SAMPLE SIZE FOR CASE-CONTROL STUDIES WITH LONGITUDINAL DATA

E. Park[1]

[1] *Chonnam National University, Gwangju, Korea*

Email: *espark02@jnu.ac.kr*

Case-control studies for longitudinal data are considered, in which, among repeated binary measurements of disease status in a subject, the exposure levels of risk factors for all diseased cases (case) are identified and the exposure levels only for small fraction of disease free cases (control) are identified. The case-control study using longitudinal data brings about economies in cost and time when the disease is rare and assessing the exposure level of risk factors is difficult.

Recently, Park and Kim (2004) proposed a noble method that uses the ordinary logistic model for the point estimation, and estimates the variance by either the robust variance estimator or bootstrap method. Here we propose sample size estimation using their model. We assume our response is dichotomous and are interested in testing if the odds ratio is one, which means there is no association between the exposure variable and response status. In practical situations, adequate combinations of the number of individuals and the number of repetitions will be decided considering the cost and logistical implications of their choice. In this paper, we'll present sample size formula for case-control studies with longitudinal data and discuss issues in balancing between number of individuals and number of repetitions within each individual.