A generalized Estimating Equation (GEE-2) Approach to Family-Based Studies of Substance Use Phenotypes in Adolescents

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1. Background

The genetics of disease of etiological importance to complex disorders remains a difficult challenge. Genetic studies characteristically use samples of families and their member s, and the analysis of such data can be complicated. The aim of this paper is to present a methodology that can be used to analyze the data from such studies. The methodology described is the generalized estimating equation (GEE) approach, which can be used to fit a wide range of statistical models to longitudinal data.

2. Methods

The GEE approach was used to analyze the data from the Add Health study, a national longitudinal study of youth in the United States. The data were collected at four waves, and the main variable of interest was the proportion of adolescent alcohol consumption.

3. Results

The GEE approach was found to be more powerful than the traditional analysis of variance (ANOVA) approach in detecting differences in the proportion of adolescent alcohol consumption across different age groups. The GEE approach was also found to be more robust to the assumption of normality of the data.

4. Discussion

The GEE approach is a powerful method for analyzing longitudinal data. It is more powerful than the traditional ANOVA approach, and it is more robust to the assumption of normality of the data. The GEE approach can be used to fit a wide range of statistical models to longitudinal data.