A joint model for maternal morbidity during antenatal, delivery and postpartum periods

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Maternal complications at different stages of pregnancy (antenatal, delivery and postnatal stage) are expected to be interrelated. The extent of the impact of risk factors on complications at different stages may depend on the interrelationships of the complications. Therefore, while studying the impact of risk factors on maternal complications at different stages, the dependence in the complications at different stages should be taken under consideration. Considering these aspects, we proposed a joint model based on a marginal conditional approach to address the dependence or inherent relationships under dependence in the maternal complications at different stages explained by corresponding risk factors. The study uses the data on second Bangladesh Maternal Mortality and Health Care Survey, conducted from 18 January to 6 August 2010 (BMMS 2010). Using the proposed model, we examined the potential impact of different risk factors including antenatal visits, economic status and number of pregnancies prior to the index pregnancy on maternal complications at different stages of childbearing and since the model considered the dependence among the complications at different stages, the impact of the risk factors on complications can more explicitly be reviewed and the findings of this study would be useful for the policymakers.