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COMPARISON OF POWER VALUES IN GENERALIZED LINEAR MIXED MODEL (GLMM) UNDER THE DIFFERENT ESTIMATION METHODS

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Abstract

In longitudinal studies, the Generalized Estimating Equation (GEE) and Maximum Likelihood (ML) methods are commonly used to estimate the parameters of Generalized Linear Mixed Models (GLMM). Power and sample size estimation constitutes an important component for longitudinal study design and planning of modern clinical trials. In this paper, the power of the Wald Test for two different estimation methods of parameters in GLMM was compared. The data employed in this study were diabetes mellitus data with three consecutive follow ups. A pattern was found in which the power values were better under ML approach than GEE approach for the GLMM.

Keywords: Generalized Linear Mixed Model, Generalized Estimating Equation, Power Function, Noncentral Chisquare Distribution

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