

Open Lecture

Effects of Exercise on Health Care Demand

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In this paper, we estimate effects of exercise on health care demand (not on health itself) using Health Retirement Study data that is a large-scale two-wave panel. The response variables (health care demand) are office visits to doctors and hospitalization days which take non-negative integers. The regressors (or treatments) of interest are two: light and vigorous exercise. We use model-free as well as model-based approaches; for the latter, Poisson and Negative Binomial models for the pooled cross-sections, and conditional Poisson and conditional Negative Binomial models for the panel will be employed. In getting the exercise effects, two sources of endogeneity are allowed for: individual-specific time-invariant unobserved variable problem (say, genes), and the simultaneity problem due to health care use affecting exercise habits. Using both cross-section and panel estimation methods, we found that the short-run light exercise effect is increasing health care demand by about 109%, whereas the long-run vigorous exercise effect is decreasing by about 12%. These findings suggest that it will be hard to reduce health care cost by encouraging people to do more exercise—at least in the short-run.