

Sasakawa Nursing Fellow 2025 Annual Report

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I. The Goal of This Year

Mental health challenges often become visible only after conditions have worsened, this highlights a critical gap in preventive care systems. Through my academic training and research experiences this year of 2025, I have worked to address this gap with broader perspective by integrating epidemiological methods. My goal has been to transform individual-level observations into population-level evidence, as a result, contributing to the development of preventive mental health strategies that can be implemented in both community and occupational health settings.

II. Fall Semester

1. Academic Learnings

During the fall semester, I focused on acquiring advanced epidemiological and biostatistical skills to strengthen my ability to conduct rigorous research. In Epidemiology III, I developed a deeper understanding of causal inference, bias, confounding, and interaction, and applied these concepts through regression models and survival analysis. These skills became the foundation of my master's thesis work. In Psychiatric Epidemiology, I learned the global burden of mental illness and methodological challenges in measuring psychological outcomes, which deepened my understanding of reliability and validity in mental health research. In Spatial Epidemiology, I learned to integrate geographic and social environmental data, utilizing GIS and census data to analyze how contextual factors influence health outcomes. This approach expanded my perspective from individual-level determinants to structural and environmental influences on mental health. In addition, Global Mental Health Epidemiology provided insight into challenges such as measurement bias, cultural differences, and implementation barriers in low- and middle-income countries. Through Data Science I, I strengthened my technical skills, including data visualization and reproducible research practices using GitHub. I also collaborated on a team project to develop a public-facing website presenting data analysis results (https://a-l-collins.github.io/manhattan_shootings.github.io/).

2. Research Experience

As part of Master's Essay in Epidemiology I, I began working with the Spatial Epidemiology Lab, focusing on psychological distress using cohort data. I conducted literature reviews, developed research questions, and designed the analytical framework. These experiences reinforced the importance of linking theoretical knowledge with real-world data and sharpened my ability to critically evaluate existing evidence. Through my internship with ChildFund International, I conducted qualitative interviews with staff members in Kenya, Guatemala, Indonesia, and Zambia to evaluate how playful parenting programs influence caregiver well-being. Additionally, as a research assistant in the Spatial Epidemiology Lab, I supported ongoing projects and gained hands-on experience in collaborative research environments.

III. Spring Semester

1. Academic Learnings and Thesis Work

The spring semester focused on achieving independence as a researcher through the completion of my master's thesis. In Master's Essay in Epidemiology II, I conducted both cross-sectional and longitudinal analyses, interpreted results, and completed the full thesis manuscript. I also communicated findings with my principal investigator and research team, strengthening my ability to collaborate in academic settings.

Courses such as Epidemiology of Neurological Diseases and Selected Problems of Measurements in Epidemiology deepened my understanding of methodological challenges, including measurement error, reliability, and validity. These courses emphasized that the quality of research findings depends not only on statistical techniques but also on the appropriateness of measurement tools and study design.

2. Research Experience

Through conducting my own research, I came to several important realizations. True understanding of epidemiology is developed through hands-on research, not only coursework. While quantitative data are essential, their interpretation requires deep contextual understanding. Working closely with Dr. Duncan, I observed how research can illuminate the realities of marginalized populations and contribute to meaningful social change. This experience shaped my aspiration to become an epidemiologist who not only generates evidence but also uses it to advocate for structural improvements.

IV. Future Direction

The 2025 academic year marked a transition from knowledge acquisition to independent research practice, during which I strengthened my ability to connect clinical and community practice, epidemiological research, and social implementation. Through my academic and research experiences, I have developed a clearer vision of how to address structural gaps in mental health care, particularly by advancing preventive systems that identify risks before conditions worsen. I aim to apply spatial and social epidemiological approaches to detect early signs of psychological distress, integrate objective behavioral and environmental data into mental health research, and design community-based interventions that can be implemented in real-world settings.

Ultimately, I seek to contribute to a system in which nurses, as the professionals closest to the community, can use scientific evidence to influence policy and improve population health outcomes. In Japan, a critical gap remains between frontline nursing practice and the generation of scientific evidence. Rather than returning solely to clinical practice, I intend to contribute as a researcher and educator by incorporating epidemiological thinking into nursing education. By supporting nurses in transforming everyday observations into research questions and evidence, I hope to help build a system in which practice-informed knowledge is translated into population-level impact and policy. Moving forward, I will continue to advance my research skills and work toward bridging the gap between frontline observations and public health systems through evidence-based preventive approaches.