3rd International Conference on

Reproductive Health and Medicine

May 21-22, 2018 | Vienna, Austria

Prediction of a sequence of binary responses from repeated measures using Markov model and regressive model

Rafiqul I Chowdhury and **M Ataharul Islam**
University of Dhaka, Bangladesh

Outcomes from longitudinal studies can produce a long sequence of binary events which may capture the state at regular or irregular intervals and make transitions through states. There is a growing interest to predict the risk of a sequence of binary responses based on patient-specific characteristics. To understand this process, we need to examine the sequence of events during subsequent follow-ups. One needs to deal with transitions to some states over time generating a large number of trajectories from beginning to the end of the study. Prediction of risk of a sequence of events with specified predictors is a challenge to the researchers. One can use the relation between marginal and conditional probability to obtain the joint probability (multivariate). Marginal probability can be obtained from the marginal model using outcome at first follow-up and conditional probability can be obtained from the conditional models such as the Markov model using subsequent follow-ups. However, with the increased number of follow-ups, this problem becomes difficult to model due to over-parameterization. We proposed a regressive model to avoid over-parameterization that requires fitting only one model for each repeated outcome by incorporating previous outcomes as covariates. The conditional probability is obtained from the regressive model. An example using real-life data is shown. The results using both approaches are similar and show the usefulness of the proposed approach. We believe the proposed model would be very useful for analyzing big data with large follow-ups.

Reproductive System & Sexual Disorders: Current Research
ISSN: 2161-038X

Reproductive Medicine 2018
May 21-22, 2018

Volume 7

Page 86