

(54) Title of the invention : Missing data integration using a combination of mean score and inverse probability weighted approaches and multiple imputation

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(57) Abstract :

The present invention addresses the limitations of traditional methods for handling missing data in longitudinal cohort studies, which can lead to inaccurate parameter estimates and reduced statistical power. The proposed method incorporates the mean score and inverse probability weighted methods in generalized estimating equations to impute missing scores due to incomplete covariate data. This approach is more efficient and robust than traditional methods, and it can be used to estimate parameters for a variety of statistical methods. The present invention also employs multiple imputation to augment incomplete data in the estimating equation, which helps to reduce the bias and variability of parameter estimates. Additionally, the invention offers a variety of other innovative features, including the ability to estimate parameters for four different covariance structures, the use of the QIC for model selection, and a special focus on the calculation of weights within the dataset. Overall, the present invention provides a novel and effective approach to missing score imputation for incomplete covariate longitudinal cohort data. It is a valuable tool for researchers who need to impute missing values in longitudinal cohort studies in order to obtain accurate and reliable results.

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