PREDICTING LONGITUDINAL ORDERED RESPONSE WITH MISSING DATA USING BAYESIAN METHOD

<u>R. Ghorbani[†]</u>, S.M. Sadat-Hashemi

Semnan University of Medical Sciences, Semnan, Iran

[†]E-mail: *R_ghorbani@sem-ums.ac.ir*

The longitudinal studies, in which response variable is ordered categorical data, such as pain intensity, degree of recovery and nausea intensity and etc, have special setting in medical sciences, because physician examines the patient frequently during the period of study. One of the most important problems in analysis of such studies is missing data. The models, which are used in these situations, are the Generalized Linear models (GLMs). In this article by considering correlation between observations of each subject, β 's coefficient in two states of complete cases and existence of missing values in the practical example were estimated and compared with each other by using Bayesian approach in SAS and Winbugs software.

Results showing that analysis through Bayesian approach and with introduced model, significant variables have not changed in the state of complete cases and existence 10% or 20% missing values, while by omitting the data of 20% subjects having missing values, no variable has been significant.

Omitting the data related to the cases that have missing data, causes the accuracy of analysis to be reduced. Therefore, using Bayesian approach (even with Non- Informative Priors) in longitudinal studies with missing values is recommended with the introduced model.