pain management interventions. This may help maximize benefits for both patients and healthcare providers by improving the effectiveness and efficiency of care.

Research Activities

In the past academic year, I worked on several research projects: (1) a systematic review aimed at synthesizing current evidence on the association between pain catastrophizing and pain outcomes including pain intensity, pain interference, pain-related disability, and physical function among adults with chronic musculoskeletal pain, the most prevalent type of chronic pain; (2) a secondary analysis of

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a clinical trial examining sex interactions in the associations between biomarkers and pain-related outcomes among adults with chronic pain; (3) a qualitative study exploring the challenges and approaches to facilitating advance care planning among Japanese Americans; and (4) a network meta-analysis, a relatively new method, for comparing the effectiveness of multiple mindfulness-based interventions in adults with chronic pain. None of the studies were conducted solely by nursing researchers; rather, they involved multidisciplinary collaboration with health sciences librarians, physicians, statisticians, biomedical specialists, epidemiologists, physical therapists, and nutrition specialists. Through this experience, I once again recognized the importance of multidisciplinary research collaboration in generating meaningful contributions to science and enhancing productivity. I have also cultivated practical knowledge and skills across the entire research process, from data acquisition and analysis to publication, which has significantly strengthened my capacity to conduct high-quality research and disseminate meaningful scientific findings.

Goal for Next Year

In the coming academic year, which will be my third and final year in the PhD program, I will face the defense of my doctoral dissertation. While my primary goal is to successfully complete my PhD, I also hope to maximize what I can learn during my remaining time in the US. As my time here becomes more limited, I intend to make the most of every opportunity to reflect on the knowledge and experiences I should gain to contribute to nursing and society in Japan in the future.