

Abstract

In most medical research, the important component during the study period is the absence of under study events. To deal with this, Kaplan and Meier (1958) introduced an estimator that calculate the survival probabilities for censored observations. However, with extensive filtering, this estimator has the disadvantage of overestimation and bias. Another estimator for estimating survival probabilities proposed by Jan (2004), weighted by non-censoring rate for censored data, having the drawback of providing zero weight/ probability for the last censoring observation. Shafiq et al. (2007) improves on this estimation by addressing the difficulties of overestimation and zero probability for the last censored observation. The problem with this improved estimator is that it gives extremely low weight and probabilities that are closer to zero for the final censoring observations, when there is a lower likelihood of an event occurring. The two novel estimators were developed and validated by an examination of an actual data set called the "Stanford Heart Transplant Study," which found that they outperformed the earlier estimators. These estimators not only controlled overestimation and decreased bias, but they also yielded non-zero survival probability even when extensive censoring was used.