

# **Drawbacks of Utilizing the Logit Link in Propensity Score Weighting Adjustment**

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Nonresponse rates in health related studies have been observed to increase in recent years regardless of the disease studied, geographical region or the age of the study population. Unit nonresponse reduces the sample size and the study power. More importantly, it can cause bias in estimates if there are significant differences between respondents and nonrespondents. In general, propensity score weighting is used to adjust for the nonresponse bias. In this study, we evaluate the drawbacks of utilizing the logit link in propensity score weighting, which is the most common practice among researchers. Specifically, we study the effects of link misspecification on propensity score weighting when used for unit nonresponse. We illustrate our results using the North Carolina-Louisiana Prostate Cancer Project (PCaP) along with the Quality of Life in Prostate Cancer Project (Q-PCaP), which is the follow-up study of the Louisiana-PCaP participants.