

# Koichiro Shiba

## Curriculum Vitae

Harvard T.H. Chan School of Public Health

Department of Epidemiology

677 Huntington Avenue, Boston, MA 02115

Tel: 617-642-8046, E-mail: [shiba\\_k@g.harvard.edu](mailto:shiba_k@g.harvard.edu)

Personal Website: <https://koichiroshiba.com/>

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## ACADEMIC APPOINTMENTS

### Harvard T.H. Chan School of Public Health

Boston, MA

Research Fellow

Department of Epidemiology

June 2020 - current

Department of Social and Behavioral Sciences

### Harvard University

Cambridge, MA

Research Fellow

Human Flourishing Program, Institute for Quantitative Social Science

June 2020 - current

## EDUCATION

### Harvard University, Graduate School of Arts and Sciences

Boston, MA

PhD in Population Health Sciences

April 2020

- Title of Dissertation: Challenges and Opportunities in Epidemiology of a Natural Disaster: Lessons From the 2011 Great East Japan Earthquake and Tsunami
- Advisor: Ichiro Kawachi
- Dissertation Committee: Ichiro Kawachi, Mariana Arcaya, Peter James

### The University of Tokyo, Faculty of Medicine

Tokyo, Japan

Master of Public Health

May 2016

- Thesis Title: Changes in working status in later life, mental health, and social participation: A fixed effects analysis of longitudinal data from the Japan Gerontological Evaluation Study
- Advisors: Naoki Kondo and Hideki Hashimoto

B.S. in Health Sciences

May 2014

- Thesis title: Informal and formal social support and caregiver burden: AGES Caregiver Survey

- Advisors: Naoki Kondo and Hideki Hashimoto

## PUBLICATIONS

### PEER-REVIEWED JOURNAL ARTICLES

- **Shiba K**, Torres JM, Daoud A, Inoue K, Kanamori S, Tsuji T, Kamada M, Kondo K, Kawachi I. Estimating the impact of sustained social participation on depressive symptoms in older adults. *Epidemiology*. In press.
- **Shiba K**, Kubzansky LD, Williams DR, VanderWeele TJ, Kim ES. Associations Between Purpose in Life and Mortality by SES. *American Journal of Preventive Medicine*. In Press.
- **Shiba K**, Kawahara T, Aida J, Kondo K, Kondo N, James P, Arcaya M, Kawachi I. Causal Inference in Studying the Long-term Health Effects of Disasters: Challenges and Potential Solutions. *American Journal of Epidemiology*. In Press.
- Nakagomi A, **Shiba K**, Kondo K, Kawachi I. Can Online Communication Prevent Depression Among Older People? A Longitudinal Analysis. *Journal of Applied Gerontology*. 2020 Dec 24;0733464820982147.
- Ogawa T, Yoshii T, Moriwaki M, Morishita S, Oh Y, Miyatake K, Nazarian A, **Shiba K**, Okawa A, Fushimi K, Fujiwara T. Association between Hemiarthroplasty vs Total Hip Arthroplasty and Major Surgical Complications among Patients with Femoral Neck Fracture. *Journal of Clinical Medicine*. 2020 Oct;9(10):3203.
- **Shiba K**, Yazawa A, Kino S, Kondo K, Aida J, Kawachi I. Depressive symptoms in the aftermath of major disaster: Empirical test of the social support deterioration model using natural experiment. *Wellbeing, Space and Society*. 2020 Jan 1;1:100006.
- **Shiba K**, Hanazato M, Aida J, Kondo K, Arcaya M, James P, Kawachi I. Cardiometabolic Profiles and Change in Neighborhood Food and Built Environment Among Older Adults: A Natural Experiment. *Epidemiology*. 2020 Nov;31(6):758-767.
- **Shiba K**, Aida J, Kondo K, Nakagomi A, Arcaya M, James P, et al. Mediation of the relationship between home loss and worsened cardiometabolic profiles of older disaster survivors by post-disaster relocation: A natural experiment from the Great East Japan earthquake and tsunami. *Health & Place*. 2020;66:102456.
- Kim ES, **Shiba K**, Boehm JK, Kubzansky LD. Sense of purpose in life and five health behaviors in older adults. *Preventive Medicine*. 2020 Oct 1;139:106172.
- Nakagomi A, **Shiba K**, Hanazato M, Kondo K, Kawachi I. Does community-level social capital mitigate the impact of widowhood & living alone on depressive symptoms?: A prospective, multi-level study. *Social Science & Medicine*. 2020 Aug 1;259:113140.

- Nakagomi A, **Shiba K**, Kondo K, Kawachi I. Can social capital moderate the impact of widowhood on depressive symptoms? A fixed-effects longitudinal analysis. *Aging & Mental Health*. 2020 Jul 17:1-0.
- **Shiba K**, Kondo N. The Global Financial Crisis and Overweight among Children of Single Parents: A Nationwide 10-Year Birth Cohort Study in Japan. *International Journal of Environmental Research and Public Health*. 2019;16(6).
- **Shiba K**, Hikichi H, Aida J, Kondo K, Kawachi I. Long-Term Associations Between Disaster Experiences and Cardiometabolic Risk: A Natural Experiment From the 2011 Great East Japan Earthquake and Tsunami. *American Journal of Epidemiology*. 2019;188(6):1109-19.
- Saito T, Kondo N, **Shiba K**, Murata C, Kondo K. Income-based inequalities in caregiving time and depressive symptoms among older family caregivers under the Japanese long-term care insurance system: A cross-sectional analysis. *PLOS ONE*. 2018;13(3):e0194919.
- **Shiba K**, Kondo N, Kondo K, Kawachi I. Retirement and mental health: does social participation mitigate the association? A fixed-effects longitudinal analysis. *BMC Public Health*. 2017;17(1):526.
- **Shiba K**, Kondo N, Kondo K. Informal and Formal Social Support and Caregiver Burden: The AGES Caregiver Survey. *Journal of Epidemiology*. 2016;26(12):622-8.
- Group JGHW. Protecting human security: proposals for the G7 Ise-Shima Summit in Japan. *The Lancet*. 2016;387(10033):2155-62.
- **Shiba K**, Nishimoto M, Sugimoto M, Ishikawa Y. The Association between Meditation Practice and Job Performance: A Cross-Sectional Study. *PLOS ONE*. 2015;10(5):e0128287.

### **Under Review**

- **Shiba K**, Daoud A, Kino S, Nishi D, Kondo K, Kawachi I. Uncovering Heterogeneous Associations of Disaster-related Traumatic Experiences with Subsequent Mental Health Problems: a Machine Learning Approach.
- **Shiba K**, Daoud A, Hikichi H, Aida J, Kondo K, Kawachi I. Heterogeneity in cognitive decline after a major disaster: a natural experiment study.
- **Shiba K**, Kawahara T. Using propensity scores for causal inference: pitfalls and tips
- **Shiba K**, Cowden RG, Gonzalez N, Lee MT, Lomas T, Lai A, VanderWeele TJ. Global Trends of Mean and Inequality in Multidimensional Well-being From 2009 to 2019: Analysis of 1.2 Million Individuals From 162 Countries
- Yazawa A, **Shiba K** (co-first author), Inoue Y, Okuzono S, Inoue K, Kondo N, Kondo K, Kawachi I. Early childhood adversity and late-life depressive symptoms: unpacking mediation and interaction by adult socioeconomic status

- **Shiba K**, Cowden RG, Gonzalez N, Ransome Y, Nakagomi A, Chen Y, Lee MT, VanderWeele TJ, Fancourt D. Associations of Online Religious Participation During COVID-19 Lockdown with Subsequent Health and Well-being: A Longitudinal Study of the UK Population.
- Okuzono S, **Shiba K** (co-first author), Kim E, Shira K, Kondo N, Fujiwara T, Kondo K, Lomas T, Trudel-Fitzgerald C, Kawachi I, VanderWeele TJ. Ikigai and Subsequent Health and Well-being Among Japanese Older Adults: A Longitudinal Outcome-wide Analysis

### PRESENTATIONS/CONFERENCES

- **Shiba K**, Kawachi I. Challenges and Approaches for Causal Inference in Studying the Long-term Health Effects of Disaster. (Oral Presentation) The Society for Epidemiologic Research 2020 Annual Meeting (Virtual), Dec 2020.
- **Shiba K**, Kim E.S., VanderWeele T.J., Kubzansky L.D. Is the association between purpose in life and mortality modified by key social structural factors? (Oral Presentation) *American Psychosomatic Society*; Long Beach, CA, USA, March 2020.
- Kim E.S., **Shiba K**, Rimm E, Kubzansky L.D. Sense of purpose in life and health behaviors. Society of Behavioral Medicine, San Francisco, CA, USA.
- Kim E.S., **Shiba K**, Rimm E, Kubzansky L.D. Sense of purpose in life and health behaviors over time. Gerontological Society of America Annual Conference, Austin, TX, USA.
- **Shiba K**, Hanazato M, Kawachi I. Does Neighborhood Environment Causally Affect Cardiometabolic Risks? - Natural Experiment From the 2011 Great East Japan Earthquake -. (Poster Presentation) The Society for Epidemiologic Research 2019 Annual Meeting, Minneapolis, MN, USA, June 2019.
- Kamada M, Hayashi H, **Shiba K**, Taguri M, Kondo N, Lee I-M, Kawachi I. Nudging baseball fans to be active: a large-scale, smartphone-based, quasi-experimental study. 7<sup>th</sup> International Society for Physical Activity and Health Congress, London, UK, Oct 2018
- **Shiba K**, Kawachi I. Long-term impact of disaster experiences on cardiometabolic risk: A natural experiment from the 2011 Great East Japan Earthquake and Tsunami. (Oral presentation) The Society for Epidemiologic Research 51<sup>st</sup> Annual Meeting, Baltimore, ML, USA, June 2018.
- Honjo K, **Shiba K**, Tani Y, Sasaki Y, Kondo K, Kondo N. The risk of depressive symptoms according to living alone and social support among Japanese older people: A fixed effects analysis of longitudinal data from the Japan Gerontological Evaluation Study. ICBM2016 2016.12.10 Melbourne, Australia
- **Shiba K**, Kondo N. Pre-adolescent overweight in single-parent households after the

global economic crisis: a nationwide 10-year birth cohort study in Japan. (Poster presentation) Epidemiology Congress of the Americas 2016, Miami, FL, USA, June 2016.

- **Shiba K**, Kondo N, Kondo K, Kawachi I. Changes in working status in later life and mental health: Longitudinal findings from the Japan Gerontological Evaluation Study. (Poster presentation) Inaugural Forum on Population Health Equity, Boston, MA, USA, September 2015.
- **Shiba K**, Kondo N. Social roles in households or local communities and depression among older Japanese -the AGES longitudinal study-. (Poster presentation) The Society for Epidemiologic Research 48th Annual Meeting, Denver, CO, USA, June 2015.
- **Shiba K**, Kondo N, Kondo K. The Differential Effects of Informal and Formal Social Supports on Reducing Family Caregiver Burden –AGES Caregiver Survey-. (Oral presentation) The 25<sup>th</sup> Annual Scientific Meeting of the Japan Epidemiological Association, Aichi, Japan, January 2015.

#### **AWARD/FELLOWSHIP**

- Research Fellowship for Well-being Research, Planet Earth Foundation      2020-present
  - This fellowship covered all the expense of my post-doctoral training at the Human Flourishing Program
- Teaching Assistant Award, Harvard T.H. Chan School of Public Health      2019
- Best Presentation, Japan Epidemiological Association      2015
  - Introduction to Epidemiology Slideshow Contest
- Graduate Study Scholarship, University of Tokyo      2015
  - Four months visit to Harvard T.H. Chan School of Public Health as a visiting graduate student

#### **GRANT FUNDING**

**Title of Project:** Simulation of the effect of a continued community intervention facilitating sports participation among older adults on depression      2019

**Funding Agency:** Meiji Yasuda Life Foundation of Health and Welfare

**Funding Mechanism:** Grant for Young Health Science Investigators (\$10,000)

**Role on Project:** Principal Investigator

**Total Amount:** \$10,000

**Title of Project:** Natural Experiment Study of Neighborhood Effects on Cardiometabolic Health of Older Adults: Insights from the 2011 Great East Japan Earthquake      2019

**Funding Agency:** Harvard University (Institute for Quantitative Social Science)

**Funding Mechanism:** Research Grants for Dissertation Research

**Role on Project:** Principal Investigator

**Total Amount:** \$3,000

## **RESEARCH EXPERIENCES**

### **Harvard University**

*Graduate Researcher*

Positive psychology and healthy aging

October 2018 - May 2020

- Investigated how positivity psychological factors (e.g. optimism and purpose in life) is linked to health behaviors and biomarkers of physical health later in life.
- Performed statistical analyses of a national representative cohort study of US population (Health and Retirement Study) and prepared multiple manuscripts for peer-reviewed journals.

Natural disaster and physical health of survivors

August 2017 - May 2020

- Investigated the long-term associations between traumatic experiences of natural disaster (i.e. the 2011 Great East Japan Earthquake and Tsunami) and cardiometabolic health of survivors.
- Performed statistical analyses of large cohort data and prepared a manuscript for a peer-reviewed journal.

*Visiting Graduate Student*

May 2015 - July 2015

- Masters' thesis project completion.
- Conducted study design, data analysis, interpretation of results, and manuscript writing within four months.
- Advisor: Ichiro Kawachi

### **University of Tokyo**

Tokyo, Japan

*Graduate Researcher*

Study of childhood obesity after the global economic crisis

August 2015 – August 2016

- Assisted in a study that revealed the increased risk of childhood overweight; particularly, among children from single parent households after the global economic crisis in 2008.
- Implemented a panel data analysis of nationwide birth-cohorts and drafted a manuscript.

Health survey project in the City of Rikuzentakata

March 2014 – March 2015

- Epidemiological survey that targeted local residents living in temporary housing in areas affected by disaster.
- Designed questionnaires for local citizens based on qualitative needs interviews.
- Wrote an official report and conducted an oral presentation to be presented to the local government based on the study's results including high prevalence of ill-health and risk factors among residents in temporary housing.

## **TEACHING EXPERIENCES**

### **Epidemiologic Methods III: Models for Causal Inference (EPI289)** 2019 & 2020

Department of Epidemiology, Harvard T.H. Chan School of Public Health

- Course Contents: Intermediate course on epidemiologic methods for causal inference from observational data. The methods covered include stratification, regression model, propensity score, g-formula, inverse probability weighting and marginal structural model, g-estimation and structural nested mean model, and instrumental variable estimation.
- Role: Teaching Fellow (Grading, weekly lab sessions, and office hours)
- With: Miguel Hernan, DrPH

### **Measurement Error and Misclassification for Epidemiologists (EPI515)** 2019

Department of Epidemiology, Harvard T.H. Chan School of Public Health

- Course Contents: Overview of the implications of and methods to deal with measurement error and misclassification in epidemiologic studies. Theories and assumptions for valid use of the correction methods were discussed.
- Role: Teaching Fellow (Grading and weekly office hours)
- With: Molin Wang, Ph.D.

### **Society and Health (SBS201)** 2017 & 2018 (Lead Teaching Fellow)

Department of Social and Behavioral Sciences, Harvard T.H. Chan School of Public Health

- Course Contents: Introductory course on social epidemiology. Reviewed key evidence of social determinants of health and their implication for population health and health disparities.
- Role: Teaching Fellow (Grading and weekly lab sessions)
- With: Ichiro Kawachi, Ph.D.

### **Principles of Social and Behavioral Research (SBS281)** 2018

Department of Social and Behavioral Sciences, Harvard T.H. Chan School of Public Health

- Course Contents: Introductory course on methods for social research in public health.

Topics covered include measurement, study design, survey research methods, questionnaire development, sampling, and data collection.

- Role: Teaching Fellow (Grading and weekly lab sessions)
- With: Laura Kubzansky, Ph.D.

### **Advanced Epidemiologic Methods (EPI207)**

2018

Department of Epidemiology, Harvard T.H. Chan School of Public Health

- Course Contents: Advanced course on epidemiologic methods for causal inference to estimate causal effect of time-varying treatment. Topics covered include Directed Acyclic Graphs and Single World Intervention Graphs, g-formula, inverse probability weighting, dynamic regimes, structural nested models, instrumental variable estimation, and doubly robust methods.
- Role: Teaching Fellow (Grading and office hours)
- With: James Robins, M.D.

### **Explaining Health Behavior: Insights from Behavioral Economics (SBS503)**

2018

Department of Social and Behavioral Sciences, Harvard T.H. Chan School of Public Health

- Course Contents: Review of the application of theories and constructs from behavioral sciences (particularly behavioral economics and social psychology) to the field of health behavior.
- Role: Teaching Fellow (Grading)
- With: Ichiro Kawachi, Ph.D.

## **OTHER EXPERIENCES**

### **Cancer Scanner / Campus for H**

Tokyo, Japan

*Data Analyst*

May 2014 – August 2016

- Worked with central and municipal governments / other national research centers to plan / execute large scale community-based public health interventions via methods such as increases in cancer screening rates.
- Conducted a thorough review of over 200 scholarly articles from diverse disciplines to generate a research hypothesis
- Led a research project that investigated the association between meditation practice and subjective job-performance, in addition to being the first author of the resulting article.

### **Health and Global Policy Institute**

Tokyo, Japan

*Intern*

January 2013 – April 2015



Worked with multiple stakeholders involved in forming health policies including: central/municipal governments, private companies, mass media, clinicians to plan / execute research and events towards better health policies.

- Engaged in the literature review and data analysis parts of the research.

### **KNOWLEDGE/SKILLS**

- Statistical software: SAS, STATA, R, Python, ArcGIS
- Statistical knowledge: causal inference from observational data, mediation analyses, longitudinal data analyses, outcome-wide study design, multilevel modeling, survival data analyses, missing data handling (multiple imputation), bootstrapping, panel data analyses, geospatial analyses, data visualization.

### **PEER REVIEW ACTIVITIES**

- Alzheimer's & Dementia
- American Journal of Epidemiology
- BMC Nephrology
- BMC Public Health
- BMC Psychiatry
- BMJ Open
- European Journal of Public Health
- Health and Place
- Journal of the American Geriatrics Society
- Journal of Epidemiology
- Journal of Occupational Health
- Journal of Public Health
- PLOS ONE
- Population, Space and Place
- Psychoneuroendocrinology
- Social Policy and Society
- Social Science and Medicine
- Social Science and Medicine – Population Health