## Supplementary Material to "Beyond of the joint survival and longitudinal data analysis model for binary data via two stages"

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More figures for the simulation study section in the manuscript.

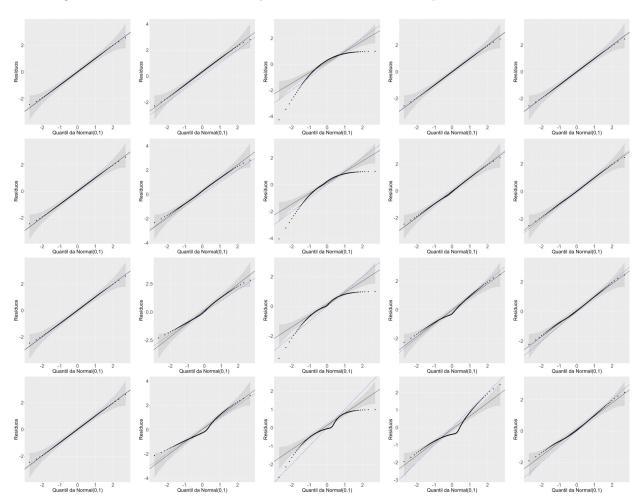


Figure 1: Randomized quantile, deviance, Martingale, NMSP, and NRSP residuals (from top to bottom) for n = 150 and censoring 0%, 10%, 30%, and 50% (from left to right), for the model described in Scenario 2,  $\max(m_i) = 2$ .

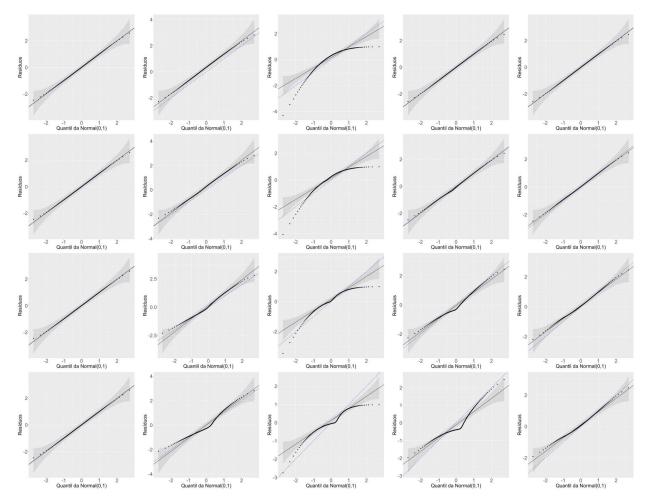


Figure 2: Quantile, deviance, Martingale, NMSP, and NRSP residuals (from top to bottom) for n=150 and censoring 0%, 10%, 30%, and 50% (from left to right), for the model described in Scenario 2,  $\max(m_i)=5$ .

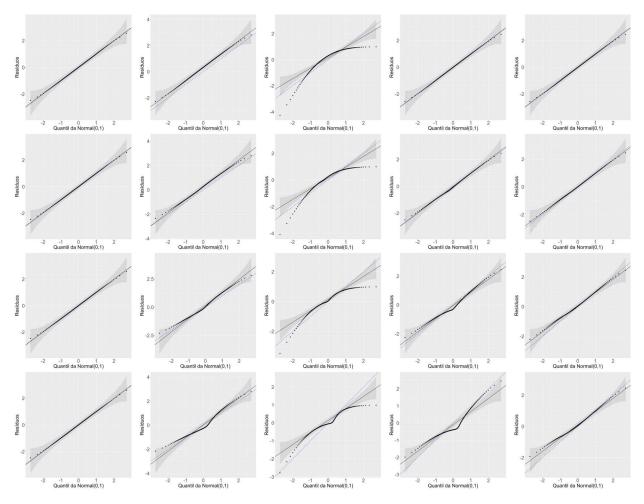


Figure 3: Randomized quantile, deviance, Martingale, NMSP, and NRSP residuals (from top to bottom) for n=150 and censoring 0%, 10%, 30%, and 50% (from left to right), for the model described in Scenario 2,  $\max(m_i)=11$ .

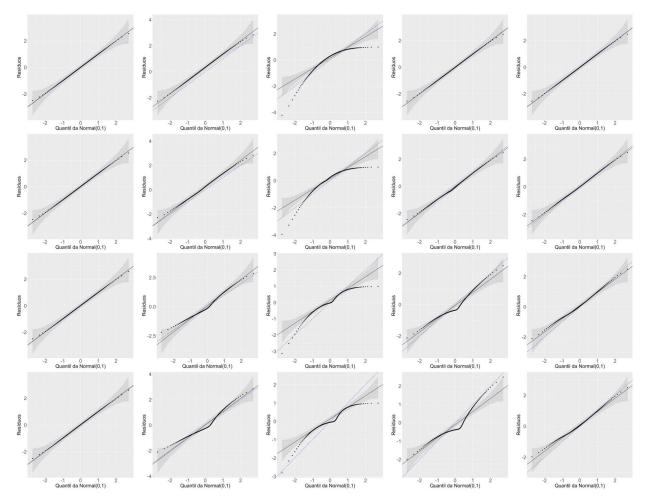


Figure 4: Randomized quantile, deviance, Martingale, NMSP and NRSP residuals (from top to bottom) for n = 150 and censoring 0%, 10%, 30%, and 50% (from left to right), for the model described in Scenario 3, with  $\max(m_i) = 2$ .

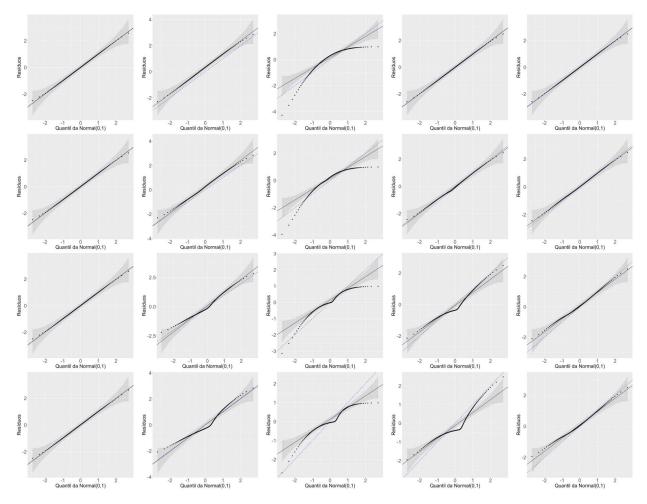


Figure 5: Randomized quantile, deviance, Martingale, NMSP and NRSP residuals (from top to bottom) for n = 150 and censoring 0%, 10%, 30%, and 50% (from left to right), for the model described in Scenario 3, with  $\max(m_i) = 5$ .

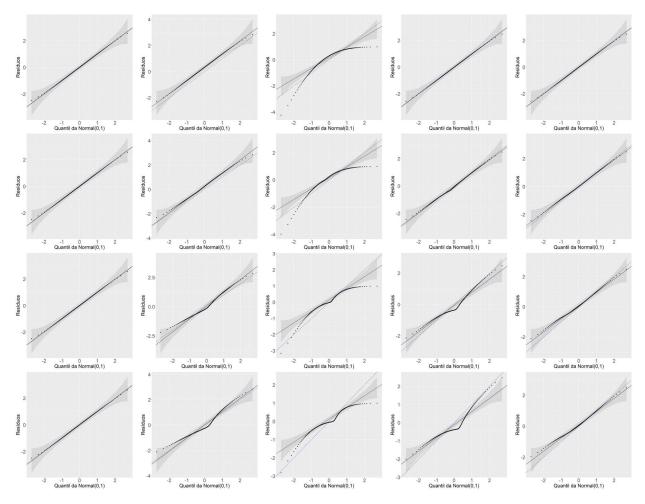


Figure 6: Randomized quantile, deviance, Martingale, NMSP and NRSP residuals (from top to bottom) for n = 150 and censoring 0%, 10%, 30%, and 50% (from left to right), for the model described in Scenario 3, with  $\max(m_i) = 11$ .

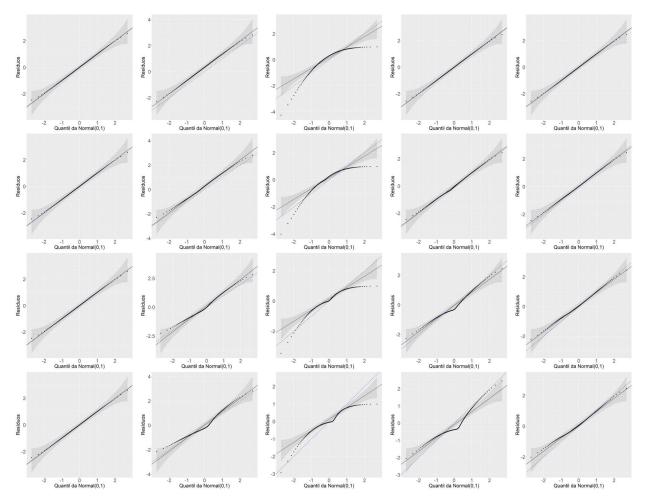


Figure 7: Randomized quantile residuals, deviance, Martingale, NMSP and NRSP (from top to bottom) for n=150 and censoring 0%, 10%, 30%, and 50% (from left to right), for the model described in Scenario 4 with  $\max(m_i)=2$ .

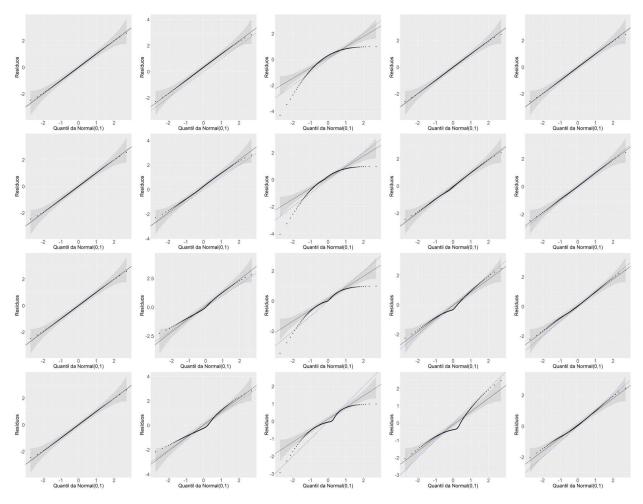


Figure 8: Randomized quantile, deviance, Martingale, NMSP, and NRSP residuals (from top to bottom) for n=150 and censoring 0%, 10%, 30%, and 50% (from left to right), for the model described in Scenario 4 with  $\max(m_i)=5$ .

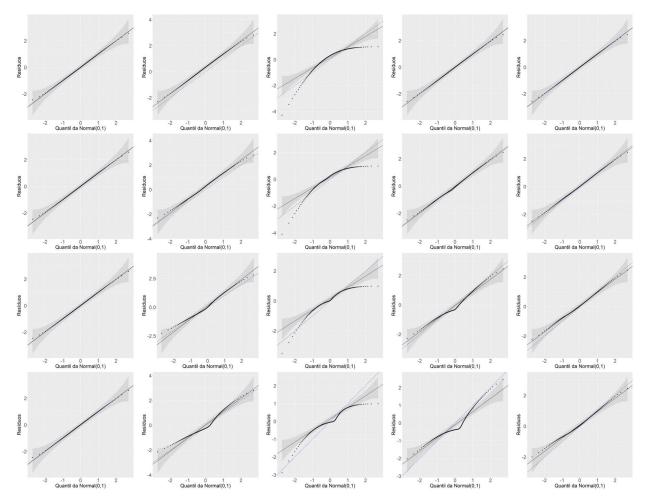


Figure 9: Randomized quantile, deviance, Martingale, NMSP, and NRSP residuals (from top to bottom) for n=150 and censoring 0%, 10%, 30%, and 50% (from left to right), for the model described in Scenario 4 with  $\max(m_i)=11$ .