

# Indian Statistical Institute

## Applied Statistics Unit

### SEMINAR NOTICE

**Speaker:** Lakshmi Raut, University of Chicago

**Title:** Early childhood factors and health pathways to disability and death in mid-ages — a multi-state time-to-event life history model

**Date:** 21 November, 2023

**Time:** 16:15 PM

**Venue:** ASU Seminar Room

**Online Platform:** Google Meet ([meet.google.com/tpn-gguy-vad](https://meet.google.com/tpn-gguy-vad))

**Abstract:** Developmental programming literature in microbiology emphasizes that much of the process of health development throughout life is determined at the early stage of life by the early childhood epigenetic factors comprising internal and external environments, health care use, health related behavior, together with the genetic factors. This paper introduces and empirically estimates a statistical multi state time-to-event life history model of incidence of chronic diseases, disability and death at mid-ages, incorporating childhood factors and health behaviors. Many of the factors at the cellular level are unobserved or imperfectly instrumented with observed data which causes biased estimates of included regressors. This paper corrects for unobserved heterogeneity biases extending statistical techniques from the generally studied two-state models to the multi-state model of this paper. The paper uses the HRS (Health and Retirement Studies) dataset, takes the definition of disability as the health status qualifying for the Social Security's DI (Disability Insurance) program or the SSI (Supplemental Security Income) program. The paper studies how various childhood factors and health behaviors are associated with probabilities of following various transition paths through the health states of normal health, illness with one-or-more chronic diseases, disability and death before reaching age 65. The paper also carries out quantitative policy analysis of social policies improving the childhood factors of various social groups on their probabilities of maintaining good health, encountering disability or death in mid-ages.

The paper url:

[https://lakshmiraut.netlify.app/publication/workpaper/2023-01-01\\_early\\_childhood\\_factors\\_unpublished/](https://lakshmiraut.netlify.app/publication/workpaper/2023-01-01_early_childhood_factors_unpublished/)

**All are invited to attend.**