JUNE 2023

GLOBAL AGING E-BRIEF

Newsletter from the Global Aging Community Initiative

GACI Update

There has been a lot of activity over the last several months with respect to our research centered on understanding the global demography of chronic pain. On the personnel side of things, we wished farewell to our Postdoctoral researcher Feinuo Sun, who was working on this project. Feinuo at present is doing a three-month residency at the Institut national d'études démographiques (INED) in Paris and will then move on to a tenure track position at The University of Texas at Arlington. For about a month we hosted Eva Ryan, a PhD student in the Department of Statistics at the University of Limerick in Ireland. Eva is working on an analysis that is exploring the causal connection between chronic pain and mortality.

And, we have had several important recent publications. In this newsletter we highlight a recent publication in the journal 'Pain', first authored by Rui Huang, a PhD student in Sociology at the University of Buffalo, who works directly with one of our affiliated scientists, Dr. Hanna Grol-Prokopczyk. Huang and colleagues reveal that chronic pain is not only influenced by one's own socioeconomic characteristics but also by a larger socioeconomic context in which they live. For instance, U.S. states with large income inequalities will also have large inequalities in arthritis-related pain among individuals living in that state.

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This issue:

The Global Aging and Community Initiative (GACI) is a research organization at Mount Saint Vincent University (MSVU), located within the Nova Scotia Center on Aging. It is directed by Dr. Zachary Zimmer, a Tier I Canada Research Chair and Professor of Family Studies and Gerontology. The GACI aims to create knowledge on issues related to the quality of life of older persons worldwide through collaborative research across a broad global scientific community. GACI is currently working on a number of research projects focusing on the health and well-being of older persons in different areas around the world. We currently list 22 collaborators from eight countries.

RESEARCH UPDATE: PAIN

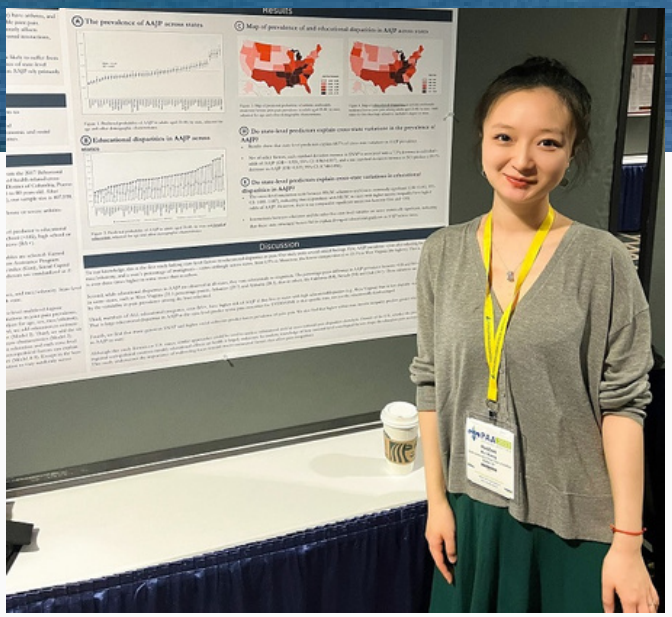
Identifying Pain Early Proves a Cost Benefit Ratio for US Budgets

by Rui (Zoe) Huang

In the U.S., 23.7% of adults (approximately 58.5 million people) have arthritis, and at least 15 million of them experience severe arthritis-attributable joint pain. Severe joint pain is strongly associated with impaired functioning, disability, mortality, limited life chance and more, and ample studies document that people with less education disproportionately suffer from joint pain and reduced quality of life.

Despite that emerging studies emphasize the importance of state-level contexts on health outcomes, existing research on social determinants of pain relies primarily on individual-level data and overlook the macro sociopolitical effects. Focusing on moderate or severe arthritis-attributable joint pain, this study attempts to (1) compare joint pain prevalence across 50 U.S. states, (2) estimate educational disparities in joint pain within each state, and (3) examine whether the cross-state variations in the prevalence and education-pain association is attributable to state-level economic and social welfare policies.

We combined individual-level data on 407,938 adults (ages 25-80) from 2017 Behavioral Risk Factor Surveillance System (BRFSS) with state-level sociopolitical data on Supplemental Nutrition Assistance Program (SNAP), Earned Income Tax Credit, Gini index, social cohesion index, Medicaid Generosity Score, and tobacco taxes. The results indicate that the prevalence of joint pain varies substantially across U.S. states, ranging from 6.9% in Minnesota to 23.1% in West Virginia. Educational gradients in joint pain exist in all states but vary strikingly.



Rui (Zoe) Huang is a PhD candidate from the University at Buffalo, The State University of New York

The cross-state variations in education-pain association are primarily due to the variation among the least educated (less than high school). In other words, lower educated people are more likely than others to be impacted upon by state level economics and welfare policies. The study also finds that a more generous SNAP program and higher social cohesion in states will reduce the prevalence of joint pain. Moreover, the state-level Gini index, which measures income inequality, is associated with higher educational disparities in joint pain.

Overall, this study shows that to help decrease the pain prevalence and disparities state governments could implement policies that can enhance food security, foster social cohesion, and decrease income inequality. It is crucial to take immediate action to manage and prevent this disabling pain condition, particularly in states with exceptionally high prevalence of joint pain and among the less educated population who are disproportionately affected. Our study also implies that pain research should move more towards understanding macro contextual factors that shape pain inequalities.

"Educational disparities in joint pain within and across U.S. states: Do macro sociopolitical contexts matter?" co-authored by Huang published in PAIN, June 2023

Collaborator Profile

-Dr. Tran Khanh Toan-

Tran Khanh Toan, M.D., Ph.D. is an Associate Professor, Family Medicine Department, Hanoi Medical University, Hanoi, Vietnam.

As a family medicine doctor in Vietnam, my professional work focusses on identifying and addressing common health issues in the community, throughout the lifespan, and I am interested in primary healthcare research. Beginning with studies on maternal and child health, my research interests have shifted over time. I am now particularly interested in health concerns related to the rapidly aging population. This has significant implications for healthcare systems, as older adults are more likely to experience multiple chronic conditions, disabilities, and complex healthcare needs.

After completing the medical school, I worked in various positions related to healthcare systems at the local level and gained experiences in planning, implementing, and evaluating community health programs. During my work, I became interested in research on primary healthcare because I recognized its potential to increase people's access to safe, effective, and affordable healthcare services.

This is especially important in the current context of changing disease patterns, with an increasing burden of non-communicable diseases. These health challenges can only be addressed through comprehensive and integrated healthcare services at the primary care level. I hope that my studies can make a small contribution to evidence for effective interventions that improve and enhance primary health care services, in order to meet the increasing healthcare needs in resource-limited settings like Vietnam.

Outside of work, I love spending my time with my family, especially with my two young daughters. I usually read books with them, tell them stories, and help them in doing their homework. During the weekend, we often play badminton or take walks together in a nearby park. Occasionally, we also organize regular trips to help them and their friends have opportunities to explore and experience new destinations within our country.

Dr. Toan is overseeing the research team heading up the Vietnamese component of the Canadian Institutes of Health Research funded project called: The Long-Term Effects of War on Biological Aging: The Case of Vietnam (PI: Zachary Zimmer). This is a 4-year project, which began in October 2020. Among other tasks, Dr. Toan is lending his expertise by training lab personnel who will be able to continue research in Vietnam.

GACI UPDATE CONTINUED

Another recent publication in the journal 'Dialogues in Health', authored by Zachary Zimmer and others, examined the degree to which there are wealth inequalities in pain on a global level, using data from the World Health Organization's World Health Survey. This analysis demonstrates that the biggest discrepancies in prevalence of chronic pain between rich and poor people exist in countries where there are the greatest income inequalities, as measured by the GINI coefficient.

Health research has long recognized that those on the bottom end of the socioeconomic spectrum are more likely than others to suffer with health problems, including chronic pain. These new investigations by GACI scientists provide additional context to this understanding - revealing that the more intense the income or educational inequalities within a nation or state, the more disadvantaged will be those on the bottom end.

Staff at the GACI toured the iconic Peggy's Cove in Nova Scotia with visiting student, Eva Ryan from SFI Centre for Research Training in Foundation of Data Science in Ireland. Pictured (l-r) Evan Ryan, Sara Hamm, GACI Research Associate and Dr. Zachary Zimmer.

Selected Recently Published Research by GACI Affiliates

- Zachary Zimmer, Anna Zajacova, Kathryn Fraser, Daniel Powers and Hanna Grol-Prokopczyk. 2023. A global comparative study of wealth-pain gradients: Investigating individual- and country-level associations. Dialogues in Health. Volume 2. https://doi.org/10.1016/j.dialog.2023.100122.
- Feinuo Sun, Zachary Zimmer and Anna Zajacova. 2023. Pain and disability transitions among older Americans: The role of education. The Journal of Pain. 24(6): 1009-1019. 10.1016/j.jpain.2023.01.014
- Glass, D. J., Young, Y. M., Tran, T. K., Clarkin, P., & Korinek, K. (2023). Weathering within war: Somatic health complaints among Vietnamese older adults exposed to bombing and violence as adolescents in the American war. Journal of Psychosomatic Research, 165, 111080.
- Huang, Rui, Yulin Yang, Anna Zajacova, Zachary Zimmer, Yuhang Li, and Hanna Grol-Prokopczyk. Forthcoming (2023). "Educational Disparities in Joint Pain Within and Across U.S. States: Do Macro Sociopolitical Contexts Matter?" PAIN.
- Yulin Yang, Rui Huang, Hanna Grol-Prokopczyk, and Jacqueline M. Torres. 2022. "Social Network Change After New-Onset Pain Among Middle-Aged and Older European Adults." Social Science & Medicine 310, article 115215. PMCID: PMC9514133. https://doi.org/10.1016/j.socscimed.2022.115215
- Teerawichitchainan, B., Zimmer, Z., Low, T. Q. Y., & Toan, T. K. (2022). Respiratory Health Among Older Adults in Vietnam: Does Earlier-Life Military Role and War Exposure Matter? Journal of Aging and Health, 35(3-4), 168-181.
- Norris D., Smith-Evans K., Tam-Seto L., Cramm H. (2022). A post-traumatic growth perspective on PTSD: The case of military veterans and their partners. Military Behavioral Health, 10(2), 134-143. https://doi.org/10.1080/21635781.2022.2098885
- Kai Zhang, Robert D. Brook, Yuanfei Li, Sanjay Rajagopalan and Juyong Brian Kim. "Air Pollution, Built Environment, and Early Cardiovascular Disease." Circulation Research. 2023;132:1707–1724. https://www.ahajournals.org/doi/full/10.1161/CIRCRESAHA.123.322002