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ONLINE ISSN : 1348-6365

PRINT ISSN : 1882-2754

JOURNAL OF THE JAPAN STATISTICAL SOCIETY

Vol. 35 (2005) , No. 1 pp.135-145

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Improving the Stratification of Medical Institutions for Stratified Sampling in the Patient Survey

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Abstract: The Patient Survey is a designated statistical survey conducted every three years with the objective of obtaining basic data on the current status of patients in medical institutions in Japan. Since stratified sampling is used in this survey, suitable construction of strata is essential for achieving low error rates in the estimation of the number of patients having various diseases. We investigated the performance of the current stratification through a correspondence analysis between disease categories and clinic categories and found that patients having diseases related to mental or behavioural disorders were not well sampled by the current stratification method. Therefore, we proposed to create a clinic category, “psychiatry,” as a new stratum for sampling and examined the effect of this stratification on the precision in the estimation through a Monte Carlo simulation. The simulation results indicate that the new stratification achieved a decrease of approximately seven points in the standard error rate of the estimated number of patients with “mental and behavioural disorders.”

Key words: correspondence analysis, Patient Survey, ratio estimation, standard error rate, stratified random sampling

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