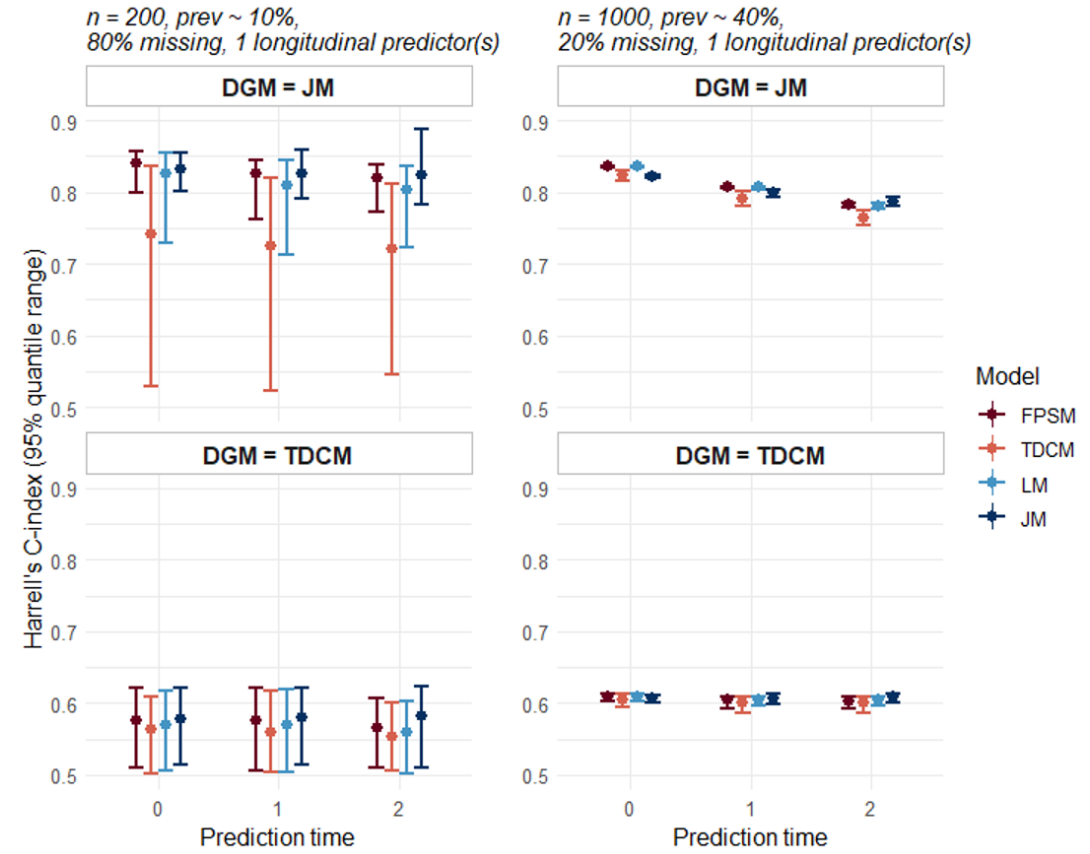
1. Presentation of results structure

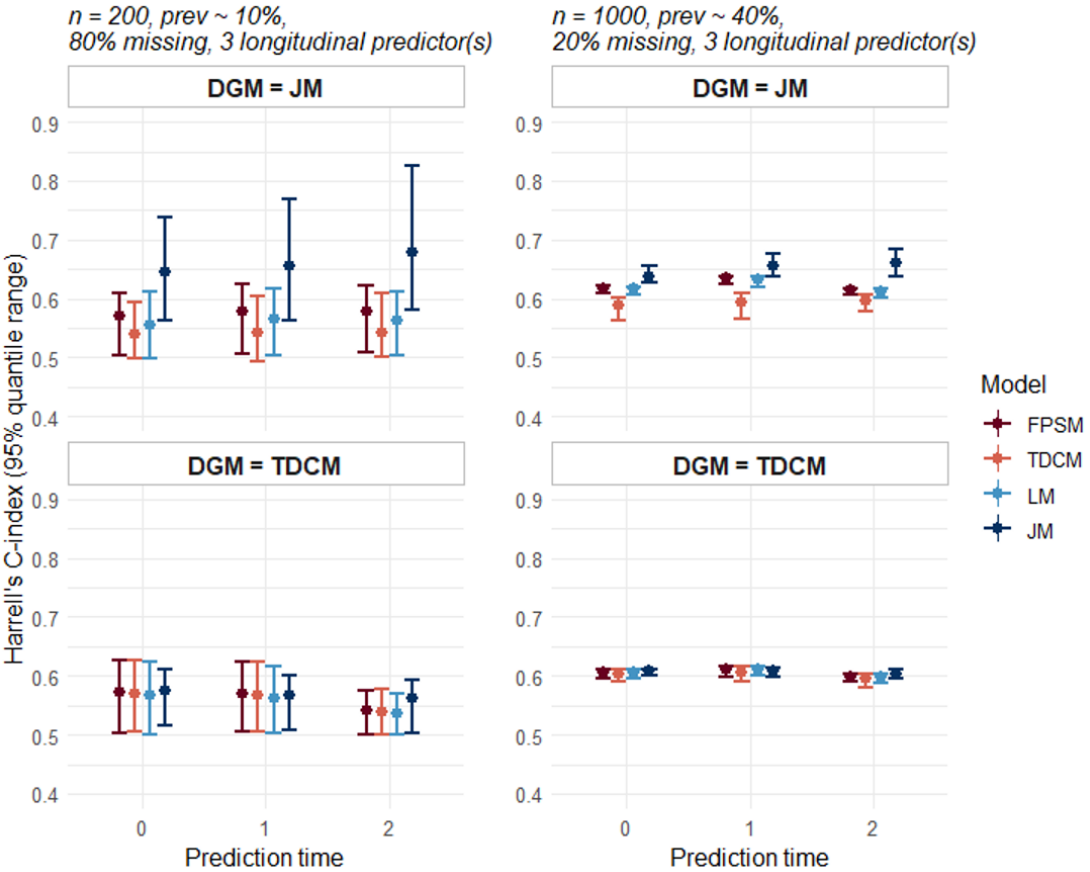
1. Presentation of results structure
    1.1. Predictive performance
        1.1.1. Discrimination
            1.1.1.1. Sample size
            1.1.1.2. Event prevalence
            1.1.1.3. Follow-up missingness
        1.1.2. Overall performance (Brier & IPA)
            1.1.2.1. Sample size
            1.1.2.2. Event prevalence
            1.1.2.3. Follow-up missingness
    1.2. Optimism
        1.2.1. Discrimination
            1.2.1.1. Sample size
            1.2.1.2. Event prevalence
            1.2.1.3. Follow-up missingness
        1.2.2. Overall performance (Brier & IPA)
            1.2.2.1. Sample size
            1.2.2.2. Event prevalence
            1.2.2.3. Follow-up missingness
    1.3. Prediction stability
        1.3.1. Sample size
        1.3.2. Event prevalence
        1.3.3. Follow-up missingness
        1.3.4. Additional plots to help with interpretation
    1.4. Computational time
        1.4.1. Fitting time
            1.4.1.1. Sample size
            1.4.1.2. Event prevalence
            1.4.1.3. Follow-up missingness
        1.4.2. Prediction time
            1.4.2.1. Sample size
            1.4.2.2. Event prevalence
            1.4.2.3. Follow-up missingness
    1.5. Model fitting failures

(Presentation of results begins overleaf)

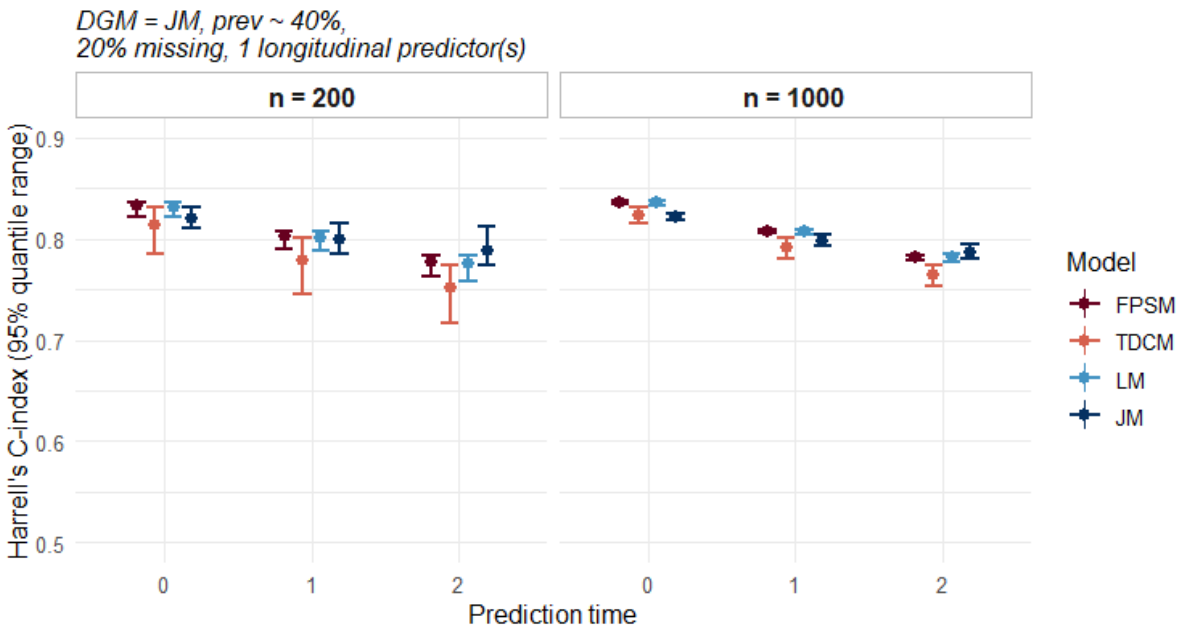
1.1. Predictive performance comparison

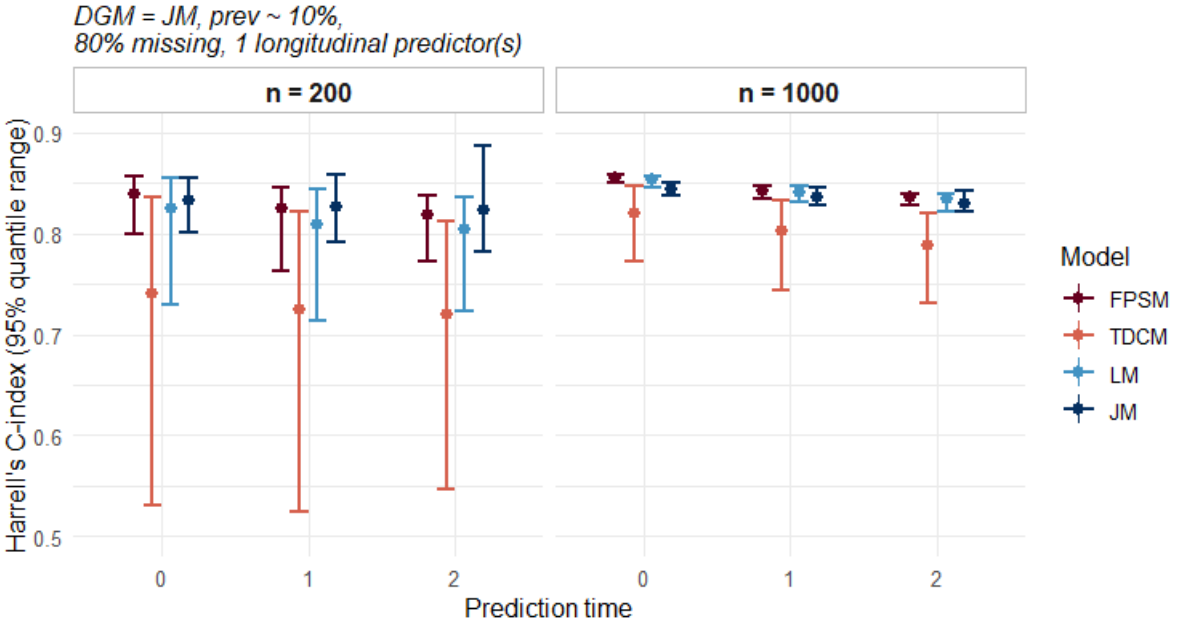
1.1.1 Discrimination

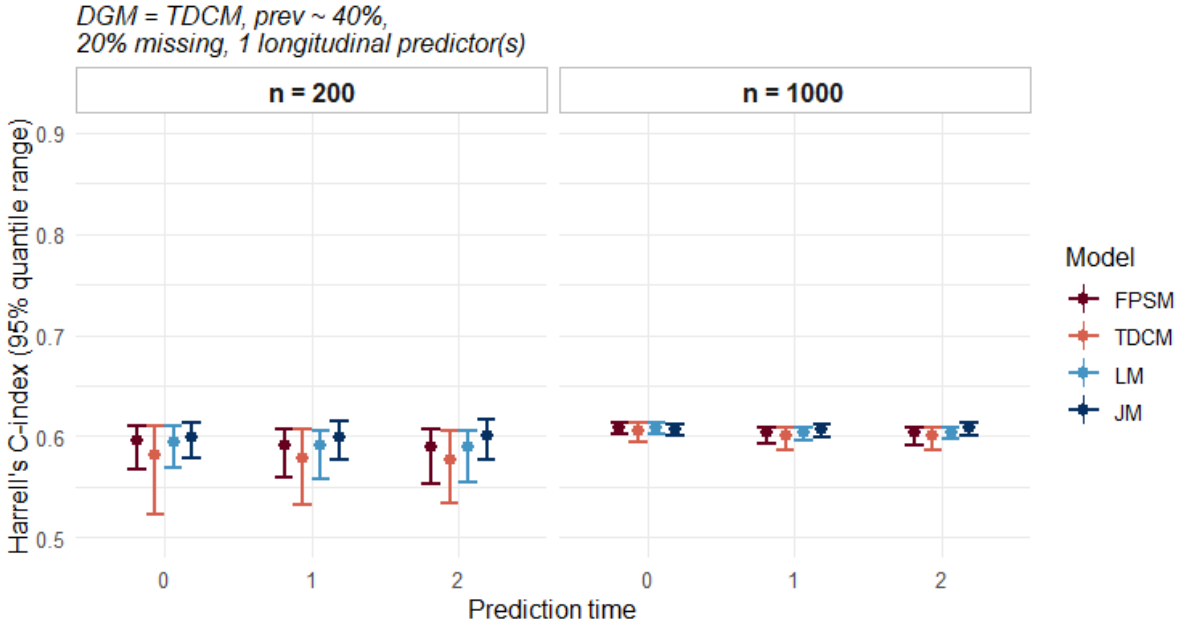


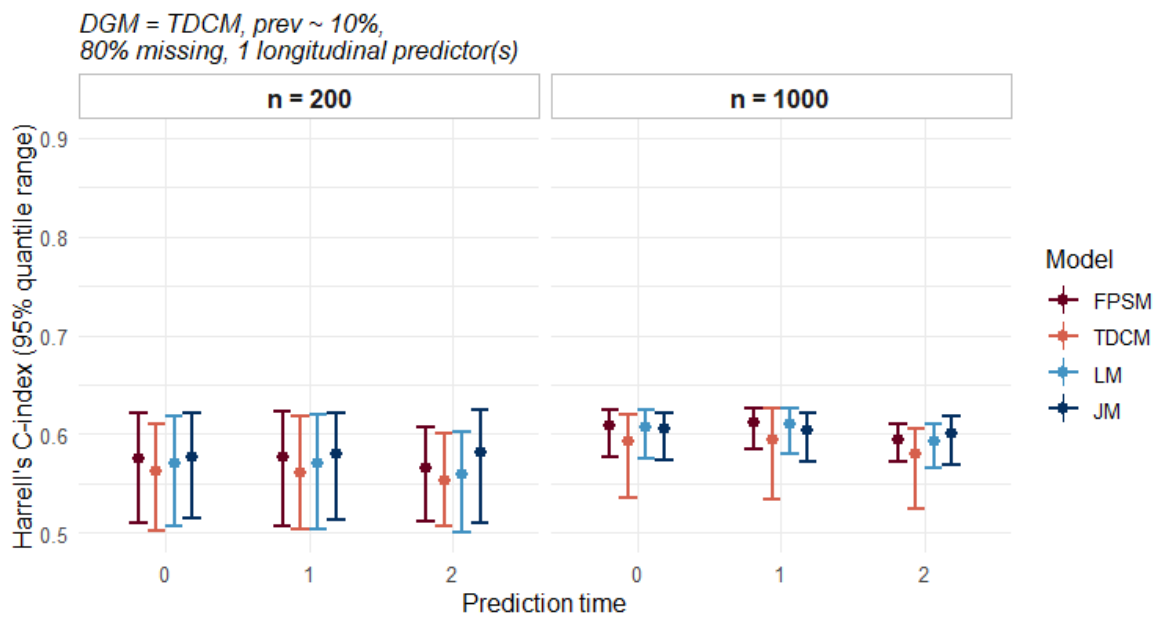


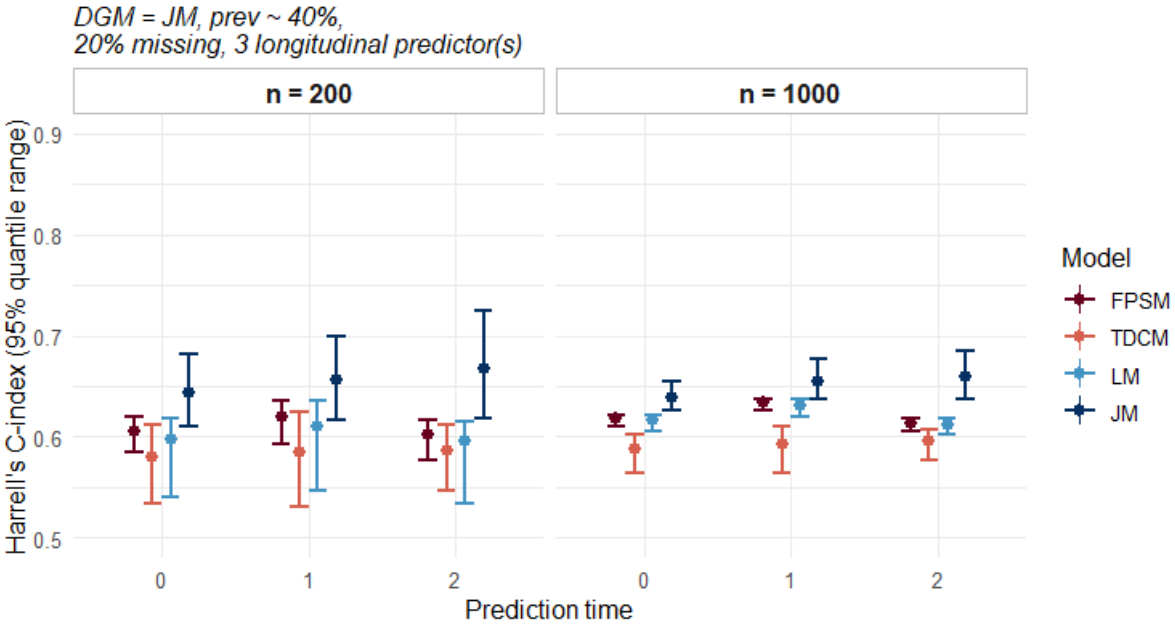
1.1.1.1. Sample size influence

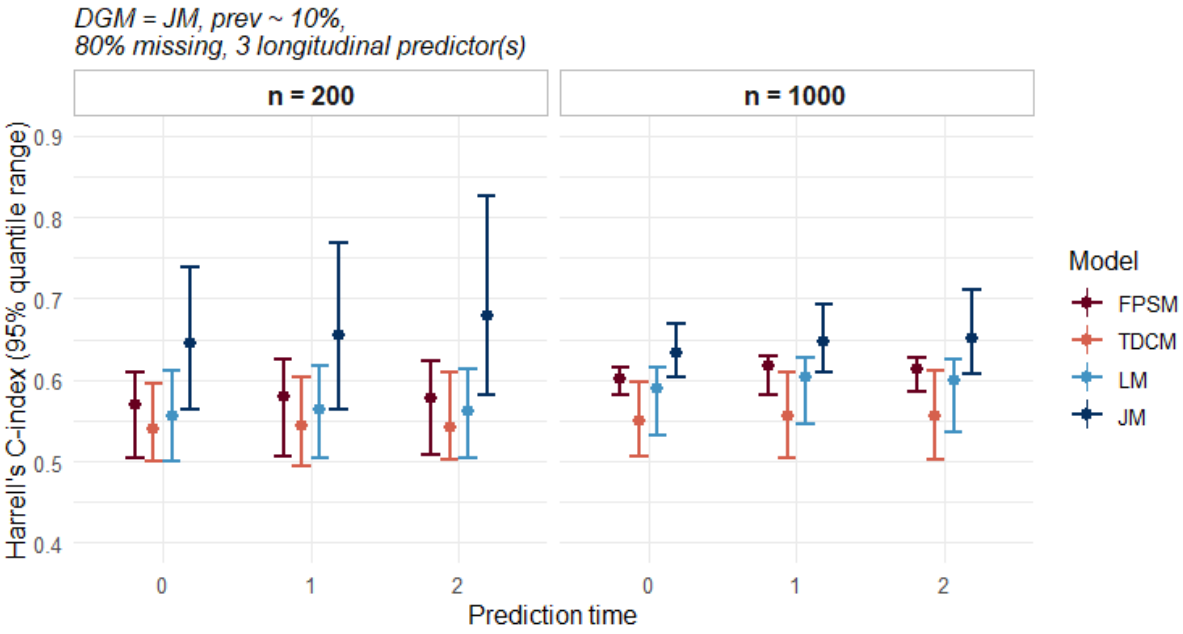


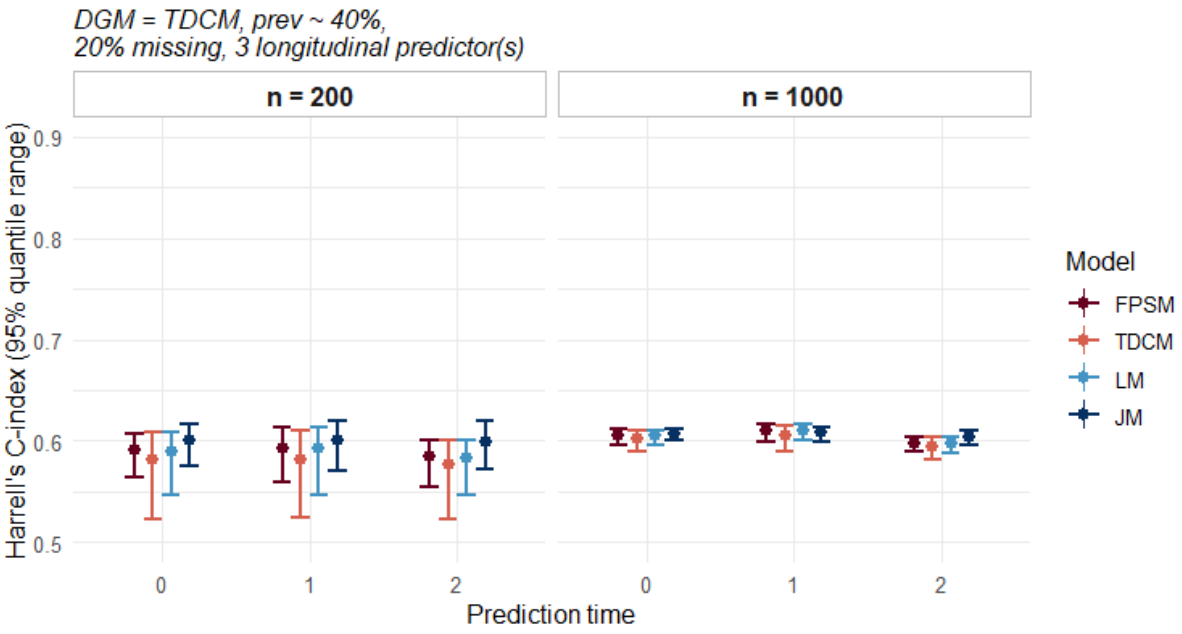


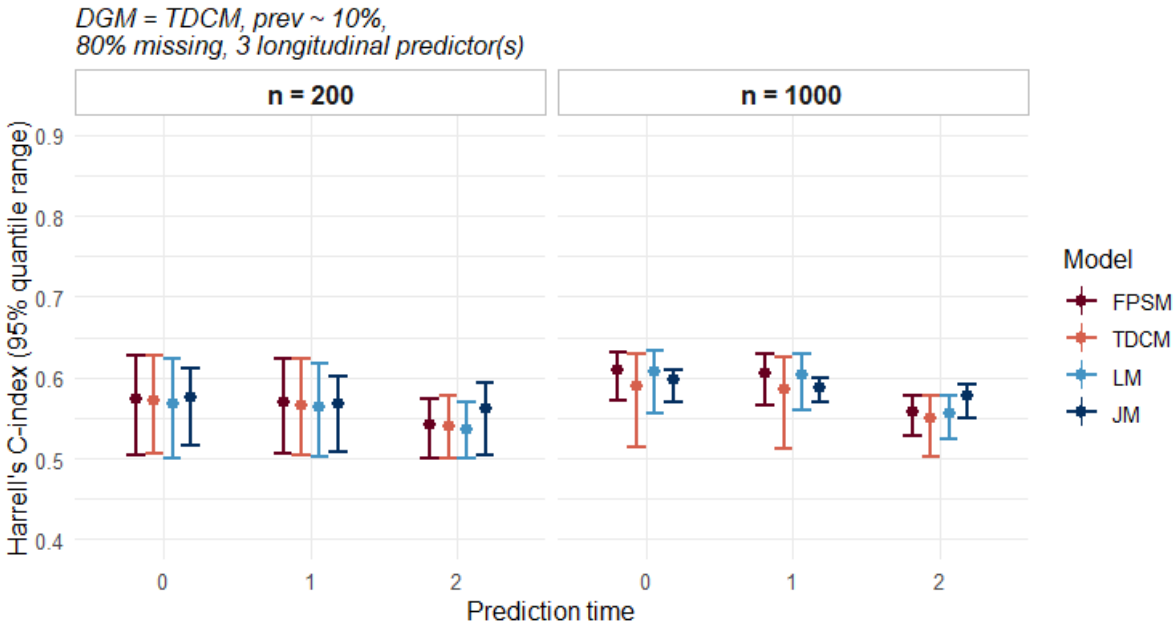



DGM = TDCM, prev ~ 10%,
80% missing, 1 longitudinal predictor(s)
n = 200
n = 1000
Harrell's C-index (95% quantile range)
0.9
0.8
0.7
0.6
0.5
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

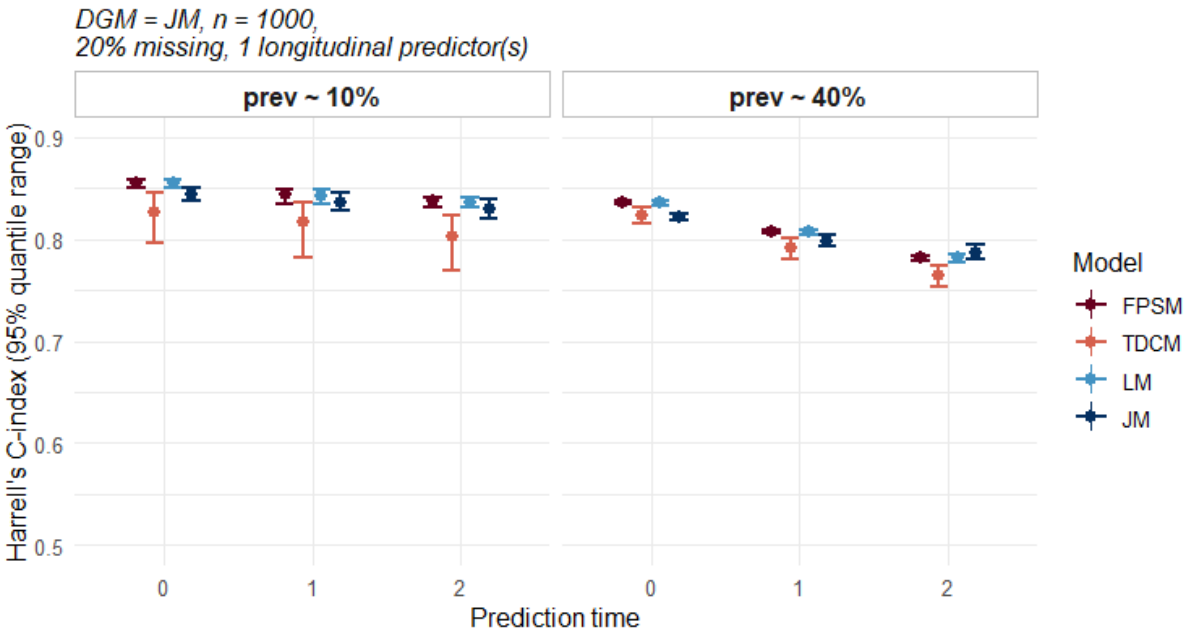

DGM = JM, prev ~ 40%,
20% missing, 3 longitudinal predictor(s)
n = 200
n = 1000
Harrell's C-index (95% quantile range)
0.9
0.8
0.7
0.6
0.5
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

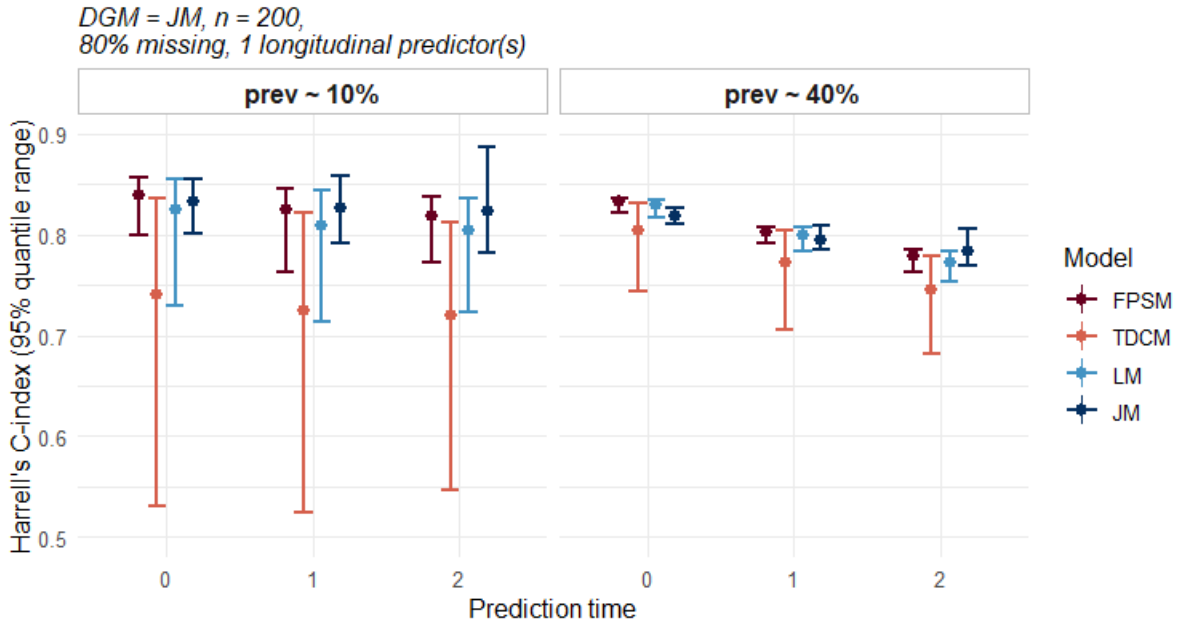

DGM = JM, prev ~ 10%,
80% missing, 3 longitudinal predictor(s)
n = 200
n = 1000
Harrell's C-index (95% quantile range)
0.9
0.8
0.7
0.6
0.5
0.4
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

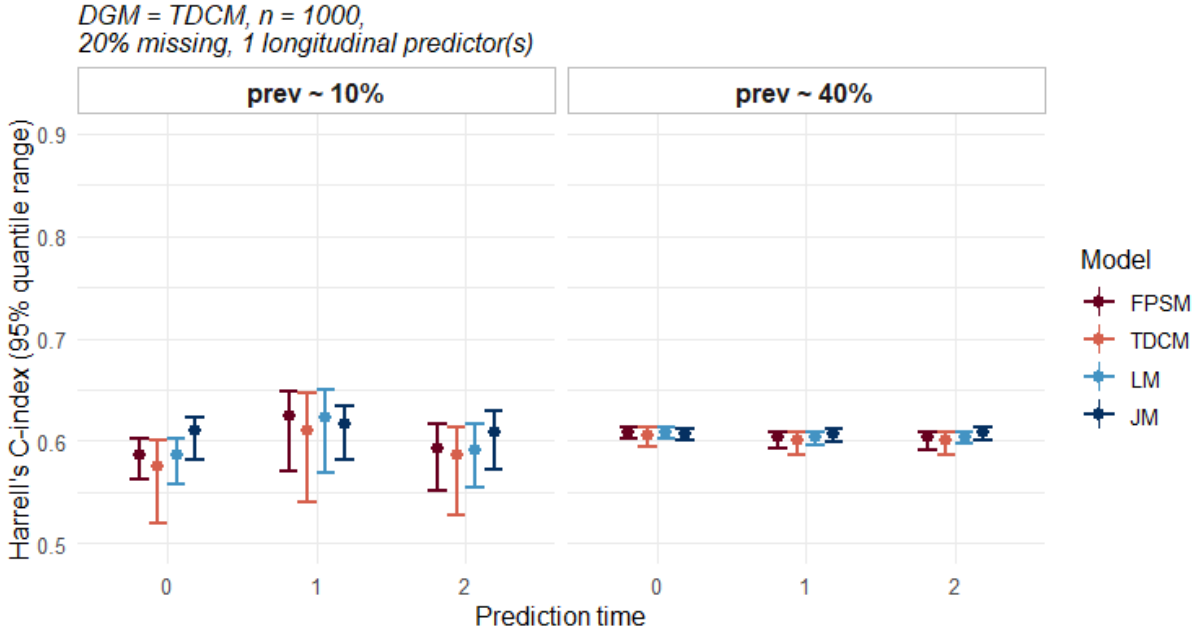

DGM = TDCM, prev ~ 40%,
20% missing, 3 longitudinal predictor(s)
n = 200
n = 1000
Harrell's C-index (95% quantile range)
0.9
0.8
0.7
0.6
0.5
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

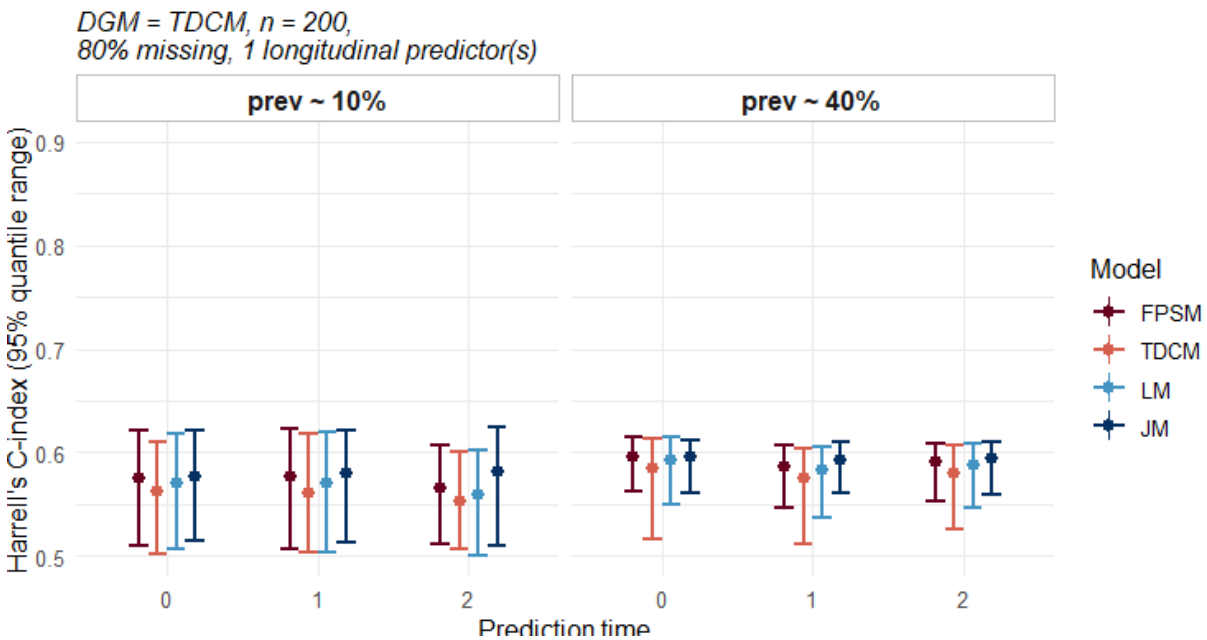

DGM = TDCM, prev ~ 10%,
80% missing, 3 longitudinal predictor(s)
n = 200
n = 1000
Harrell's C-index (95% quantile range)
0.9
0.8
0.7
0.6
0.5
0.4
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

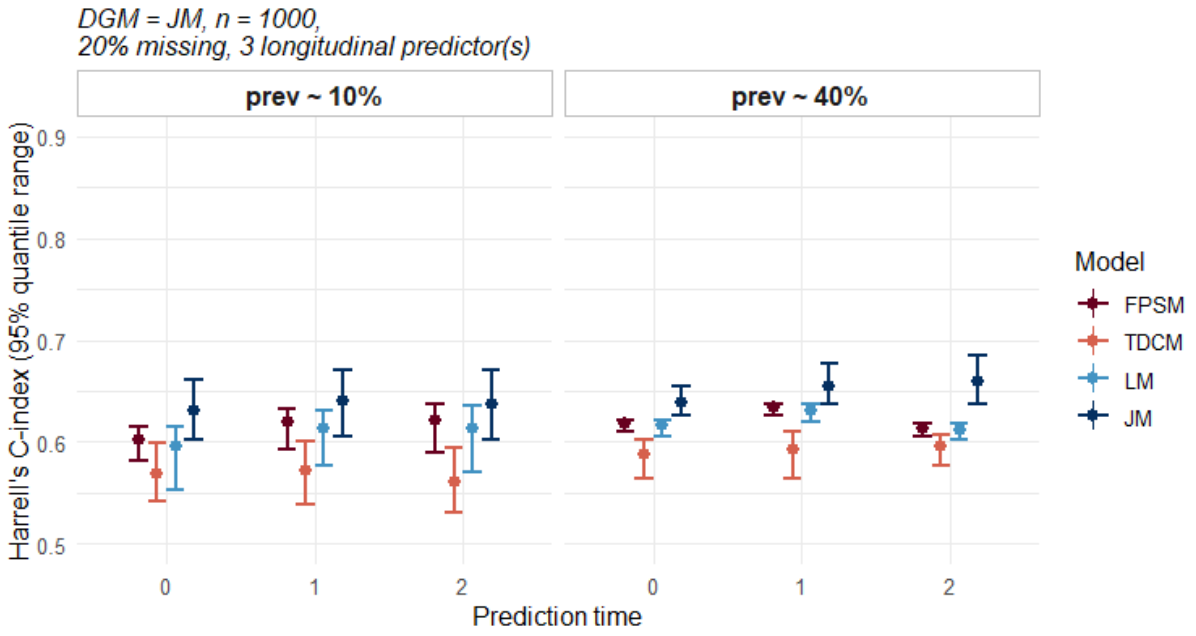
1.1.1.2. Event prevalence

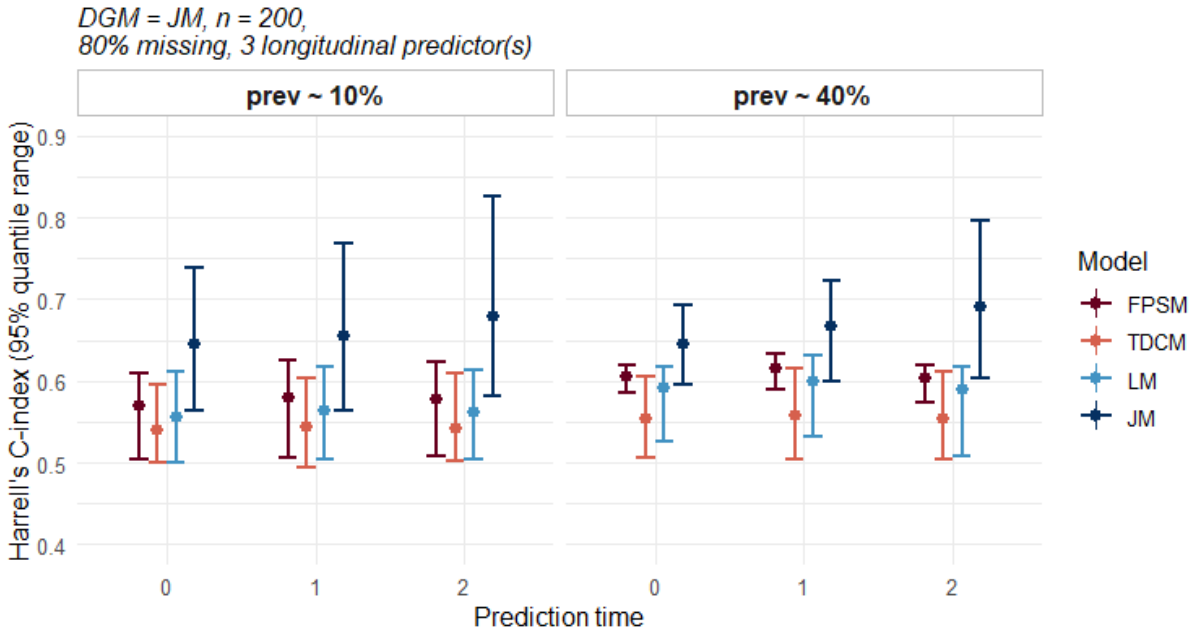


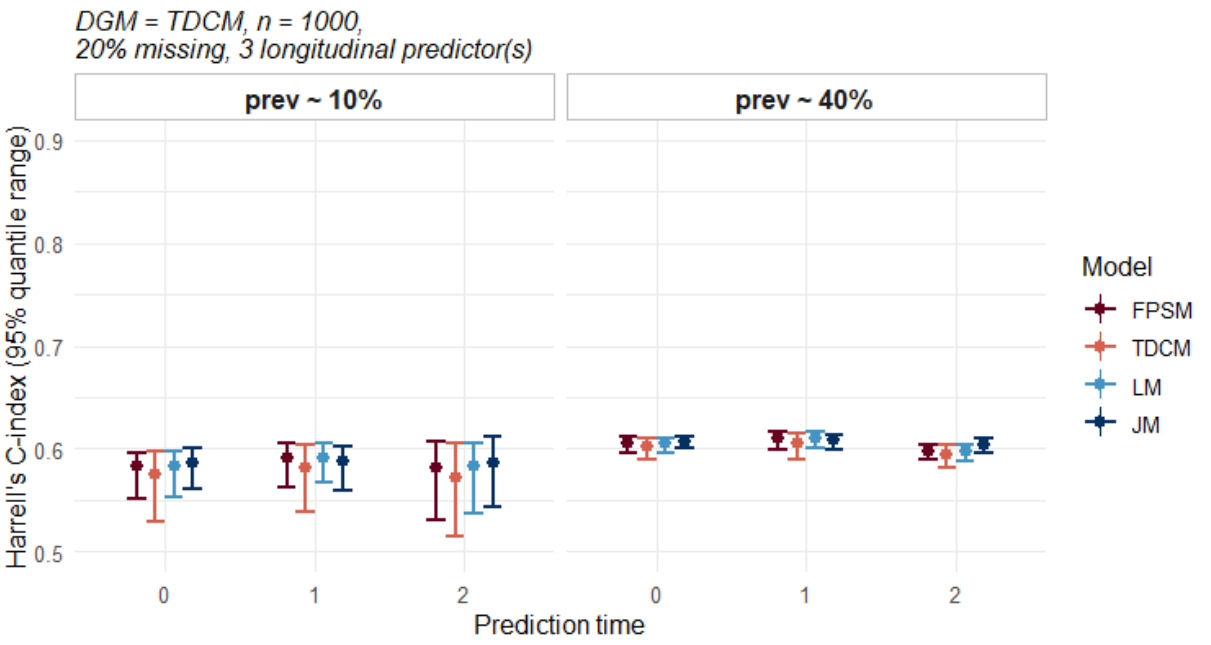


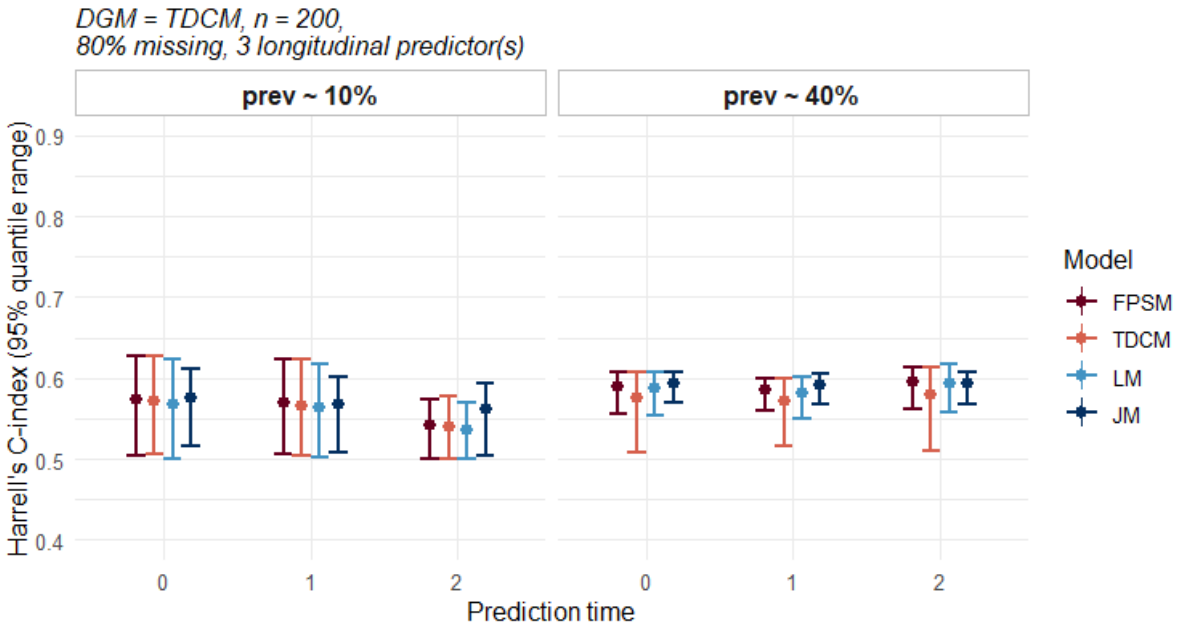



DGM = TDCM, n = 200,
80% missing, 1 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Harrell's C-index (95% quantile range)
0.9
0.8
0.7
0.6
0.5
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

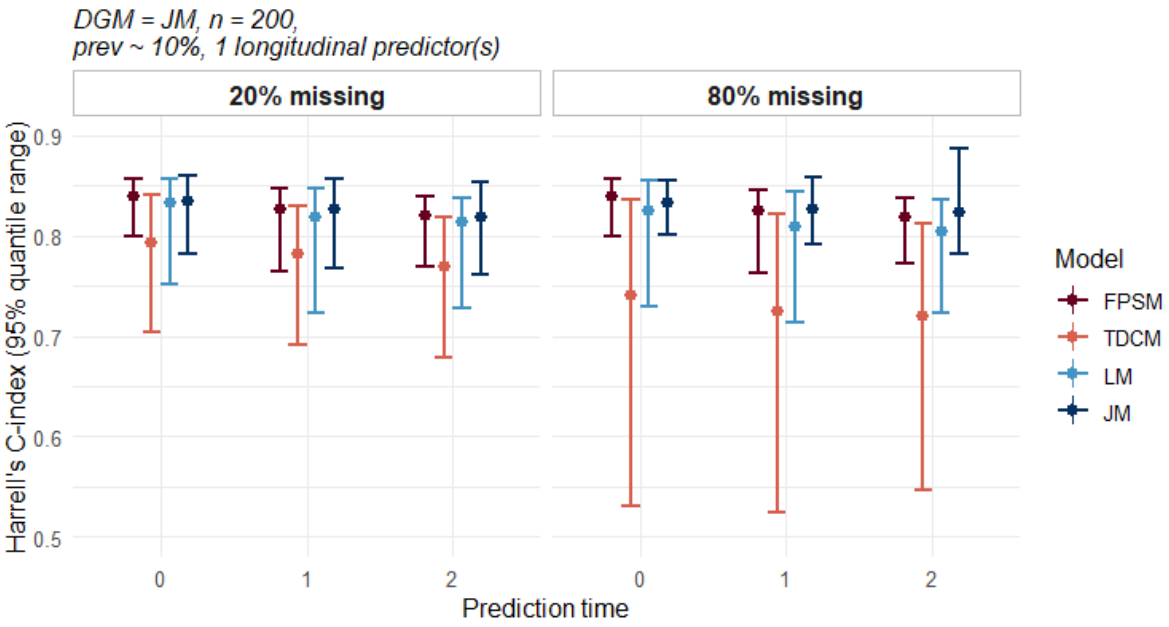

DGM = JM, n = 1000,
20% missing, 3 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Harrell's C-index (95% quantile range)
0.9
0.8
0.7
0.6
0.5
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

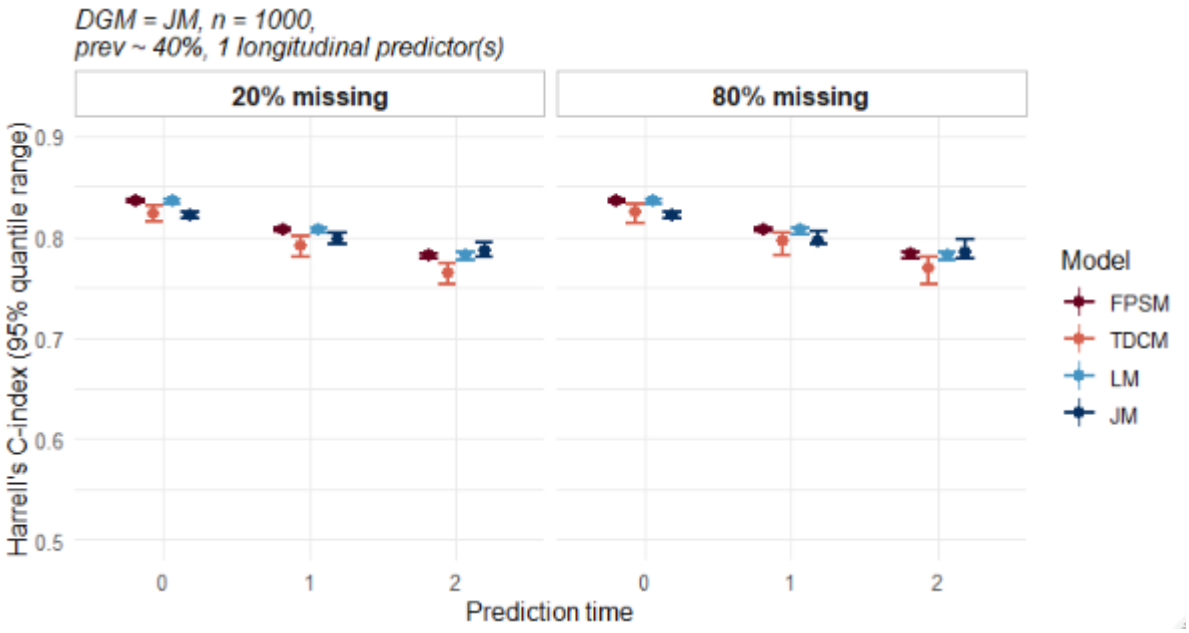

DGM = JM, n = 200,
80% missing, 3 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Harrell's C-index (95% quantile range)
0.9
0.8
0.7
0.6
0.5
0.4
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

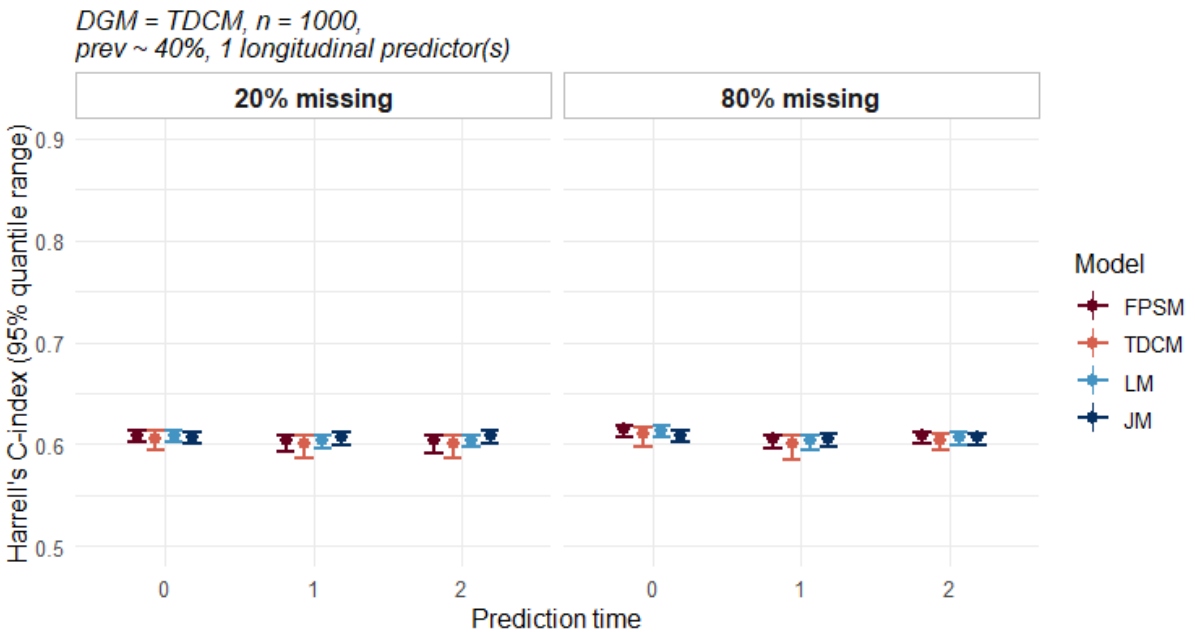

DGM = TDCM, n = 1000,
20% missing, 3 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Harrell's C-index (95% quantile range)
0.9
0.8
0.7
0.6
0.5
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM


DGM = TDCM, n = 200,
80% missing, 3 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Harrell's C-index (95% quantile range)
0.9
0.8
0.7
0.6
0.5
0.4
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

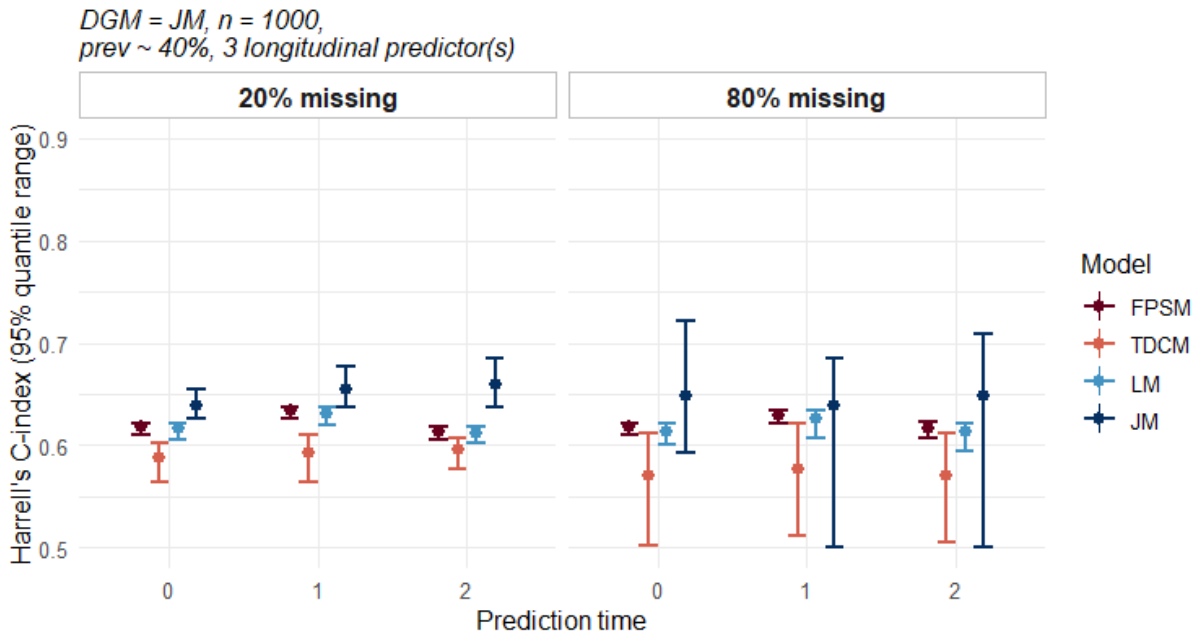
1.1.1.3. Follow-up missingness

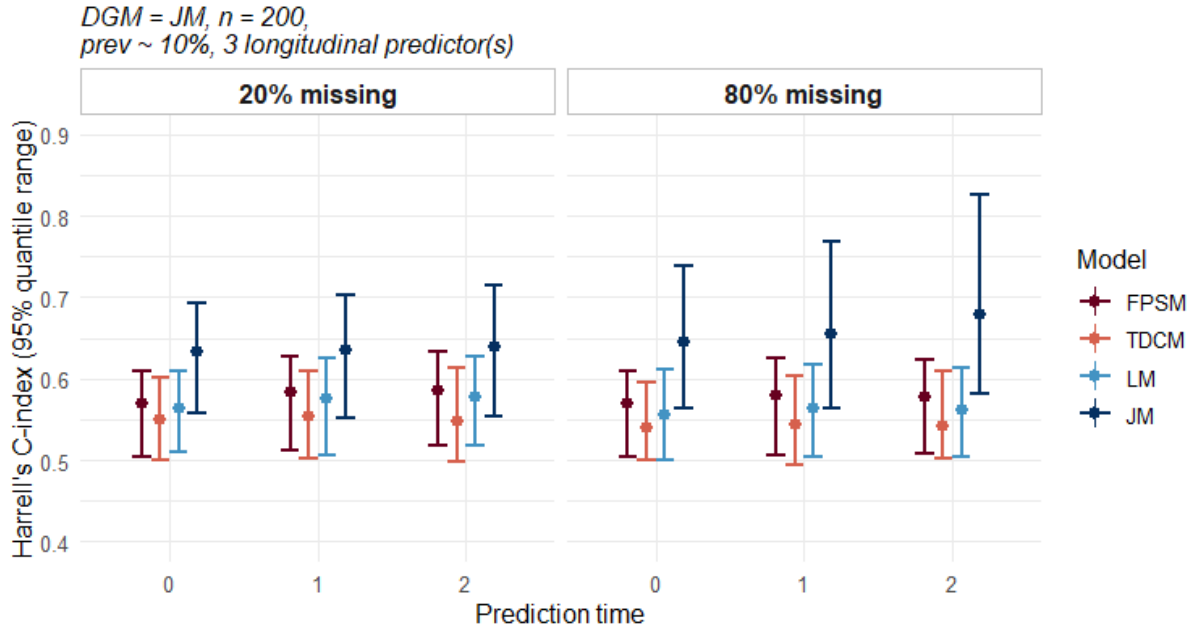


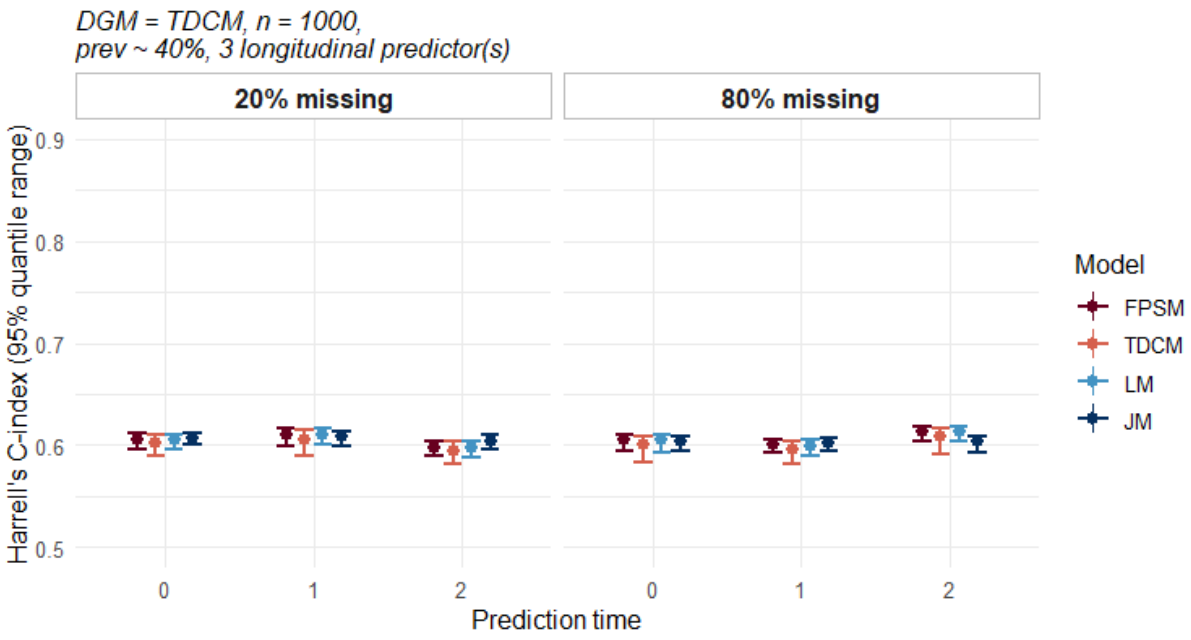


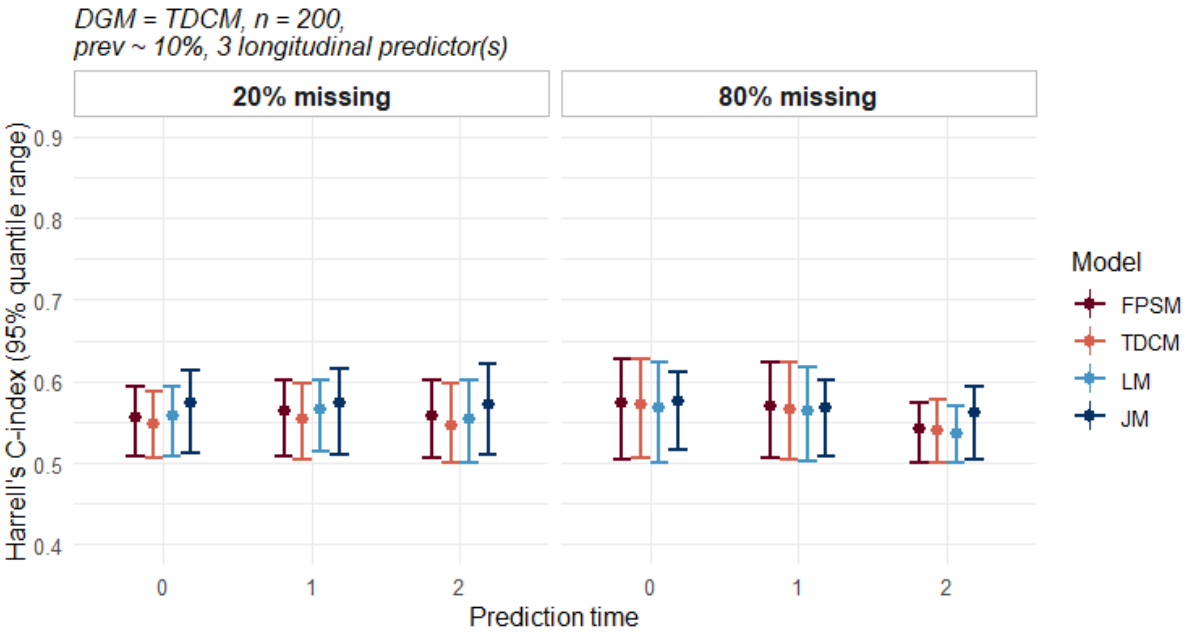



DGM = TDCM, n = 200,
prev ~ 10%, 1 longitudinal predictor(s)
20% missing
80% missing
Harrell's C-index (95% quantile range)
0.9
0.8
0.7
0.6
0.5
0.4
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

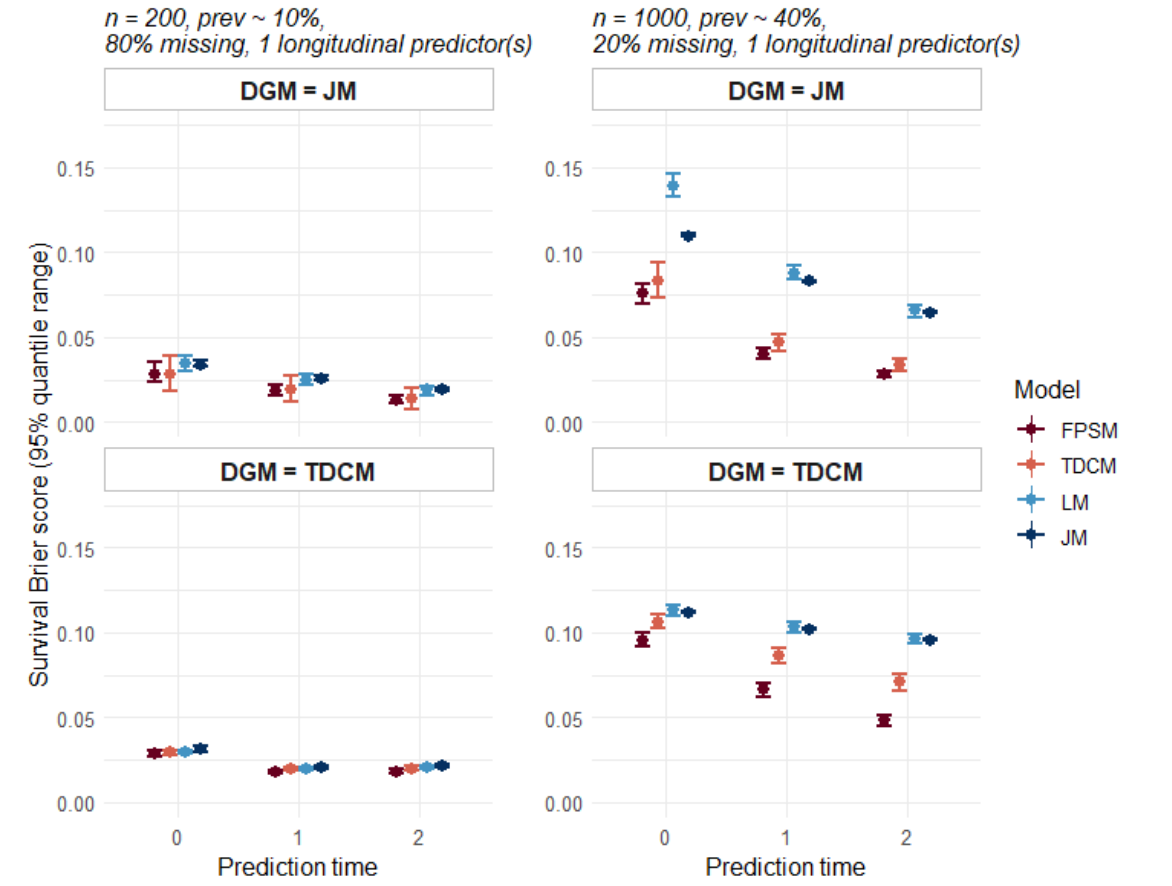

DGM = JM, n = 1000,
prev ~ 40%, 3 longitudinal predictor(s)
20% missing
80% missing
Harrell's C-index (95% quantile range)
0.9
0.8
0.7
0.6
0.5
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

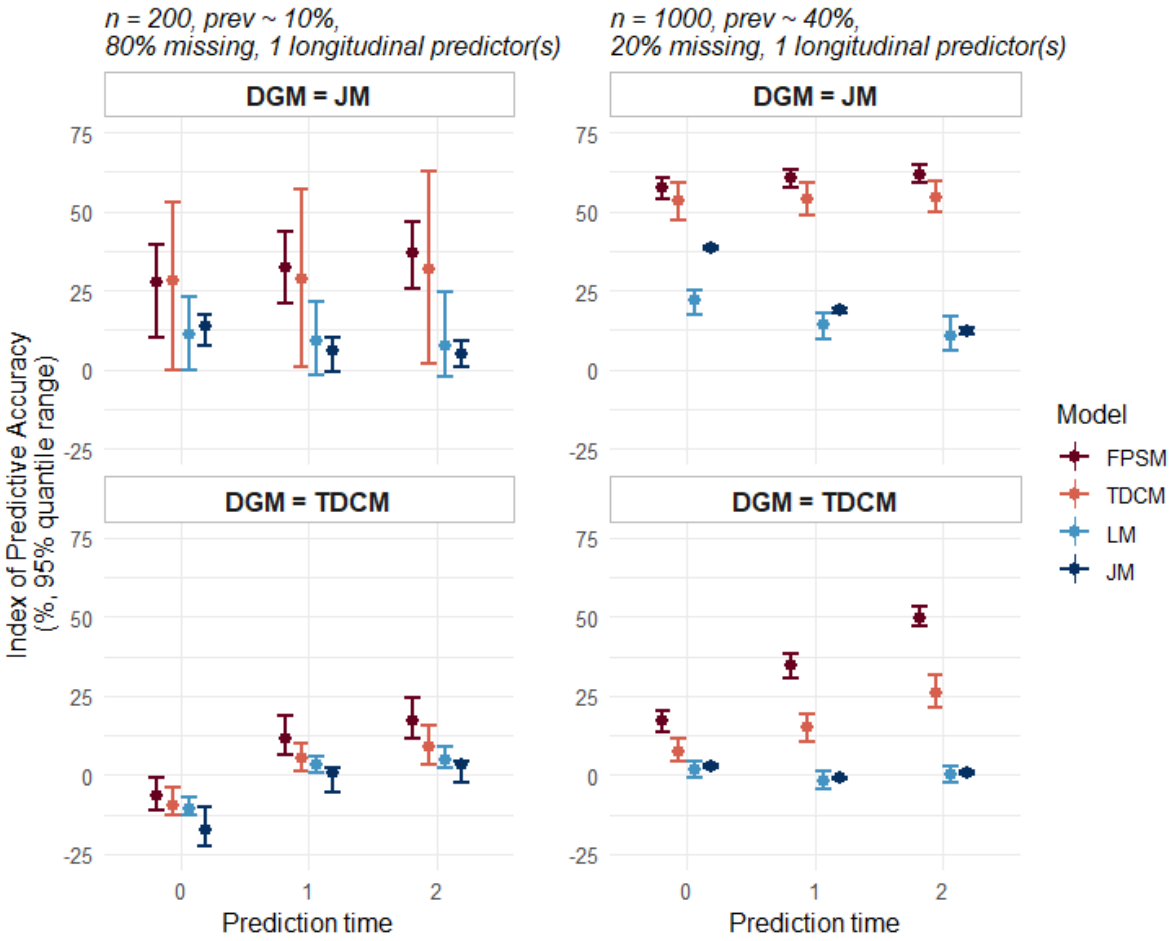

DGM = JM, n = 200,
prev ~ 10%, 3 longitudinal predictor(s)
20% missing
80% missing
Harrell's C-index (95% quantile range)
0.9
0.8
0.7
0.6
0.5
0.4
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

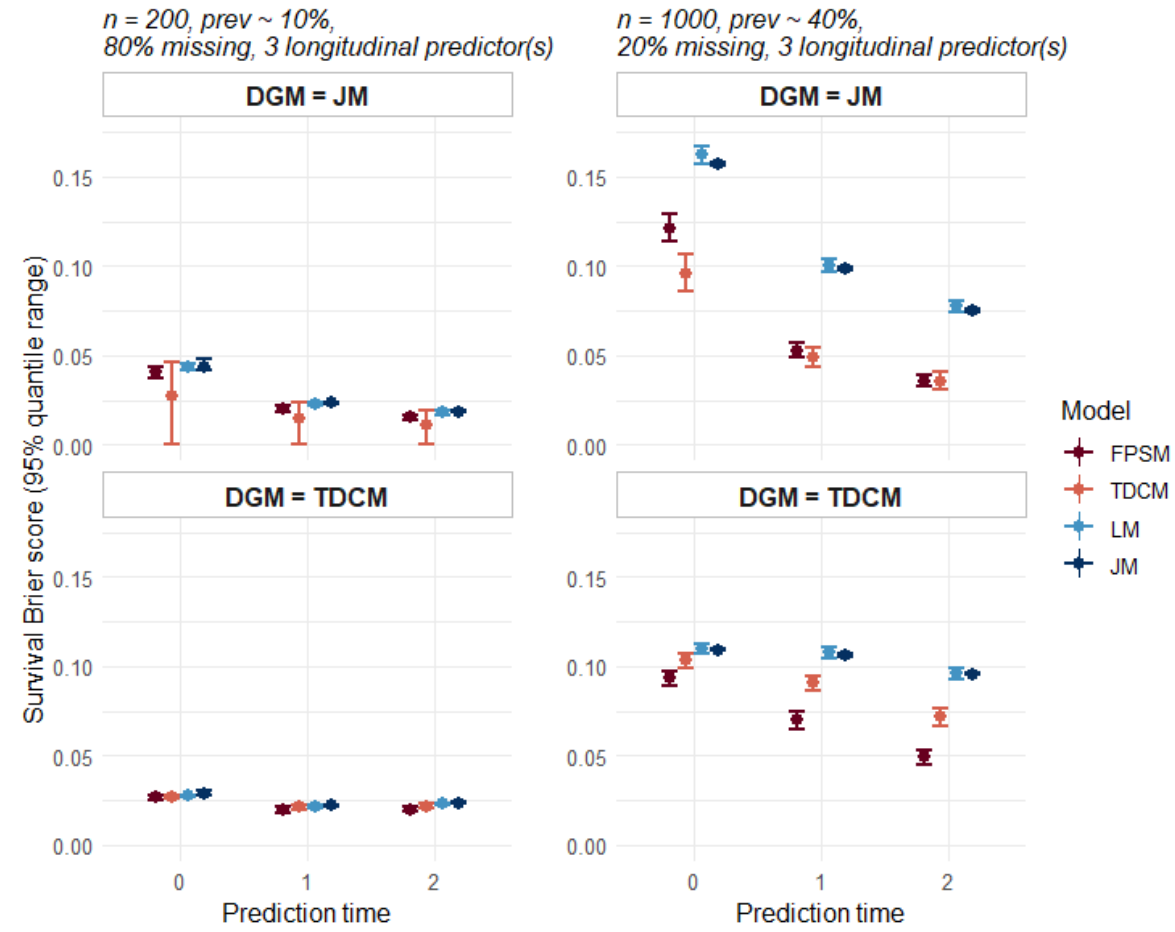

DGM = TDCM, n = 1000,
prev ~ 40%, 3 longitudinal predictor(s)
20% missing
80% missing
Harrell's C-index (95% quantile range)
0.9
0.8
0.7
0.6
0.5
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

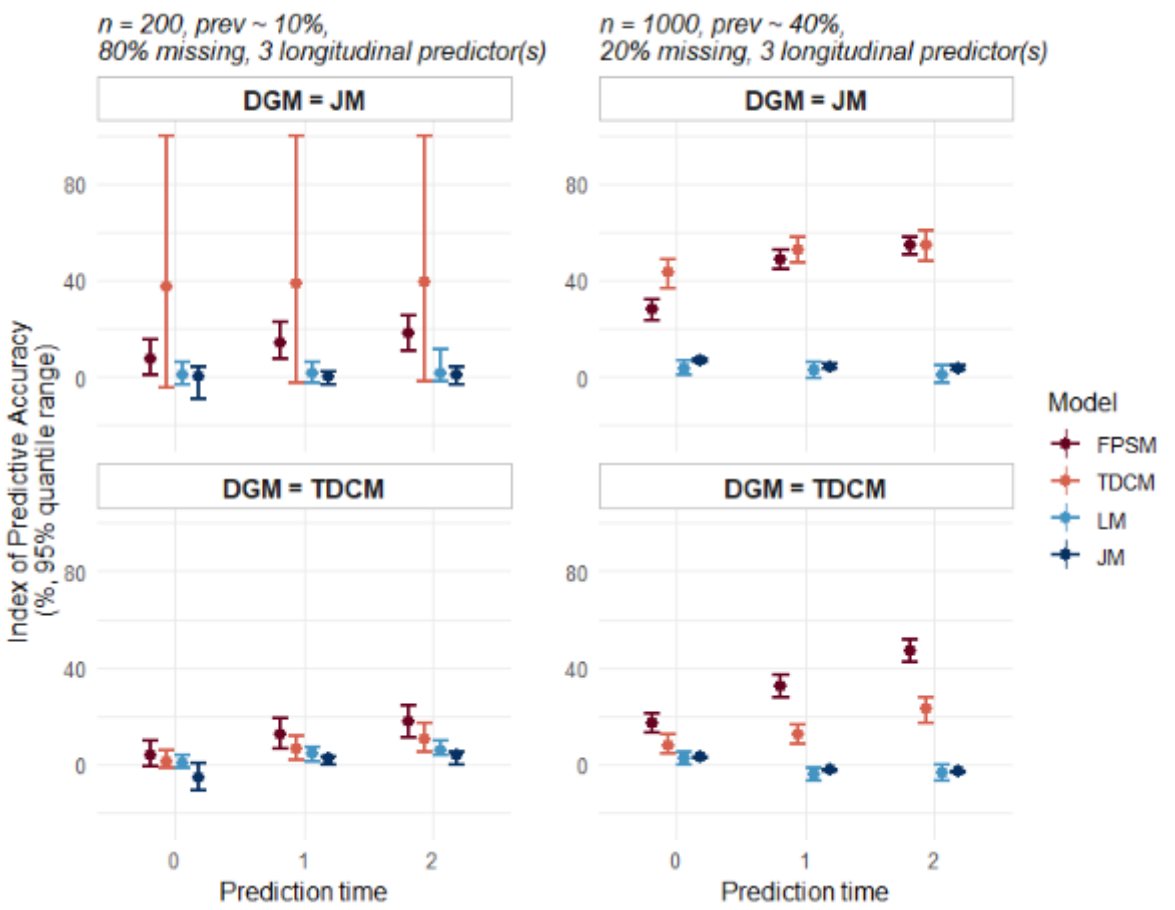

DGM = TDCM, n = 200,
prev ~ 10%, 3 longitudinal predictor(s)
20% missing
80% missing
Harrell's C-index (95% quantile range)
0.9
0.8
0.7
0.6
0.5
0.4
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

1.1.2. Overall performance

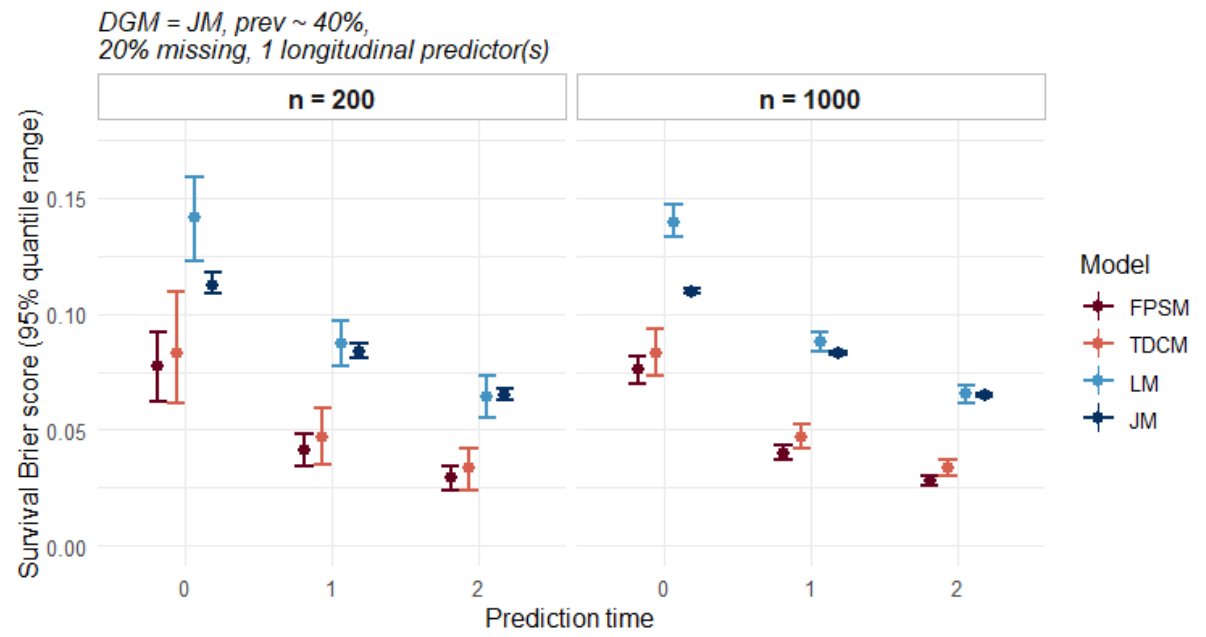


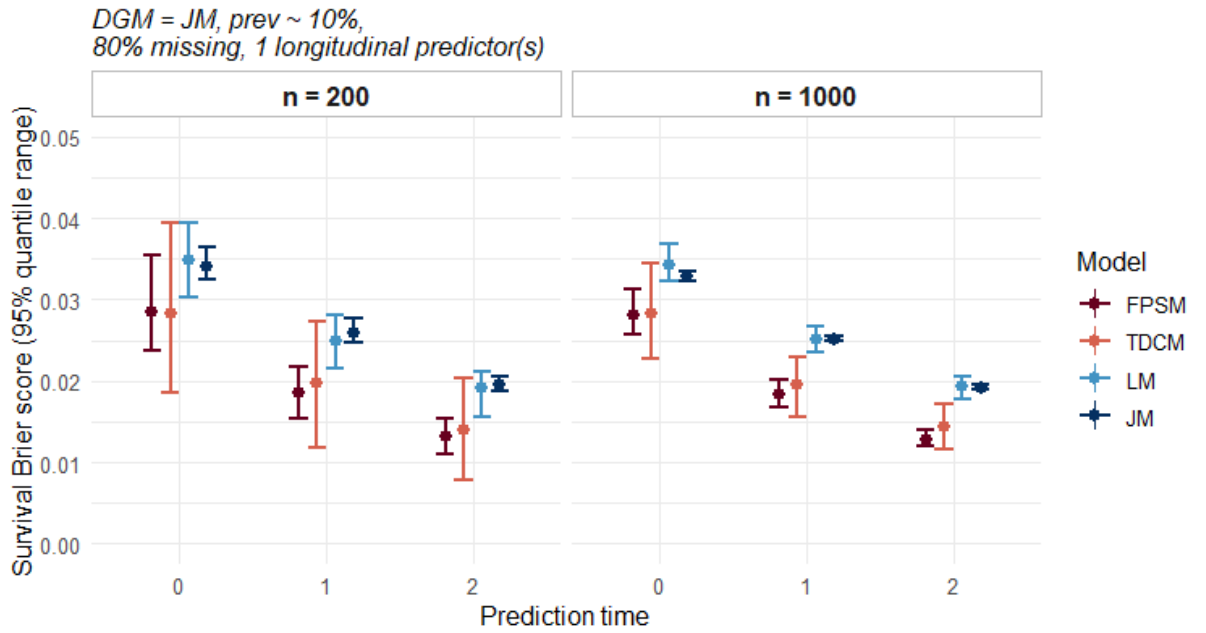


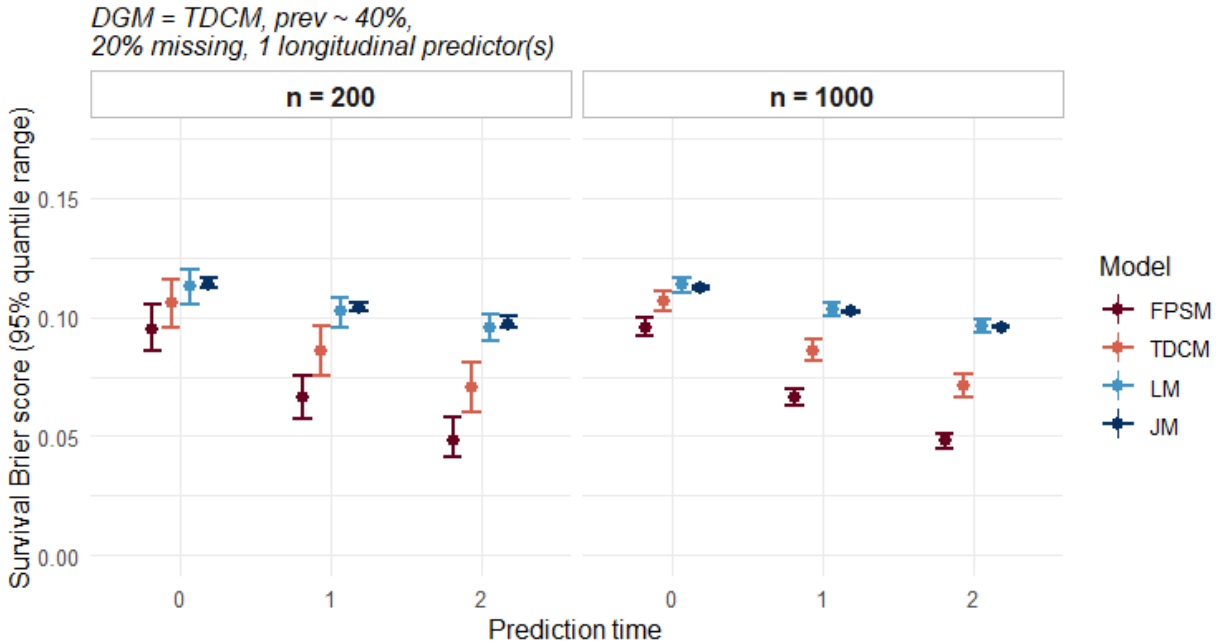

n = 200, prev ~ 10%,
80% missing, 3 longitudinal predictor(s)
n = 1000, prev ~ 40%,
20% missing, 3 longitudinal predictor(s)
DGM = JM
DGM = TDCM
Survival Brier score (95% quantile range)
0.15
0.10
0.05
0.00
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

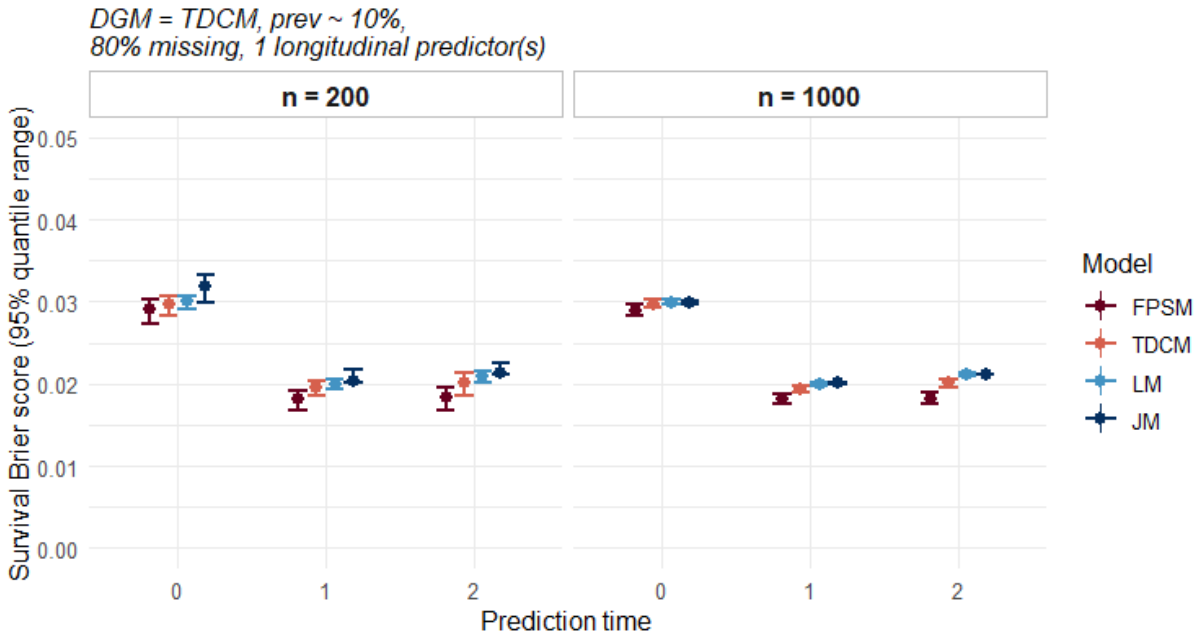

n = 200, prev ~ 10%,
80% missing, 3 longitudinal predictor(s)
n = 1000, prev ~ 40%,
20% missing, 3 longitudinal predictor(s)
DGM = JM
DGM = TDCM
Index of Predictive Accuracy
(%, 95% quantile range)
80
40
0
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

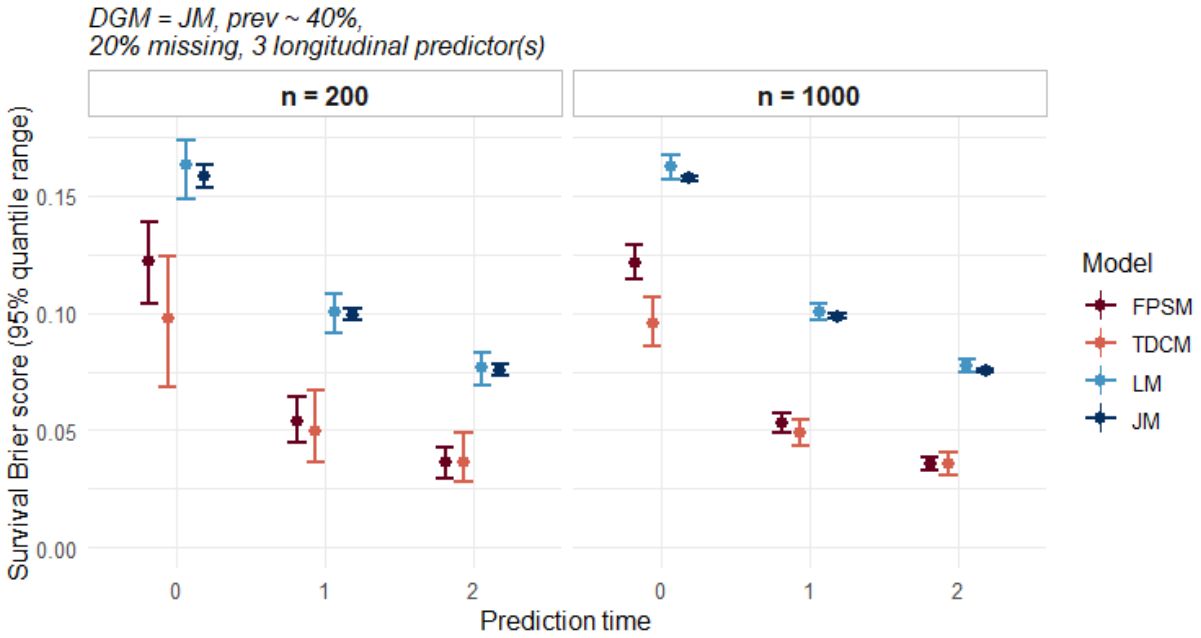
1.1.2.1. Sample size

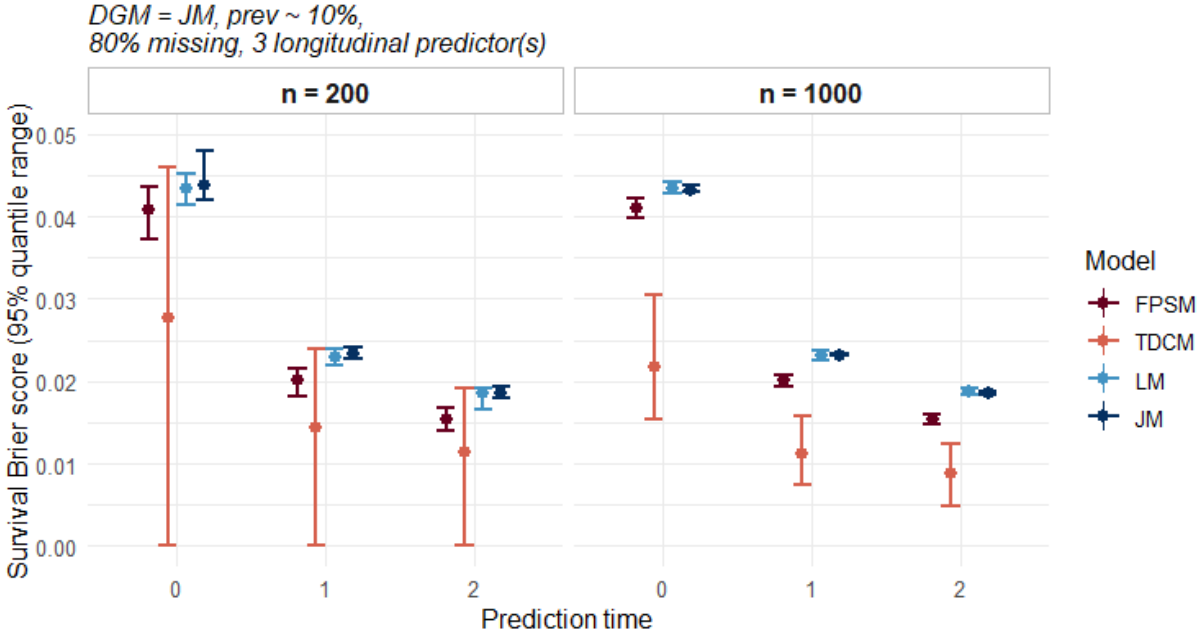


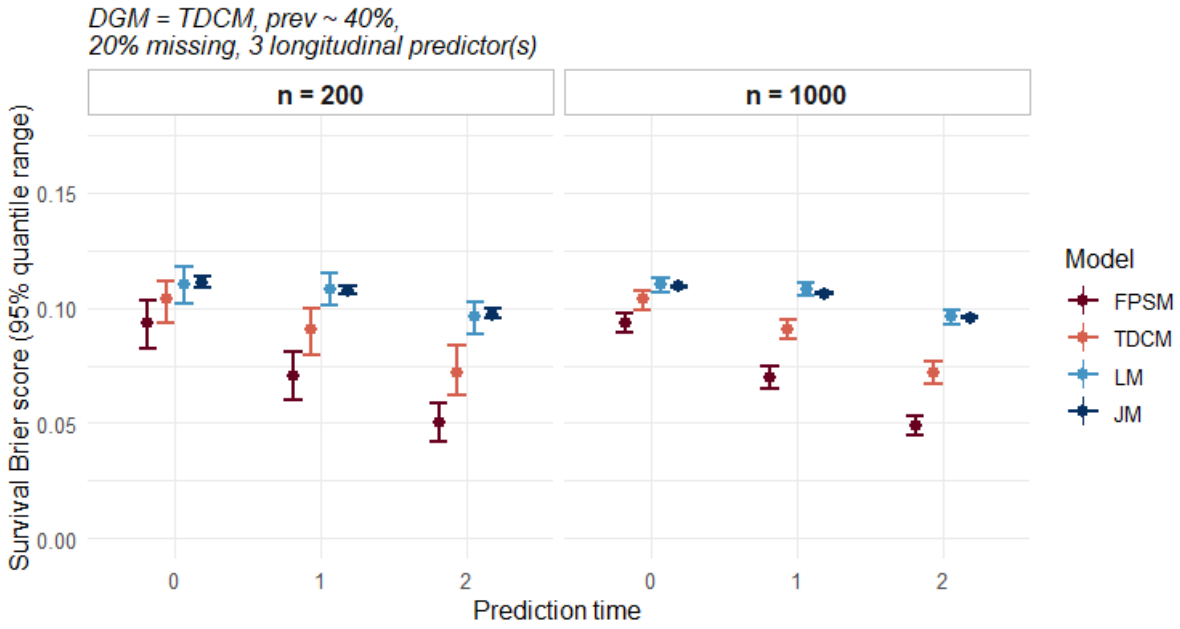


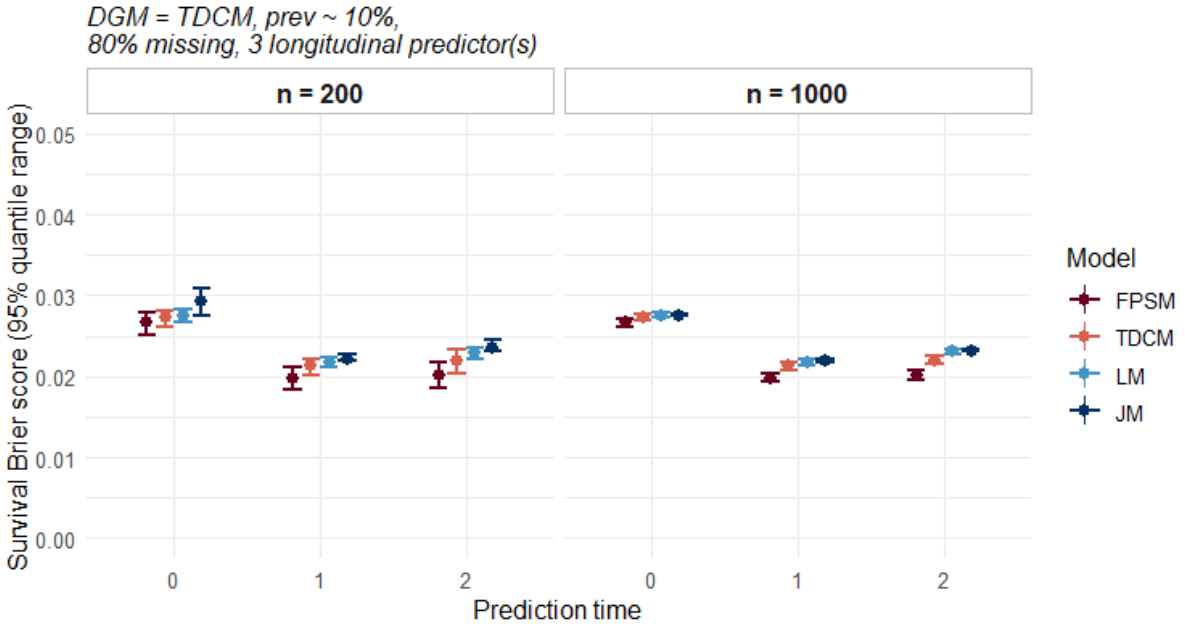


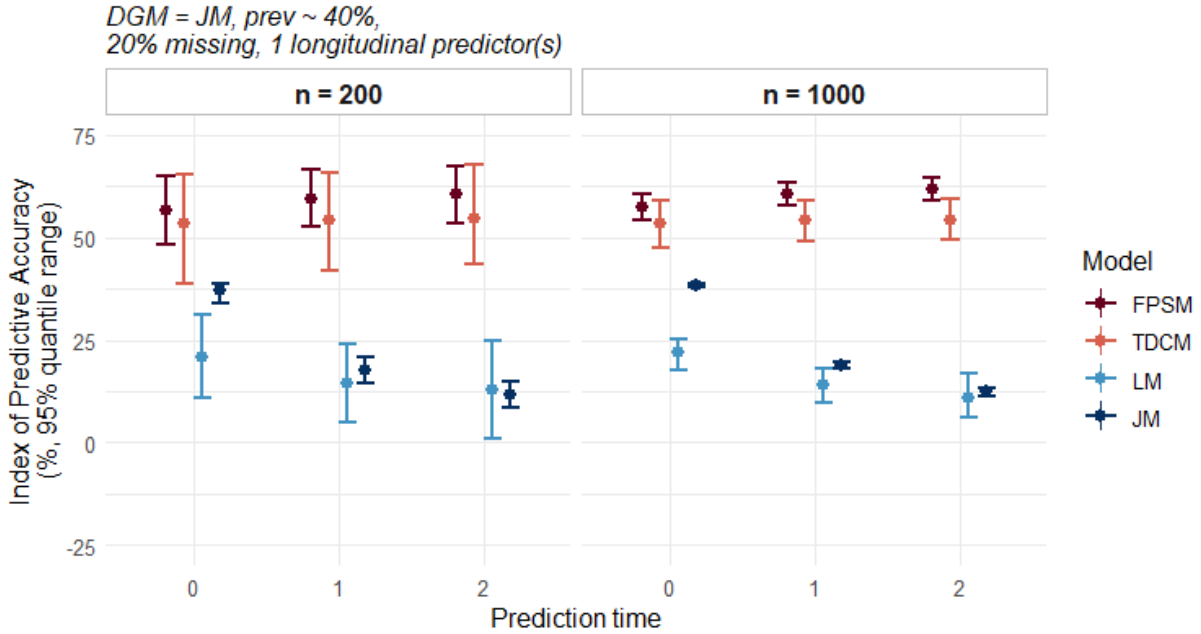

DGM = TDCM, prev ~ 10%,
80% missing, 1 longitudinal predictor(s)
n = 200
n = 1000
Survival Brier score (95% quantile range)
0.05
0.04
0.03
0.02
0.01
0.00
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

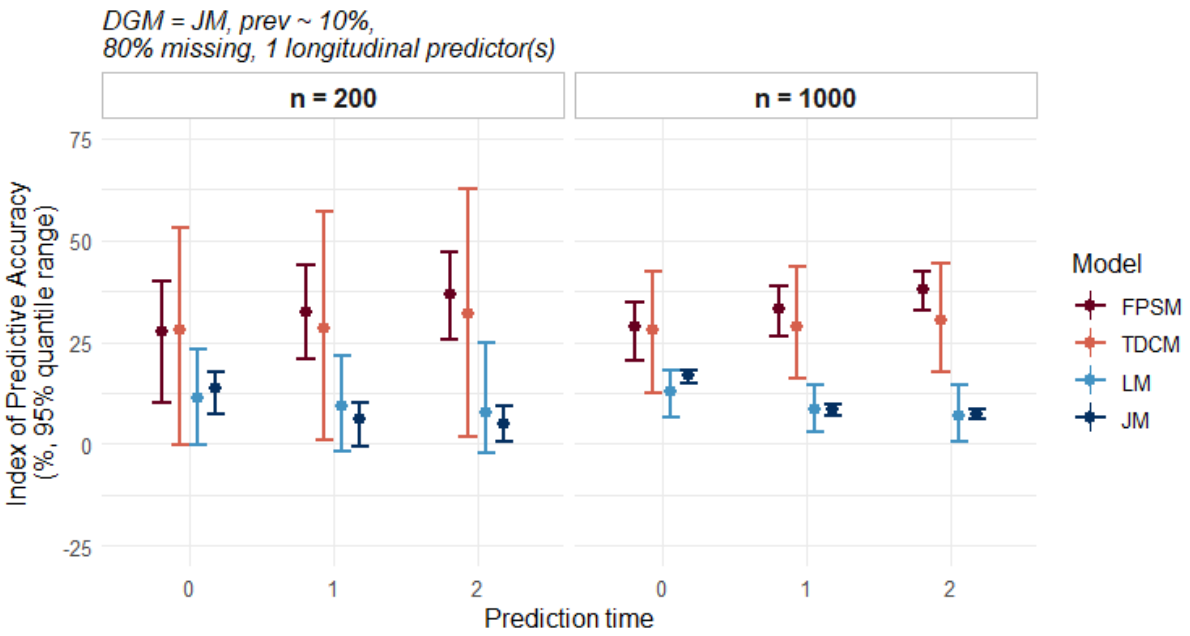

DGM = JM, prev ~ 40%,
20% missing, 3 longitudinal predictor(s)
n = 200
n = 1000
Survival Brier score (95% quantile range)
0.15
0.10
0.05
0.00
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

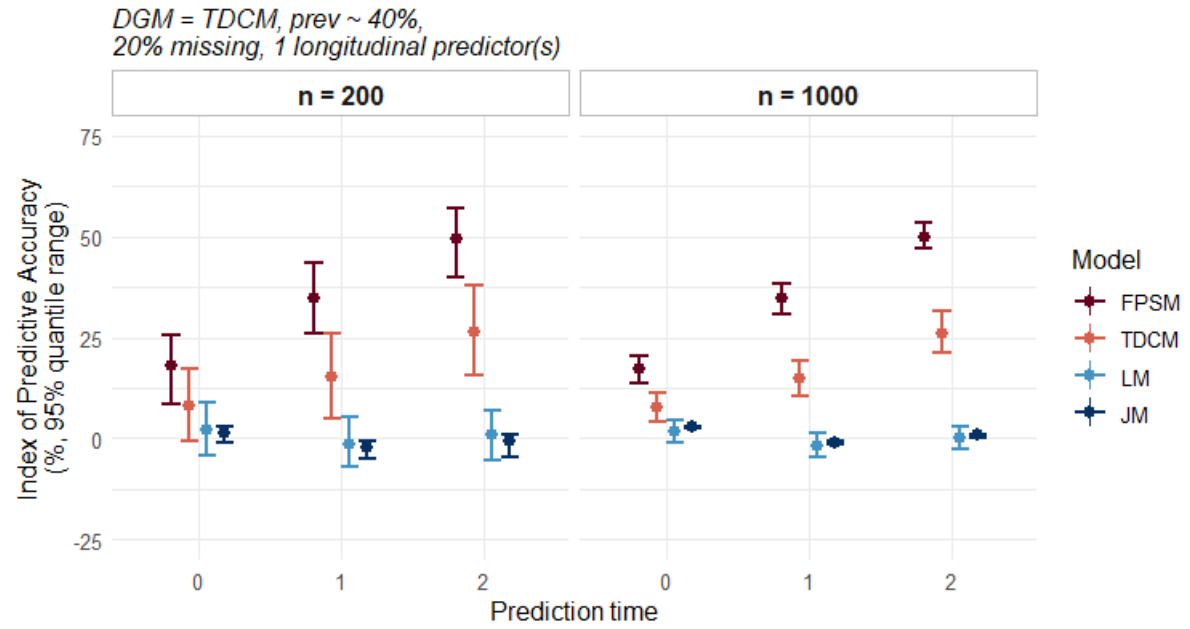

DGM = JM, prev ~ 10%,
80% missing, 3 longitudinal predictor(s)
n = 200
n = 1000
Survival Brier score (95% quantile range)
0.05
0.04
0.03
0.02
0.01
0.00
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

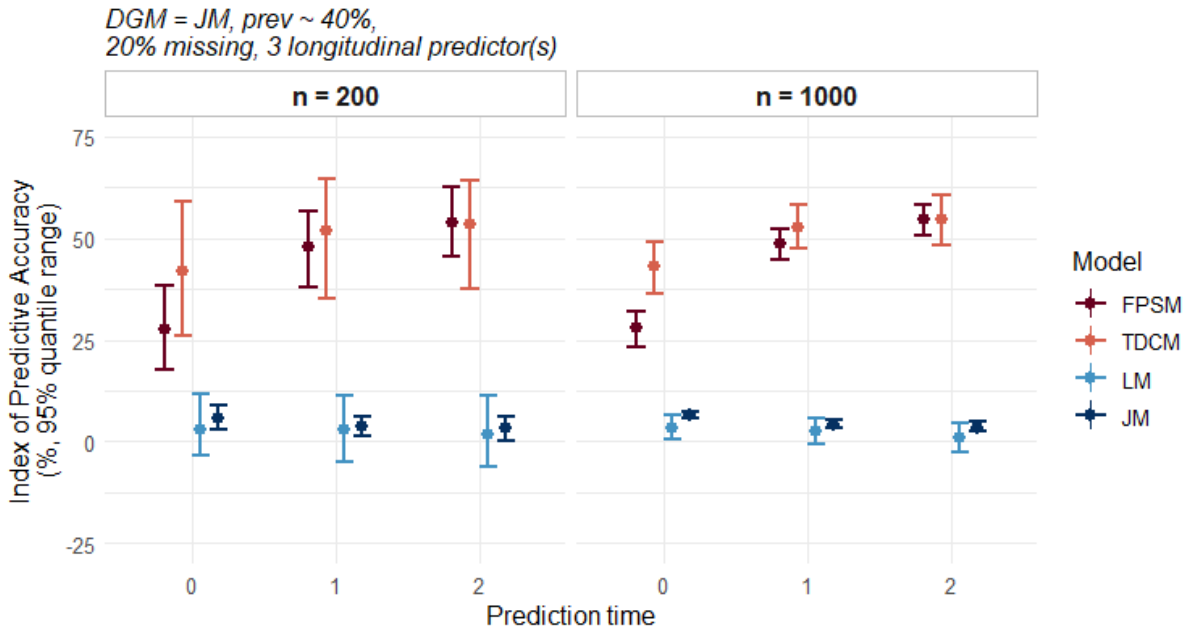

DGM = TDCM, prev ~ 40%,
20% missing, 3 longitudinal predictor(s)
n = 200
n = 1000
Survival Brier score (95% quantile range)
0.15
0.10
0.05
0.00
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

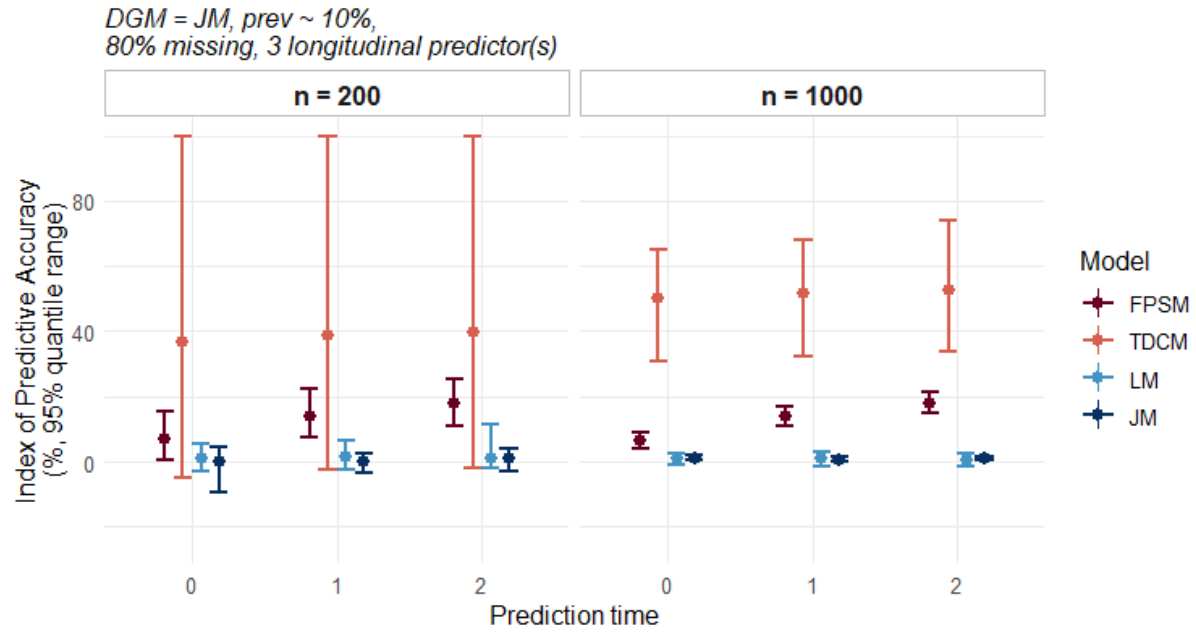

DGM = TDCM, prev ~ 10%,
80% missing, 3 longitudinal predictor(s)
n = 200
n = 1000
Survival Brier score (95% quantile range)
0.05
0.04
0.03
0.02
0.01
0.00
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

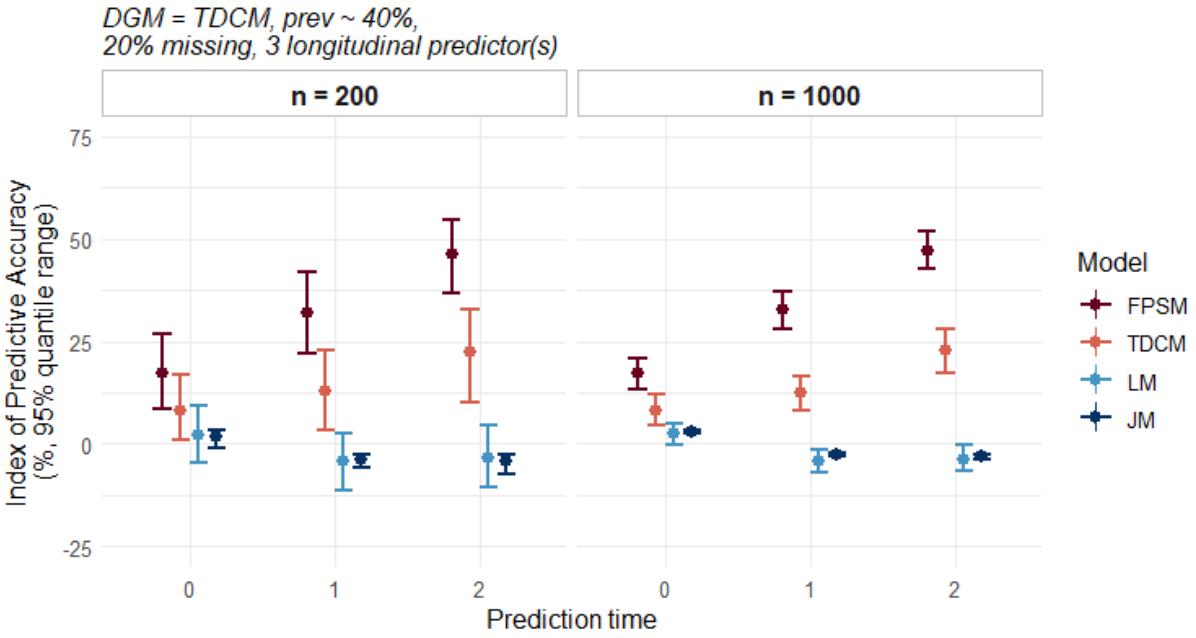

DGM = JM, prev ~ 40%,
20% missing, 1 longitudinal predictor(s)
n = 200
n = 1000
Index of Predictive Accuracy
(%, 95% quantile range)
75
50
25
0
-25
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

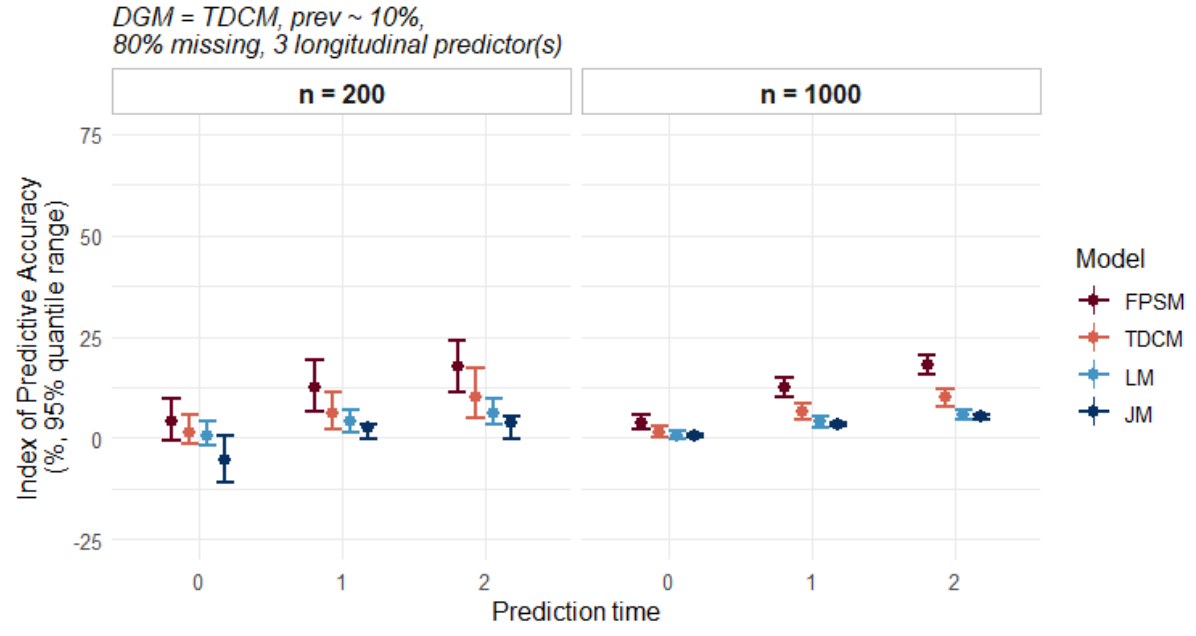

DGM = JM, prev ~ 10%,
80% missing, 1 longitudinal predictor(s)
n = 200
n = 1000
Index of Predictive Accuracy
(%, 95% quantile range)
75
50
25
0
-25
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

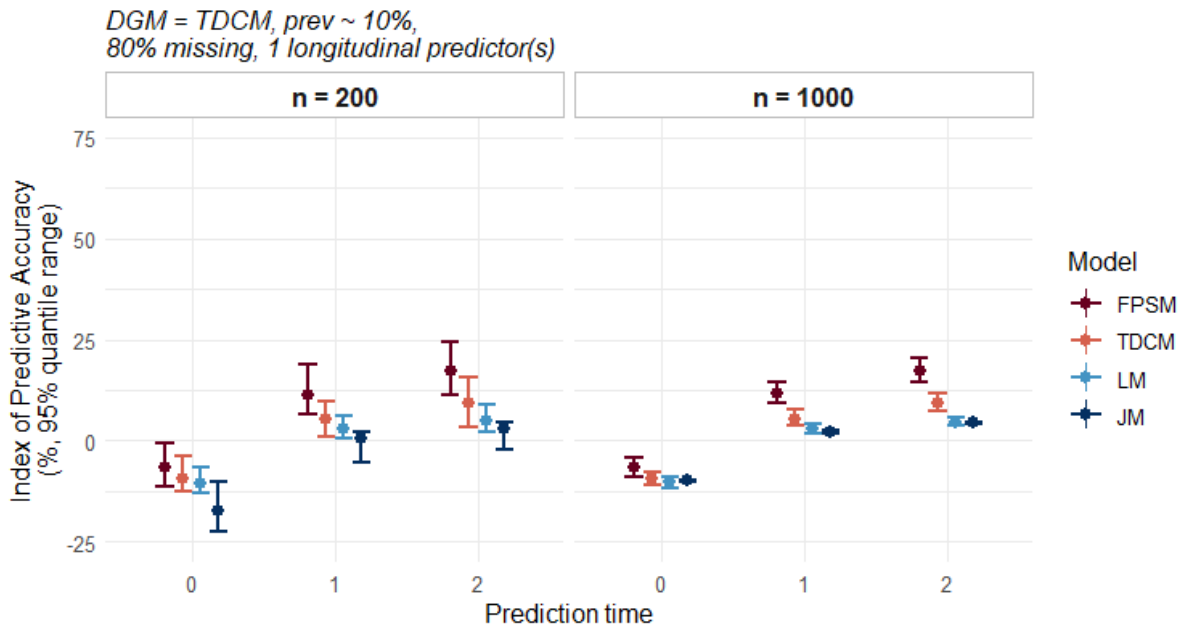

DGM = TDCM, prev ~ 40%,
20% missing, 1 longitudinal predictor(s)
n = 200
n = 1000
Index of Predictive Accuracy
(%, 95% quantile range)
75
50
25
0
-25
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM


DGM = JM, prev ~ 40%,
20% missing, 3 longitudinal predictor(s)
n = 200
n = 1000
Index of Predictive Accuracy
(%, 95% quantile range)
75
50
25
0
-25
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

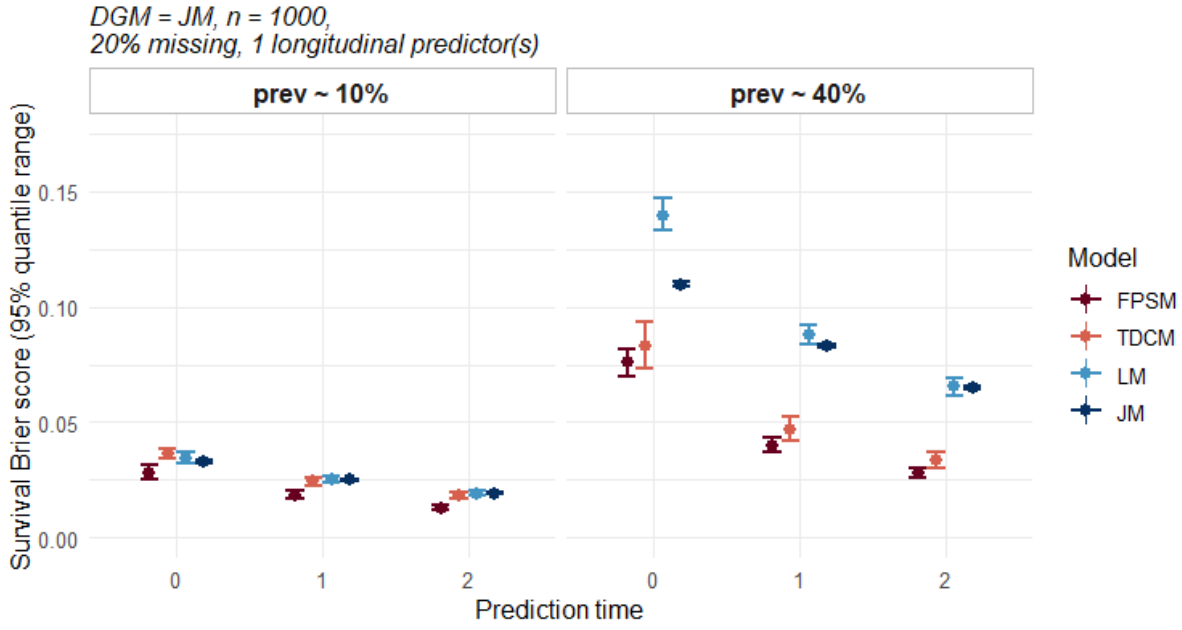

DGM = JM, prev ~ 10%,
80% missing, 3 longitudinal predictor(s)
n = 200
n = 1000
Index of Predictive Accuracy
(%, 95% quantile range)
80
40
0
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

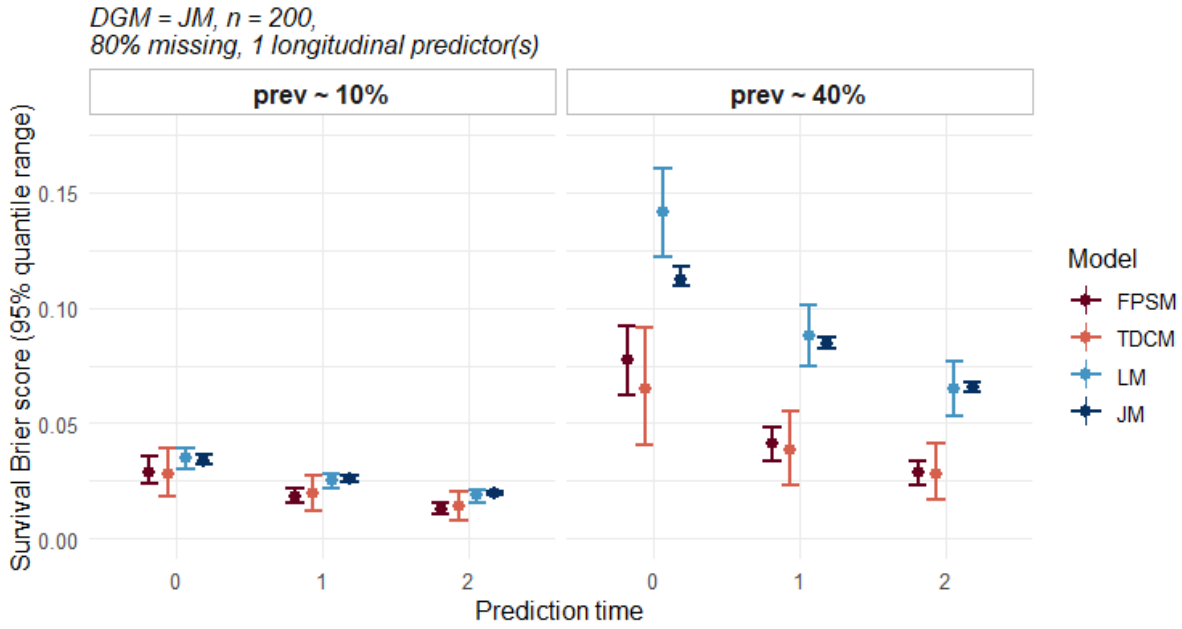

DGM = TDCM, prev ~ 40%,
20% missing, 3 longitudinal predictor(s)
n = 200
n = 1000
Index of Predictive Accuracy
(%, 95% quantile range)
75
50
25
0
-25
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

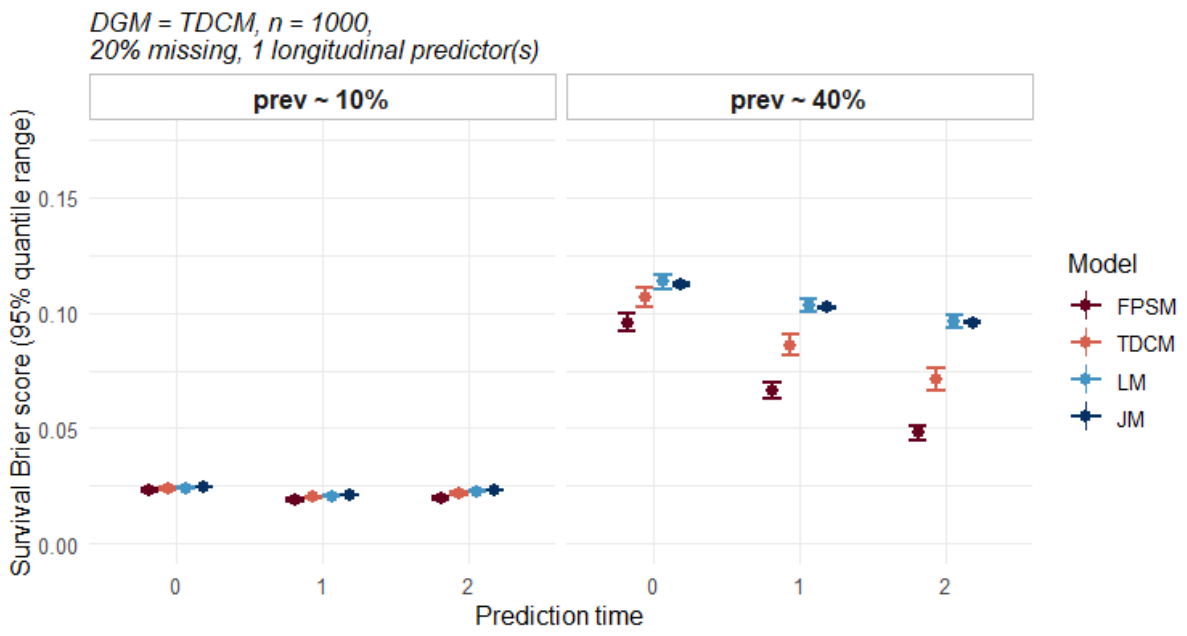

DGM = TDCM, prev ~ 10%,
80% missing, 3 longitudinal predictor(s)
n = 200
n = 1000
Index of Predictive Accuracy
(%, 95% quantile range)
75
50
25
0
-25
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

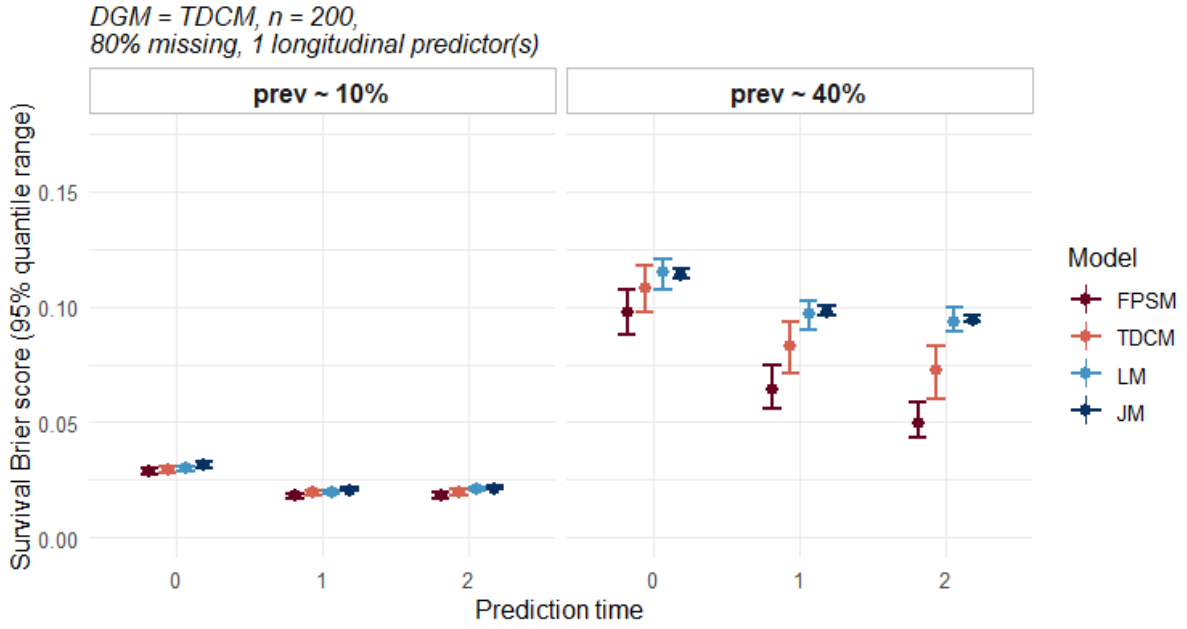


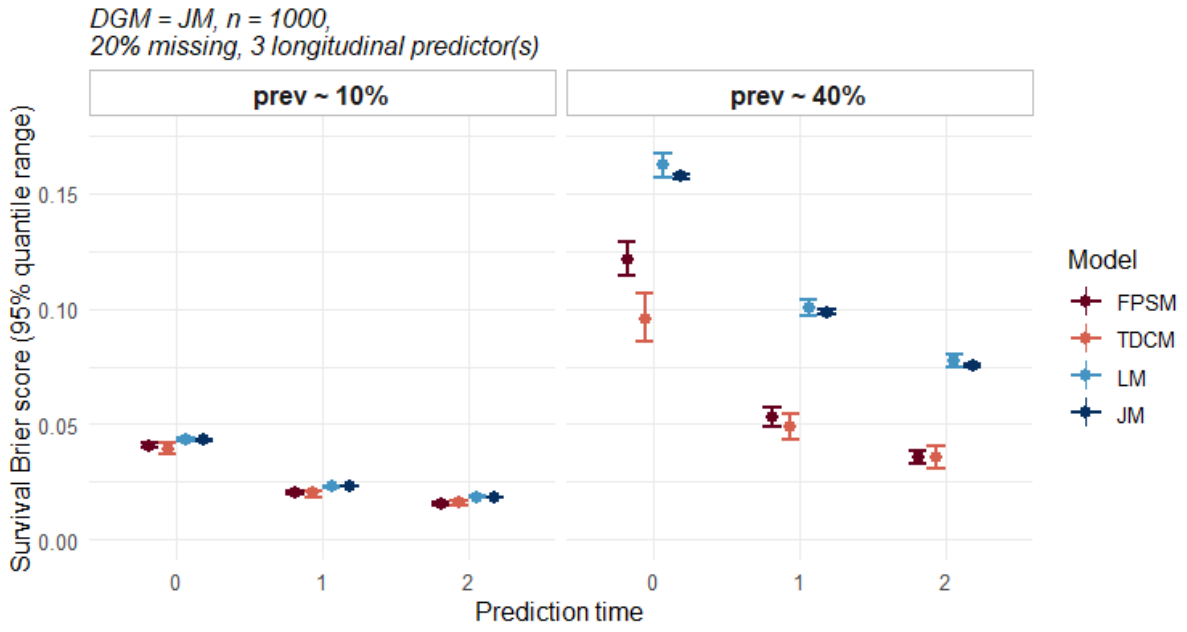
1.1.2.2. Event prevalence

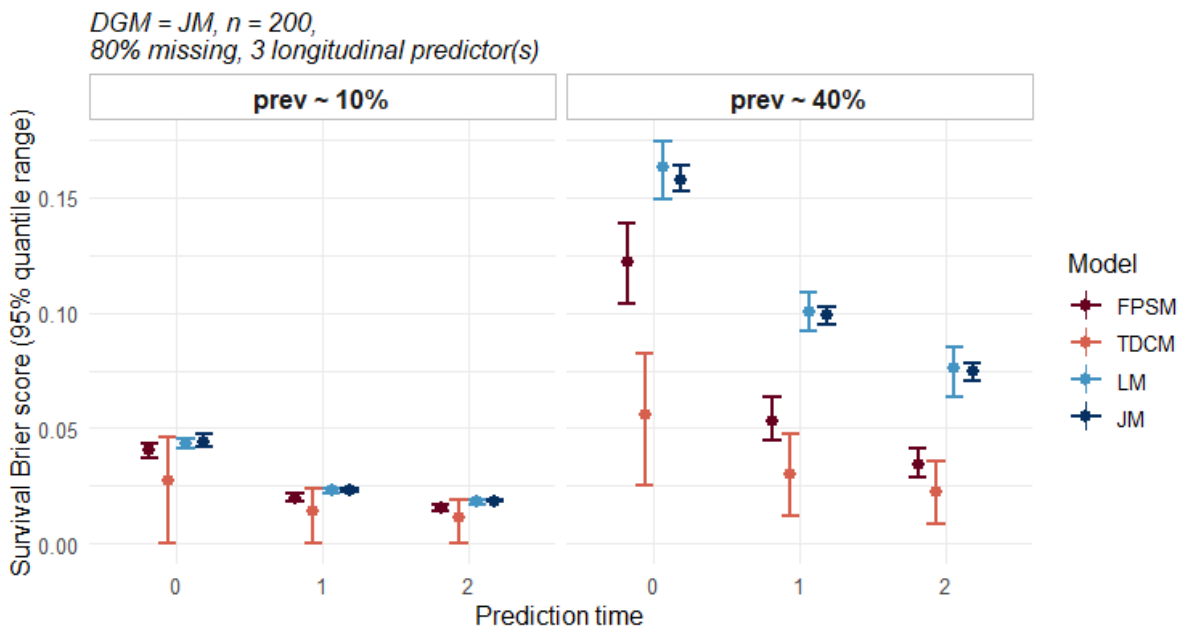


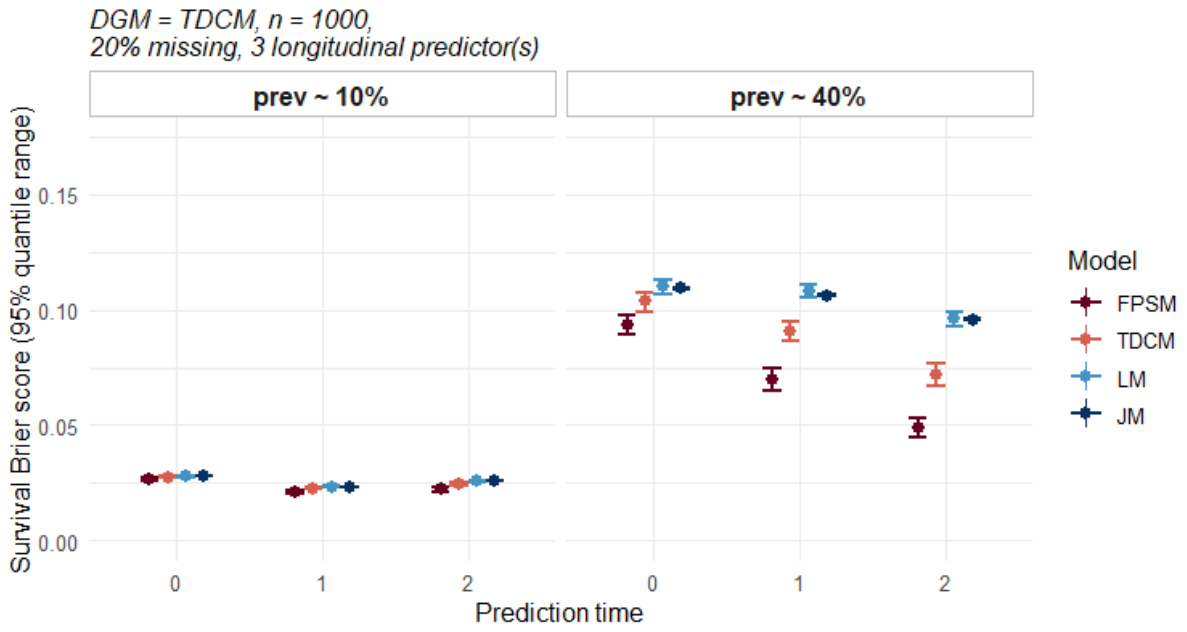


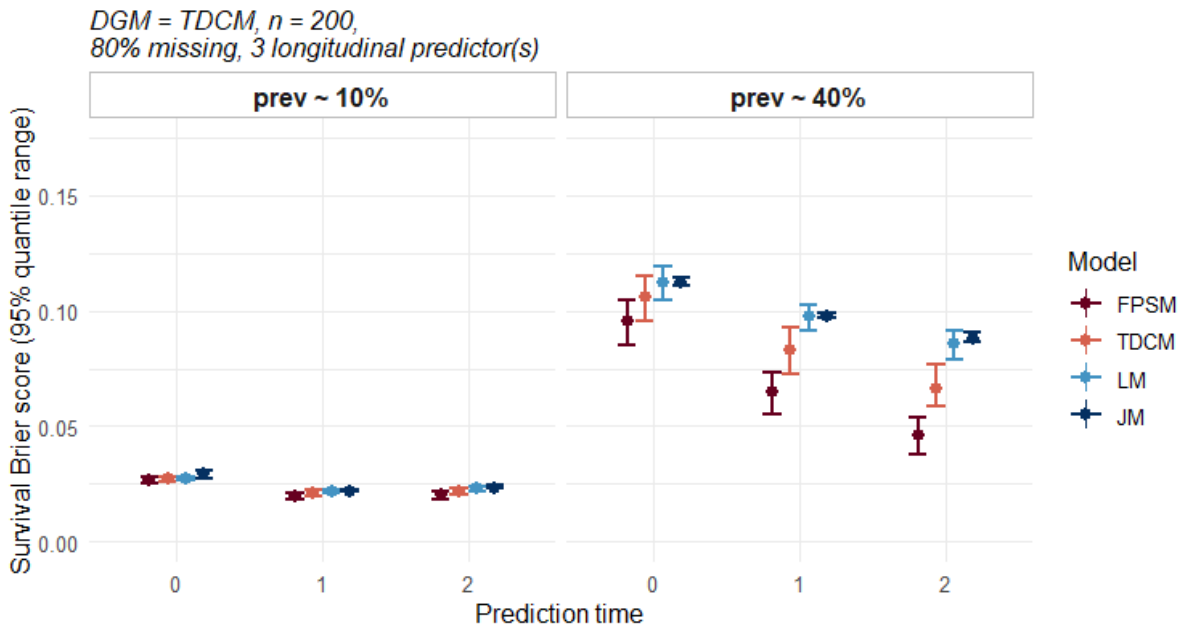

DGM = TDCM, n = 1000,
20% missing, 1 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Survival Brier score (95% quantile range)
0.00
0.05
0.10
0.15
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

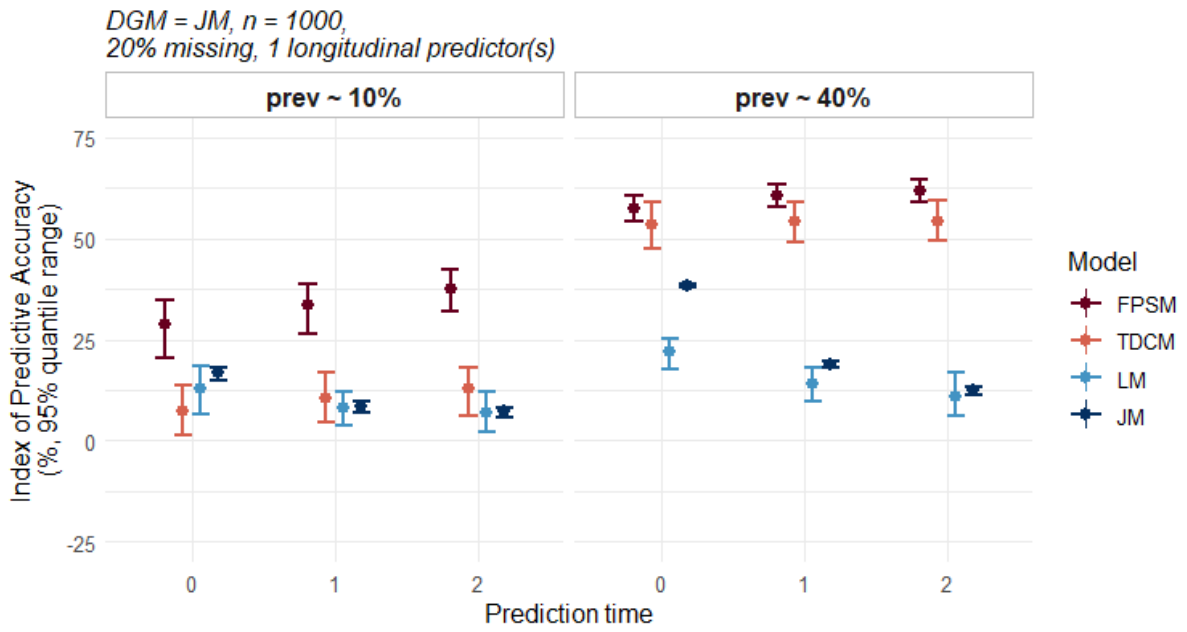

DGM = TDCM, n = 200,
80% missing, 1 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Survival Brier score (95% quantile range)
0.00
0.05
0.10
0.15
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

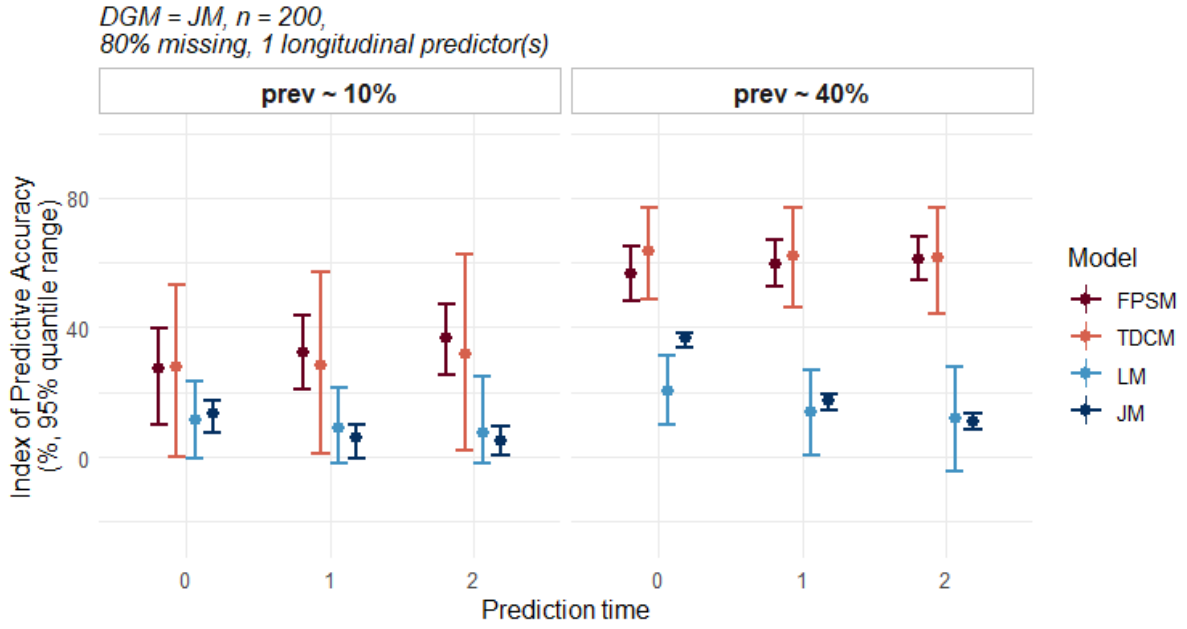

DGM = JM, n = 1000,
20% missing, 3 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Survival Brier score (95% quantile range)
0.00
0.05
0.10
0.15
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

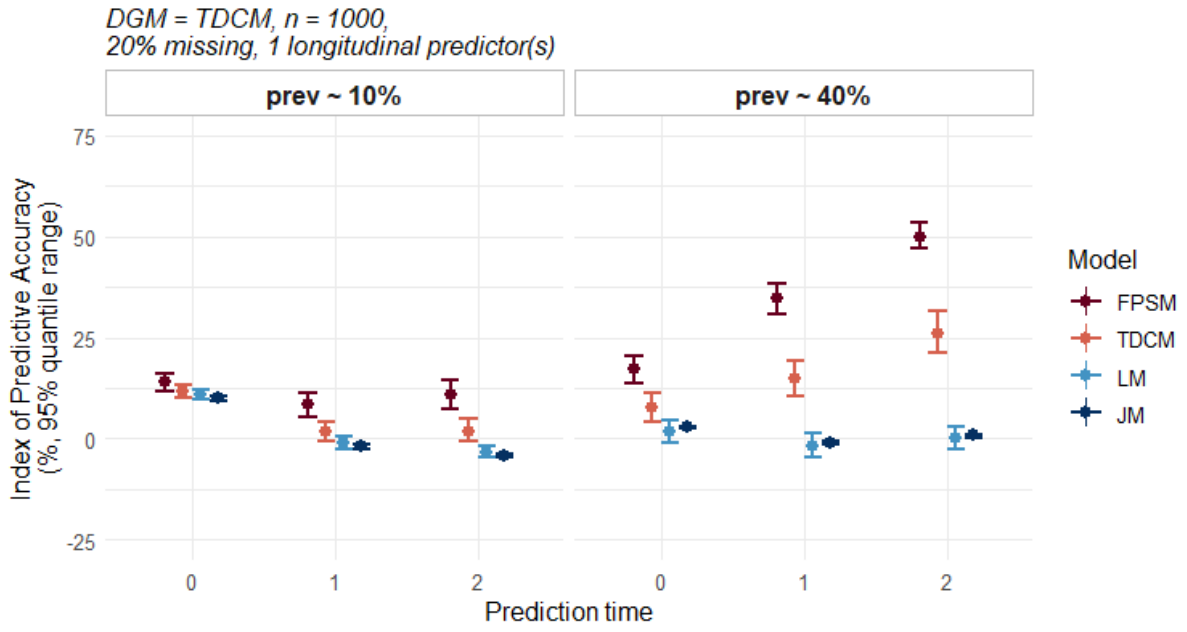

DGM = JM, n = 200,
80% missing, 3 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Survival Brier score (95% quantile range)
0.00
0.05
0.10
0.15
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

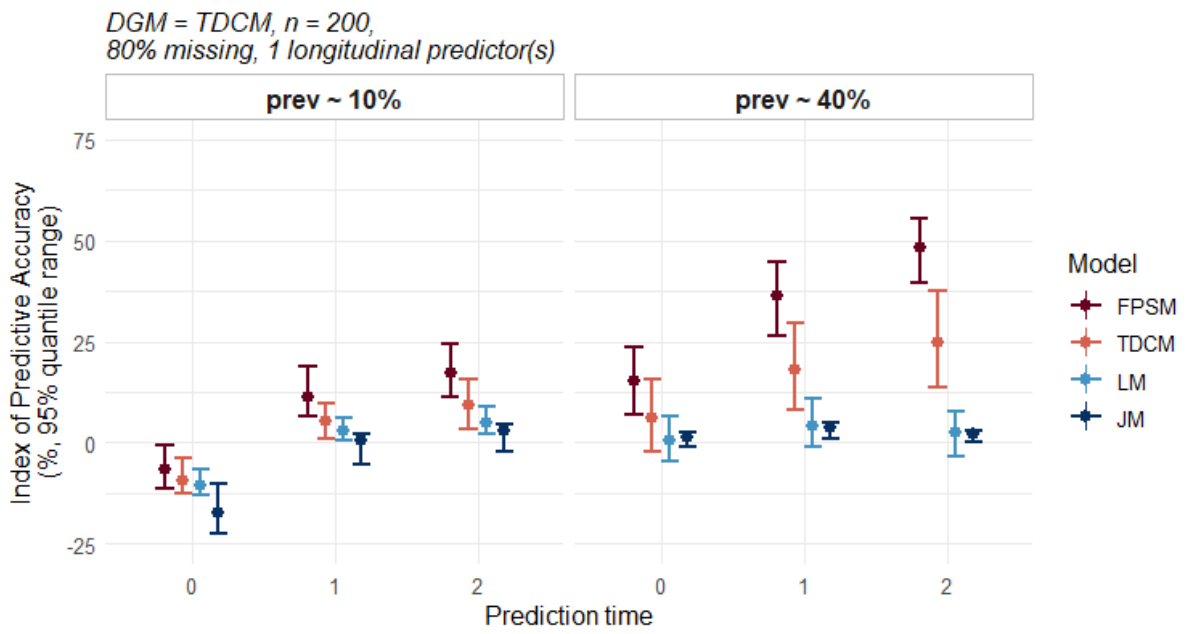

DGM = TDCM, n = 1000,
20% missing, 3 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Survival Brier score (95% quantile range)
0.00
0.05
0.10
0.15
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

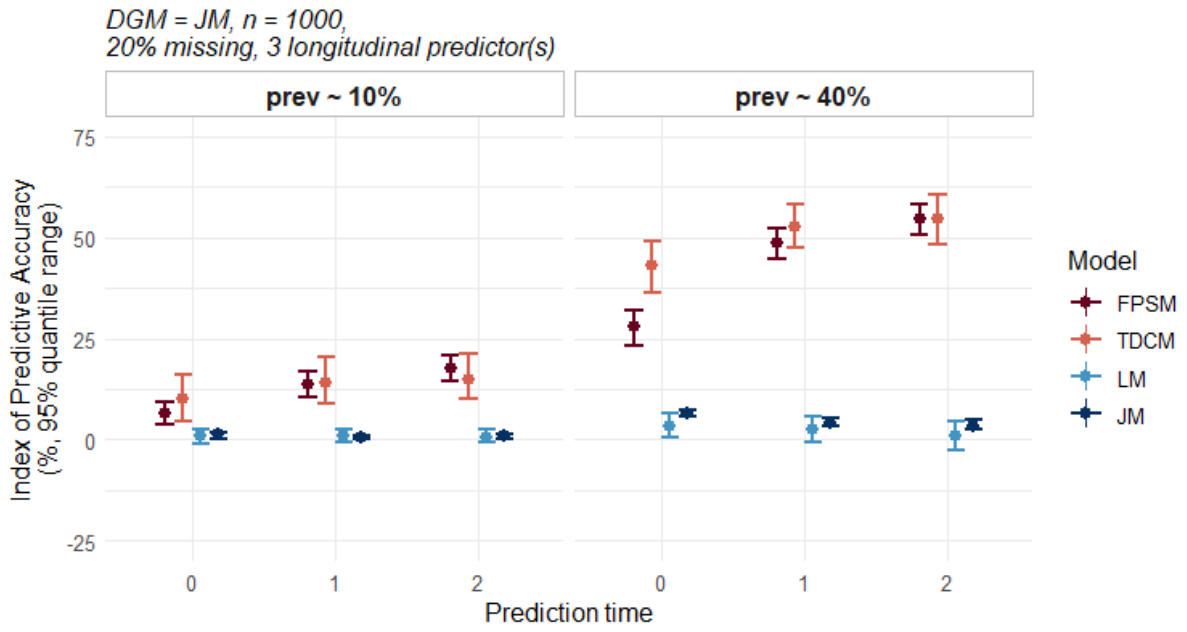

DGM = TDCM, n = 200,
80% missing, 3 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Survival Brier score (95% quantile range)
0.00
0.05
0.10
0.15
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

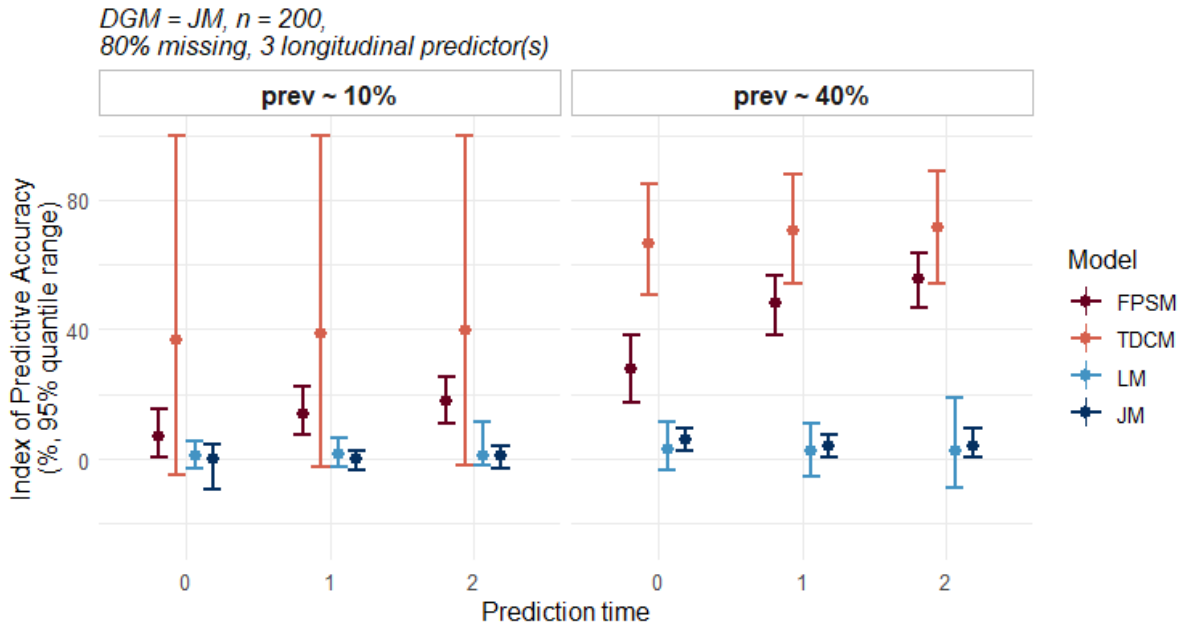

DGM = JM, n = 1000,
20% missing, 1 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Index of Predictive Accuracy
(%, 95% quantile range)
75
50
25
0
-25
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

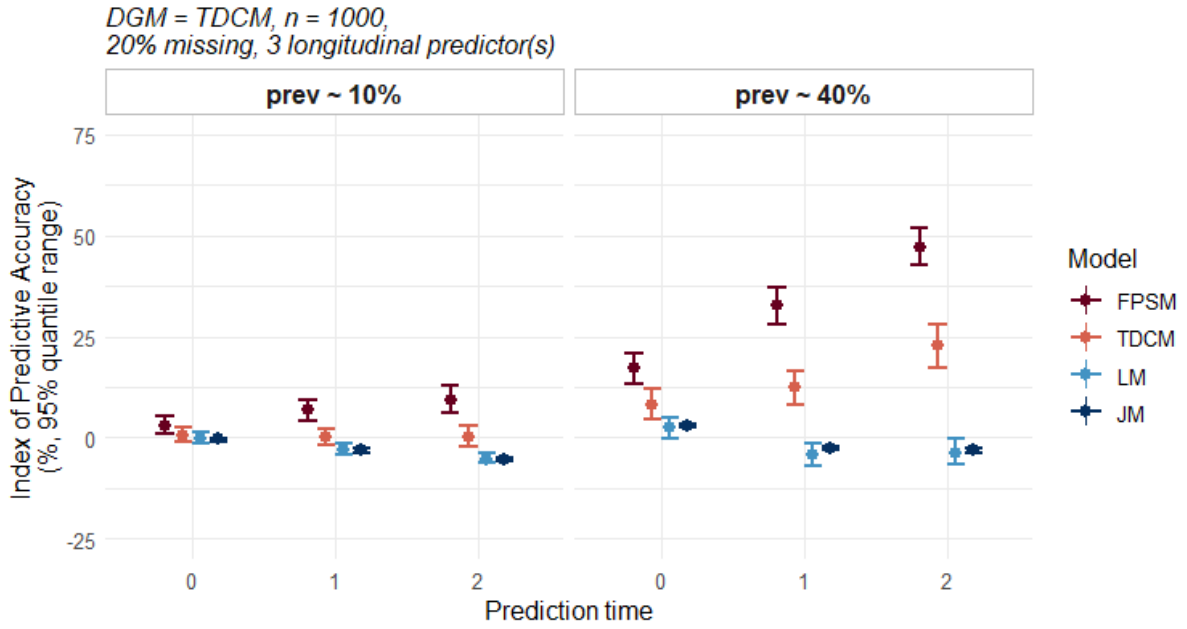

DGM = JM, n = 200,
80% missing, 1 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Index of Predictive Accuracy
(%, 95% quantile range)
80
40
0
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

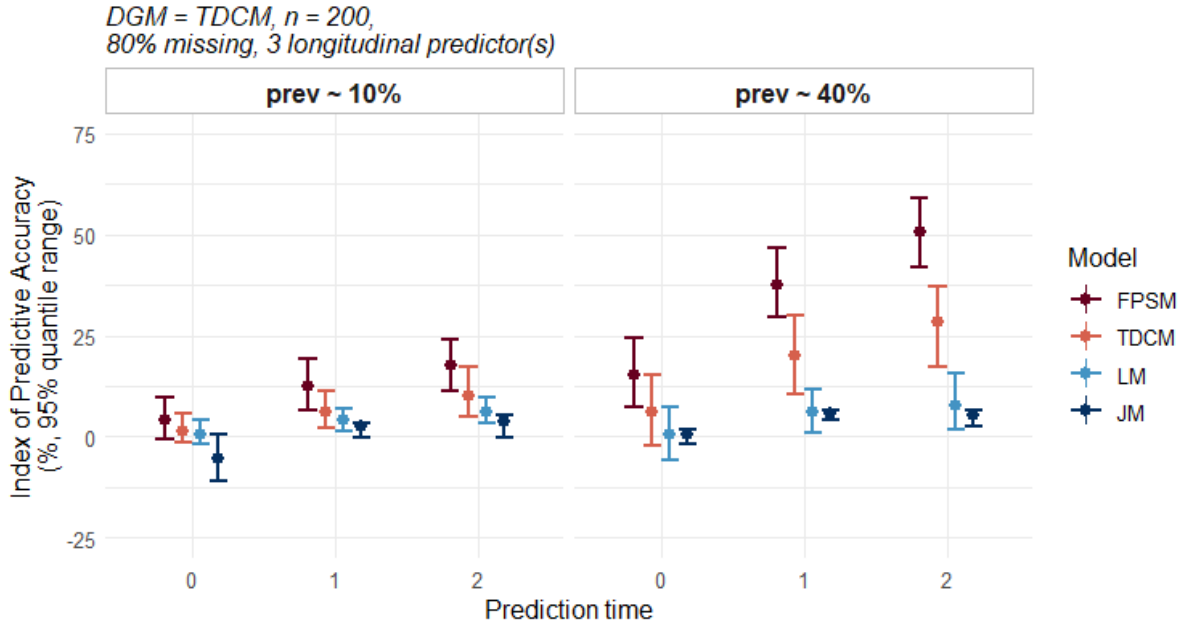

DGM = TDCM, n = 1000,
20% missing, 1 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Index of Predictive Accuracy
(%, 95% quantile range)
75
50
25
0
-25
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM


DGM = TDCM, n = 200,
80% missing, 1 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Index of Predictive Accuracy
(%, 95% quantile range)
75
50
25
0
-25
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

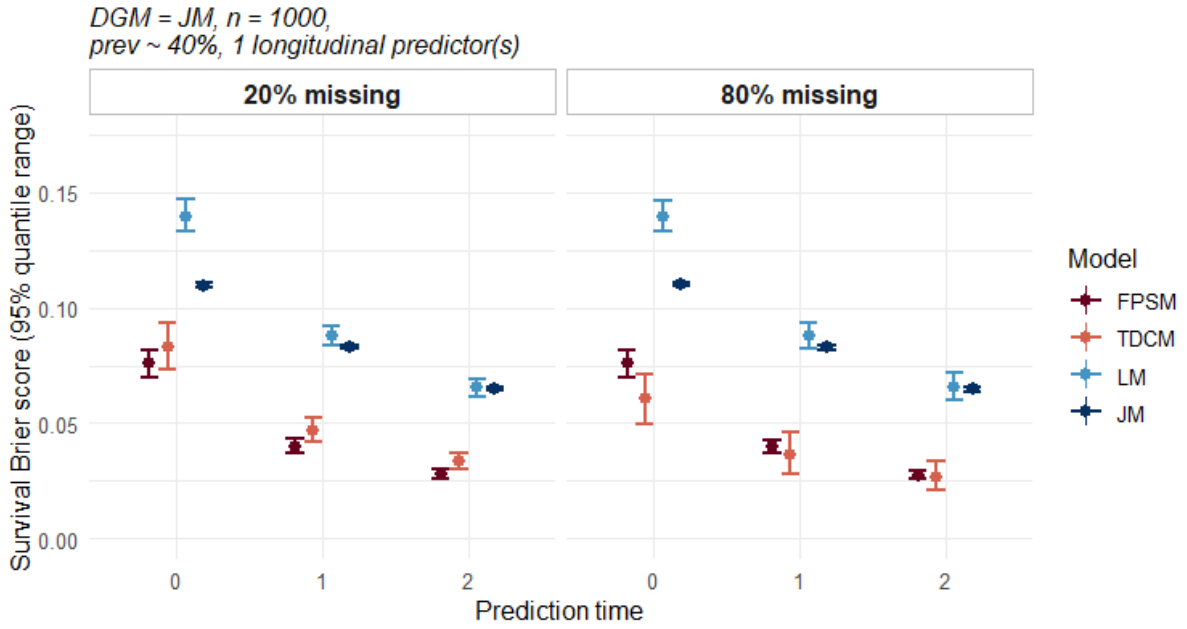

DGM = JM, n = 1000,
20% missing, 3 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Index of Predictive Accuracy
(%, 95% quantile range)
75
50
25
0
-25
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

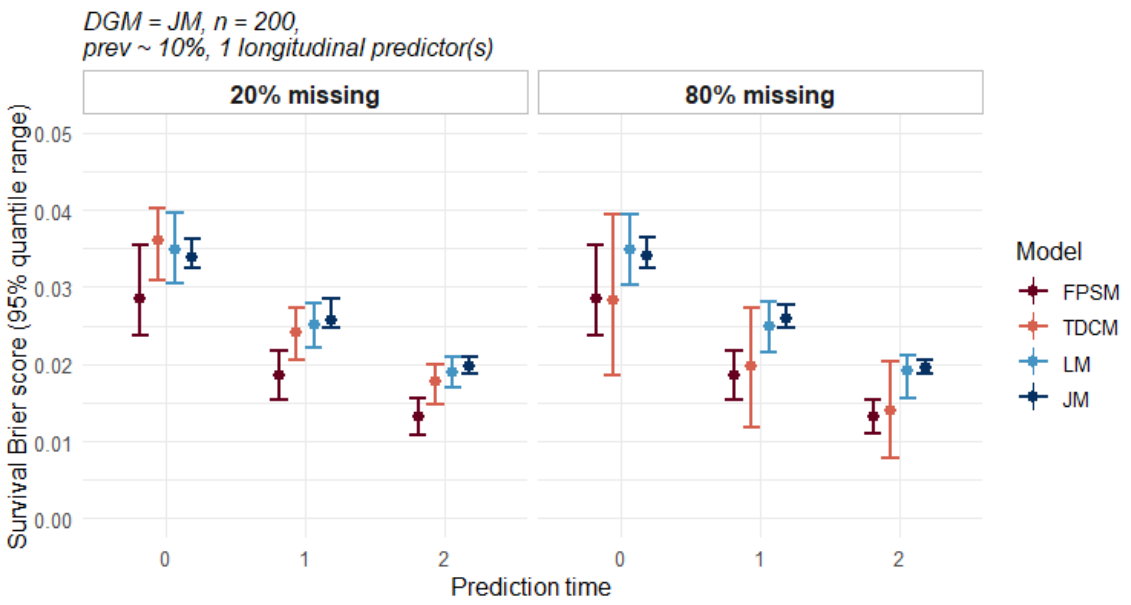

DGM = JM, n = 200,
80% missing, 3 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Index of Predictive Accuracy
(%, 95% quantile range)
80
40
0
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

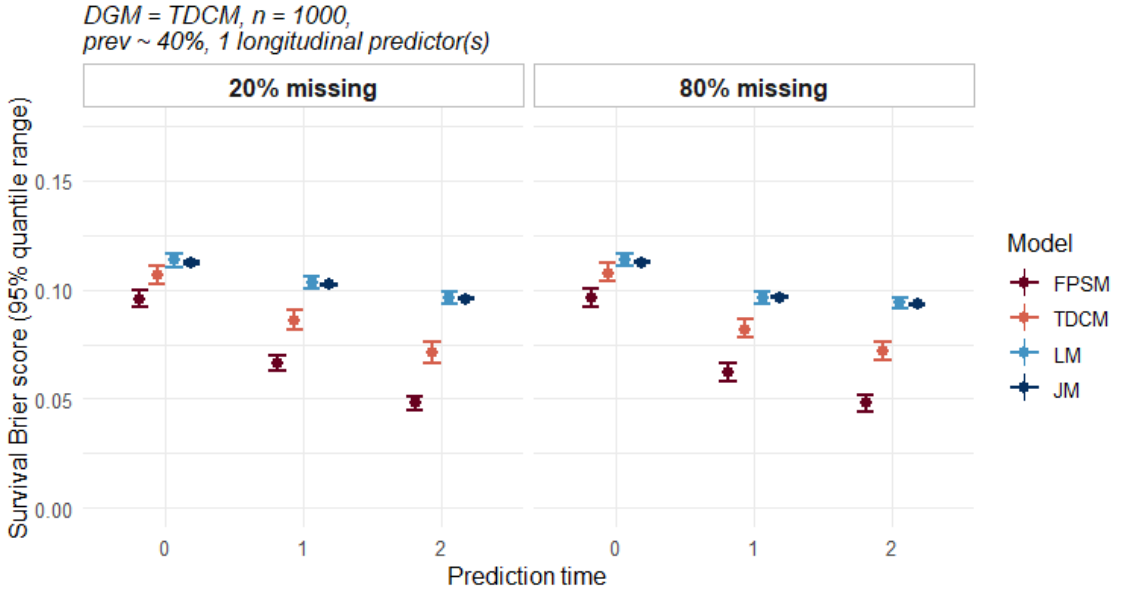


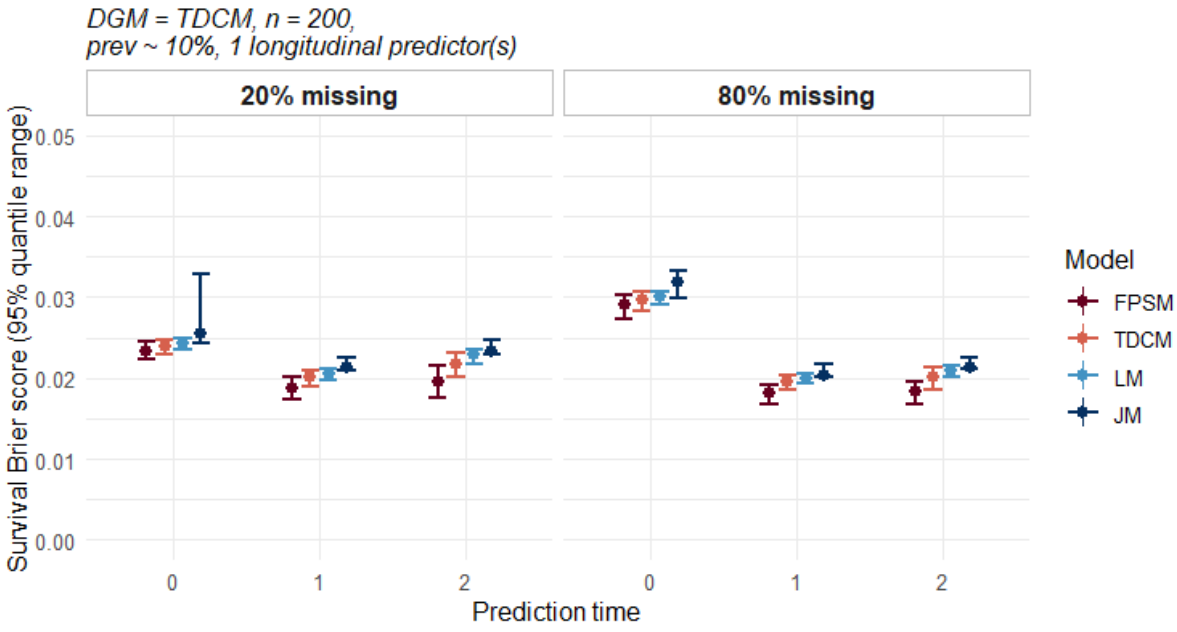


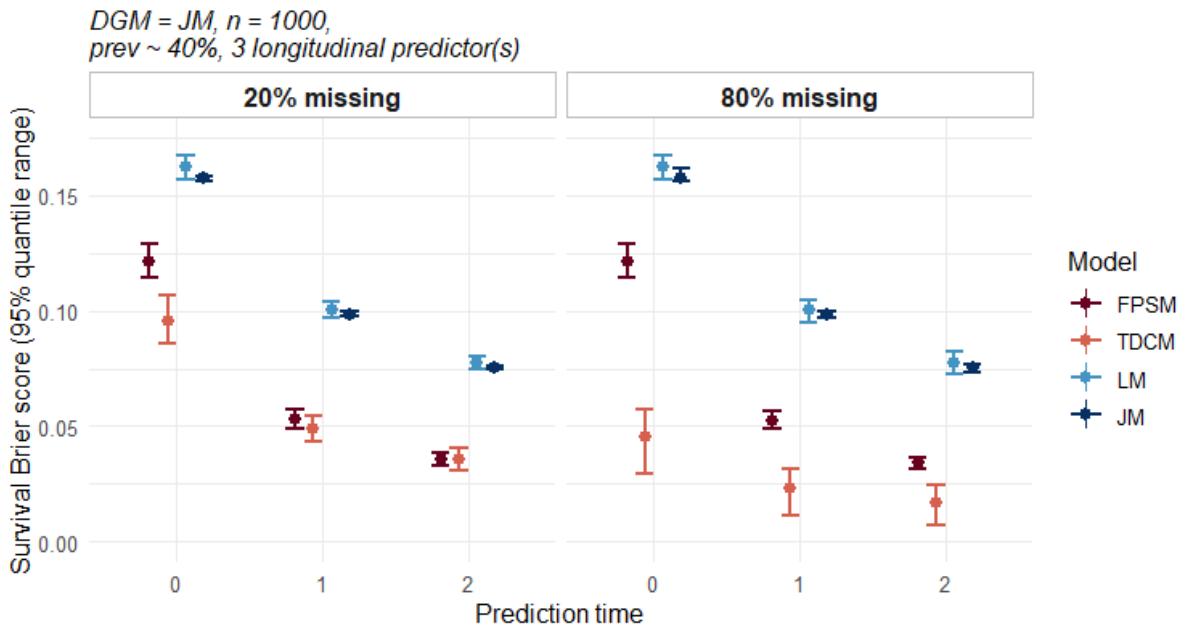
1.1.2.3. Follow-up missingness

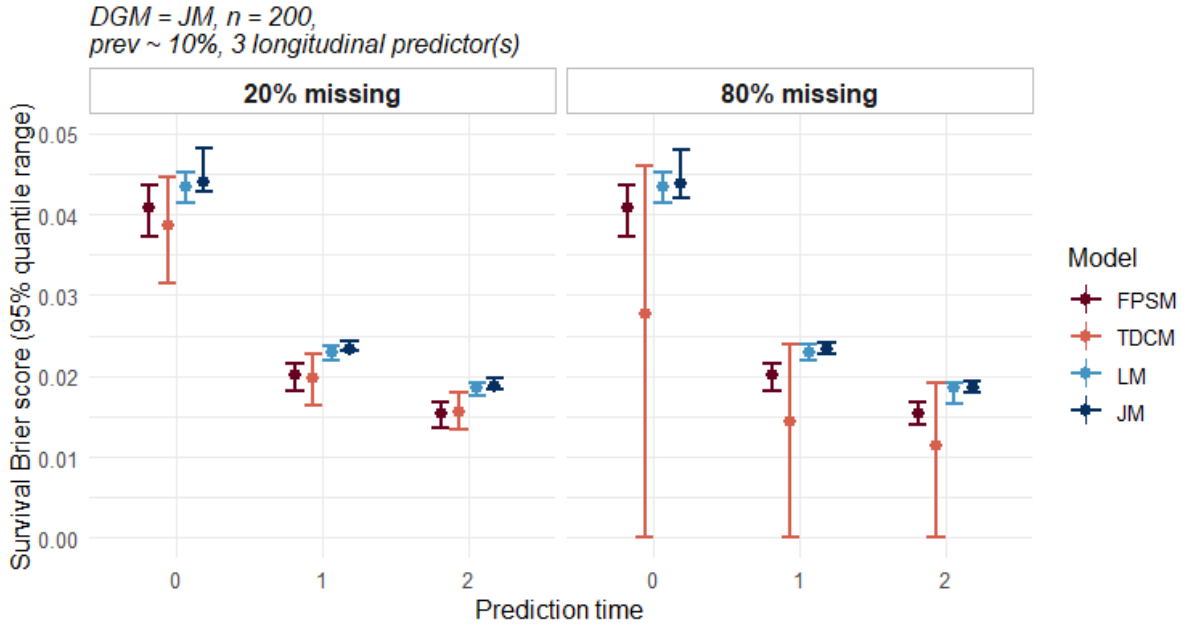


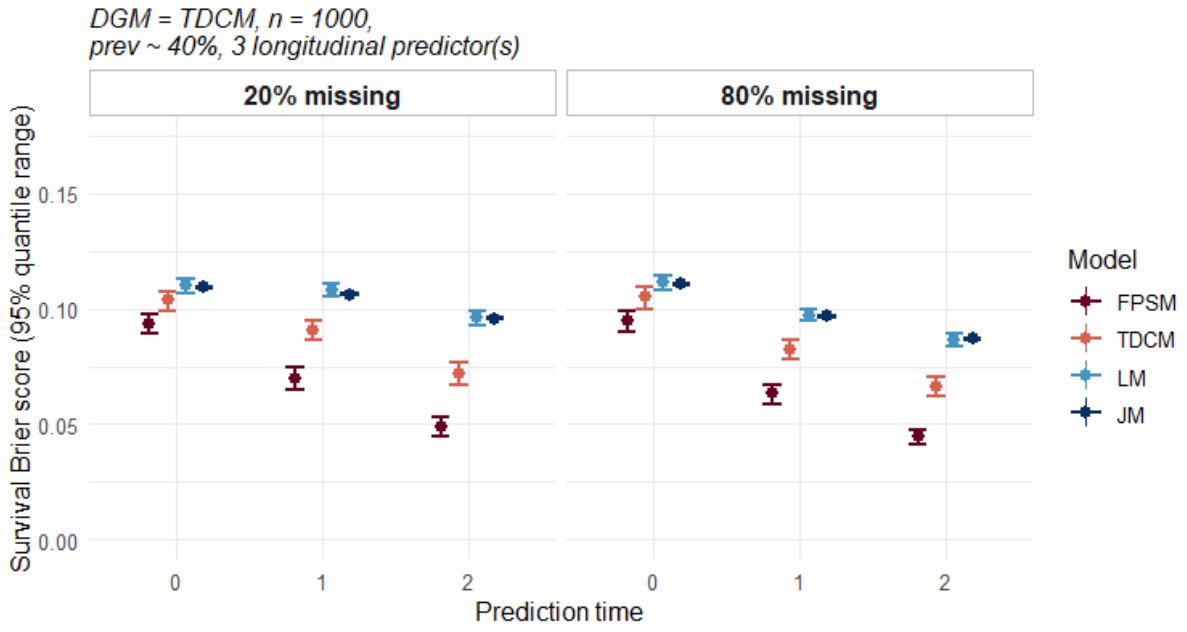

DGM = JM, n = 200,
prev ~ 10%, 1 longitudinal predictor(s)
20% missing
80% missing
Survival Brier score (95% quantile range)
0.05
0.04
0.03
0.02
0.01
0.00
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

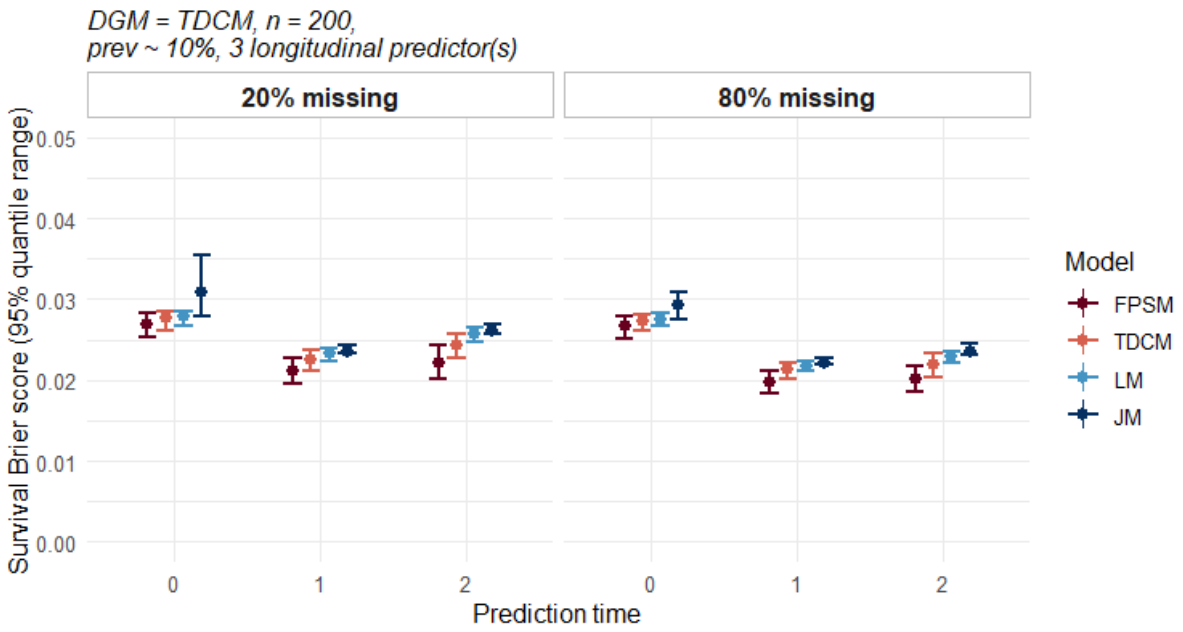

DGM = TDCM, n = 1000,
prev ~ 40%, 1 longitudinal predictor(s)
20% missing
80% missing
Survival Brier score (95% quantile range)
0.15
0.10
0.05
0.00
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

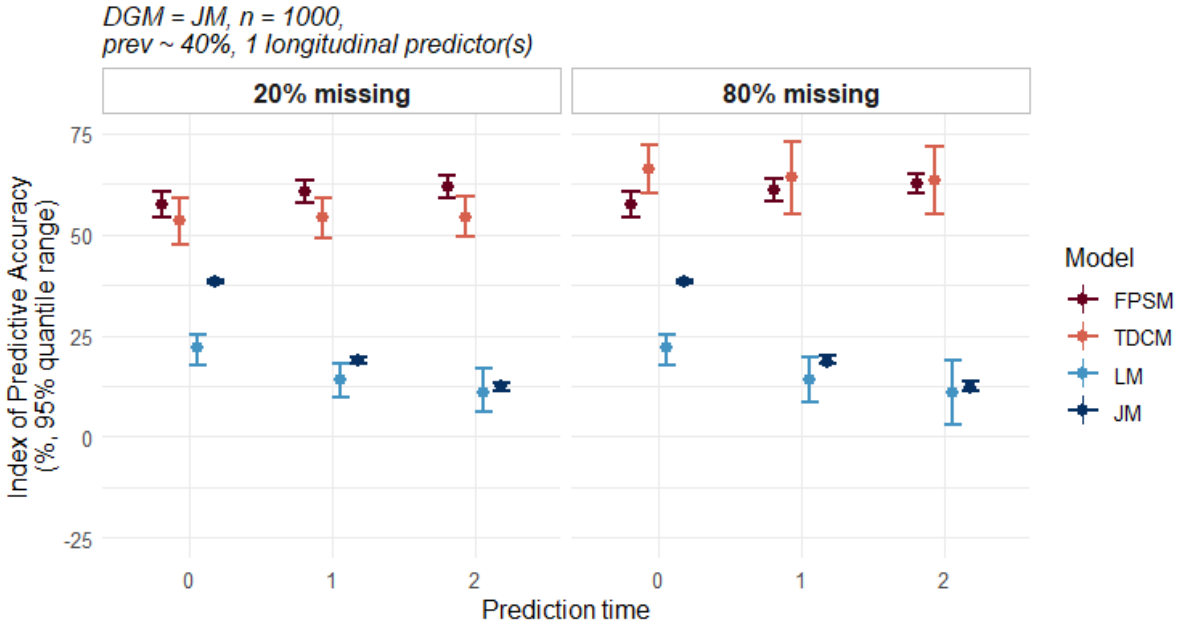

DGM = TDCM, n = 200,
prev ~ 10%, 1 longitudinal predictor(s)
20% missing
80% missing
Survival Brier score (95% quantile range)
0.05
0.04
0.03
0.02
0.01
0.00
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

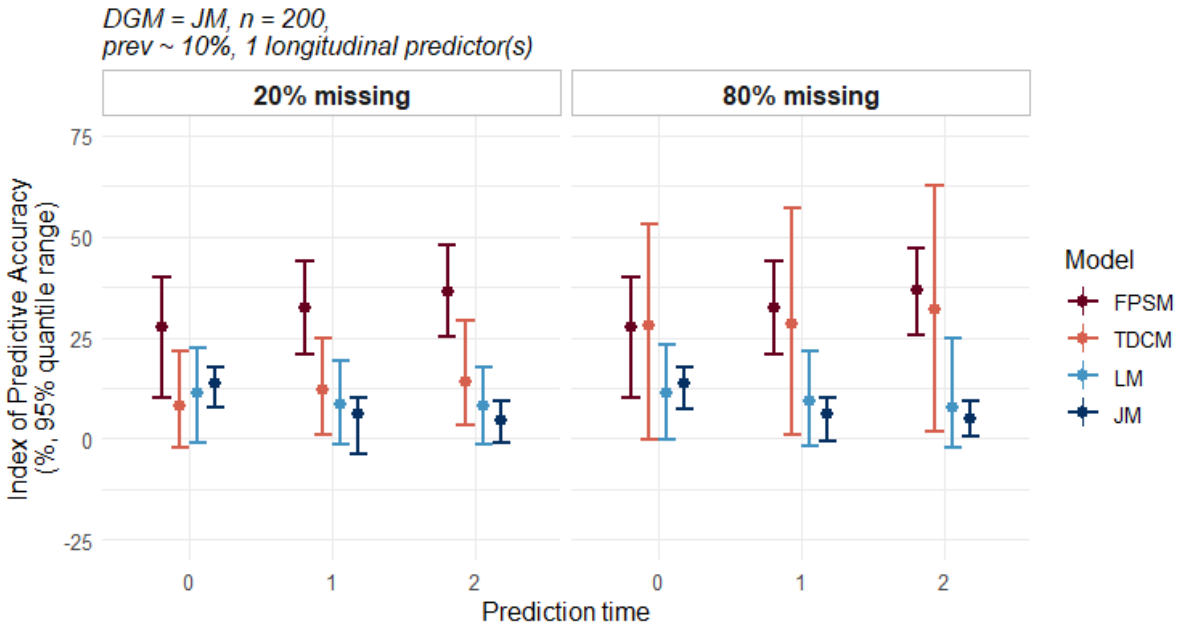

DGM = JM, n = 1000,
prev ~ 40%, 3 longitudinal predictor(s)
20% missing
80% missing
Survival Brier score (95% quantile range)
0.00
0.05
0.10
0.15
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

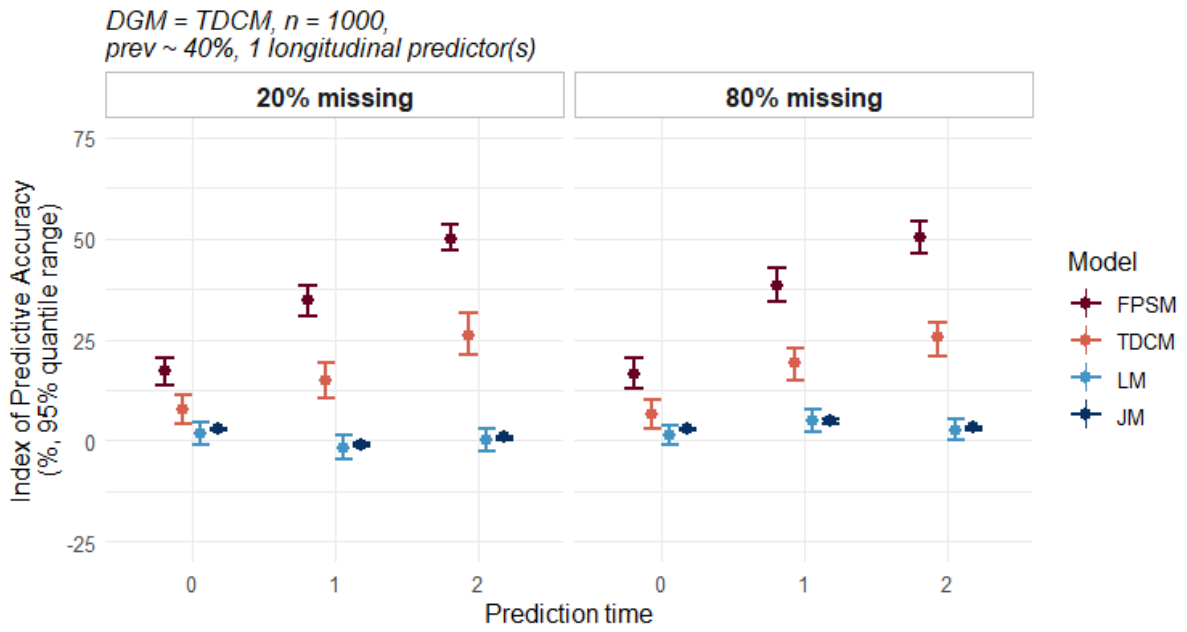

DGM = JM, n = 200,
prev ~ 10%, 3 longitudinal predictor(s)
20% missing
80% missing
Survival Brier score (95% quantile range)
0.00
0.01
0.02
0.03
0.04
0.05
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

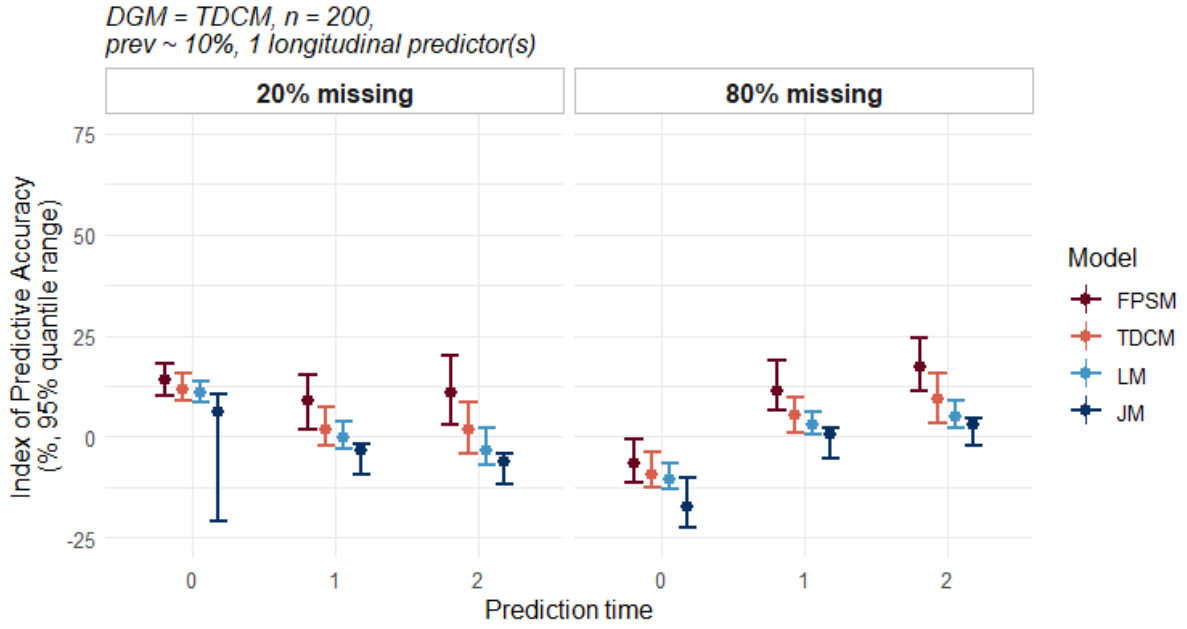

DGM = TDCM, n = 1000,
prev ~ 40%, 3 longitudinal predictor(s)
20% missing
80% missing
Survival Brier score (95% quantile range)
0.00
0.05
0.10
0.15
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

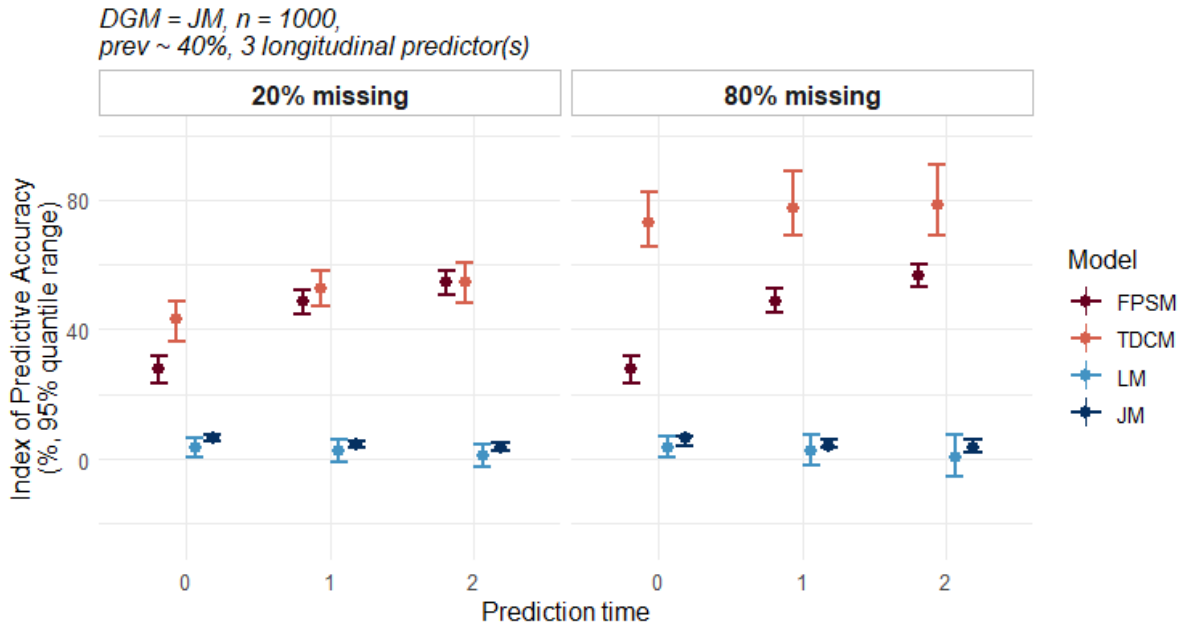

DGM = TDCM, n = 200,
prev ~ 10%, 3 longitudinal predictor(s)
20% missing
80% missing
Survival Brier score (95% quantile range)
0.05
0.04
0.03
0.02
0.01
0.00
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

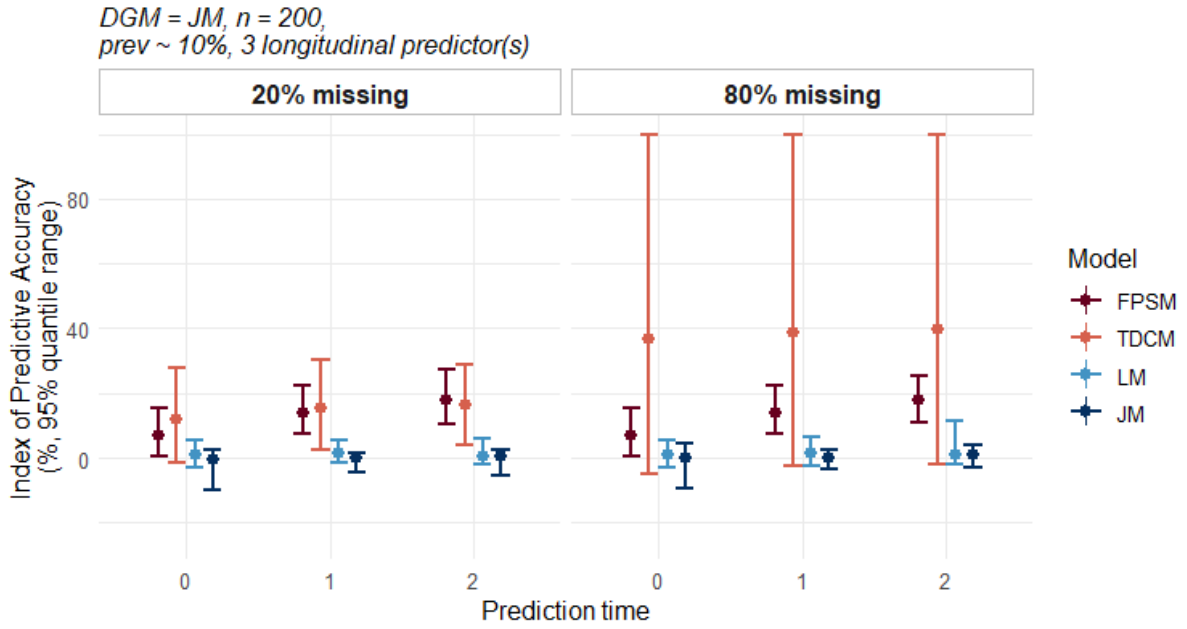

DGM = JM, n = 1000,
prev ~ 40%, 1 longitudinal predictor(s)
20% missing
80% missing
Index of Predictive Accuracy
(%, 95% quantile range)
75
50
25
0
-25
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

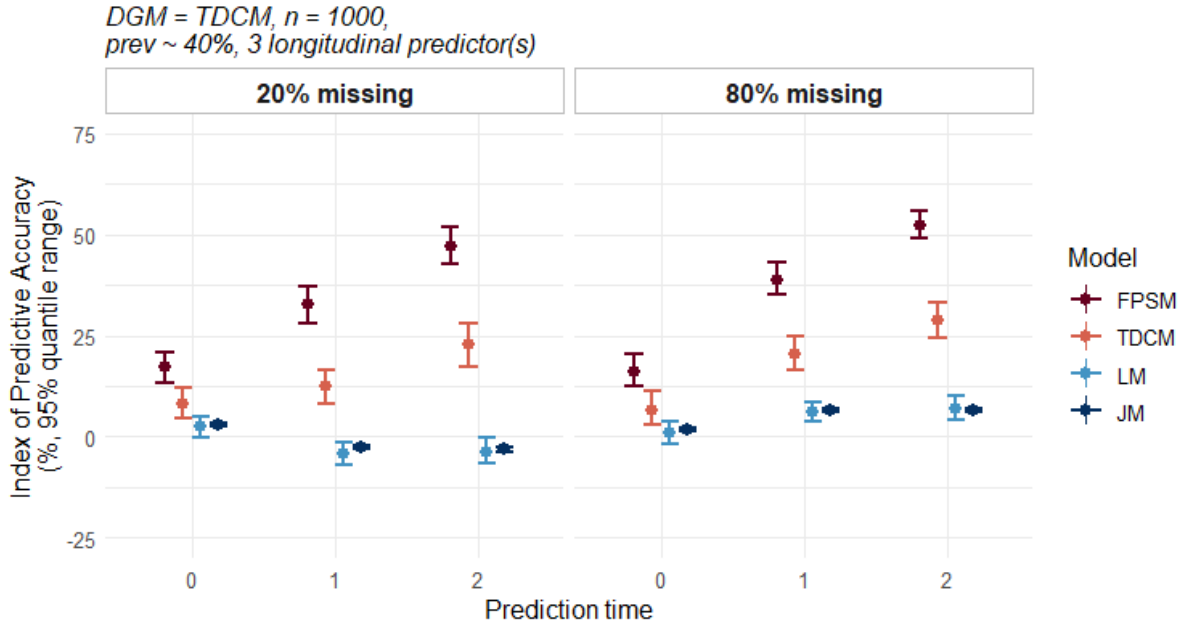

DGM = JM, n = 200,
prev ~ 10%, 1 longitudinal predictor(s)
20% missing
80% missing
Index of Predictive Accuracy
(%, 95% quantile range)
75
50
25
0
-25
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

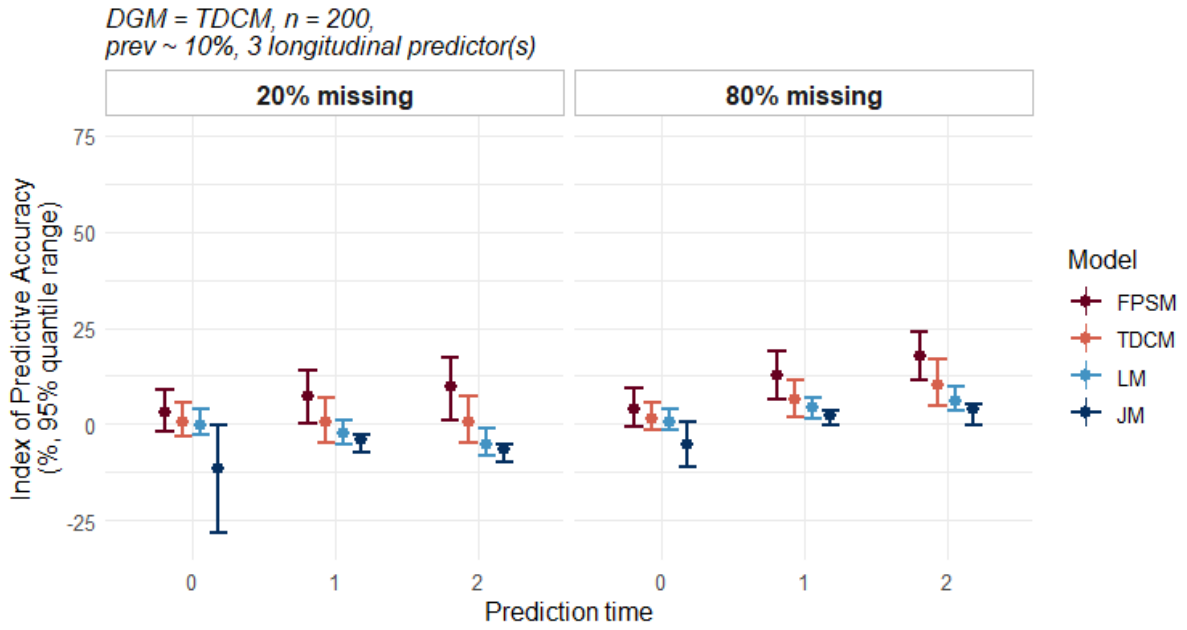

DGM = TDCM, n = 1000,
prev ~ 40%, 1 longitudinal predictor(s)
20% missing
80% missing
Index of Predictive Accuracy
(%, 95% quantile range)
75
50
25
0
-25
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM


DGM = TDCM, n = 200,
prev ~ 10%, 1 longitudinal predictor(s)
20% missing
80% missing
Index of Predictive Accuracy
(%, 95% quantile range)
75
50
25
0
-25
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM


DGM = JM, n = 1000,
prev ~ 40%, 3 longitudinal predictor(s)
20% missing
80% missing
Index of Predictive Accuracy
(%, 95% quantile range)
80
40
0
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

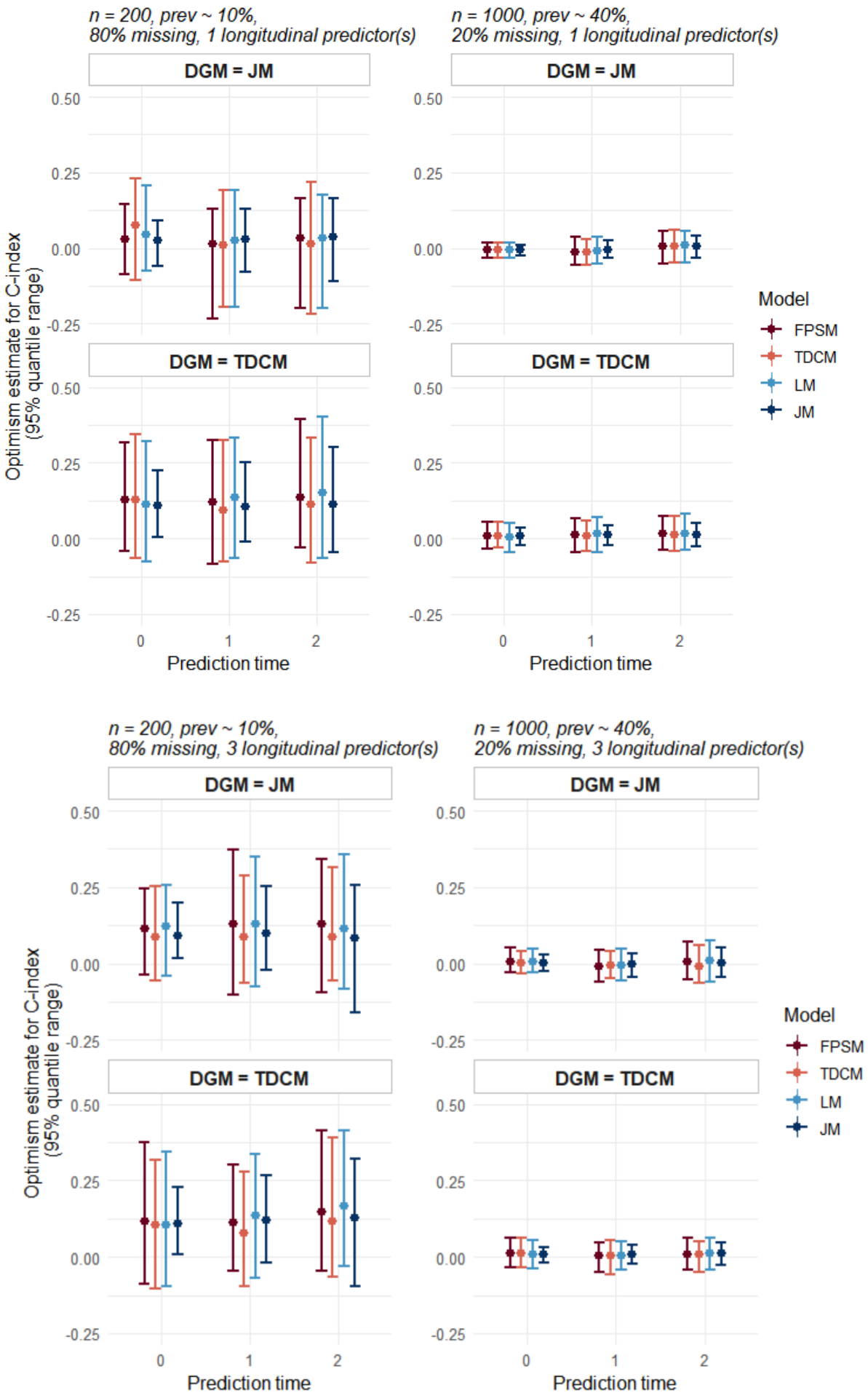

DGM = JM, n = 200,
prev ~ 10%, 3 longitudinal predictor(s)
20% missing
80% missing
Index of Predictive Accuracy
(%, 95% quantile range)
80
40
0
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM


DGM = TDCM, n = 1000,
prev ~ 40%, 3 longitudinal predictor(s)
20% missing
80% missing
Index of Predictive Accuracy
(%, 95% quantile range)
75
50
25
0
-25
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

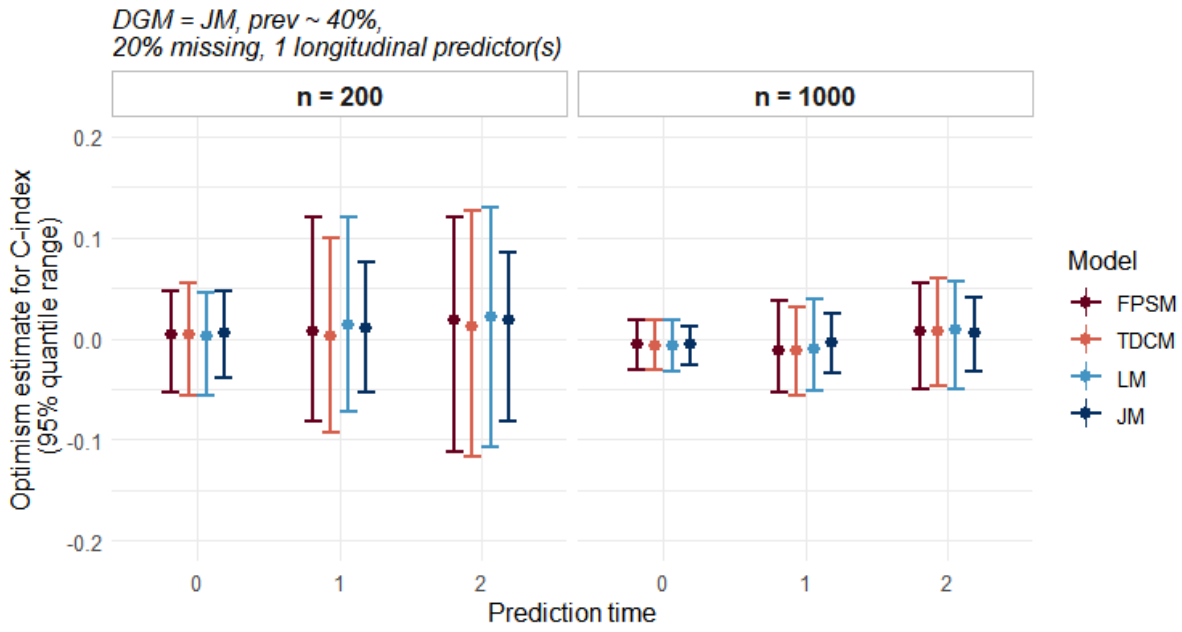

DGM = TDCM, n = 200,
prev ~ 10%, 3 longitudinal predictor(s)
20% missing
80% missing
Index of Predictive Accuracy
(%, 95% quantile range)
75
50
25
0
-25
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

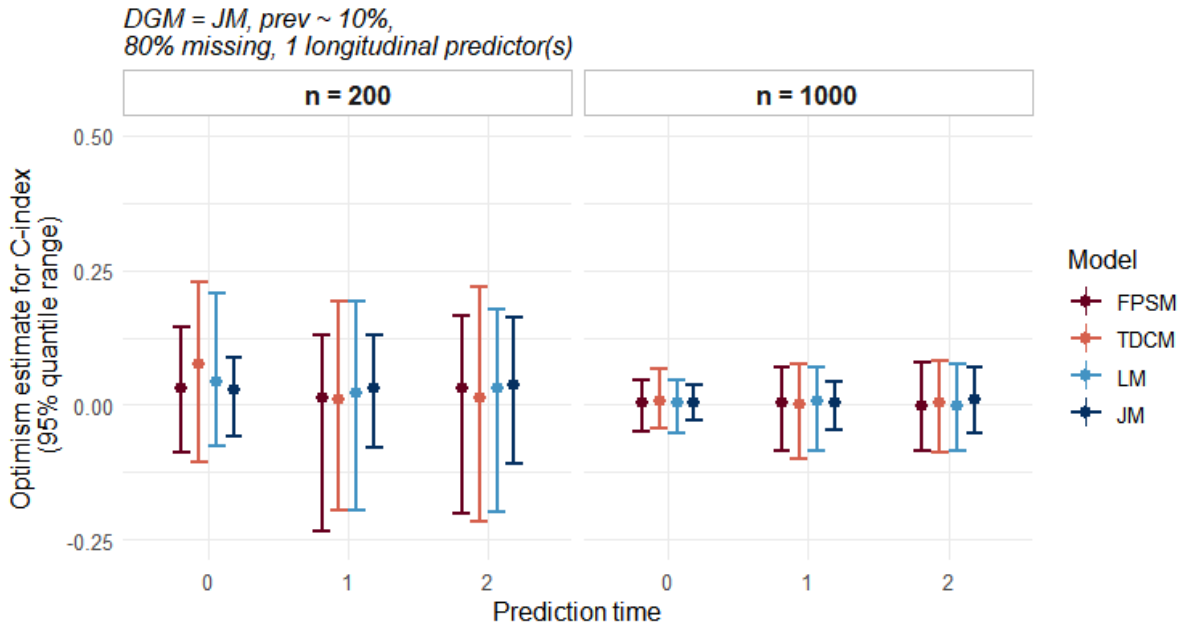
1.2 Optimism

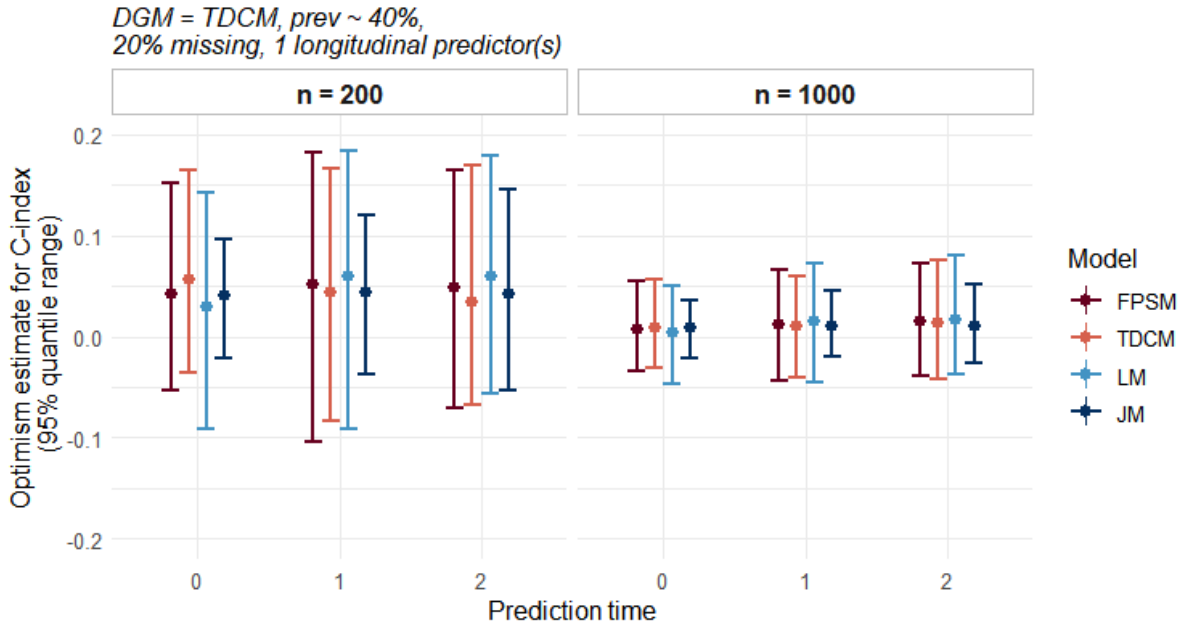
1.2.1. Discrimination

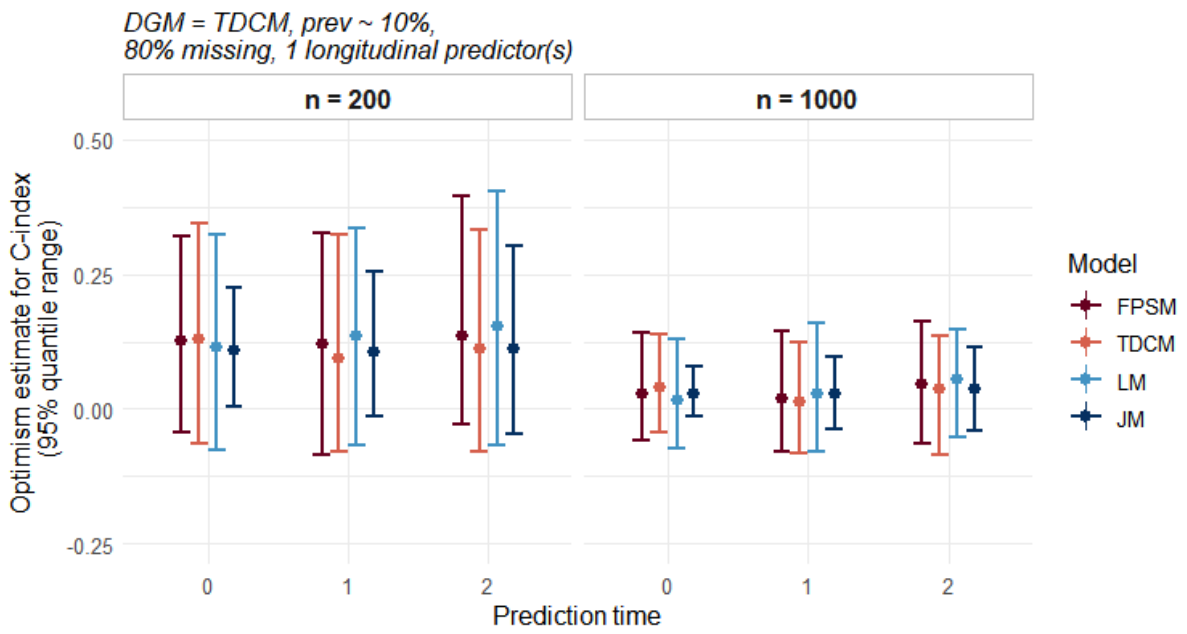


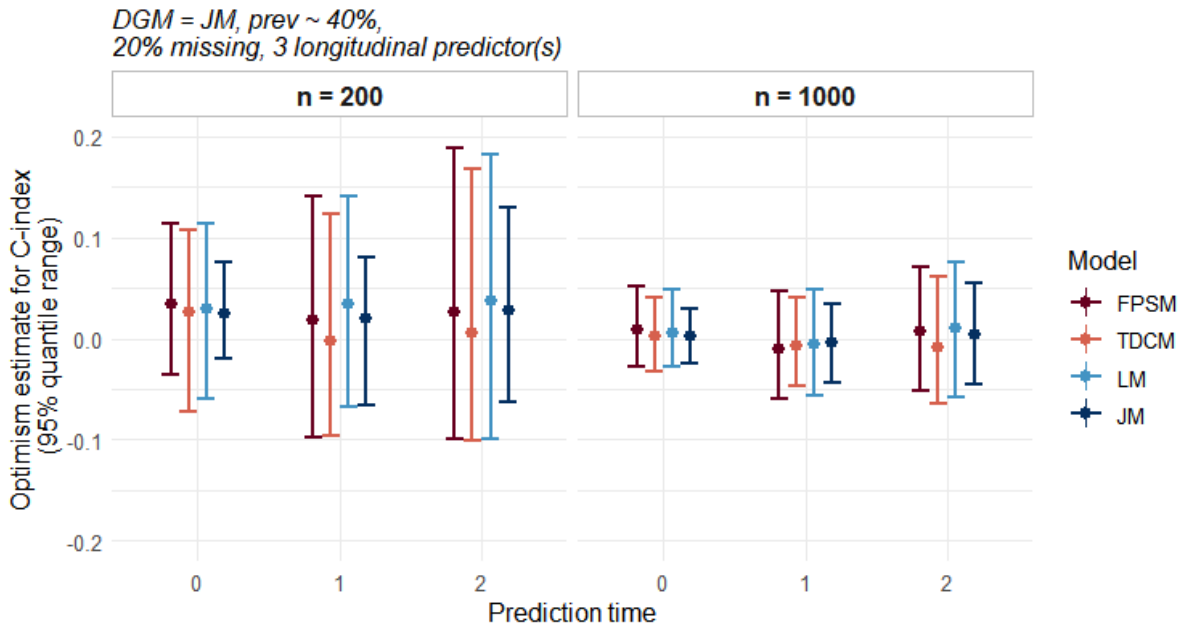
1.2.1.1. Sample size

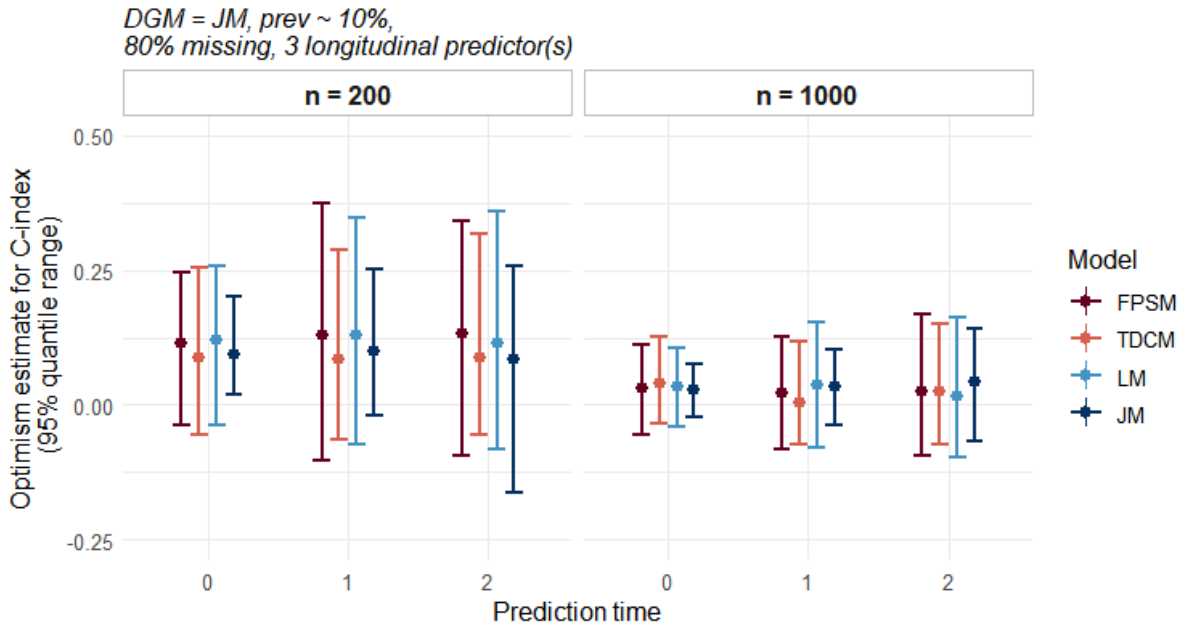


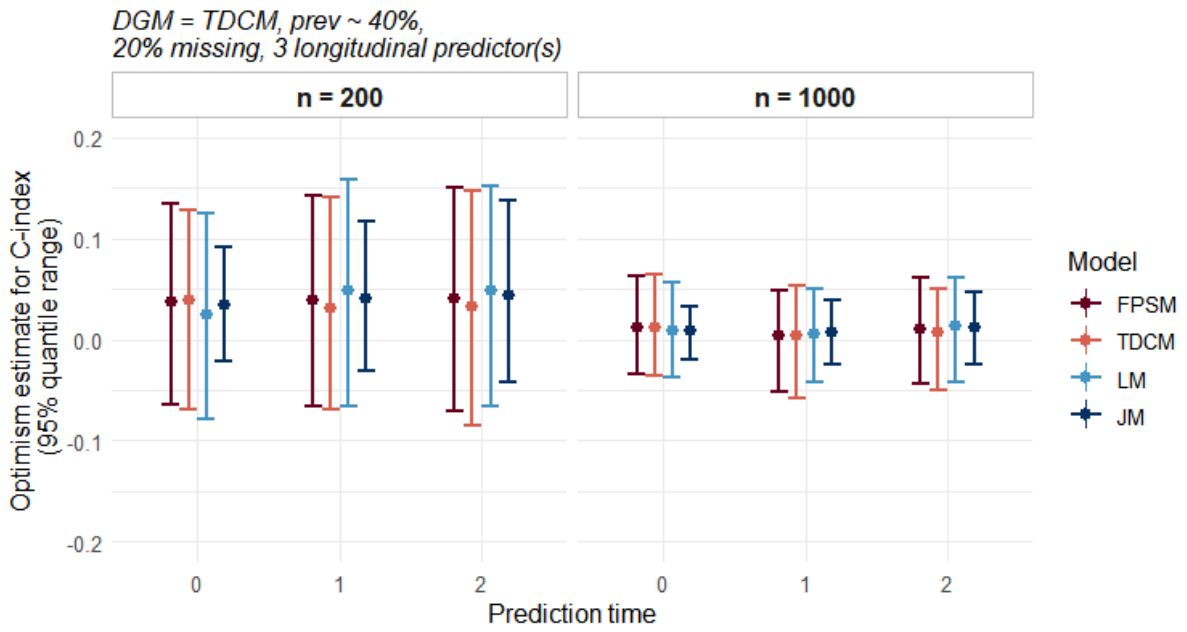


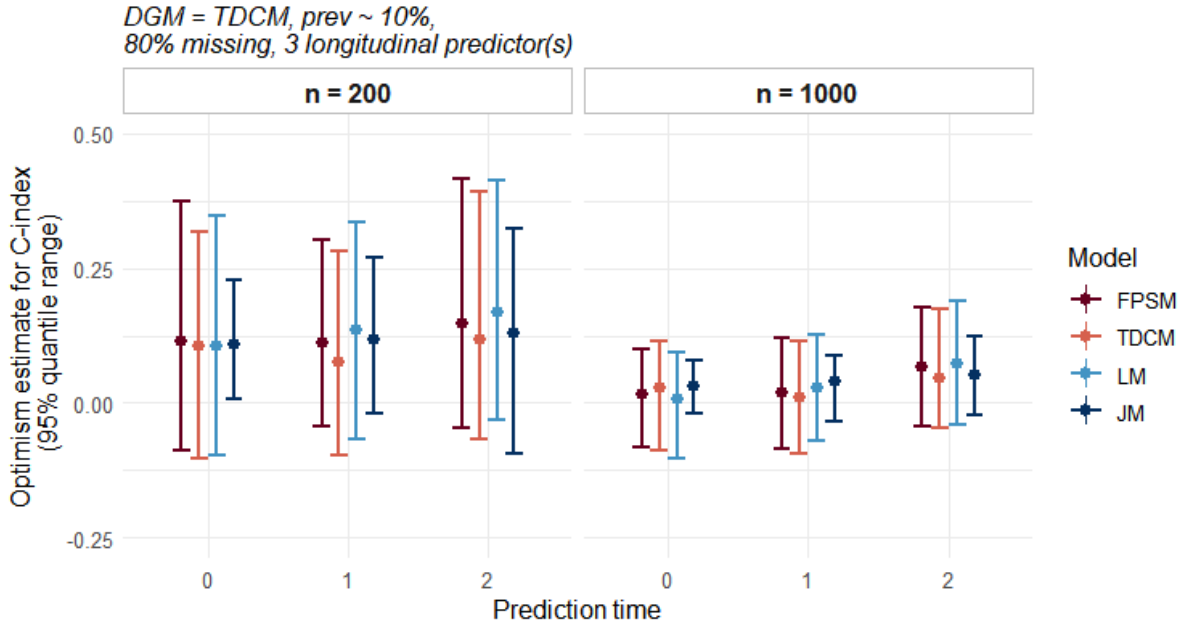



DGM = TDCM, prev ~ 10%,
80% missing, 1 longitudinal predictor(s)
n = 200
n = 1000
Optimism estimate for C-index
(95% quantile range)
0.50
0.25
0.00
-0.25
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

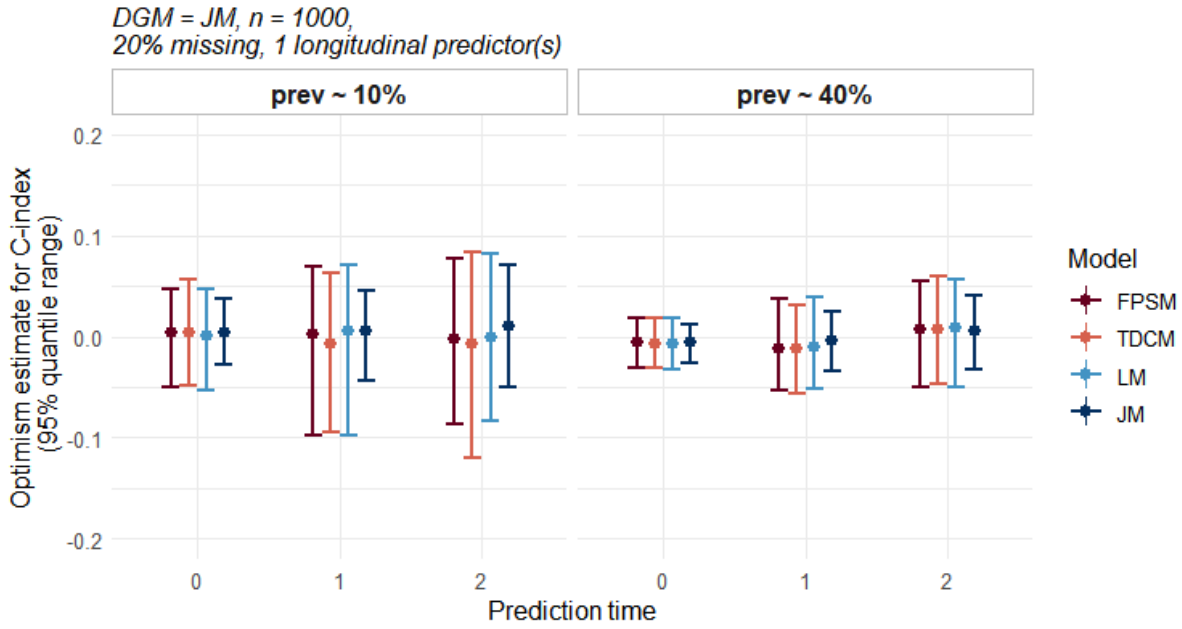

DGM = JM, prev ~ 40%,
20% missing, 3 longitudinal predictor(s)
n = 200
n = 1000
Optimism estimate for C-index
(95% quantile range)
0.2
0.1
0.0
-0.1
-0.2
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

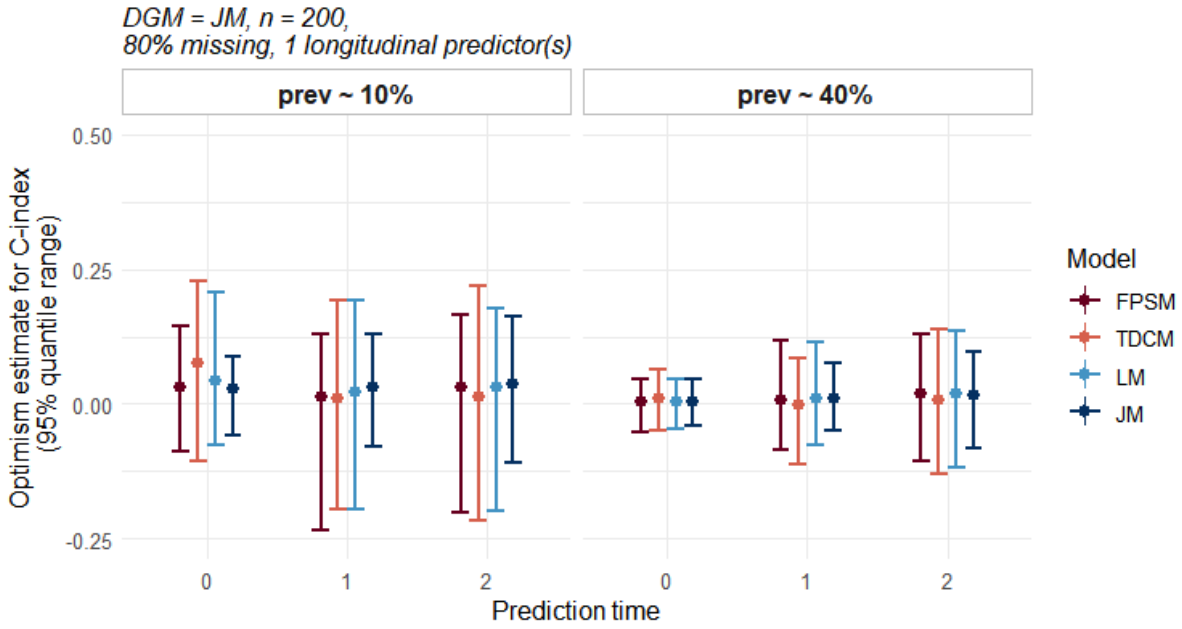

DGM = JM, prev ~ 10%,
80% missing, 3 longitudinal predictor(s)
n = 200
n = 1000
Optimism estimate for C-index
(95% quantile range)
0.50
0.25
0.00
-0.25
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

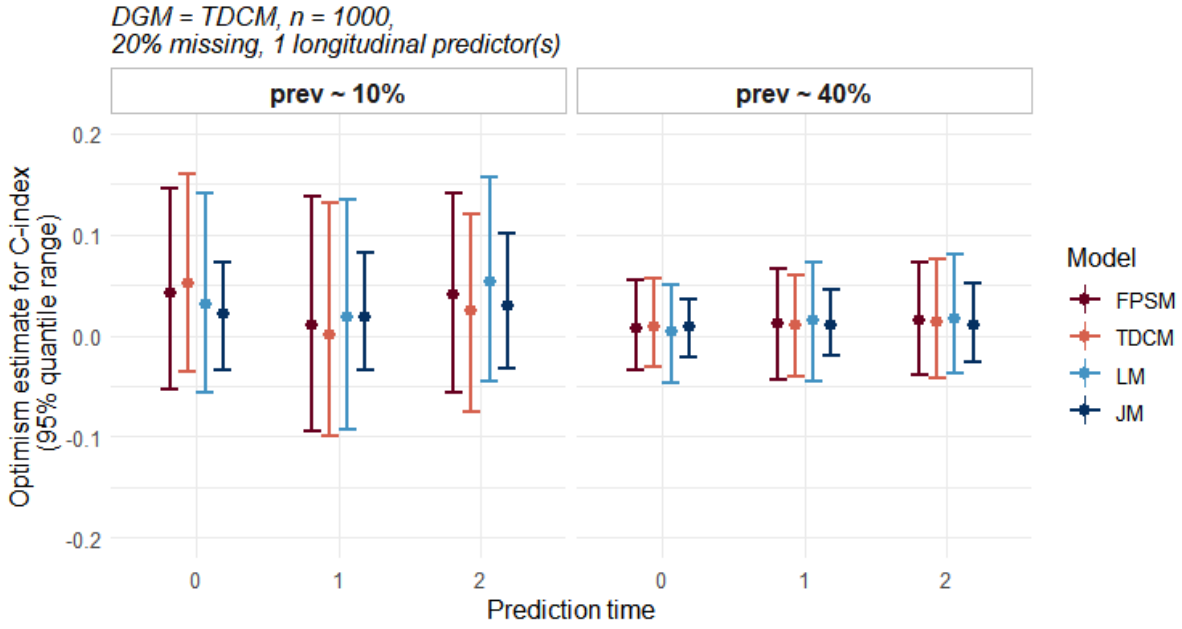


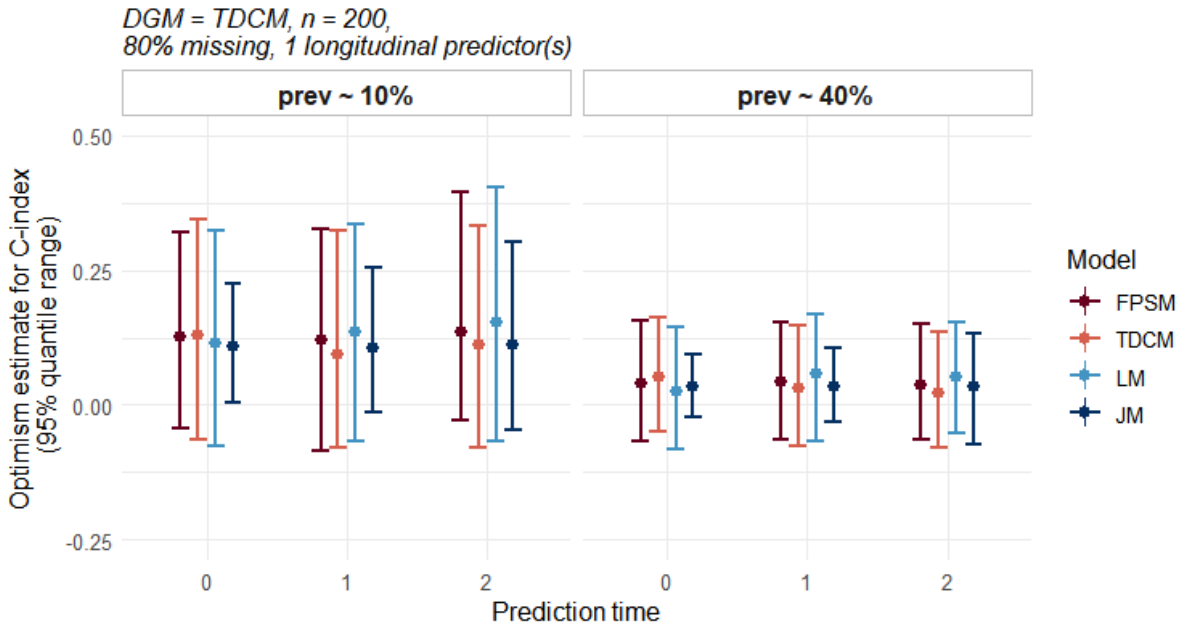


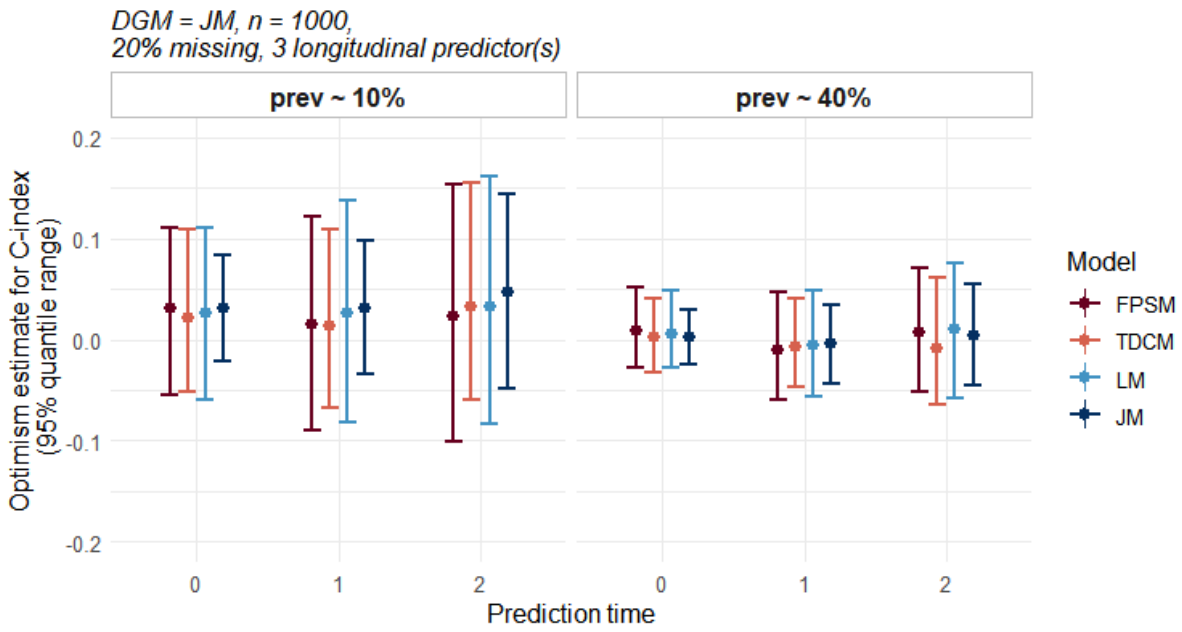
1.2.1.2. Event prevalence

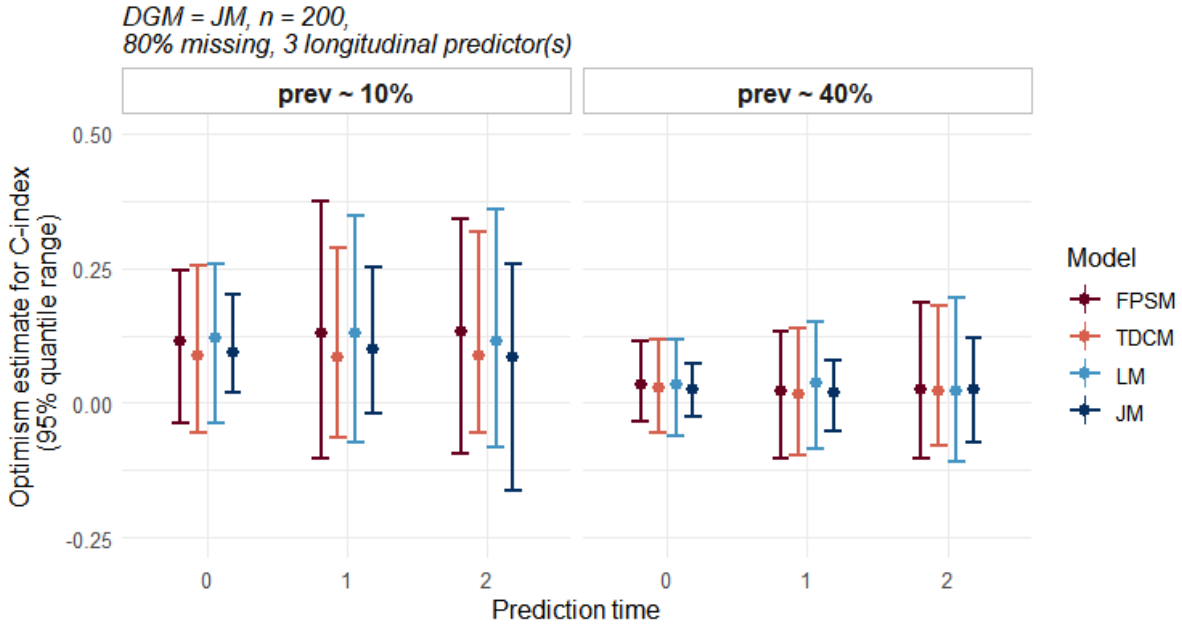


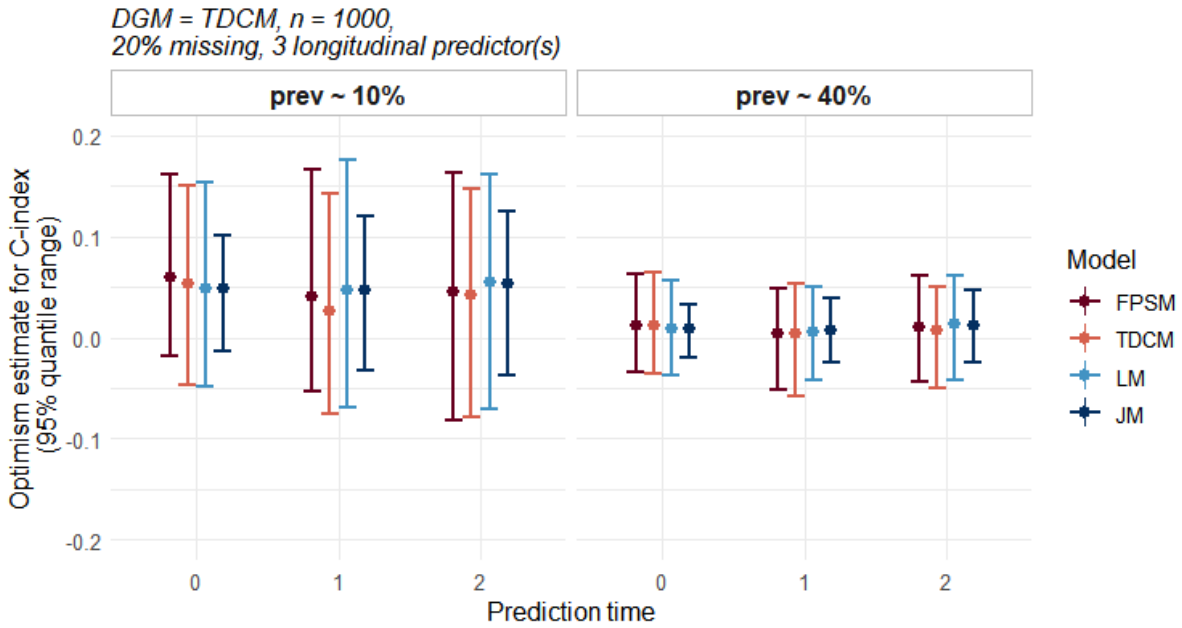

DGM = JM, n = 200,
80% missing, 1 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Optimism estimate for C-index
(95% quantile range)
0.50
0.25
0.00
-0.25
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

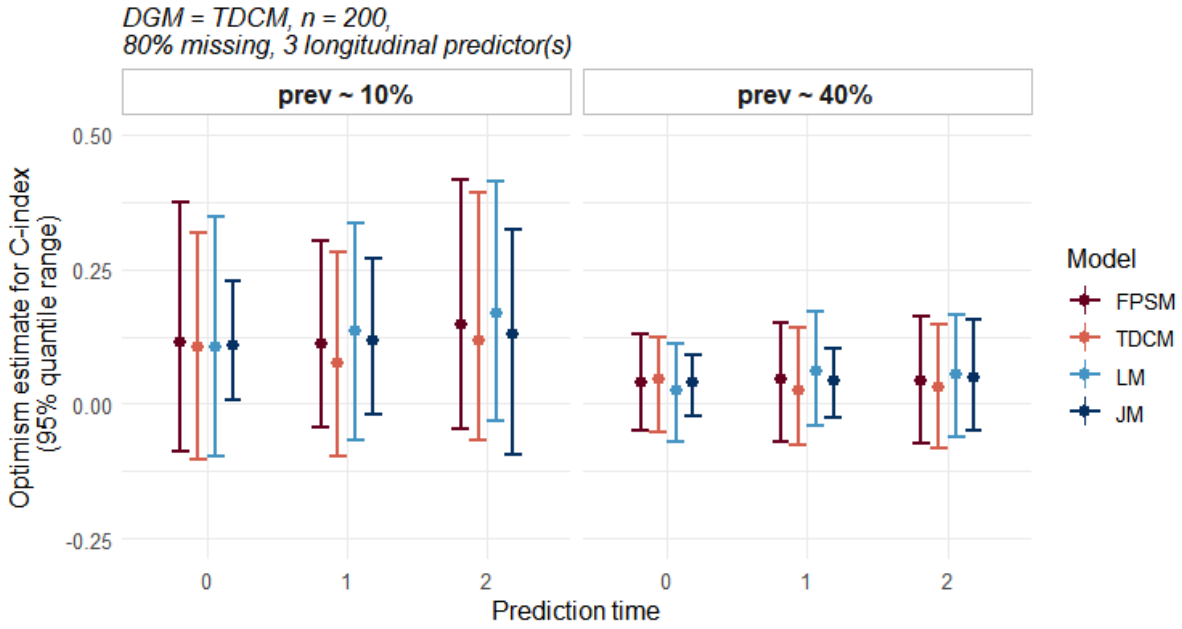

DGM = TDCM, n = 1000,
20% missing, 1 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Optimism estimate for C-index
(95% quantile range)
0.2
0.1
0.0
-0.1
-0.2
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM


DGM = TDCM, n = 200,
80% missing, 1 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Optimism estimate for C-index
(95% quantile range)
0.50
0.25
0.00
-0.25
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

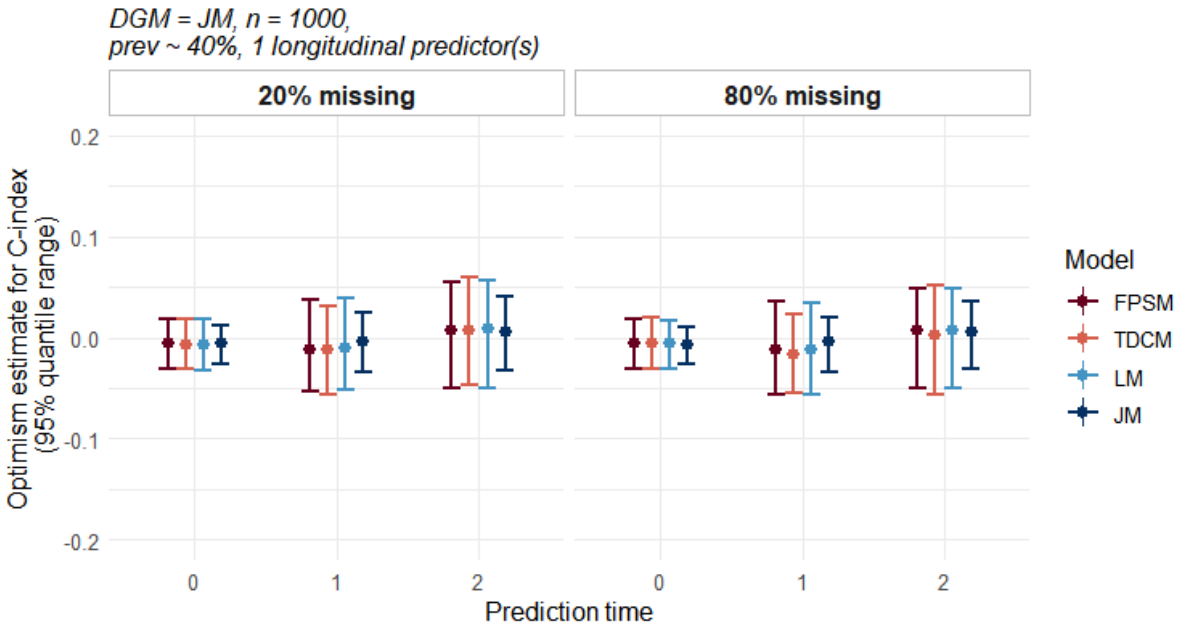

DGM = JM, n = 1000,
20% missing, 3 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Optimism estimate for C-index
(95% quantile range)
0.2
0.1
0.0
-0.1
-0.2
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

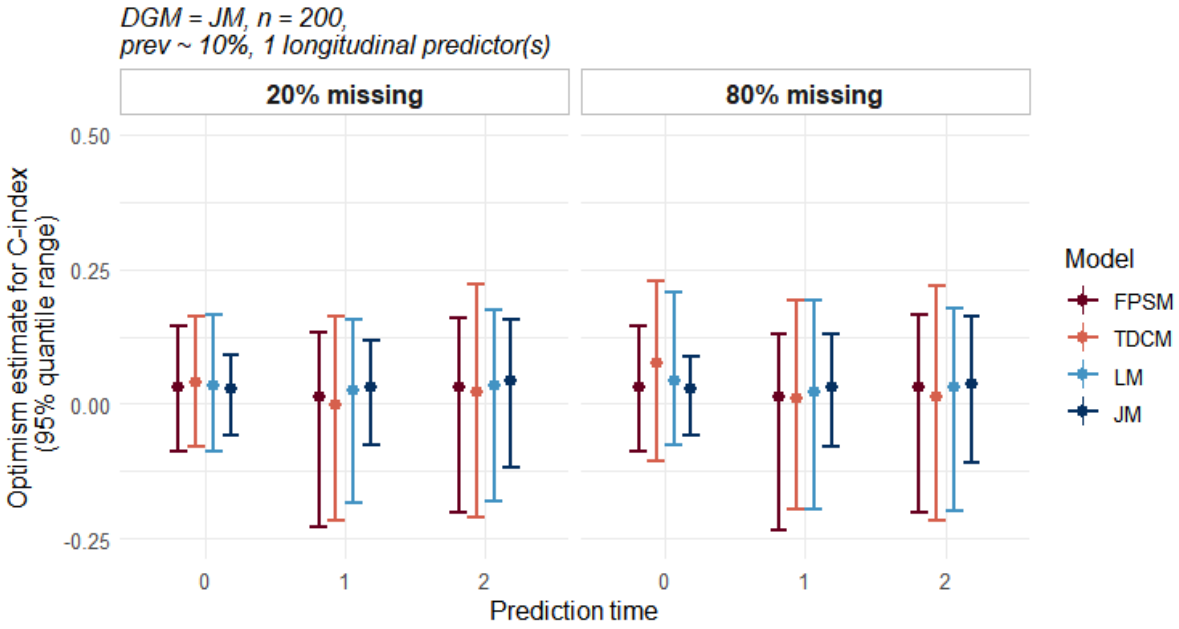

DGM = JM, n = 200,
80% missing, 3 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Optimism estimate for C-index
(95% quantile range)
0.50
0.25
0.00
-0.25
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

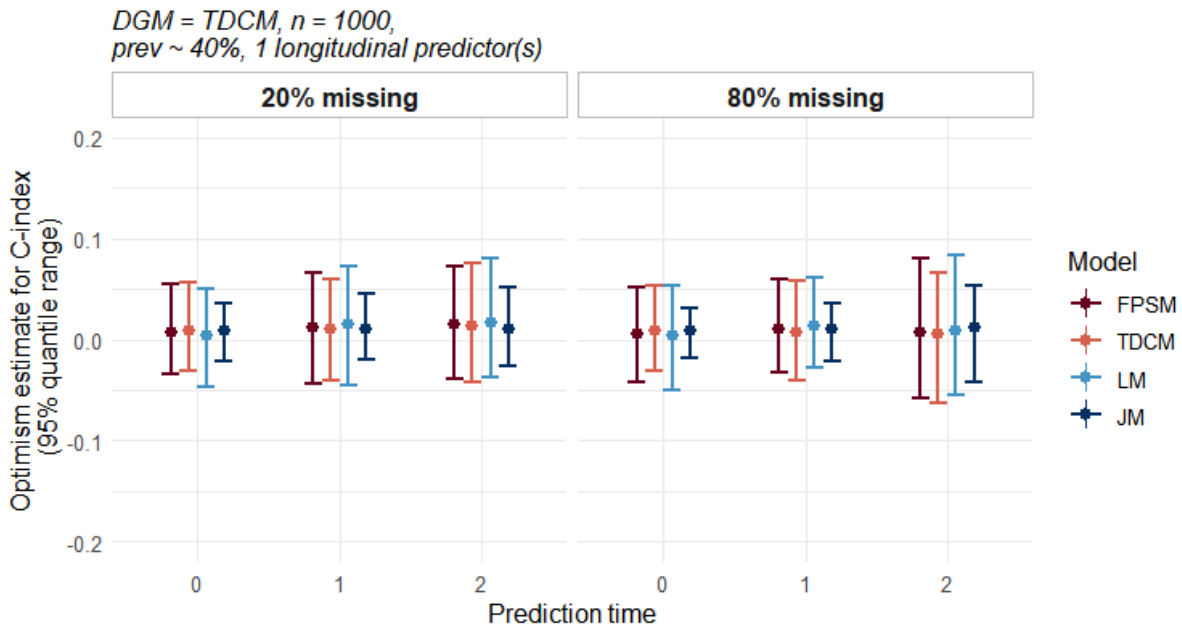

DGM = TDCM, n = 1000,
20% missing, 3 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Optimism estimate for C-index
(95% quantile range)
0.2
0.1
0.0
-0.1
-0.2
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

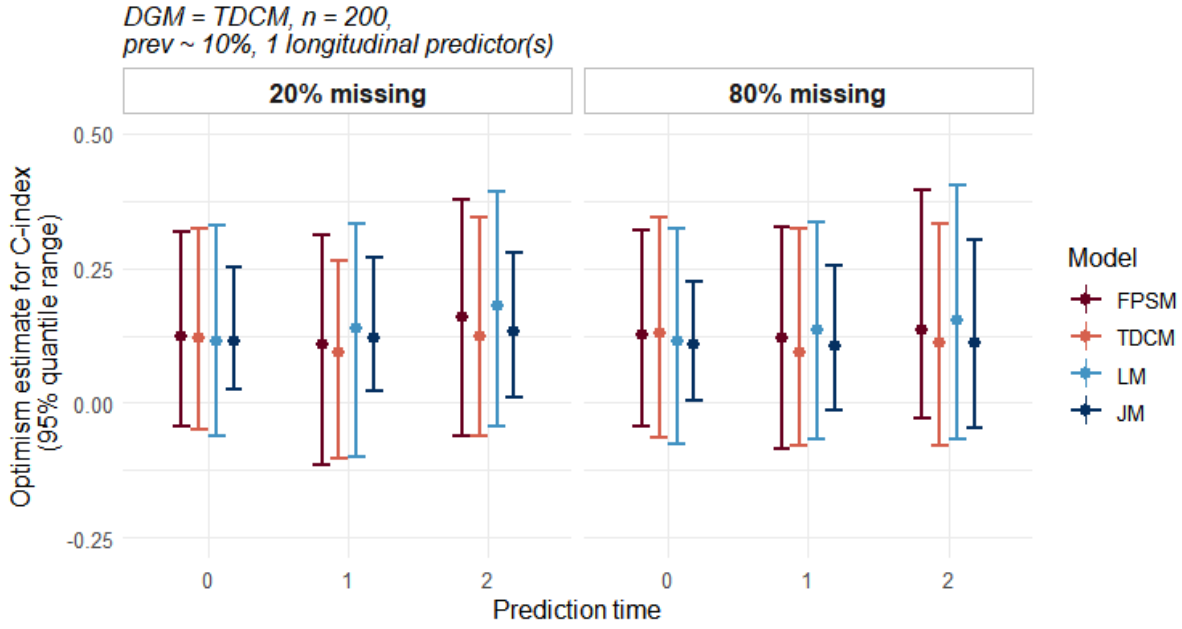


1.2.1.3. Follow-up missingness

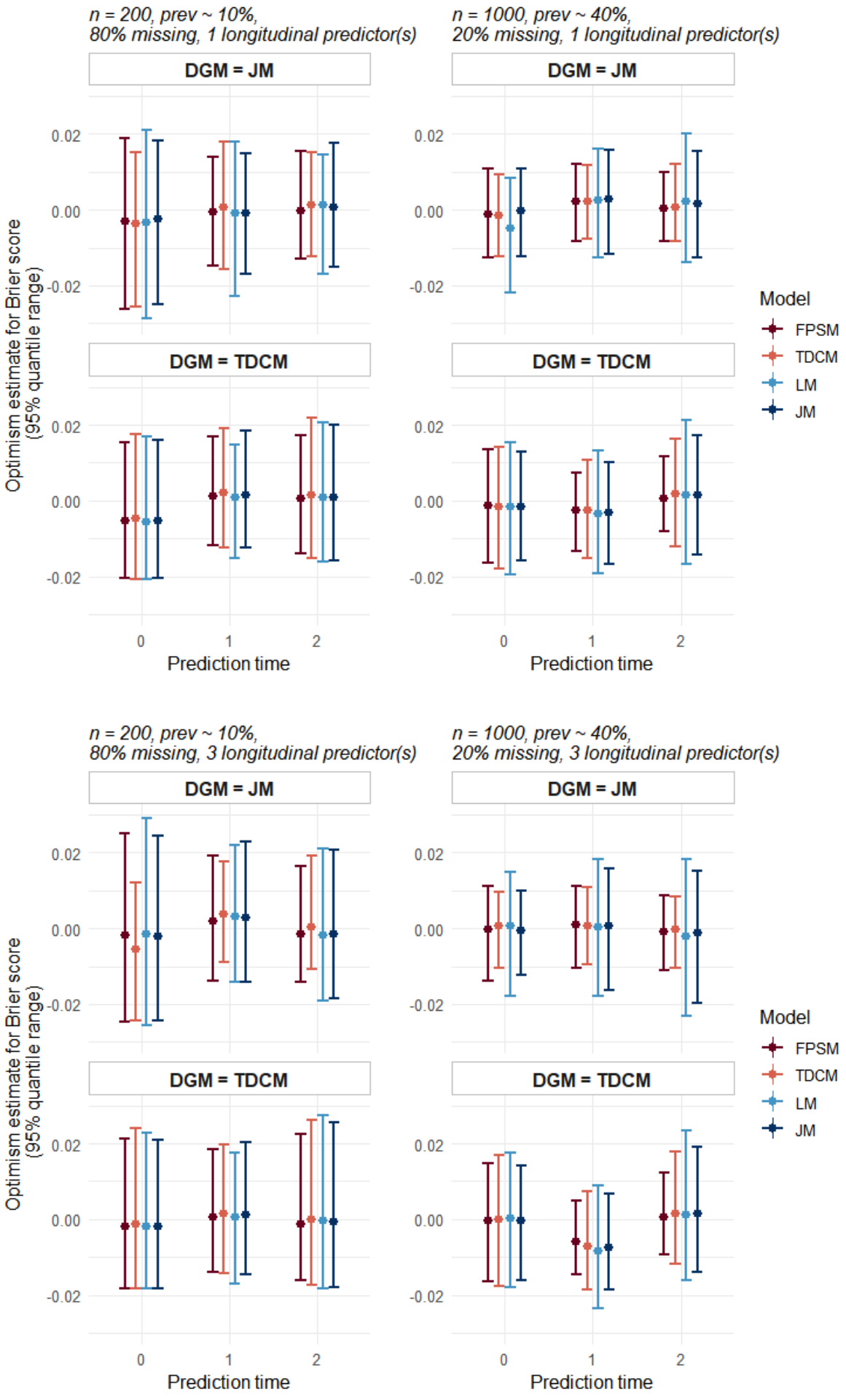




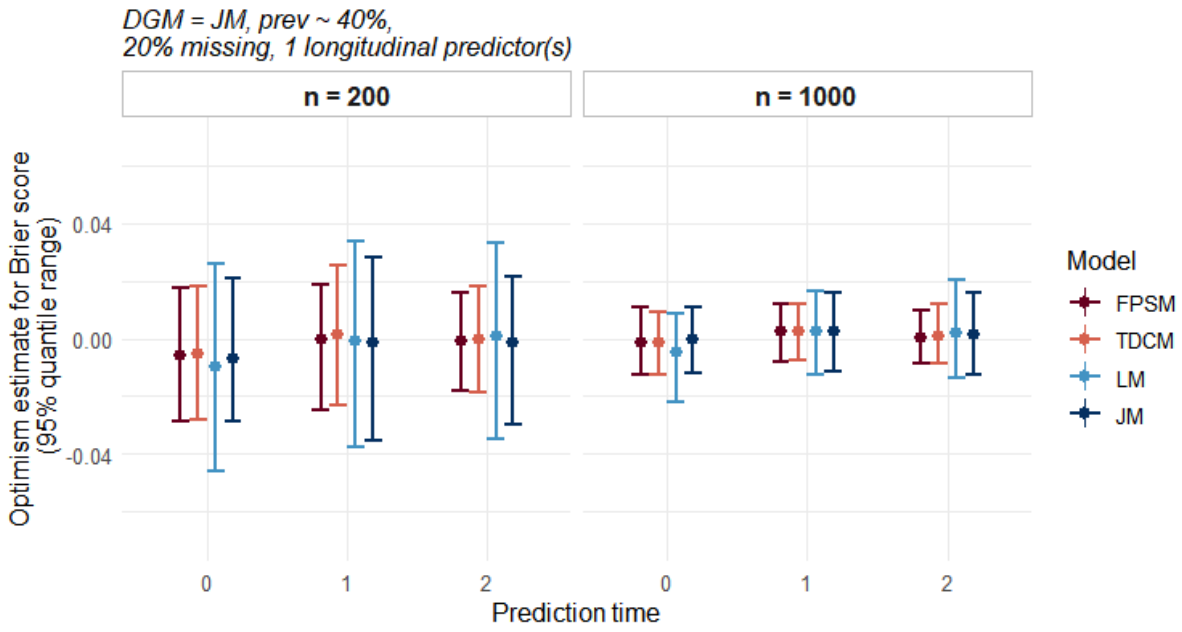

DGM = TDCM, n = 1000,
prev ~ 40%, 1 longitudinal predictor(s)
20% missing
80% missing
Optimism estimate for C-index
(95% quantile range)
0.2
0.1
0.0
-0.1
-0.2
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

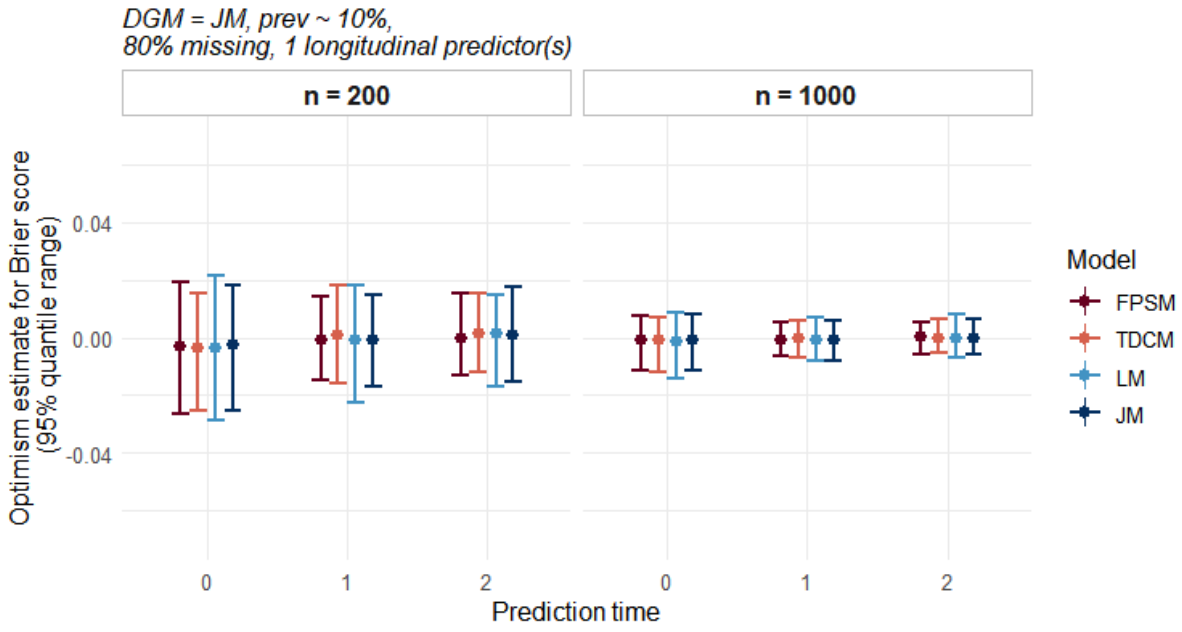

DGM = TDCM, n = 200,
prev ~ 10%, 1 longitudinal predictor(s)
20% missing
80% missing
Optimism estimate for C-index
(95% quantile range)
0.50
0.25
0.00
-0.25
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

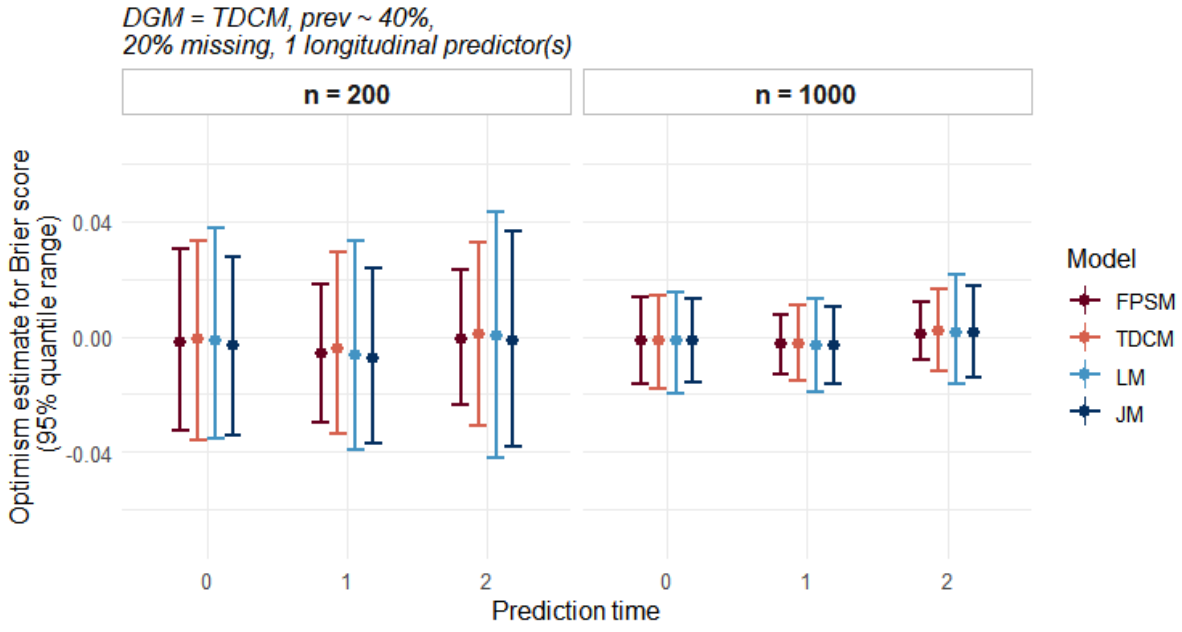
1.2.2. Overall performance

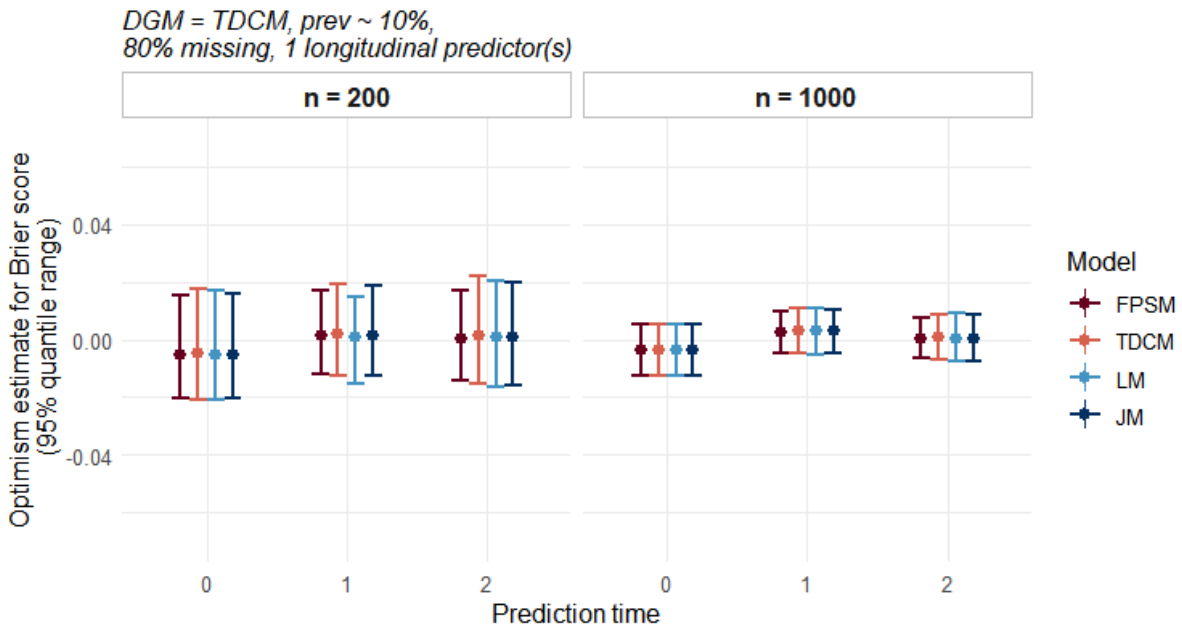


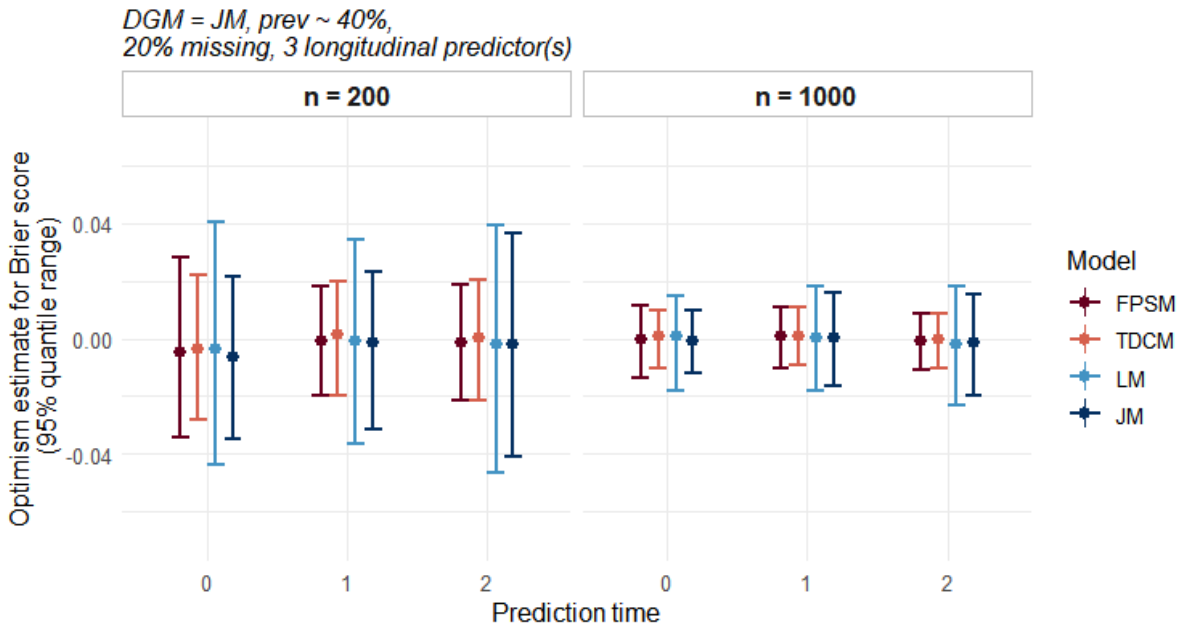
1.2.2.1. Sample size

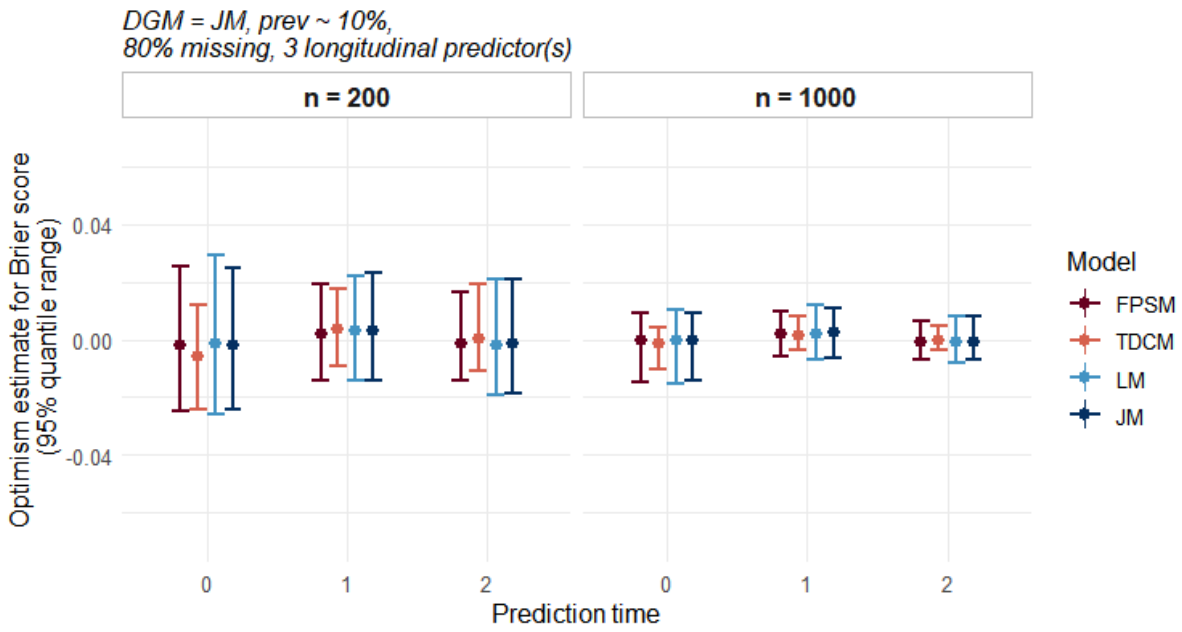


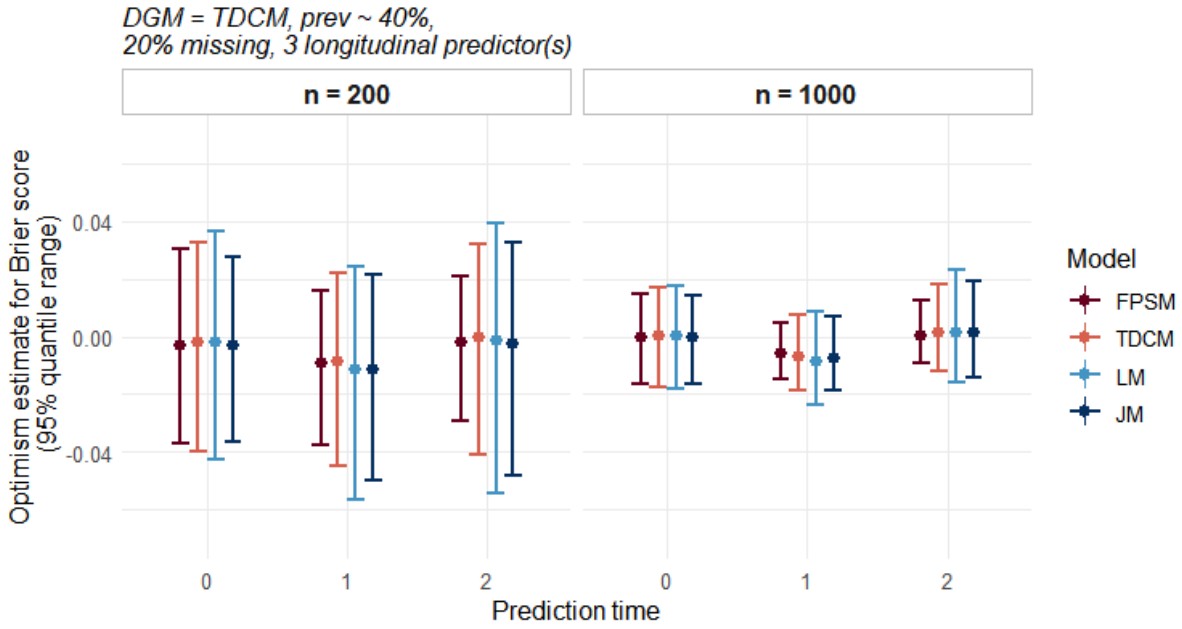


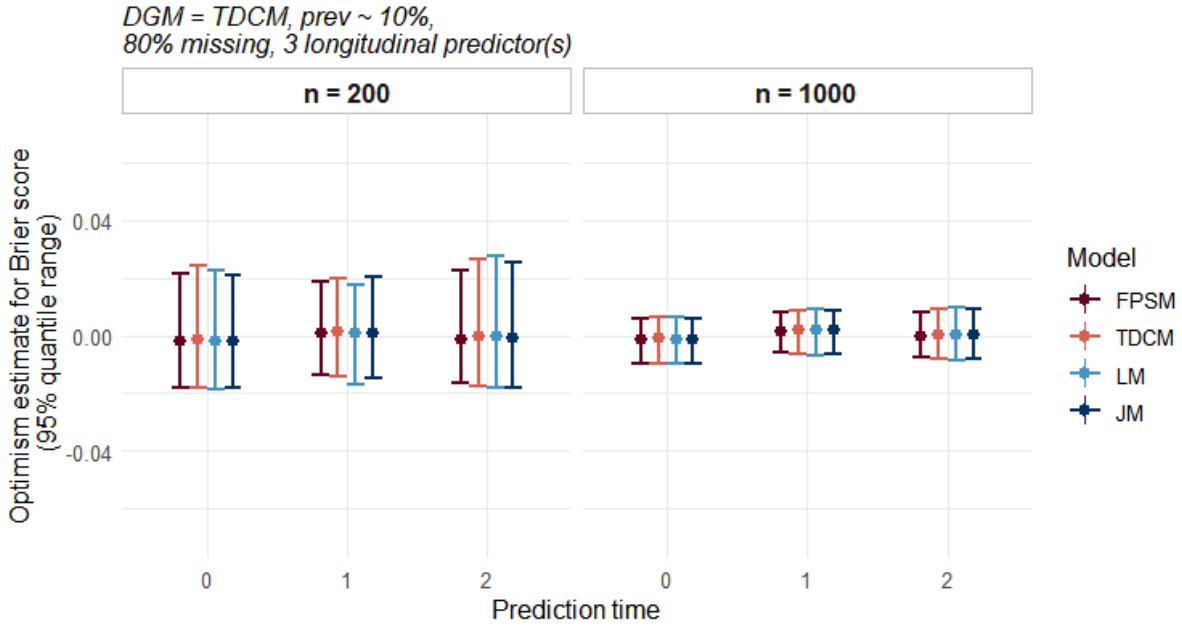



DGM = TDCM, prev ~ 10%,
80% missing, 1 longitudinal predictor(s)
n = 200
n = 1000
Optimism estimate for Brier score
(95% quantile range)
0.04
0.00
-0.04
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

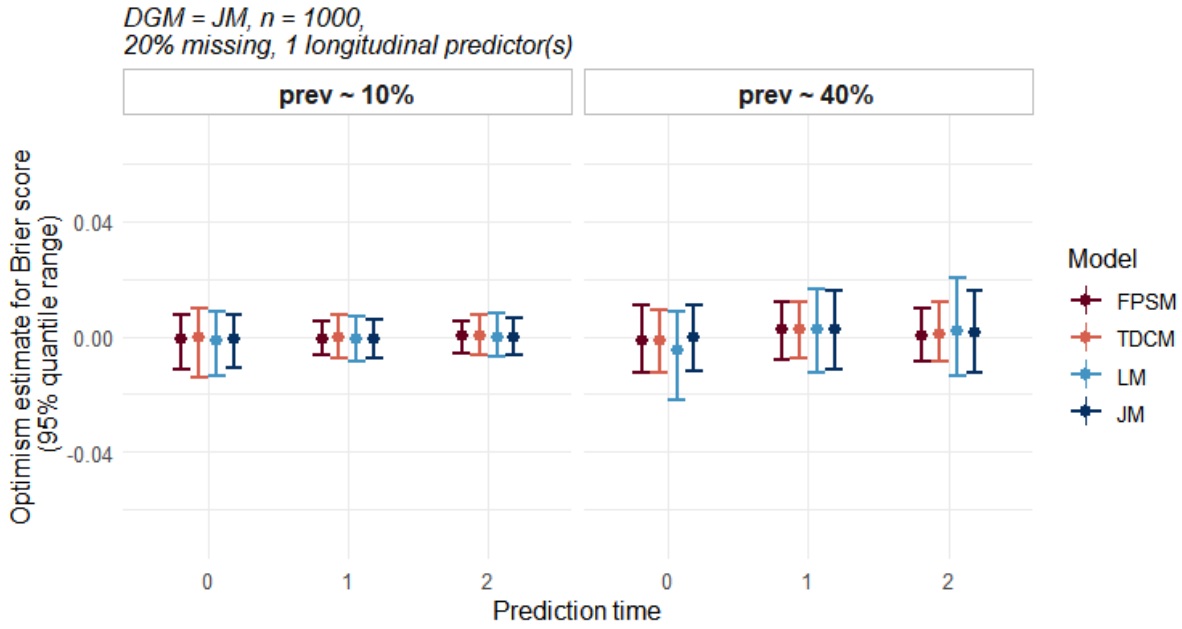

DGM = JM, prev ~ 40%,
20% missing, 3 longitudinal predictor(s)
n = 200
n = 1000
Optimism estimate for Brier score
(95% quantile range)
0.04
0.00
-0.04
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

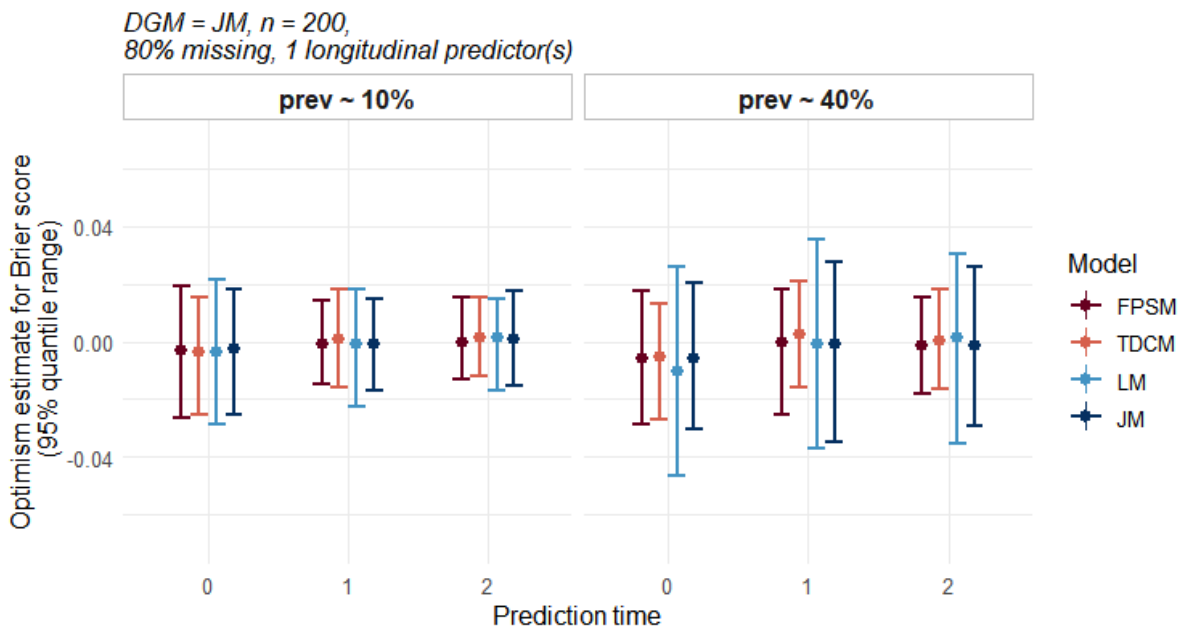

DGM = JM, prev ~ 10%,
80% missing, 3 longitudinal predictor(s)
n = 200
n = 1000
Optimism estimate for Brier score
(95% quantile range)
0.04
0.00
-0.04
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

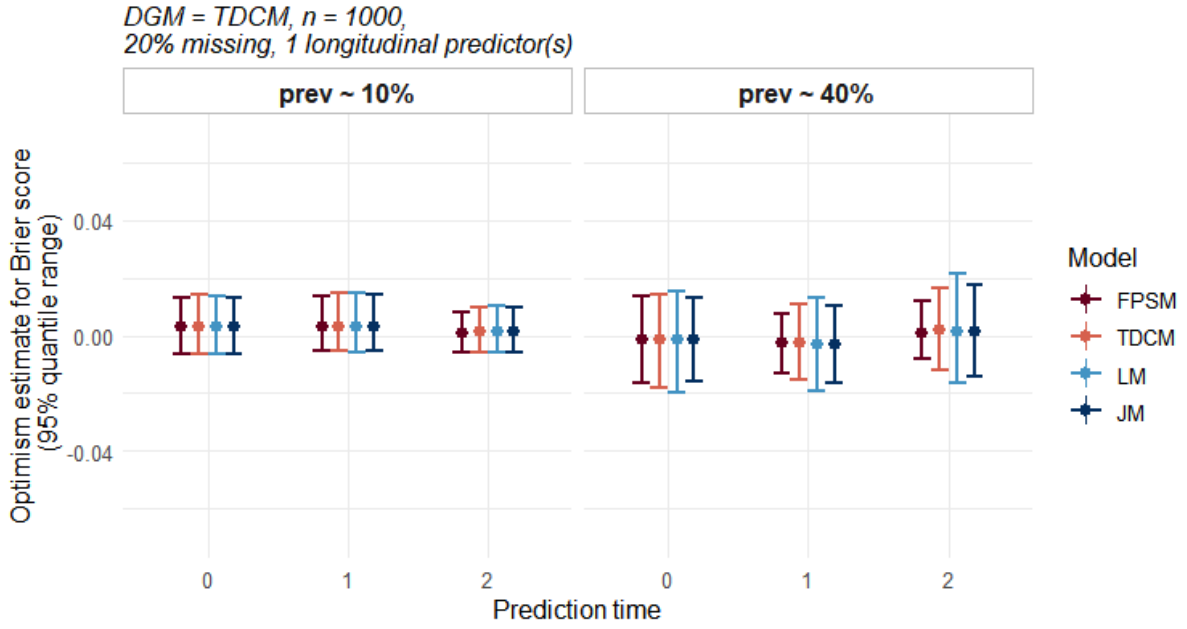


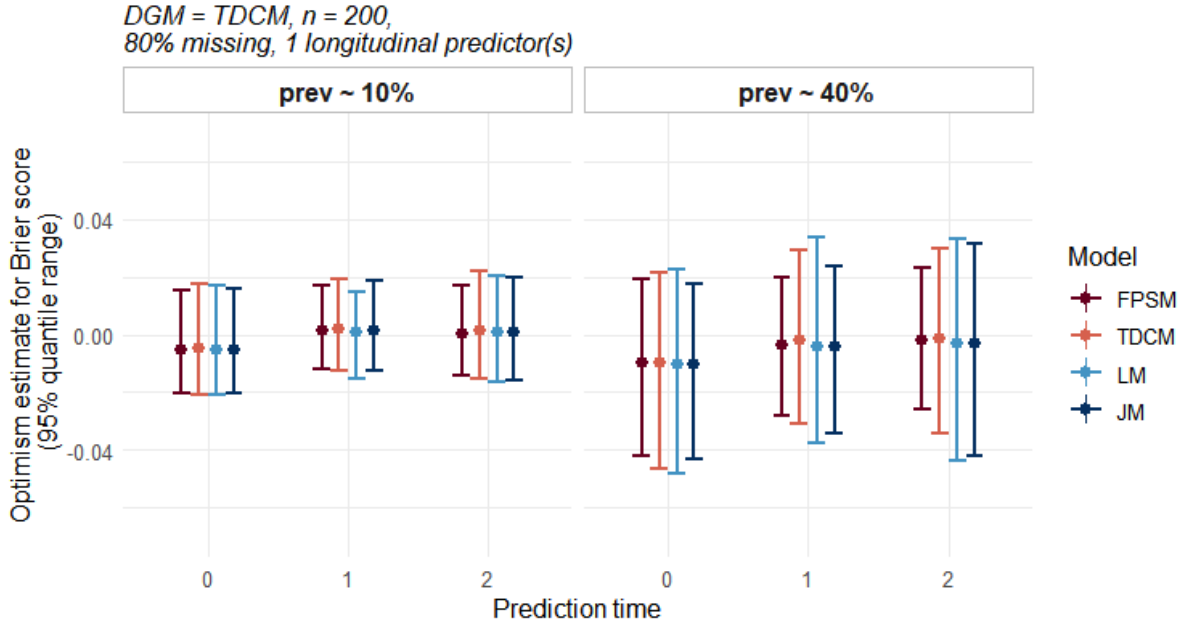


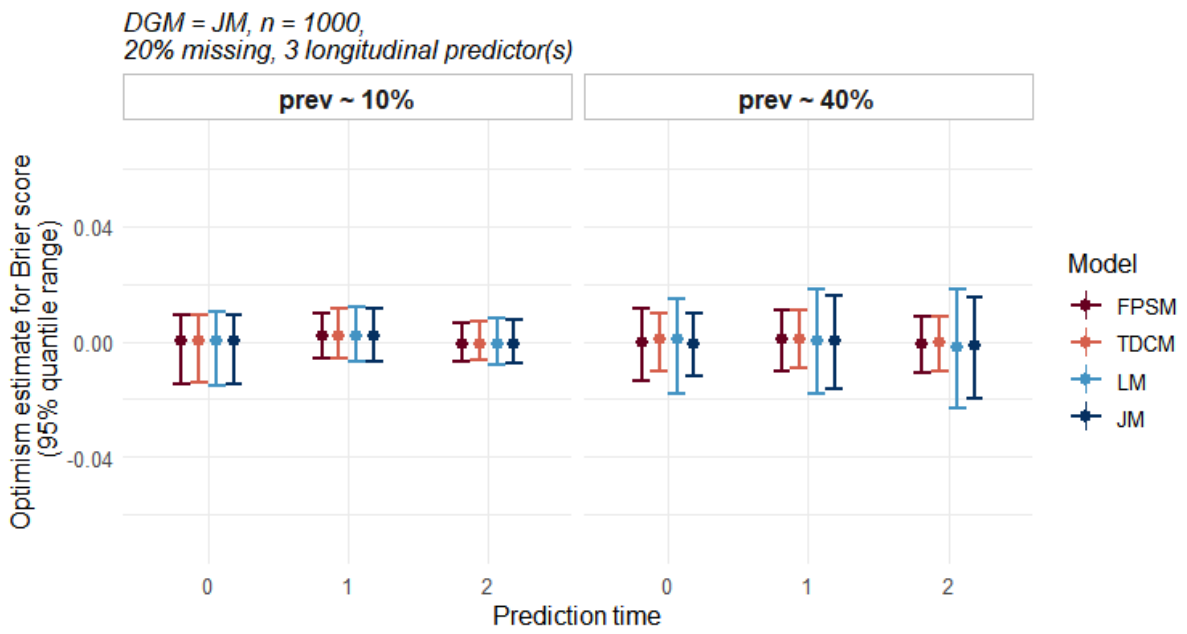
1.2.2.2. Event prevalence

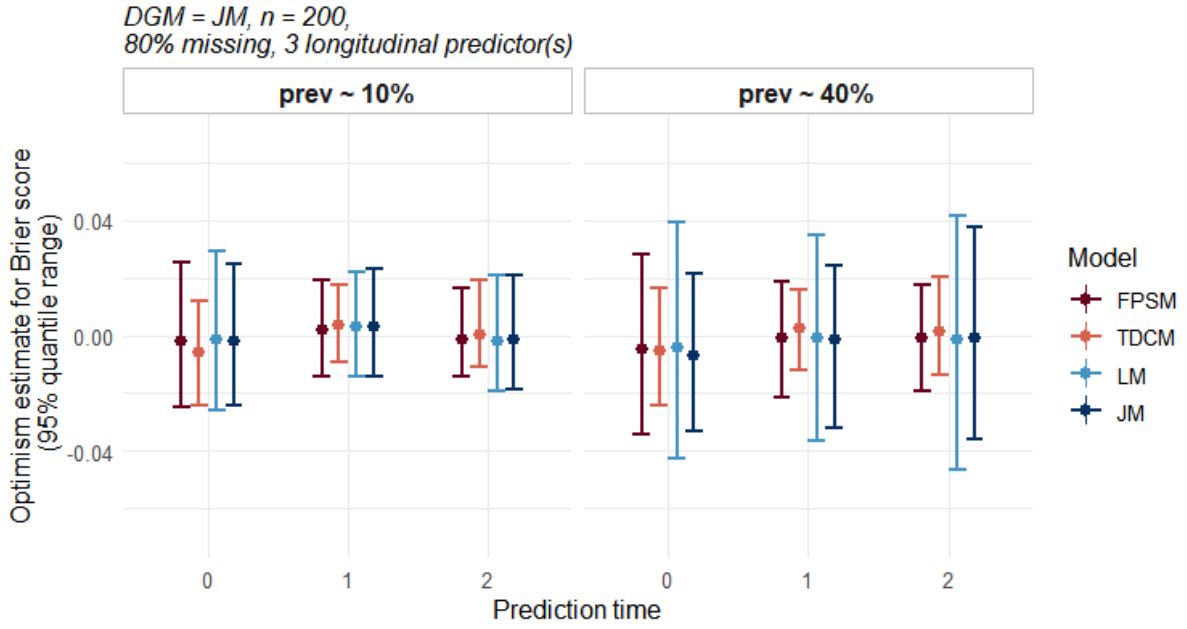


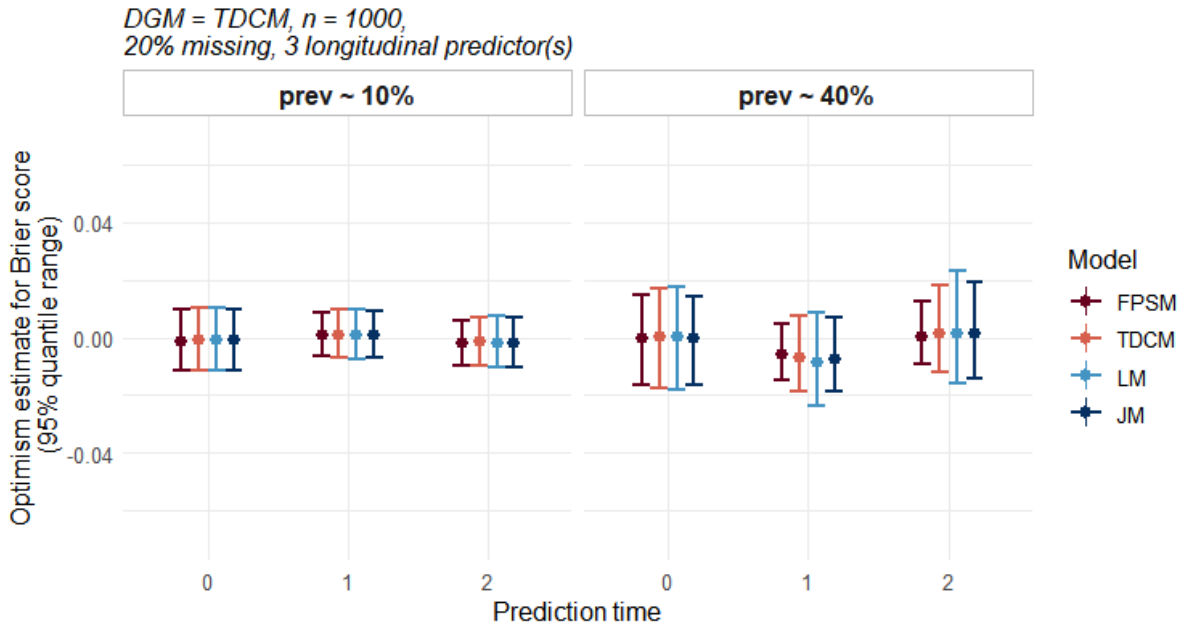

DGM = JM, n = 200,
80% missing, 1 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Optimism estimate for Brier score
(95% quantile range)
0.04
0.00
-0.04
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

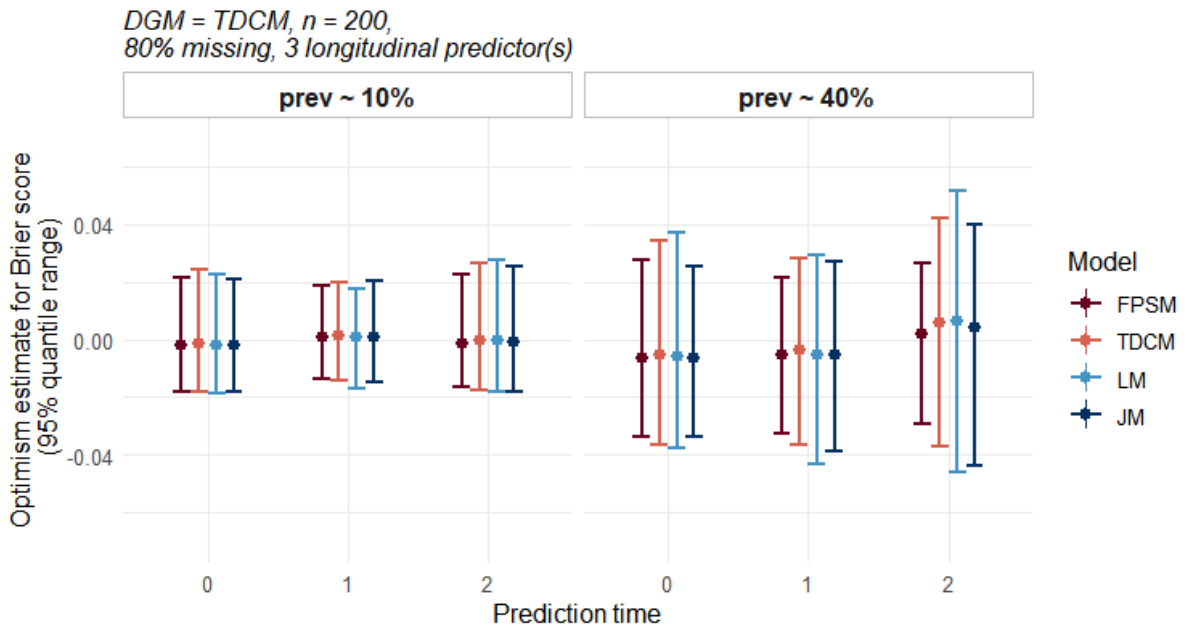

DGM = TDCM, n = 1000,
20% missing, 1 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Optimism estimate for Brier score
(95% quantile range)
0.04
0.00
-0.04
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM


DGM = TDCM, n = 200,
80% missing, 1 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Optimism estimate for Brier score
(95% quantile range)
0.04
0.00
-0.04
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

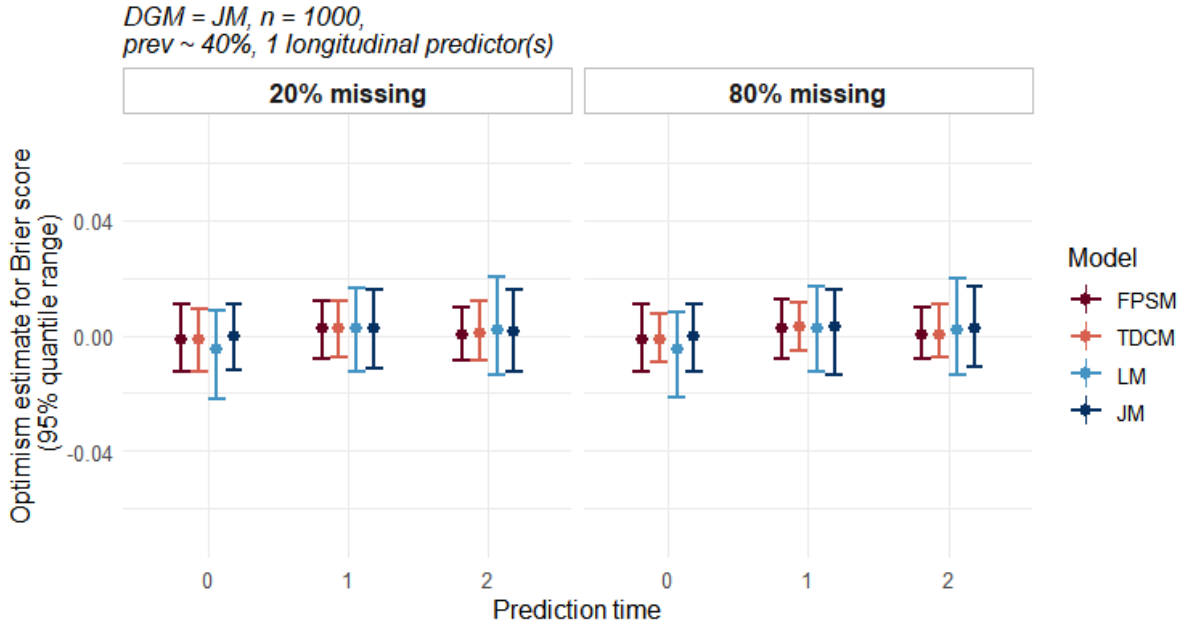

DGM = JM, n = 1000,
20% missing, 3 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Optimism estimate for Brier score
(95% quantile range)
0.04
0.00
-0.04
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

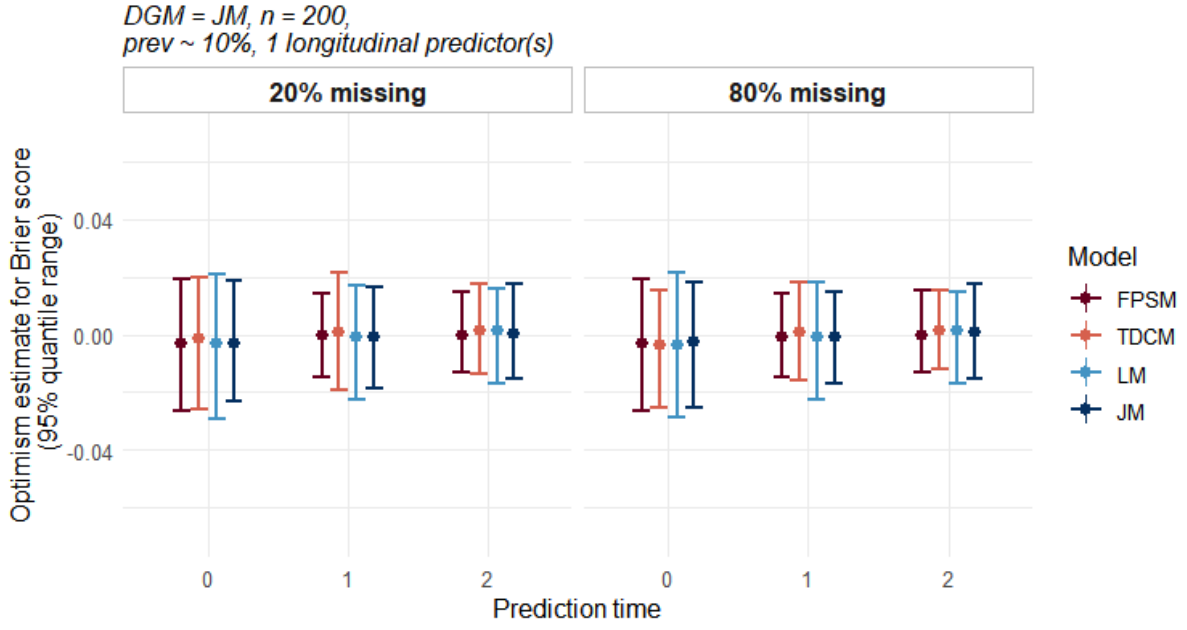

DGM = JM, n = 200,
80% missing, 3 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Optimism estimate for Brier score
(95% quantile range)
0.04
0.00
-0.04
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM


DGM = TDCM, n = 1000,
20% missing, 3 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Optimism estimate for Brier score
(95% quantile range)
0.04
0.00
-0.04
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

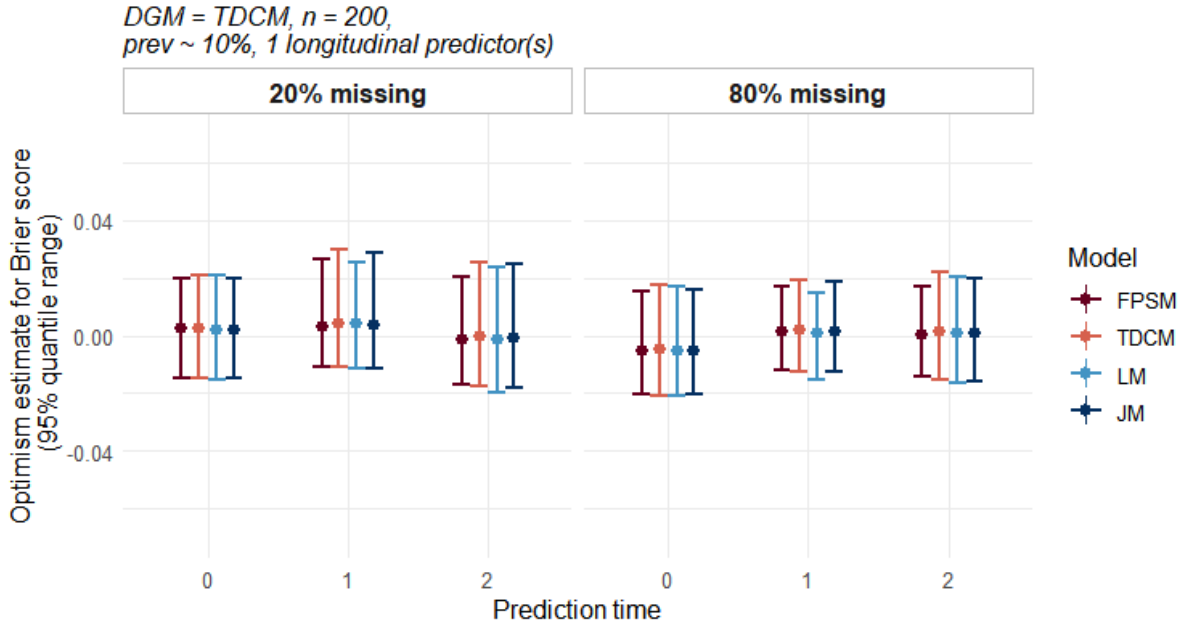


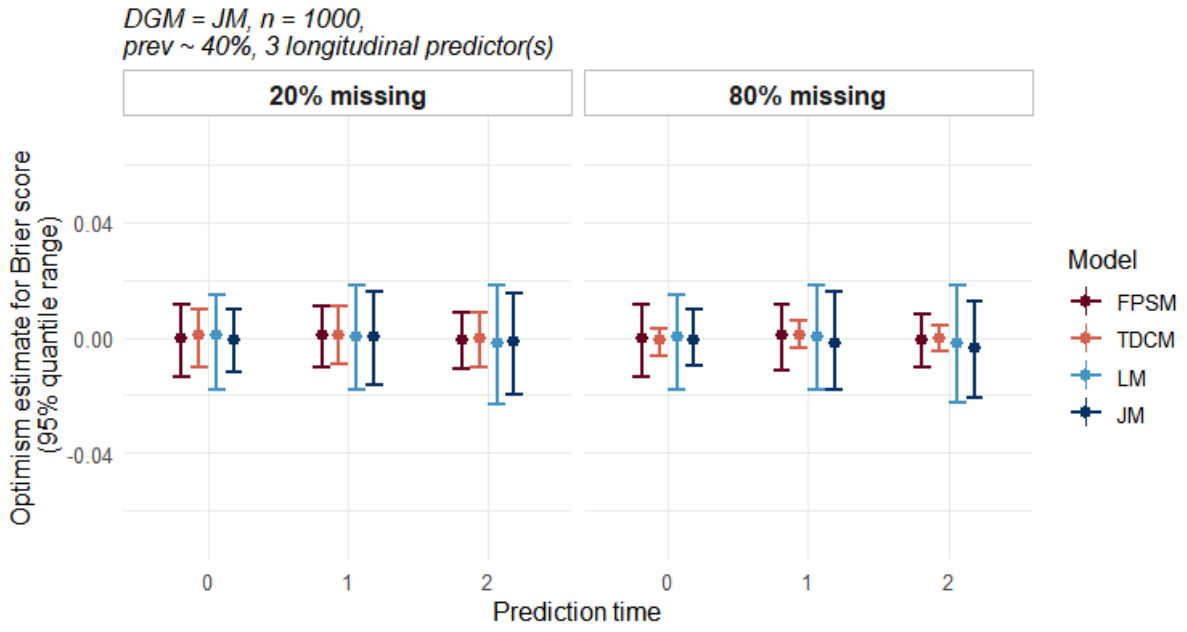
1.2.2.3. Follow-up missingness

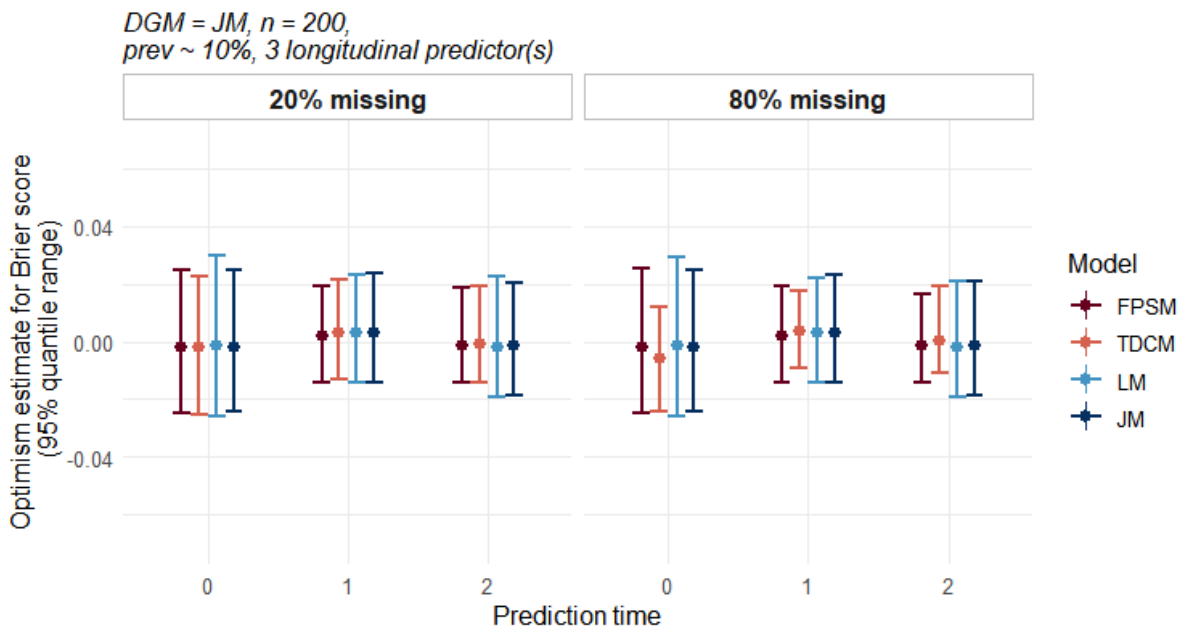


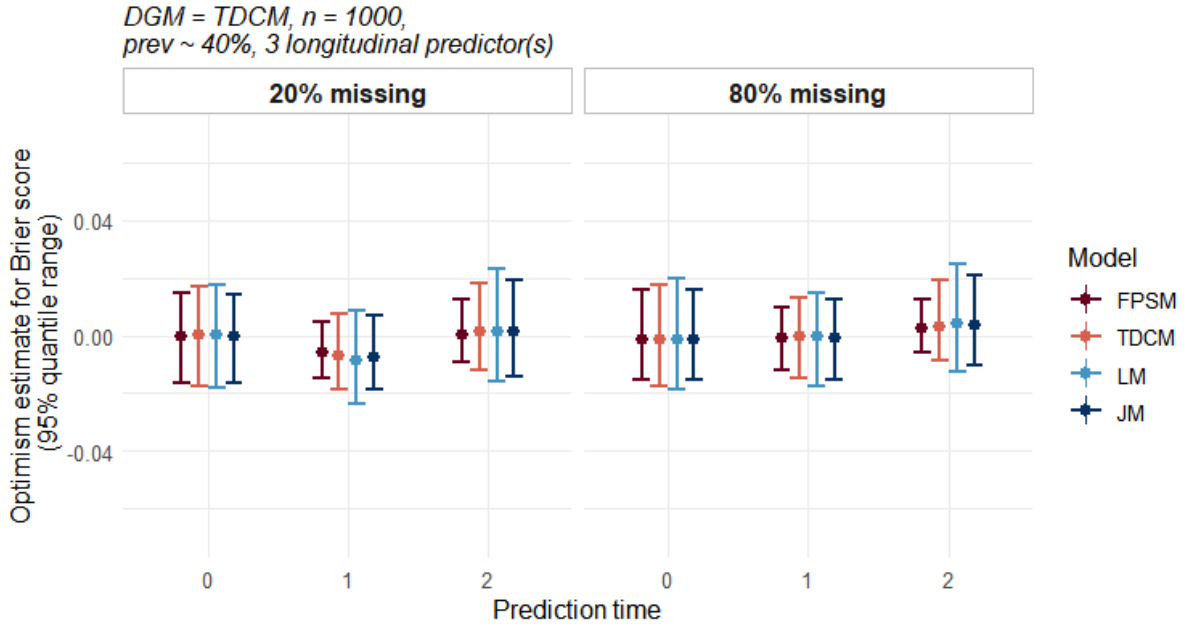


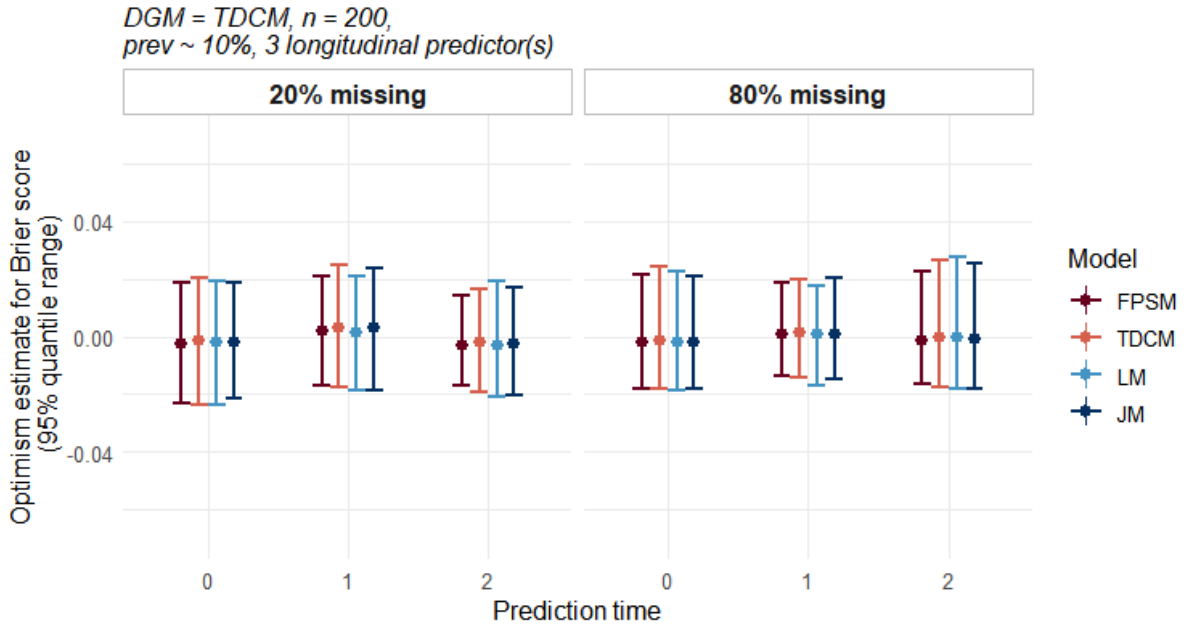

DGM = TDCM, n = 1000,
prev ~ 40%, 1 longitudinal predictor(s)
20% missing
80% missing
Optimism estimate for Brier score
(95% quantile range)
0.04
0.00
-0.04
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM


DGM = TDCM, n = 200,
prev ~ 10%, 1 longitudinal predictor(s)
20% missing
80% missing
Optimism estimate for Brier score
(95% quantile range)
0.04
0.00
-0.04
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

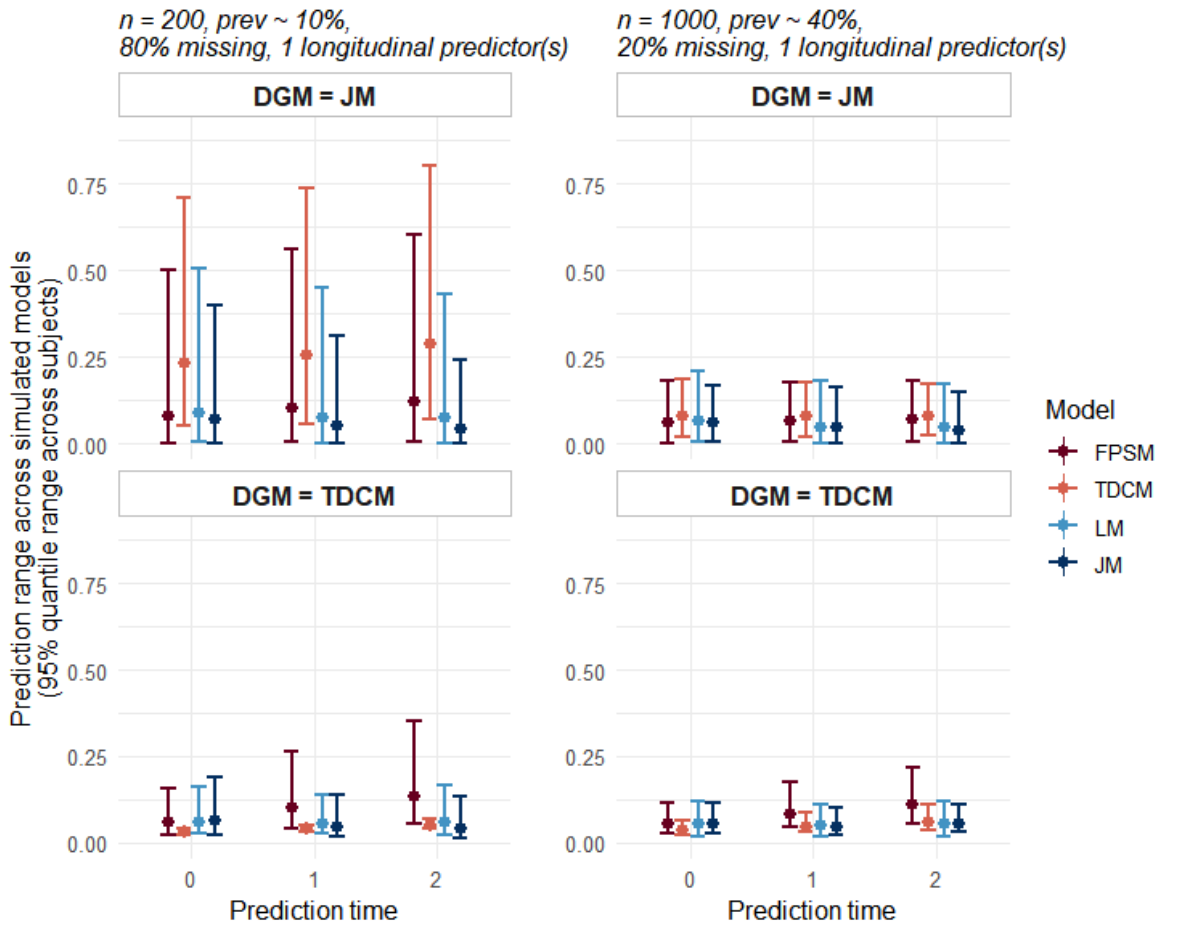

DGM = JM, n = 1000,
prev ~ 40%, 3 longitudinal predictor(s)
20% missing
80% missing
Optimism estimate for Brier score
(95% quantile range)
0.04
0.00
-0.04
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

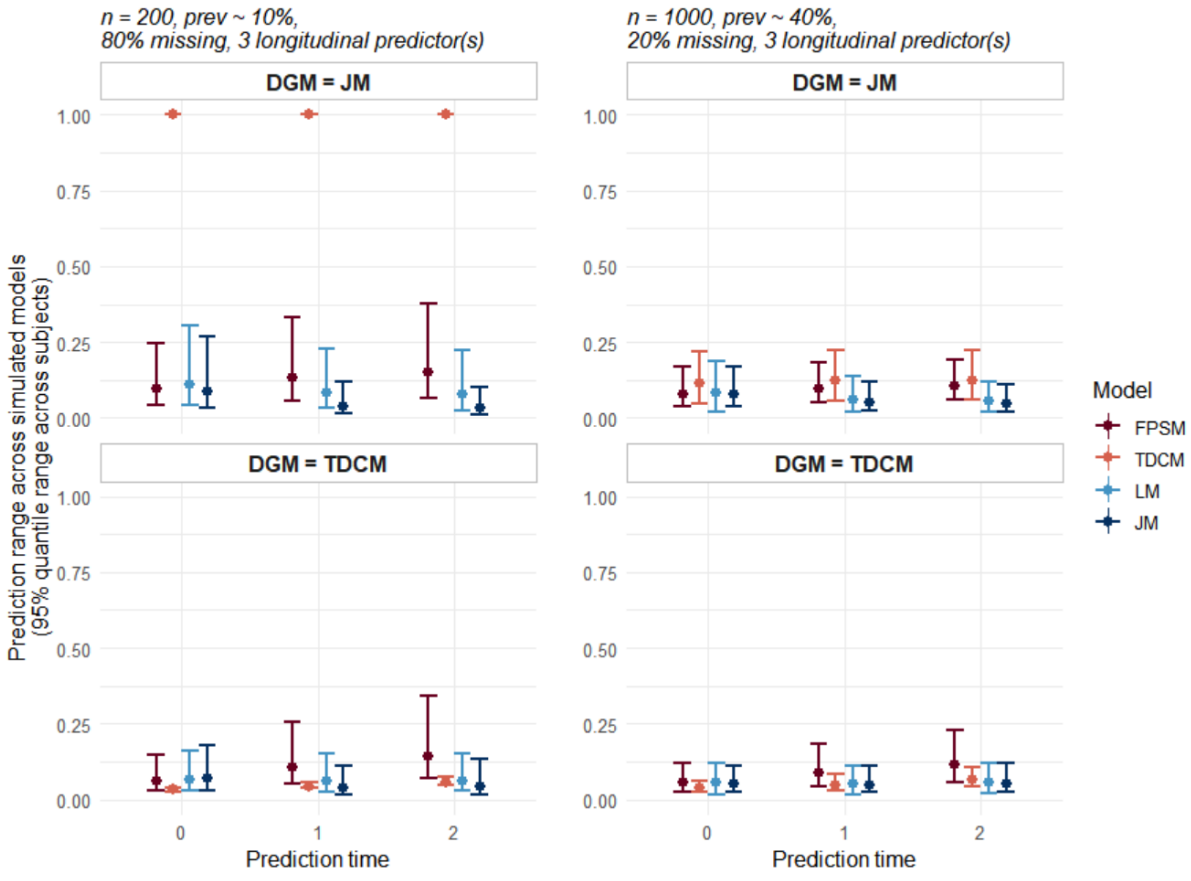

DGM = JM, n = 200,
prev ~ 10%, 3 longitudinal predictor(s)
20% missing
80% missing
Optimism estimate for Brier score
(95% quantile range)
0.04
0.00
-0.04
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM


DGM = TDCM, n = 1000,
prev ~ 40%, 3 longitudinal predictor(s)
20% missing
80% missing
Optimism estimate for Brier score
(95% quantile range)
0.04
0.00
-0.04
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

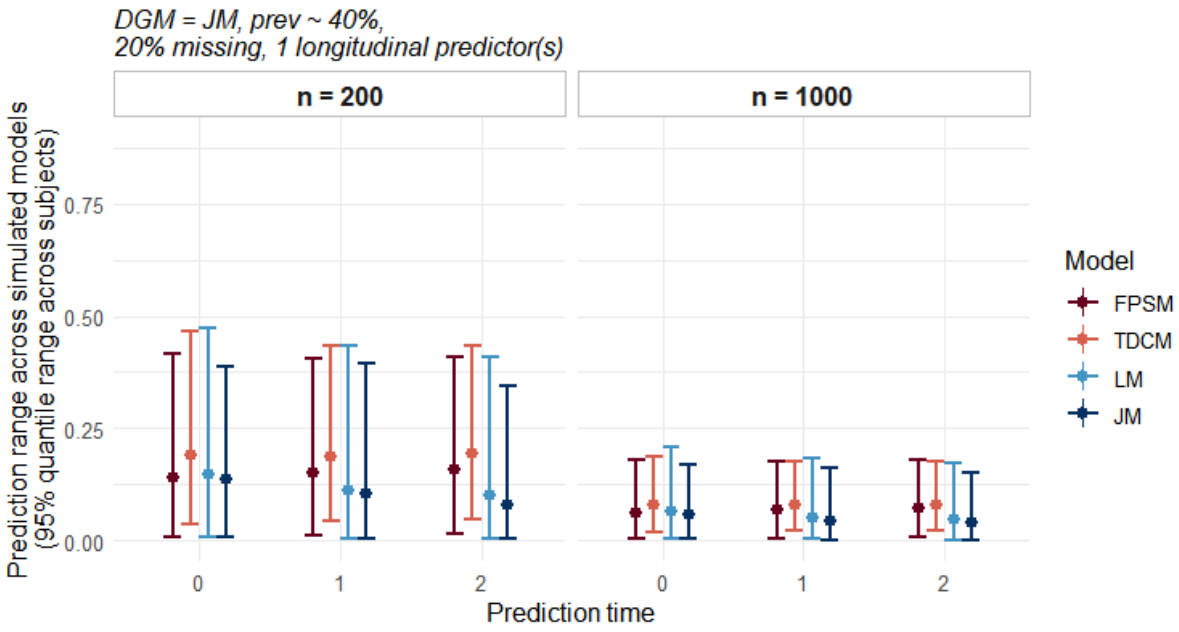

DGM = TDCM, n = 200,
prev ~ 10%, 3 longitudinal predictor(s)
20% missing
80% missing
Optimism estimate for Brier score
(95% quantile range)
0.04
0.00
-0.04
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

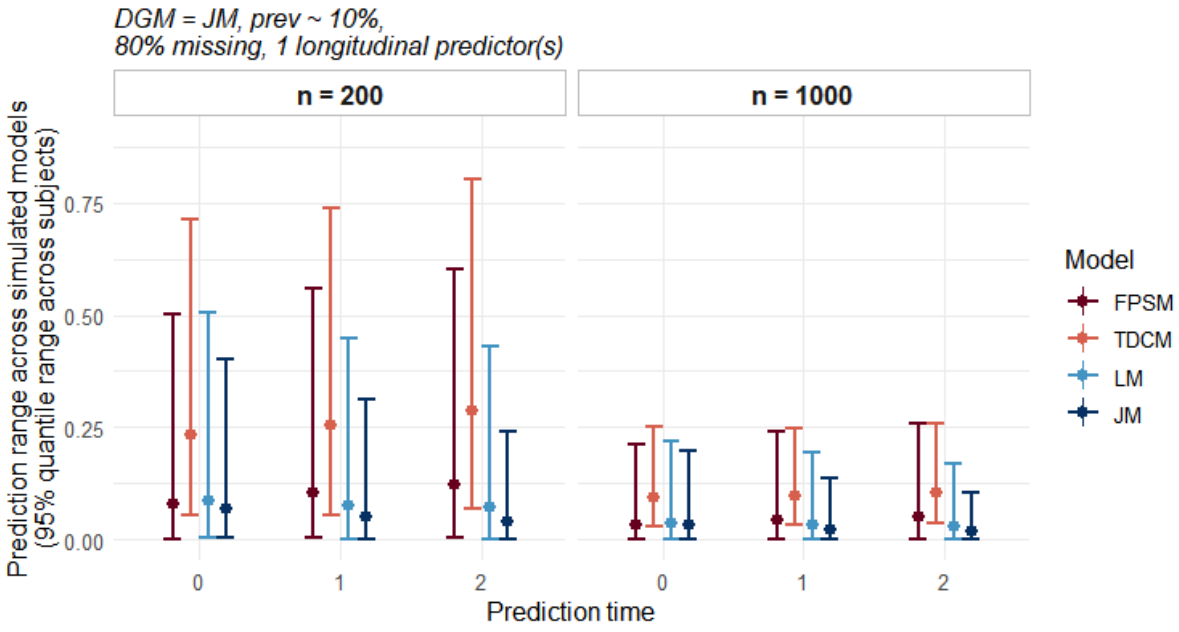
1.3. Prediction stability

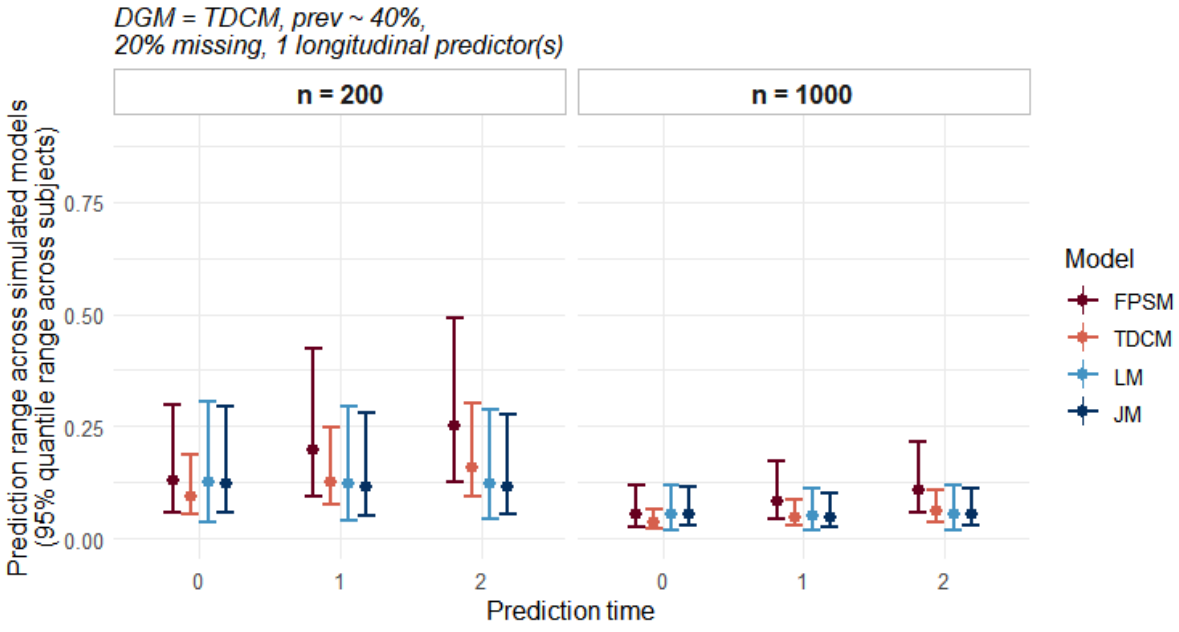


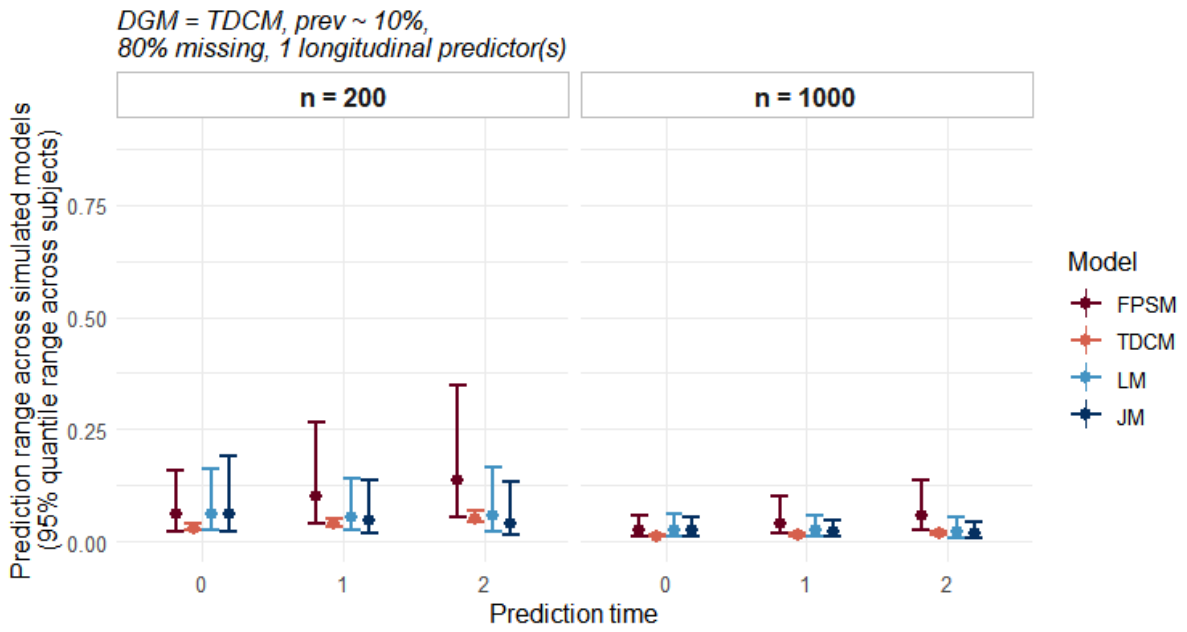


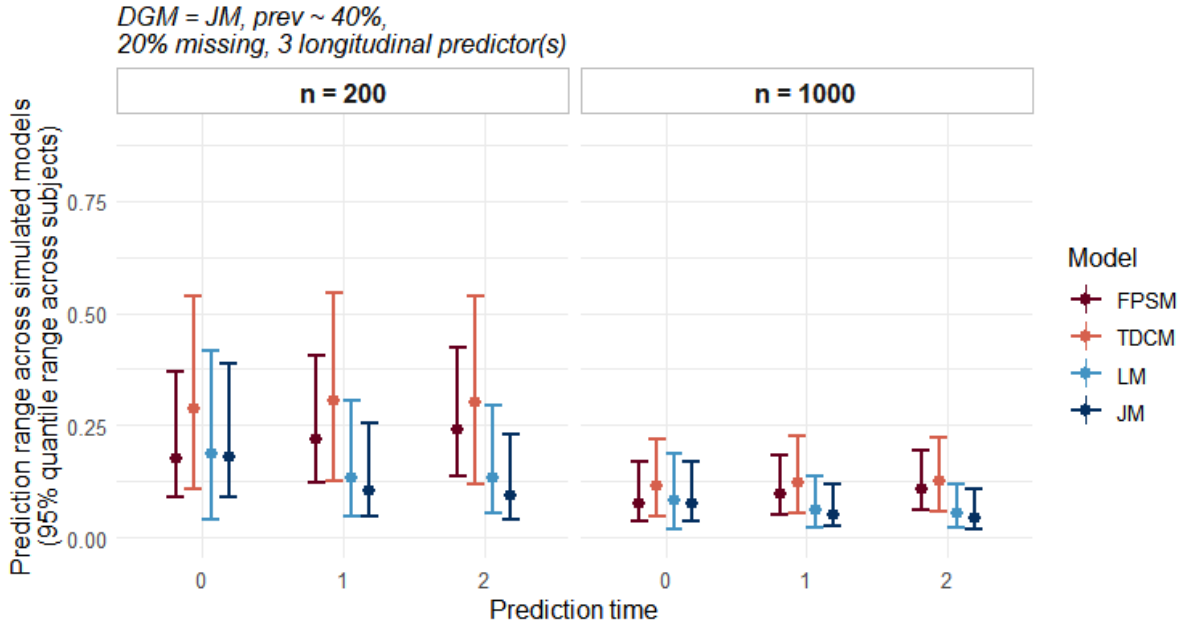
1.3.1. Sample size

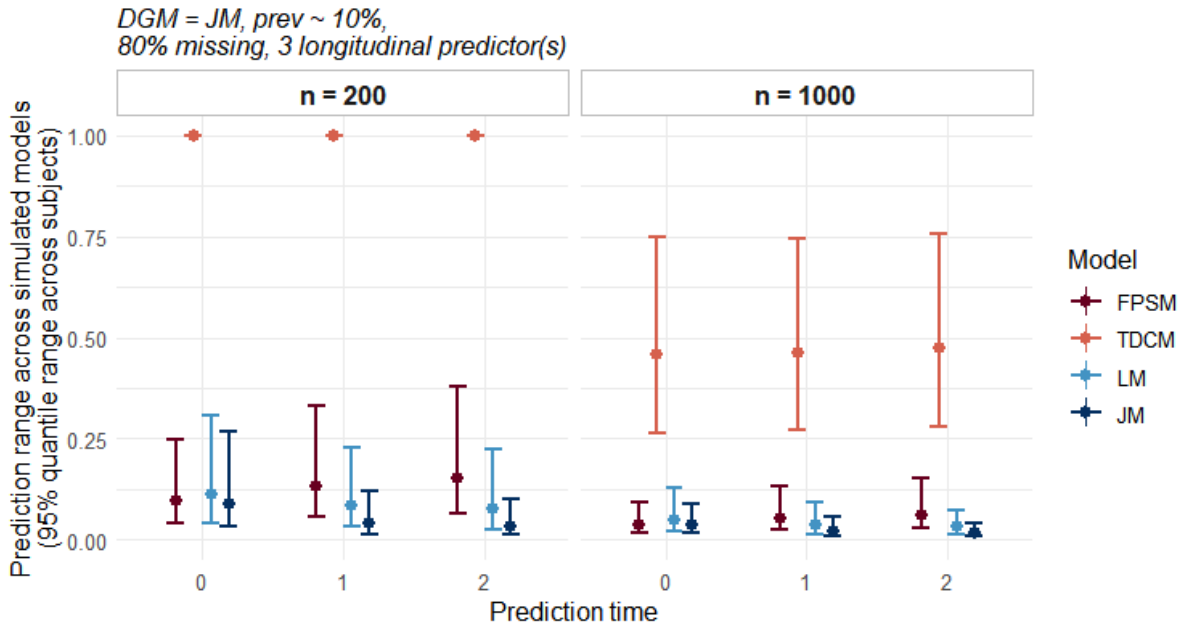


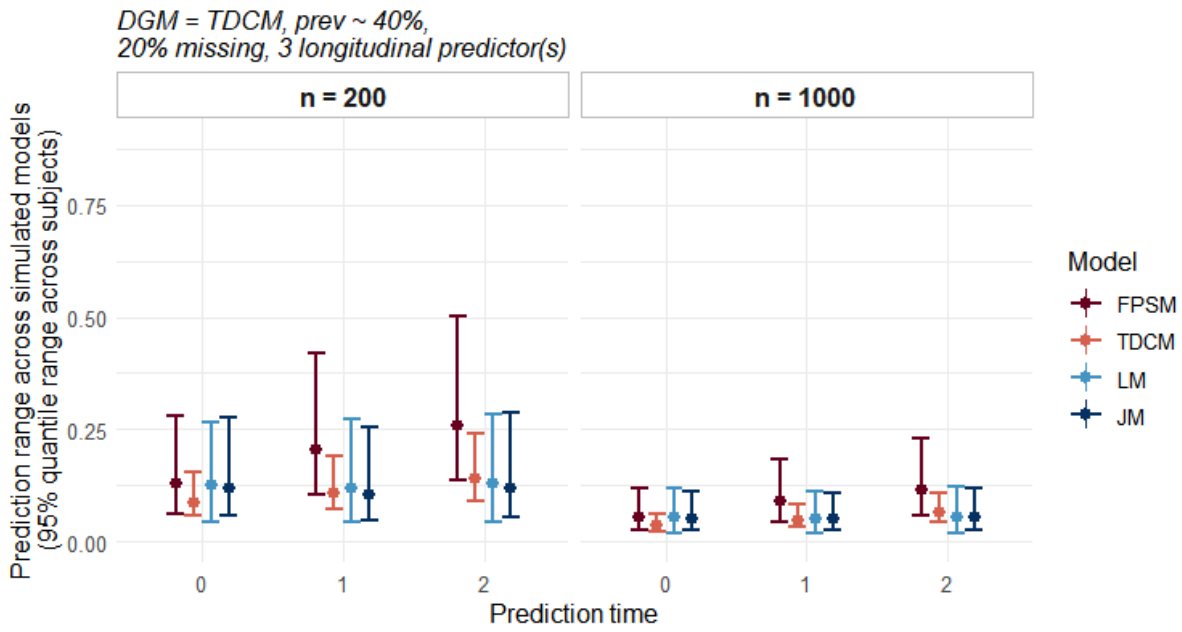




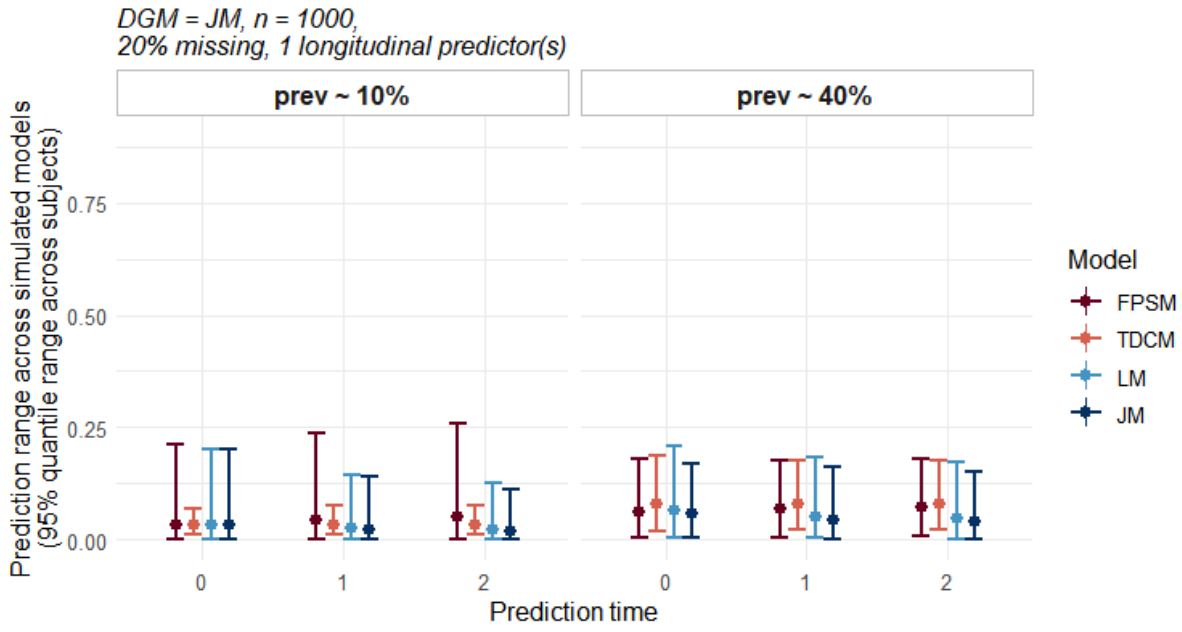

DGM = TDCM, prev ~ 10%,
80% missing, 1 longitudinal predictor(s)
n = 200
n = 1000
Prediction range across simulated models
(95% quantile range across subjects)
0.00
0.25
0.50
0.75
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

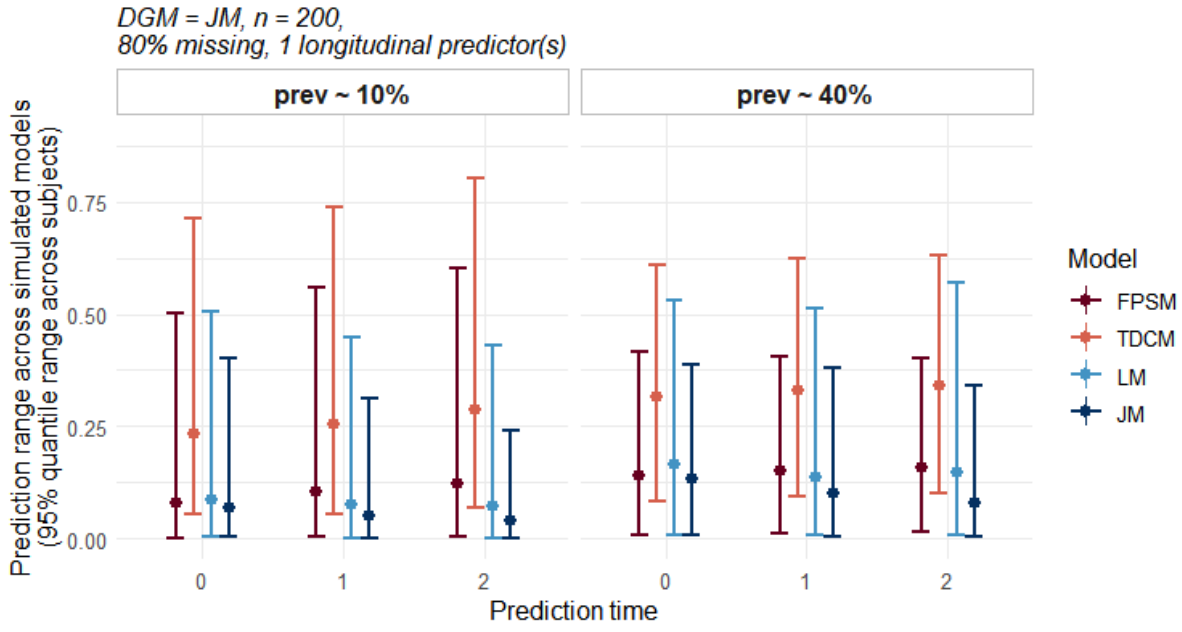

DGM = JM, prev ~ 40%,
20% missing, 3 longitudinal predictor(s)
n = 200
n = 1000
Prediction range across simulated models
(95% quantile range across subjects)
0.00
0.25
0.50
0.75
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

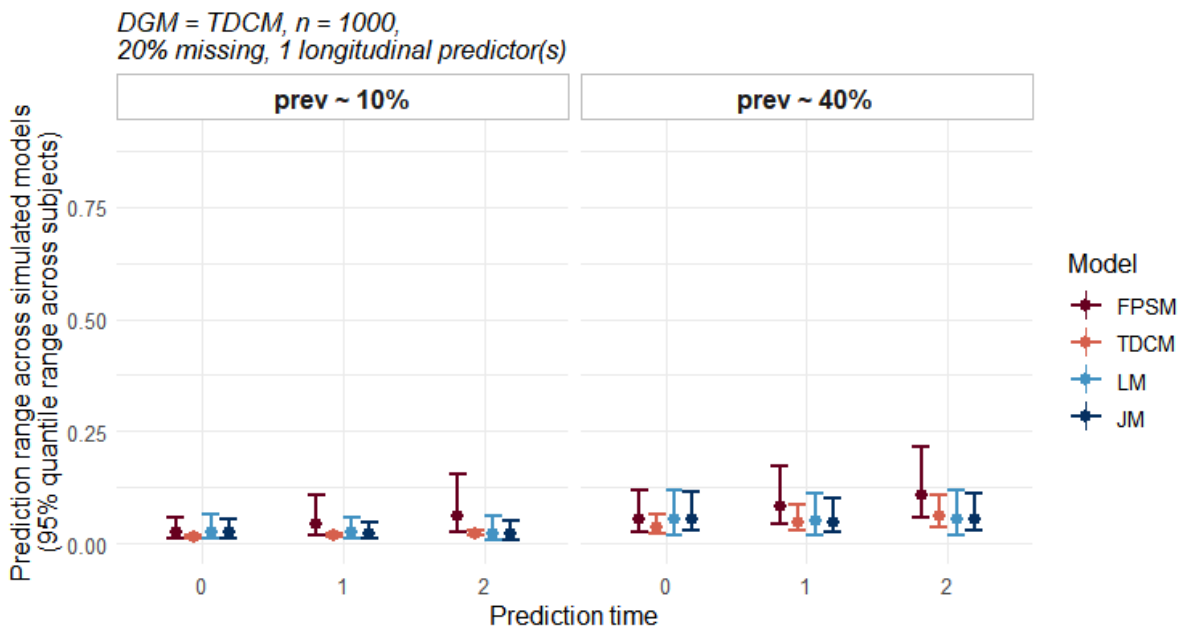

DGM = JM, prev ~ 10%,
80% missing, 3 longitudinal predictor(s)
n = 200
n = 1000
Prediction range across simulated models
(95% quantile range across subjects)
0.00
0.25
0.50
0.75
1.00
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

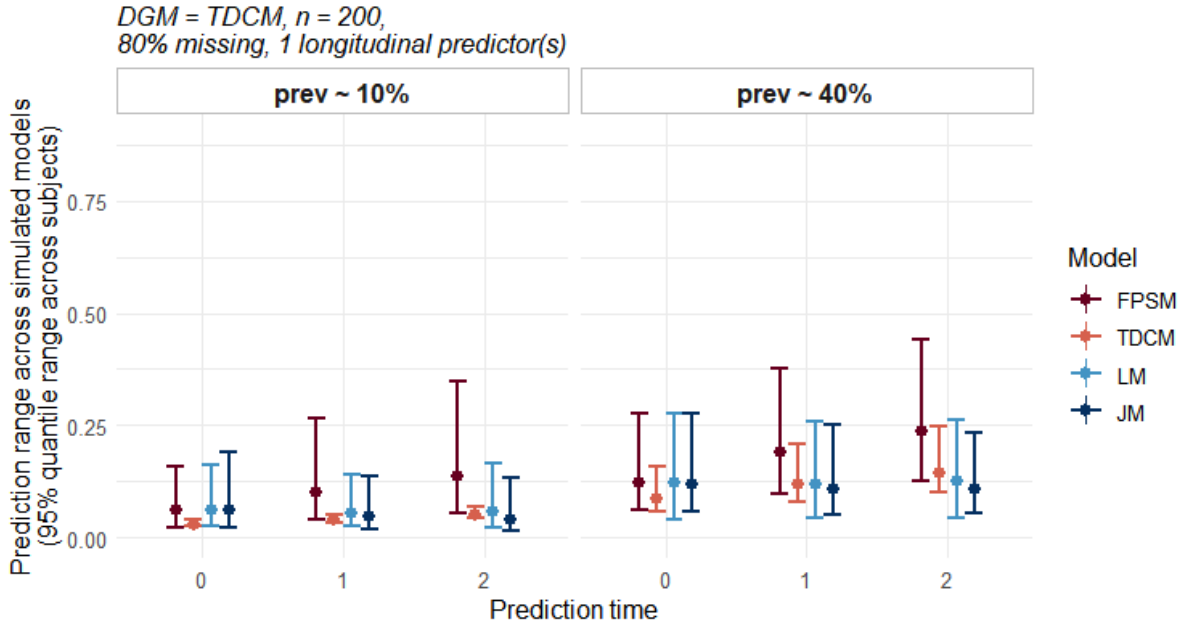


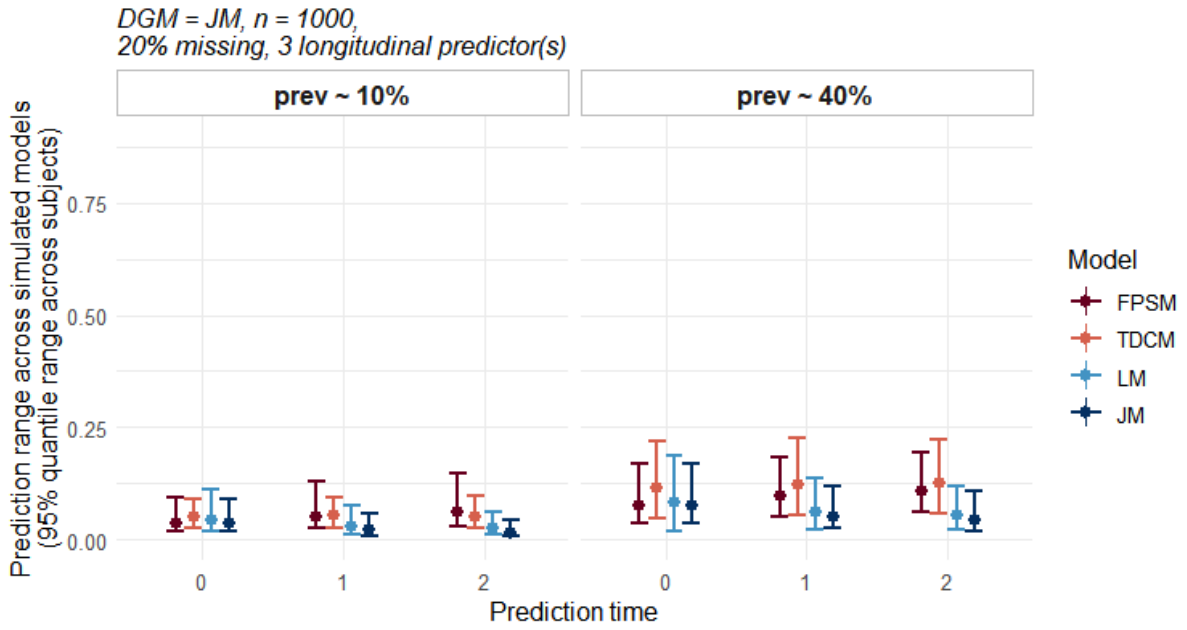
1.3.2. Event prevalence

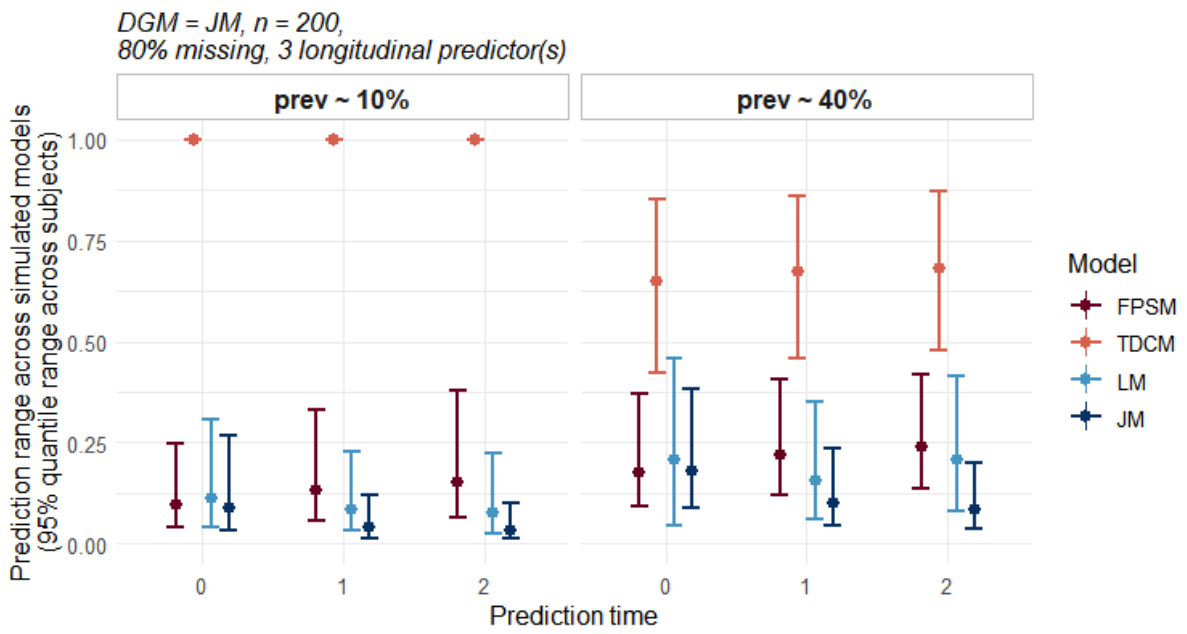


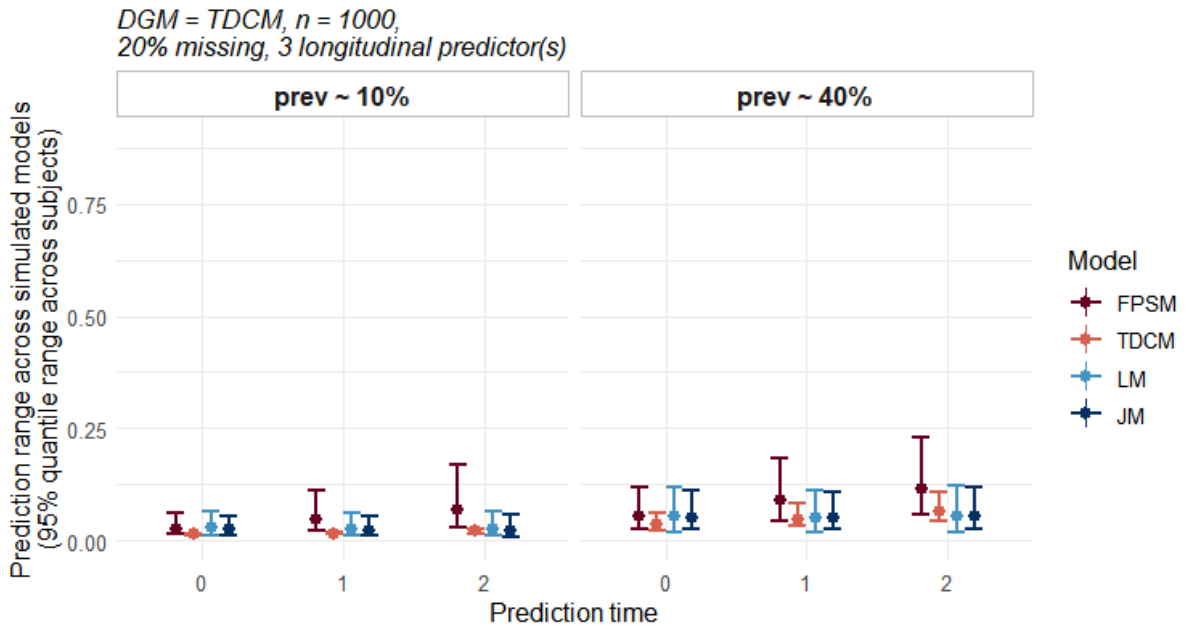


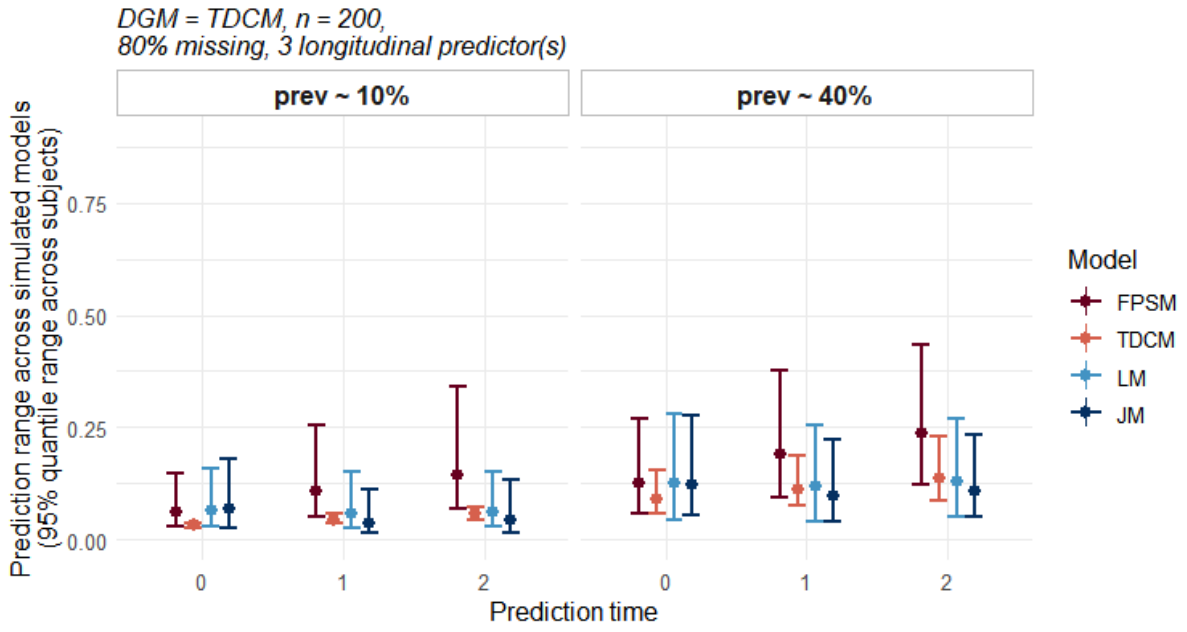

DGM = TDCM, n = 1000,
20% missing, 1 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Prediction range across simulated models
(95% quantile range across subjects)
0.00
0.25
0.50
0.75
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM


DGM = TDCM, n = 200,
80% missing, 1 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Prediction range across simulated models
(95% quantile range across subjects)
0.00
0.25
0.50
0.75
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

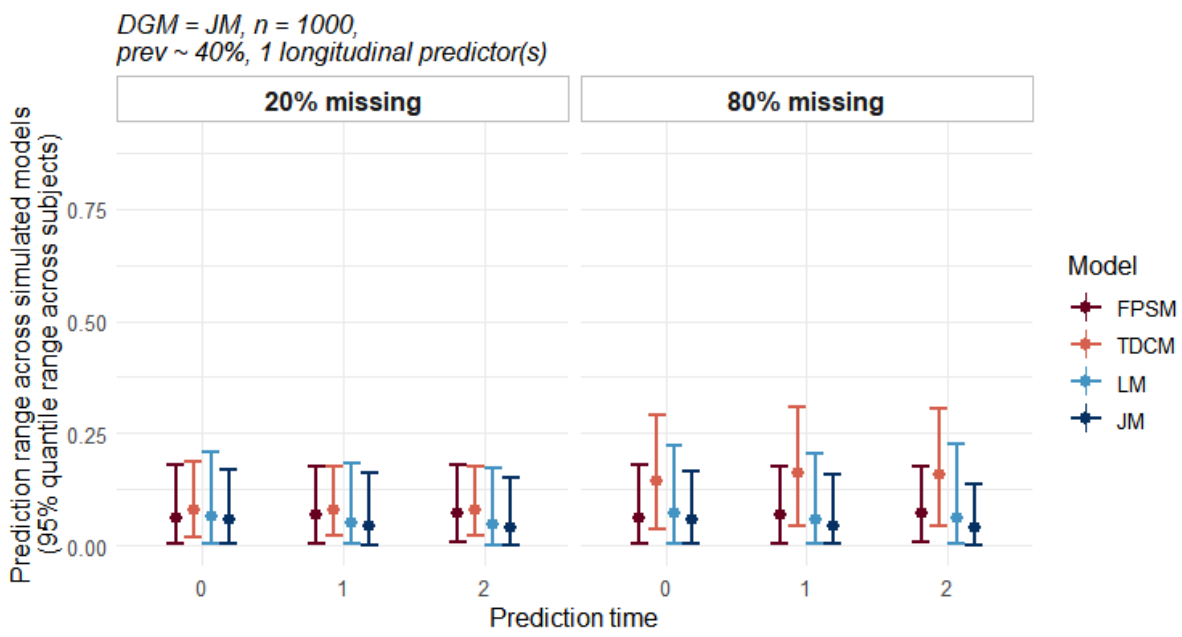

DGM = JM, n = 1000,
20% missing, 3 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Prediction range across simulated models
(95% quantile range across subjects)
0.00
0.25
0.50
0.75
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

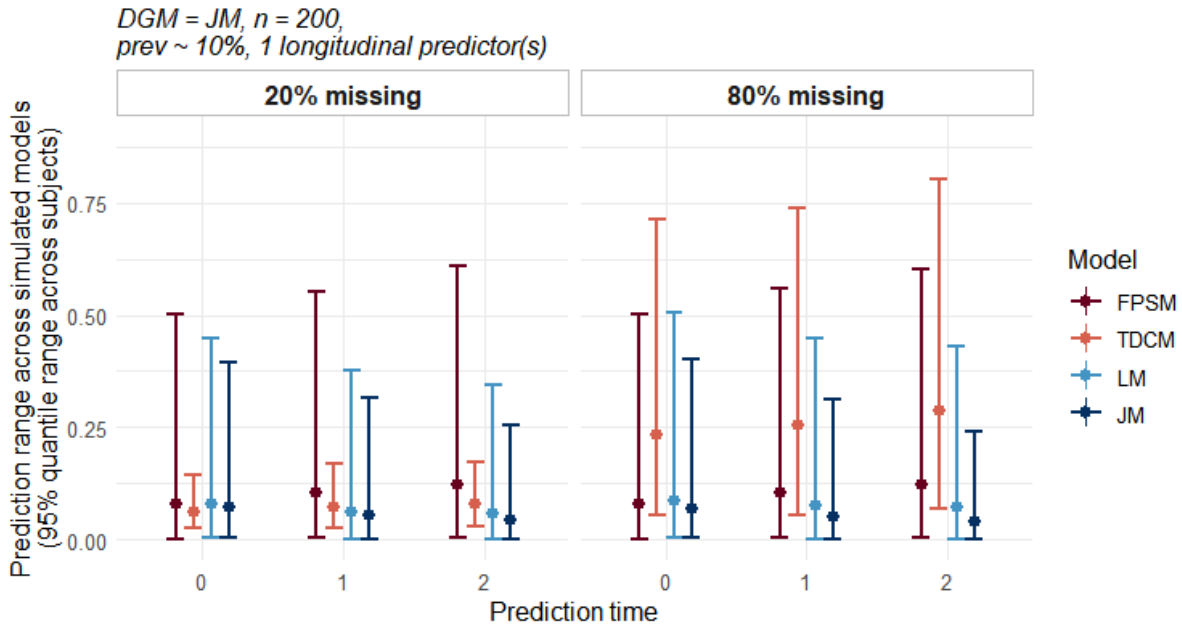

DGM = JM, n = 200,
80% missing, 3 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Prediction range across simulated models
(95% quantile range across subjects)
1.00
0.75
0.50
0.25
0.00
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

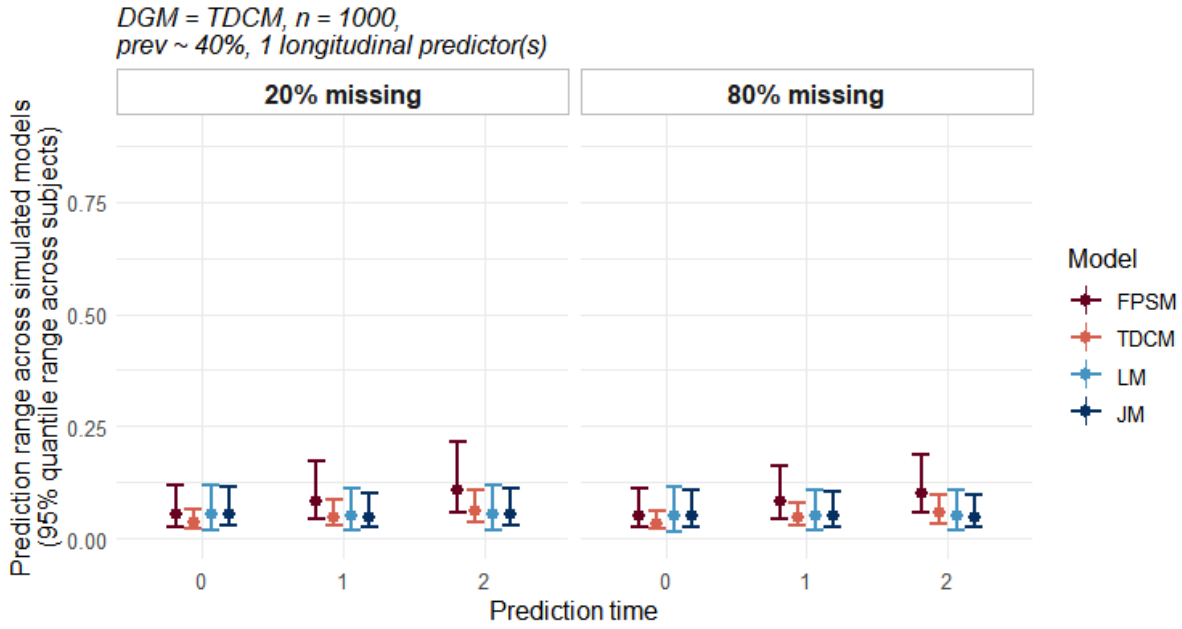

DGM = TDCM, n = 1000,
20% missing, 3 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Prediction range across simulated models
(95% quantile range across subjects)
0.75
0.50
0.25
0.00
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

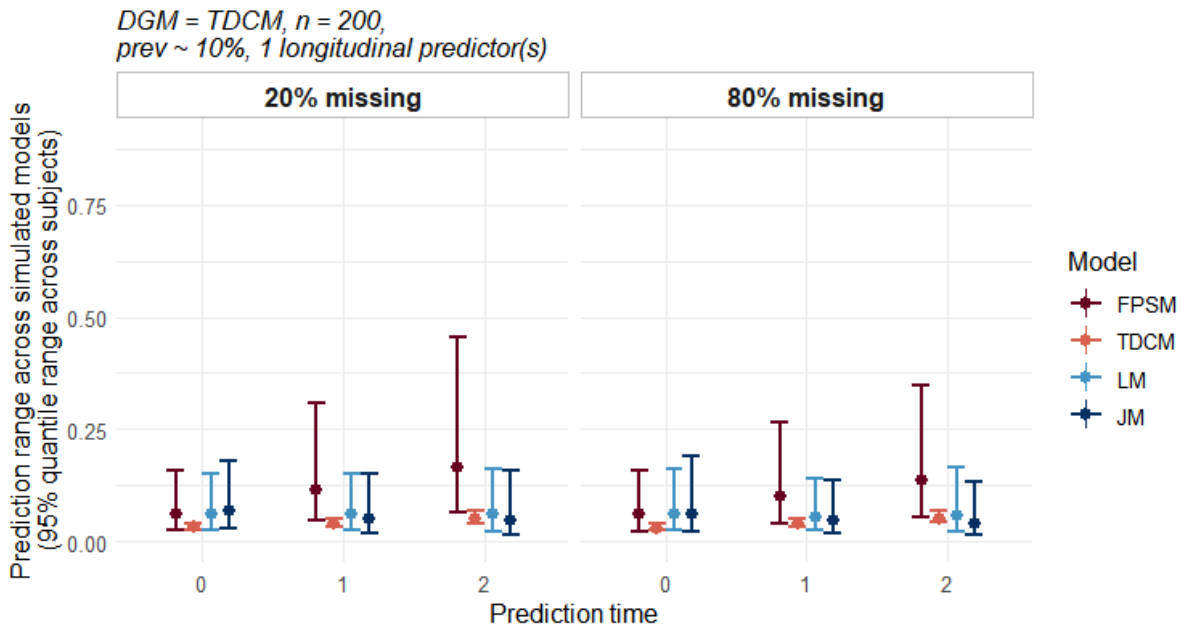

DGM = TDCM, n = 200,
80% missing, 3 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Prediction range across simulated models
(95% quantile range across subjects)
0.75
0.50
0.25
0.00
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

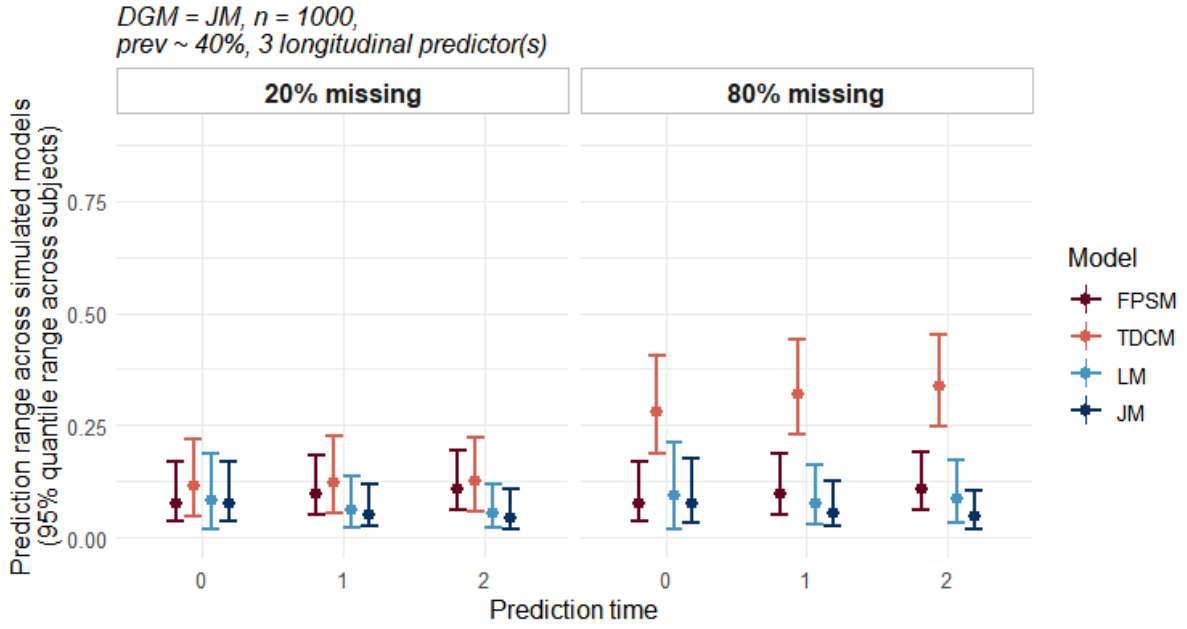
1.3.3. Follow-up missingness

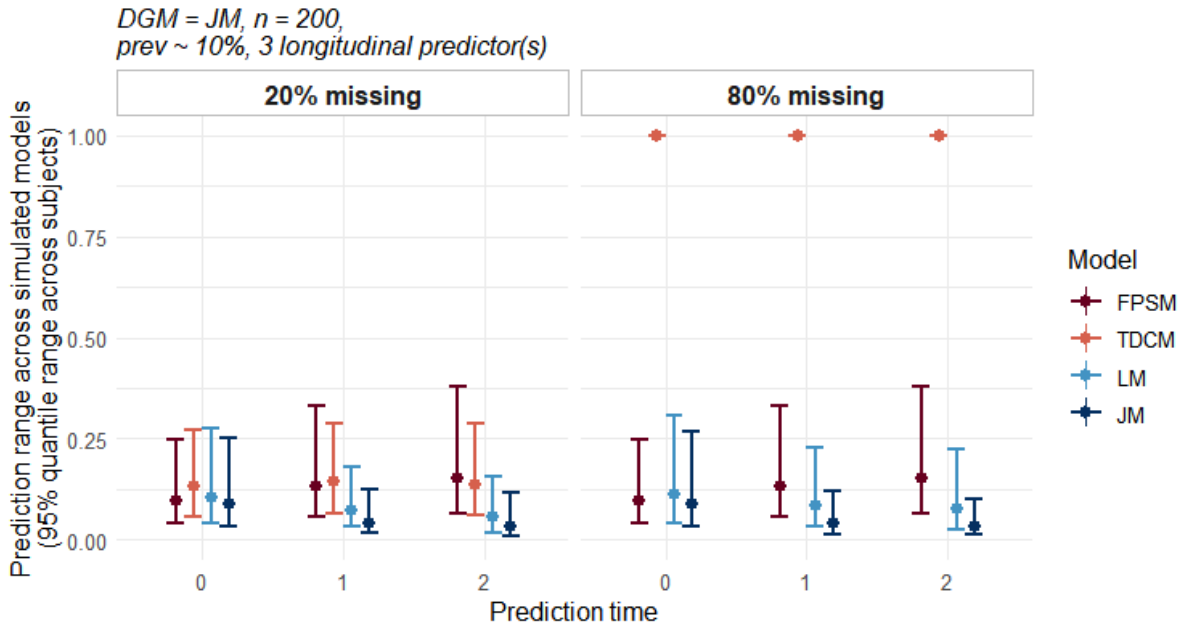


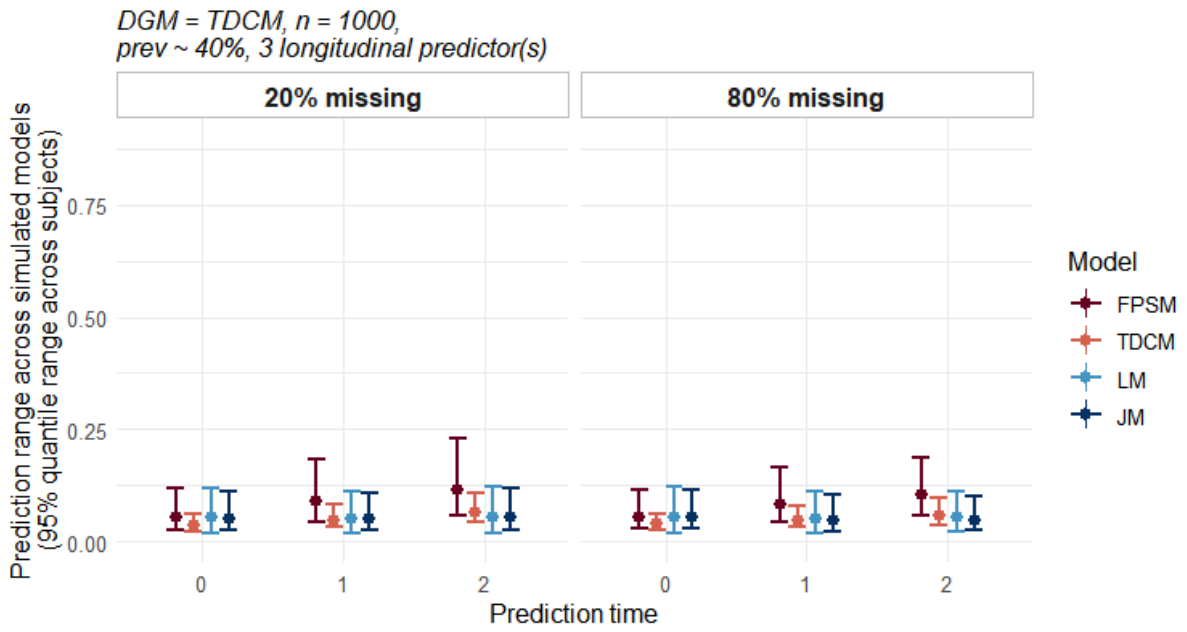


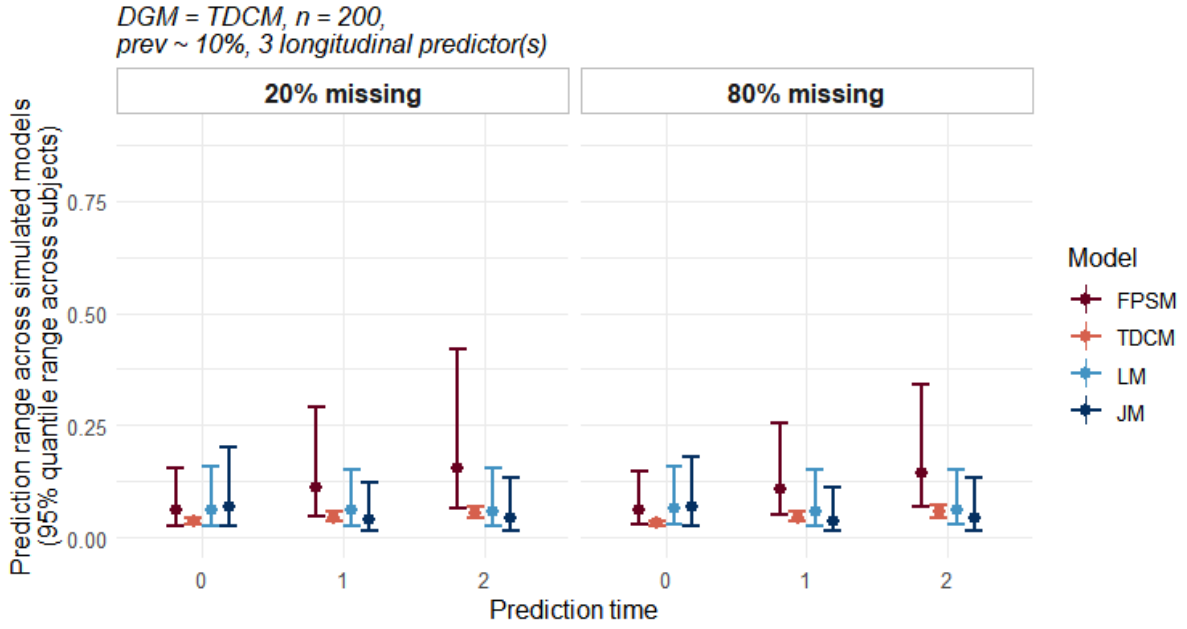



DGM = TDCM, n = 200,
prev ~ 10%, 1 longitudinal predictor(s)
20% missing
80% missing
Prediction range across simulated models
(95% quantile range across subjects)
0.00
0.25
0.50
0.75
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

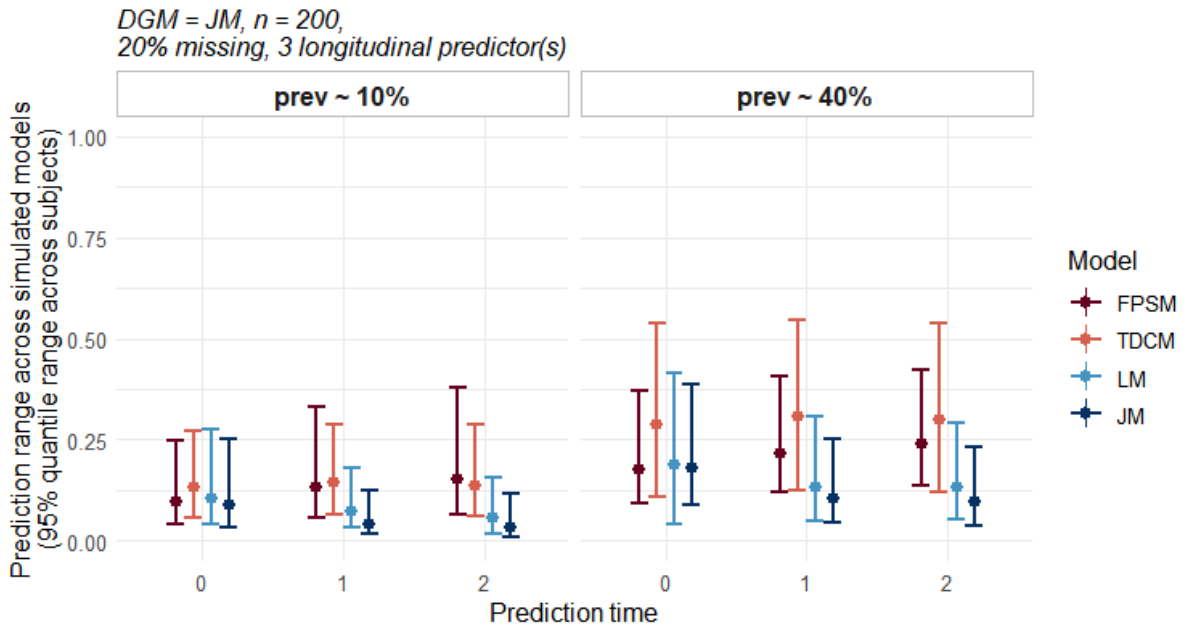

DGM = JM, n = 1000,
prev ~ 40%, 3 longitudinal predictor(s)
20% missing
80% missing
Prediction range across simulated models
(95% quantile range across subjects)
0.00
0.25
0.50
0.75
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

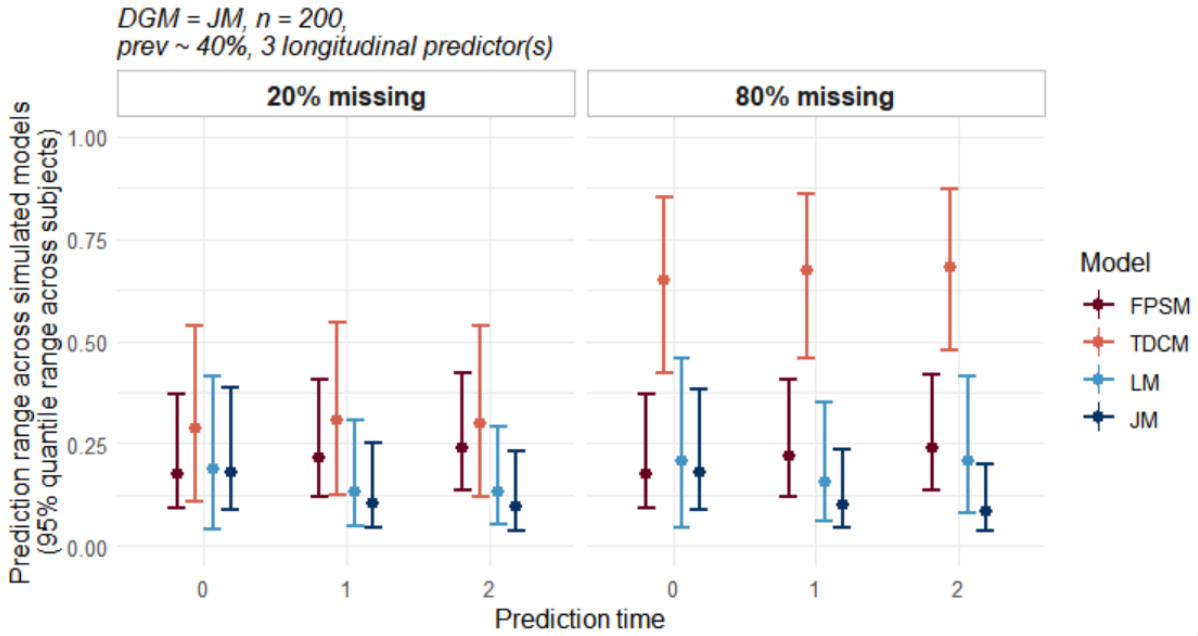

DGM = JM, n = 200,
prev ~ 10%, 3 longitudinal predictor(s)
20% missing
80% missing
Prediction range across simulated models
(95% quantile range across subjects)
0.00
0.25
0.50
0.75
1.00
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

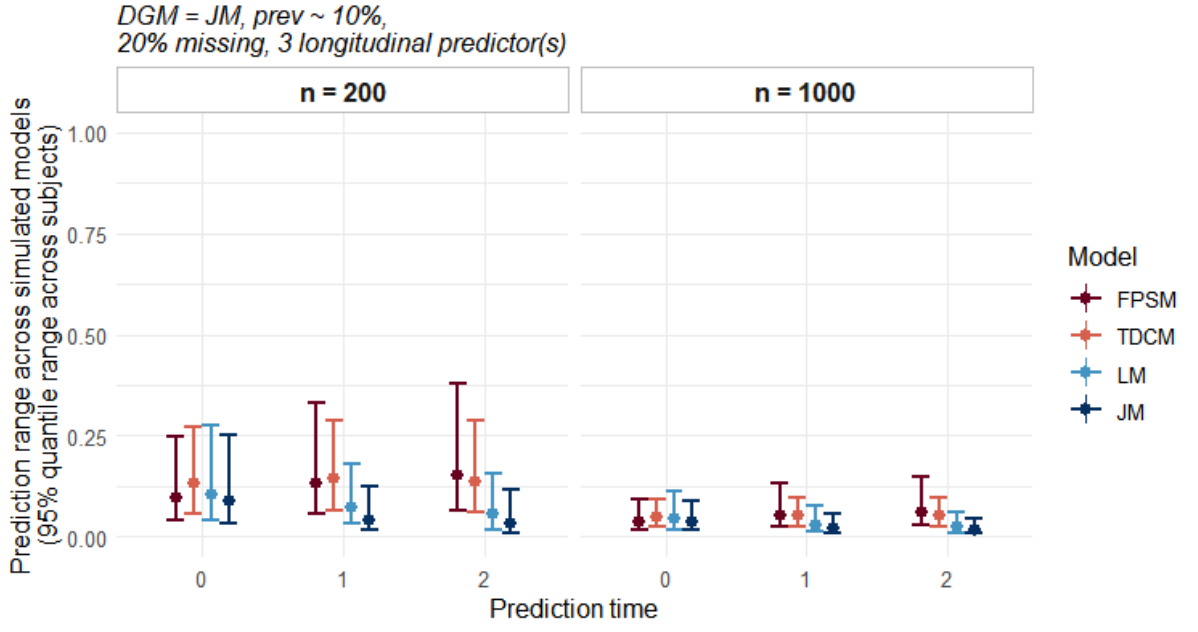

DGM = TDCM, n = 1000,
prev ~ 40%, 3 longitudinal predictor(s)
20% missing
80% missing
Prediction range across simulated models
(95% quantile range across subjects)
0.00
0.25
0.50
0.75
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM


DGM = TDCM, n = 200,
prev ~ 10%, 3 longitudinal predictor(s)
20% missing
80% missing
Prediction range across simulated models
(95% quantile range across subjects)
0.00
0.25
0.50
0.75
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

1.3.4. Extras for interpretation without errors

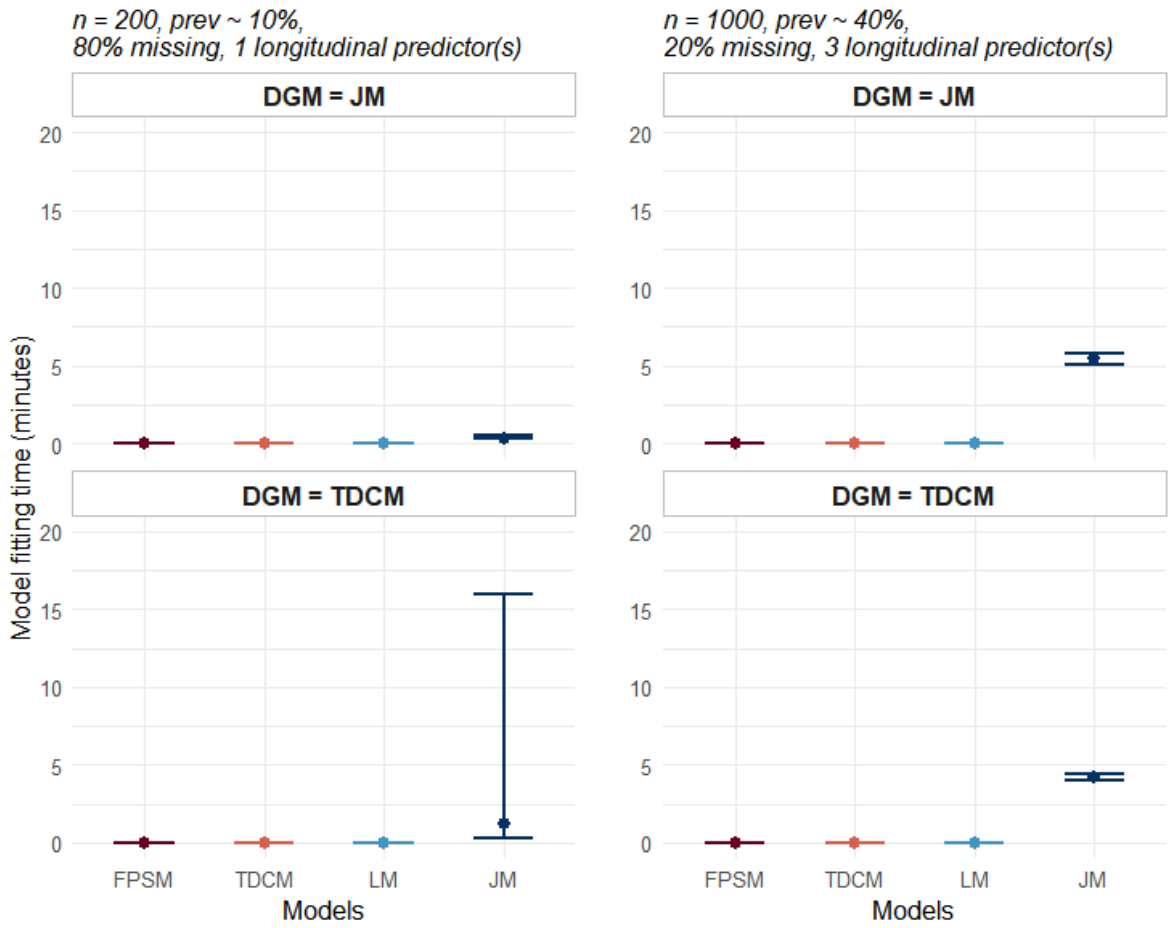




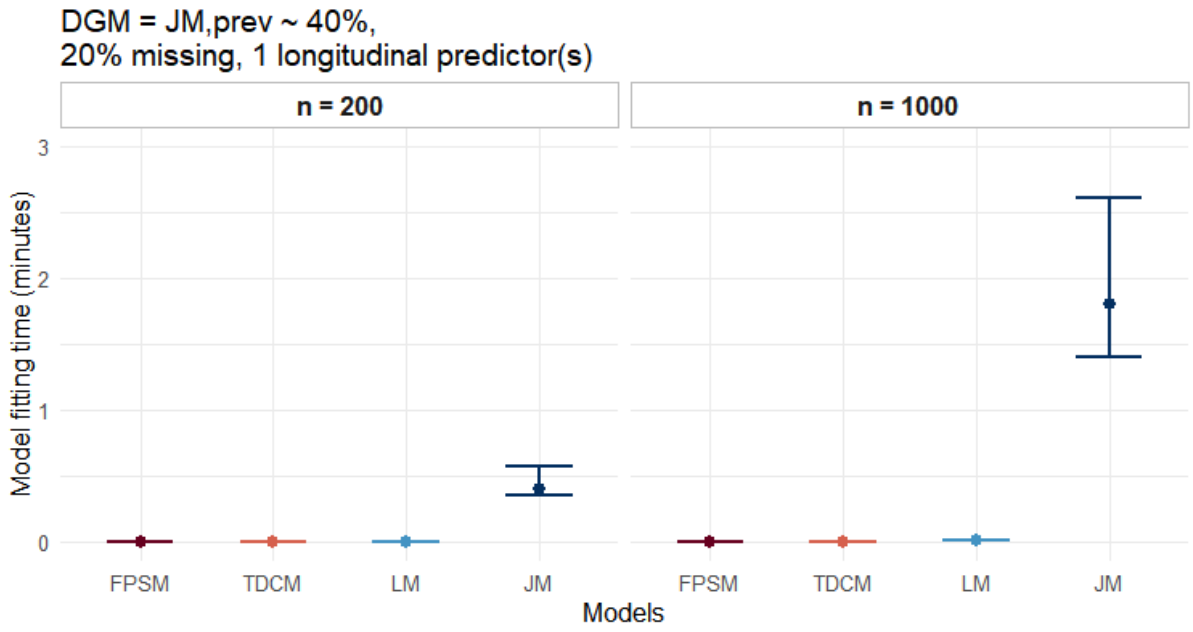


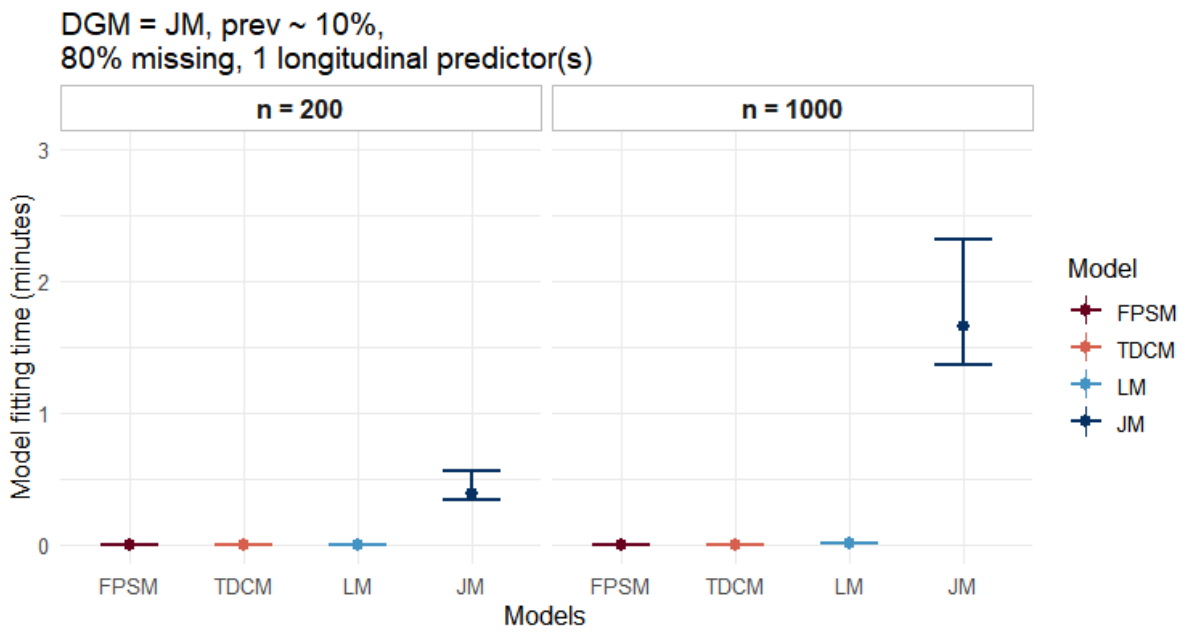
1.4. Computational time

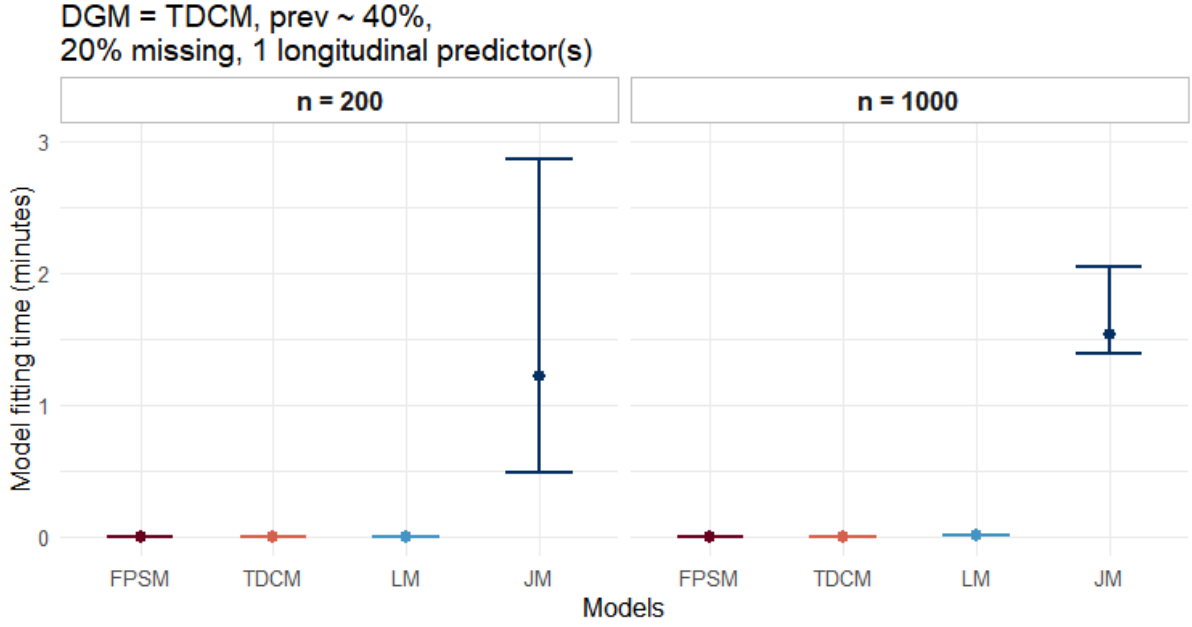
1.4.1. Fitting time

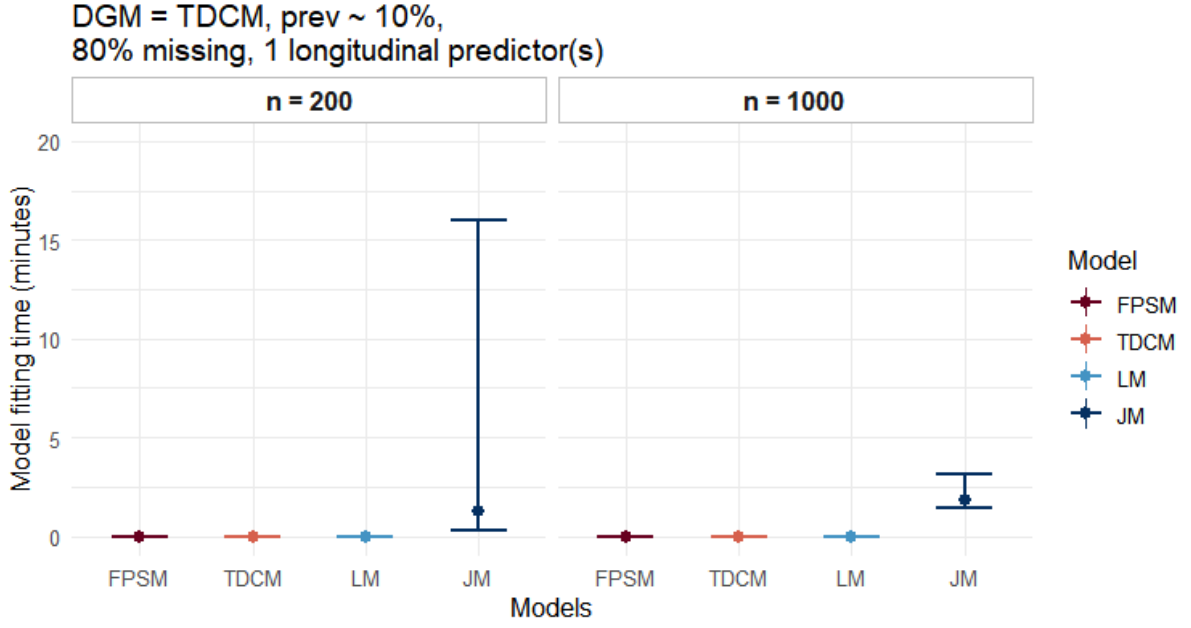


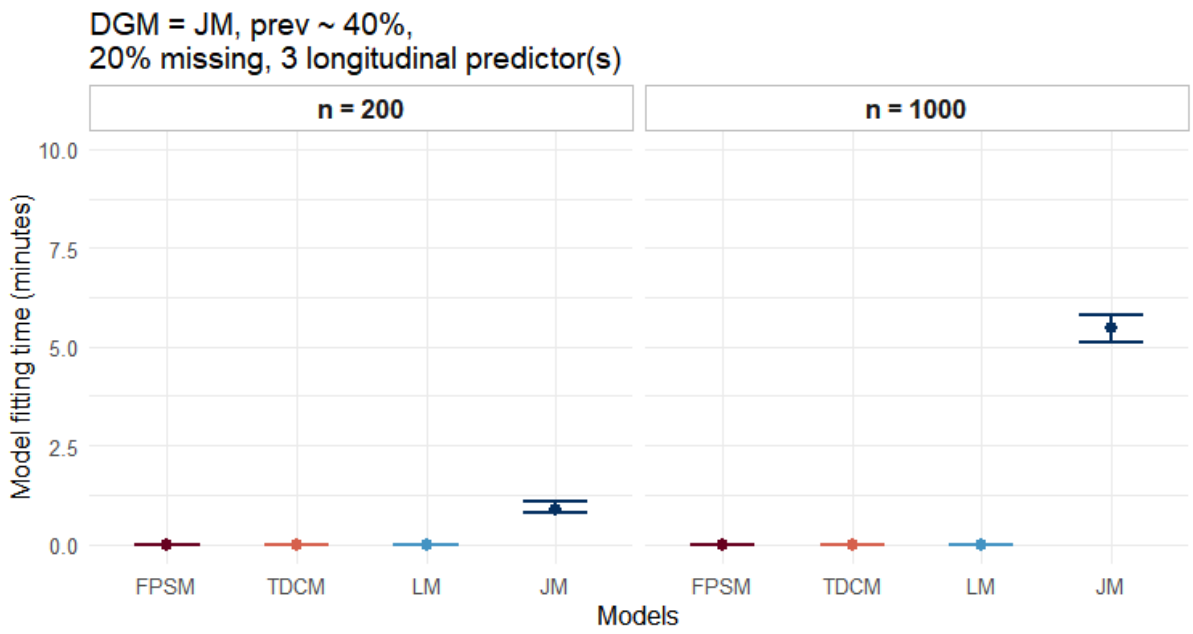
1.4.1.1. Sample size

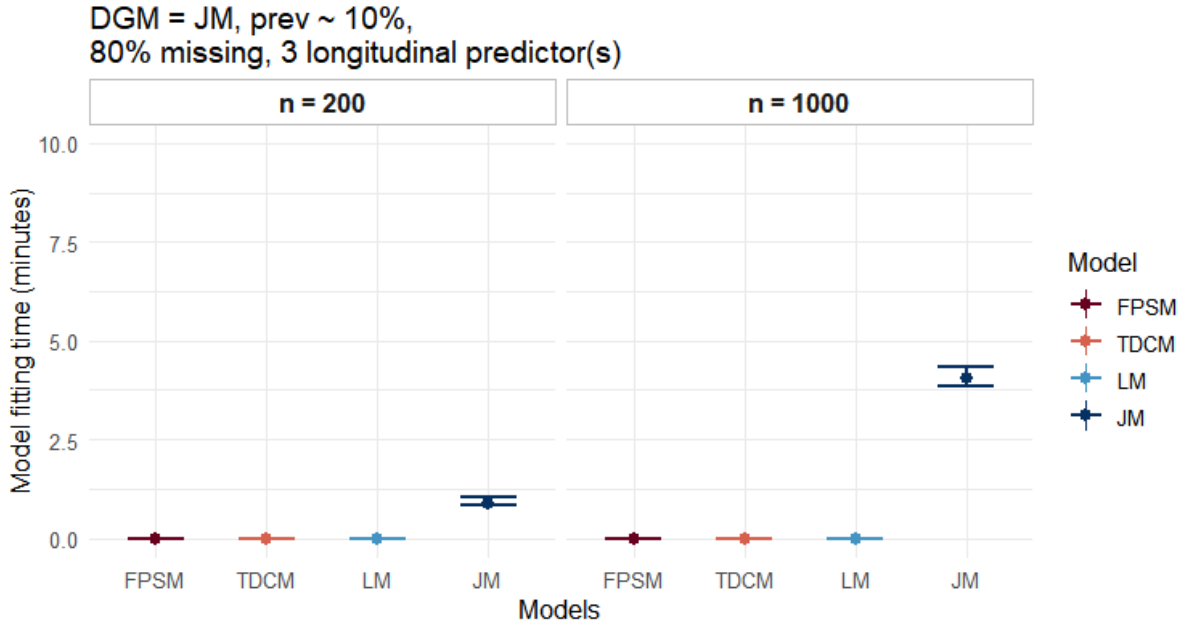


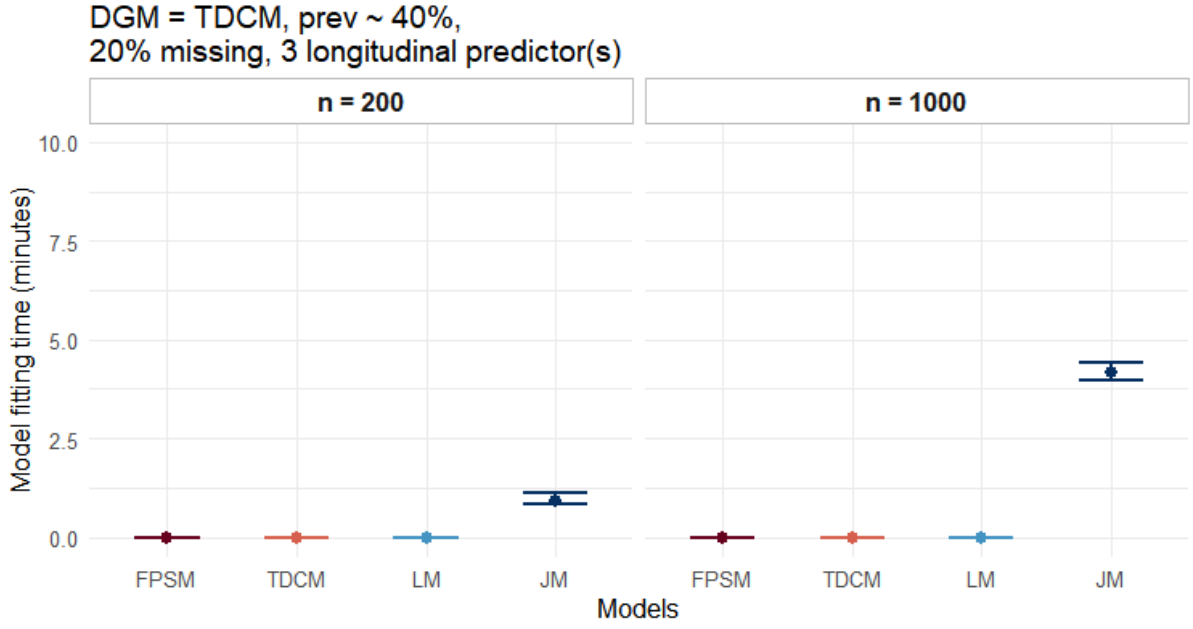

DGM = JM, prev ~ 10%,
80% missing, 1 longitudinal predictor(s)
n = 200
n = 1000
Model fitting time (minutes)
0
1
2
3
FPSM
TDCM
LM
JM
Models
Model
FPSM
TDCM
LM
JM

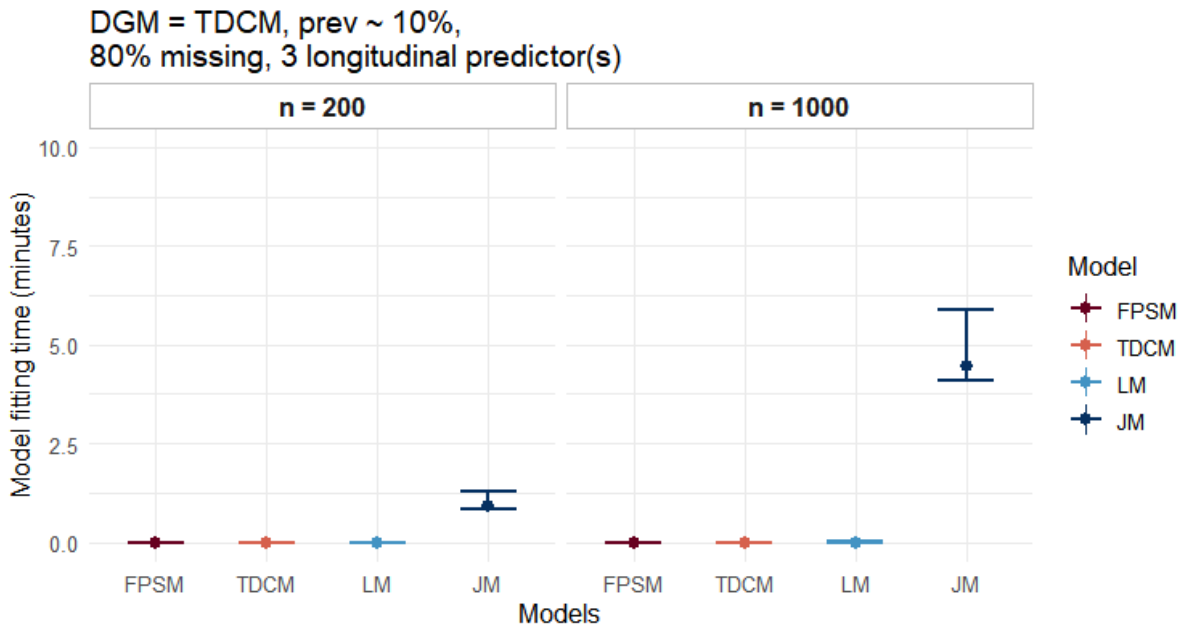

DGM = TDCM, prev ~ 40%,
20% missing, 1 longitudinal predictor(s)
n = 200
n = 1000
Model fitting time (minutes)
0
1
2
3
FPSM
TDCM
LM
JM
Models


DGM = TDCM, prev ~ 10%,
80% missing, 1 longitudinal predictor(s)
n = 200
n = 1000
Model fitting time (minutes)
0
5
10
15
20
FPSM
TDCM
LM
JM
Models
Model
FPSM
TDCM
LM
JM

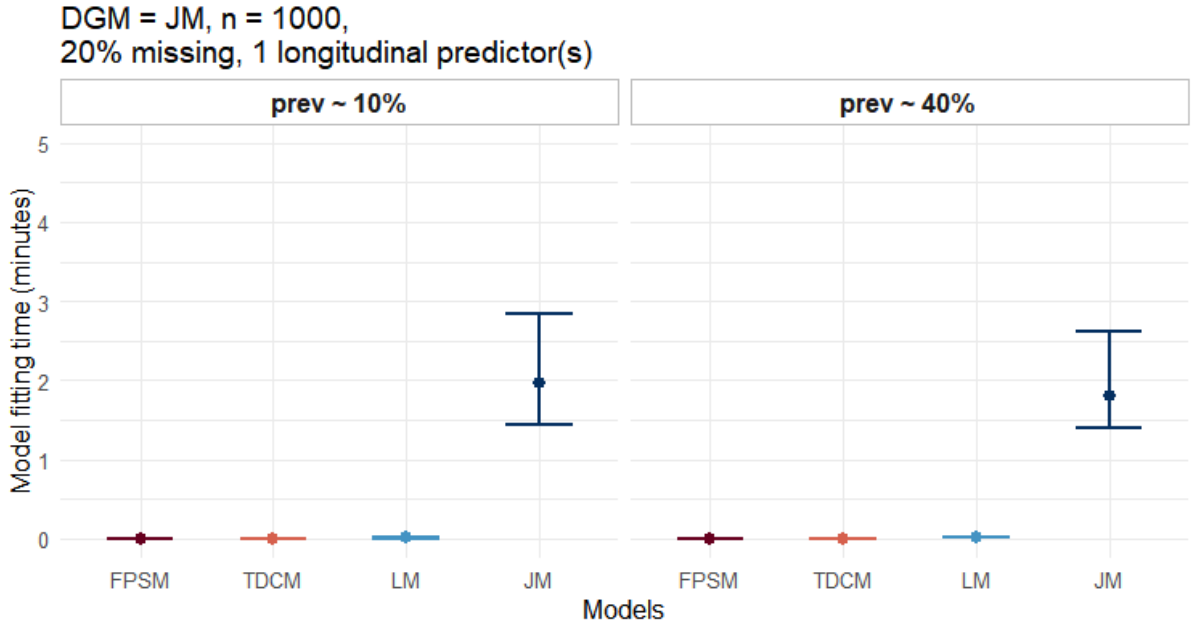

DGM = JM, prev ~ 40%,
20% missing, 3 longitudinal predictor(s)
n = 200
n = 1000
Model fitting time (minutes)
10.0
7.5
5.0
2.5
0.0
FPSM
TDCM
LM
JM
Models

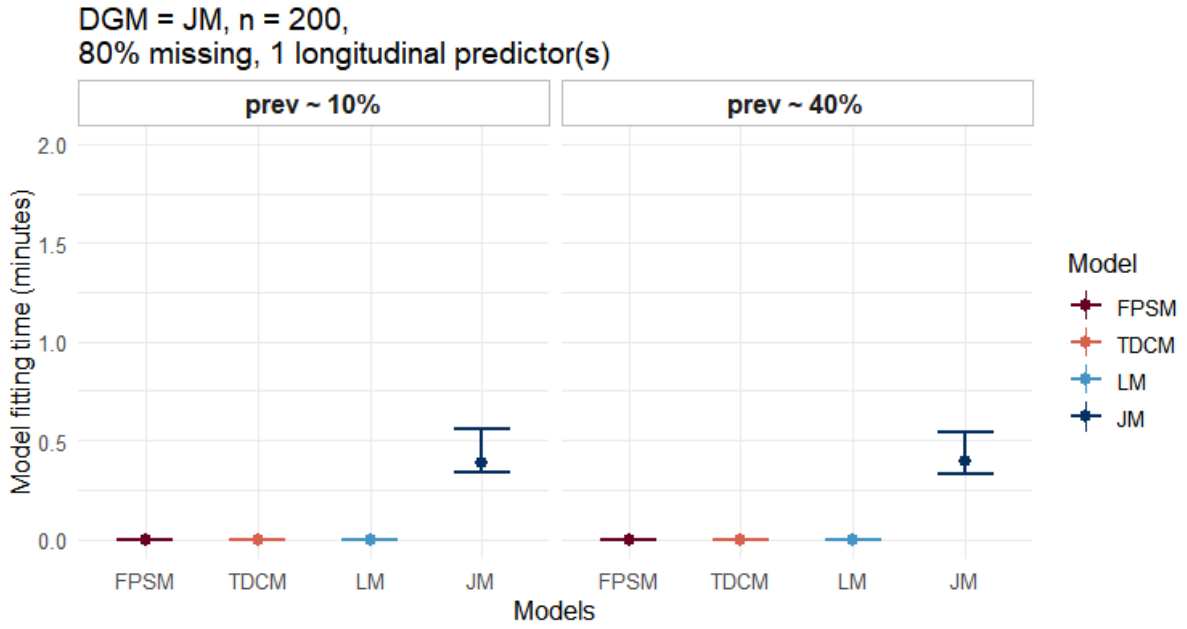

DGM = JM, prev ~ 10%,
80% missing, 3 longitudinal predictor(s)
n = 200
n = 1000
Model fitting time (minutes)
10.0
7.5
5.0
2.5
0.0
FPSM
TDCM
LM
JM
Models
Model
FPSM
TDCM
LM
JM

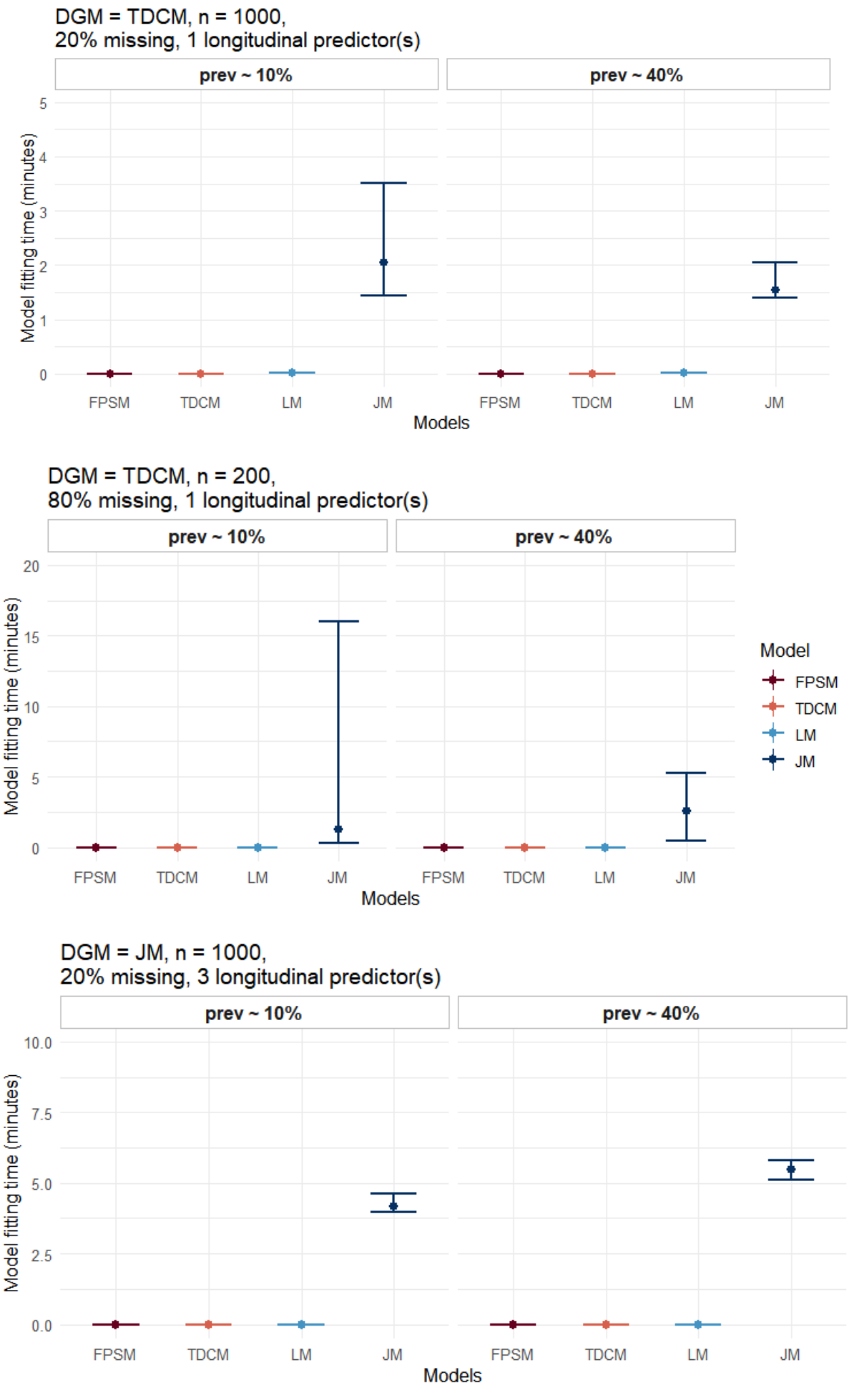

DGM = TDCM, prev ~ 40%,
20% missing, 3 longitudinal predictor(s)
n = 200
n = 1000
Model fitting time (minutes)
10.0
7.5
5.0
2.5
0.0
FPSM
TDCM
LM
JM
Models

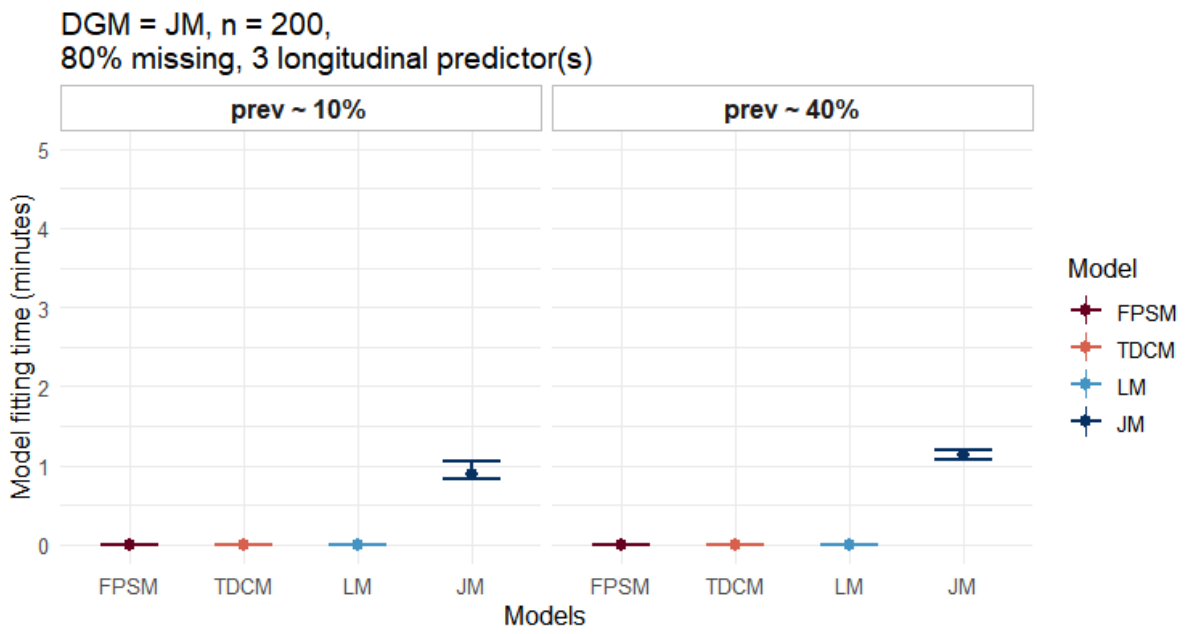


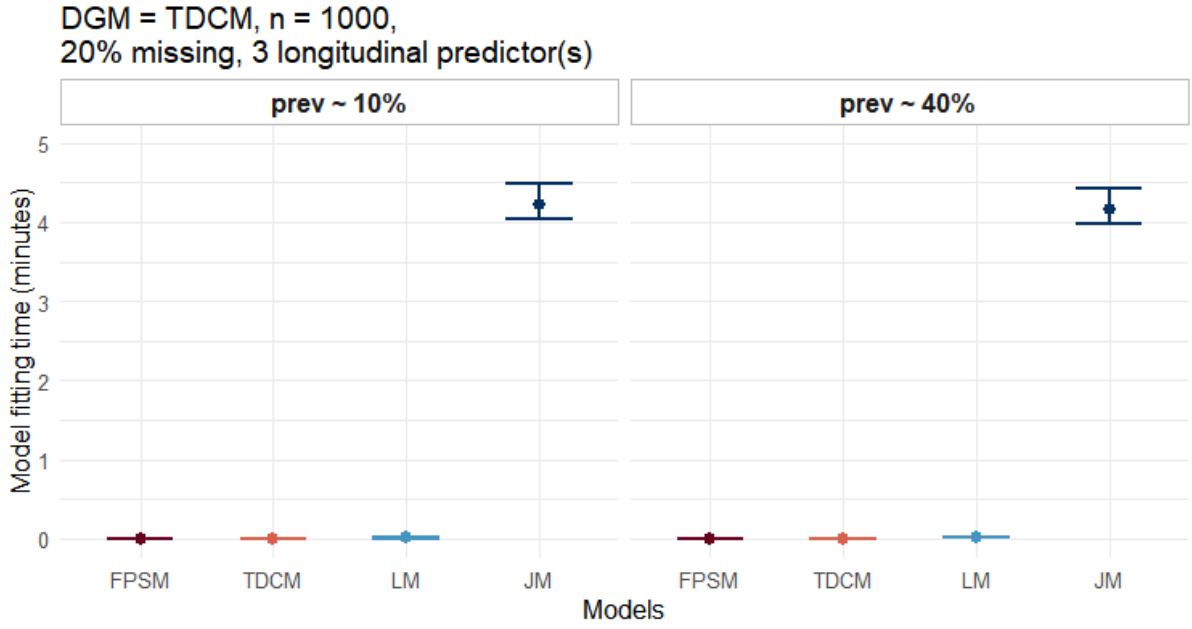
1.4.1.2. Event prevalence

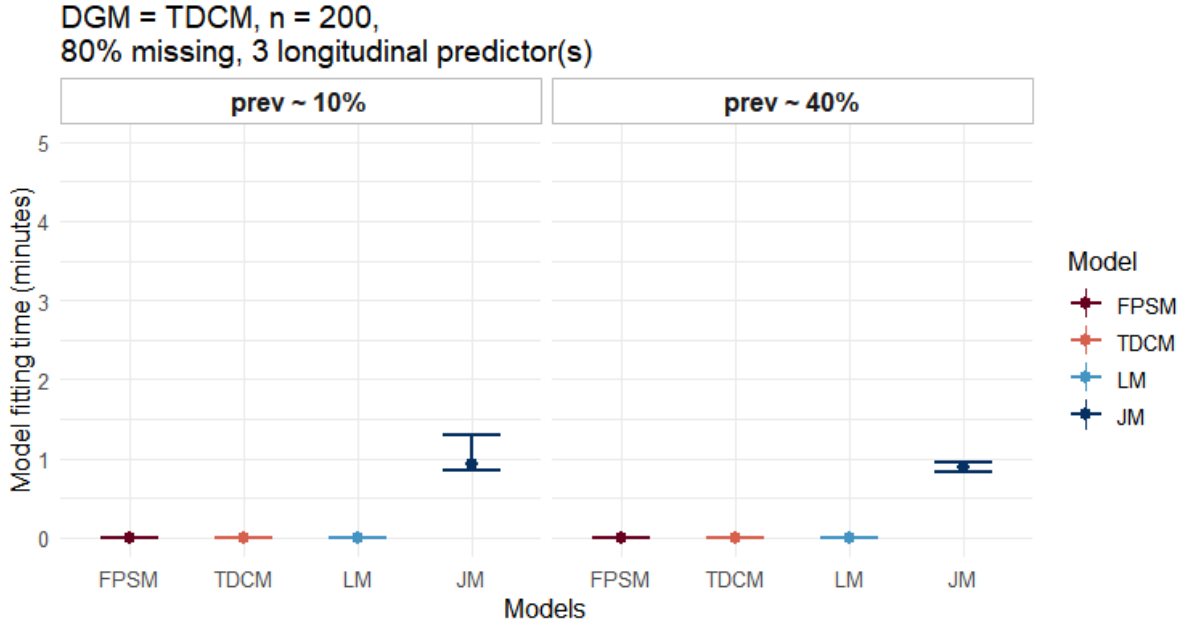




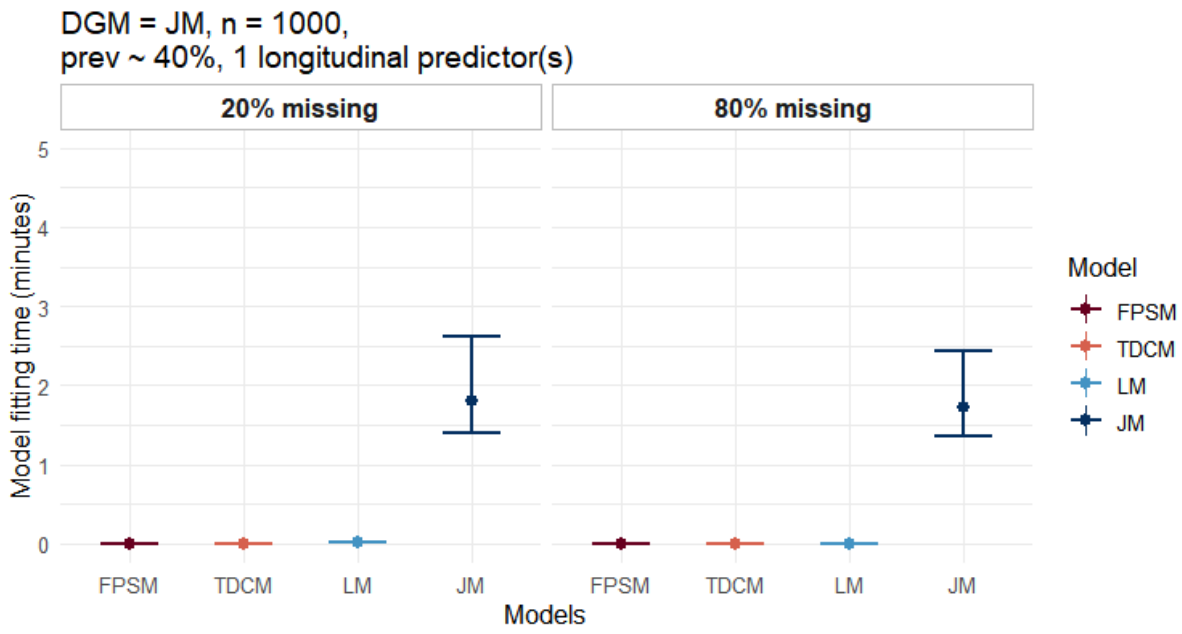

DGM = TDCM, n = 1000,
20% missing, 1 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Model fitting time (minutes)
0
1
2
3
4
5
FPSM
TDCM
LM
JM
Models
DGM = TDCM, n = 200,
80% missing, 1 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Model fitting time (minutes)
0
5
10
15
20
Model
FPSM
TDCM
LM
JM
Models
DGM = JM, n = 1000,
20% missing, 3 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Model fitting time (minutes)
0.0
2.5
5.0
7.5
10.0
Models

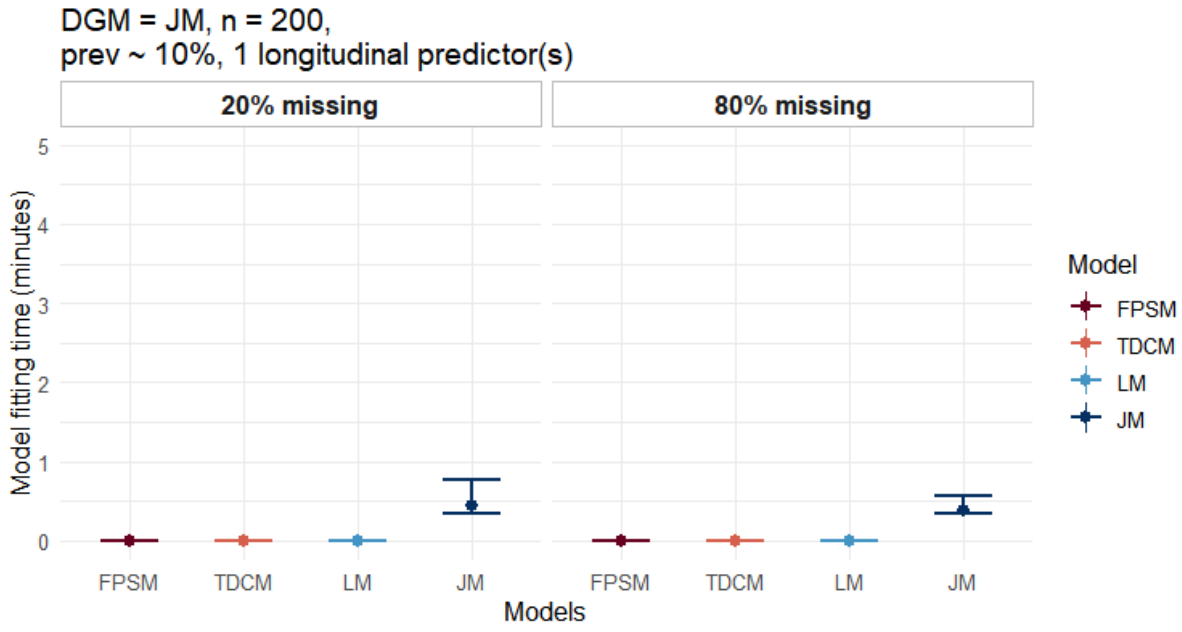

DGM = JM, n = 200,
80% missing, 3 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Model fitting time (minutes)
0
1
2
3
4
5
FPSM
TDCM
LM
JM
Models
Model
FPSM
TDCM
LM
JM

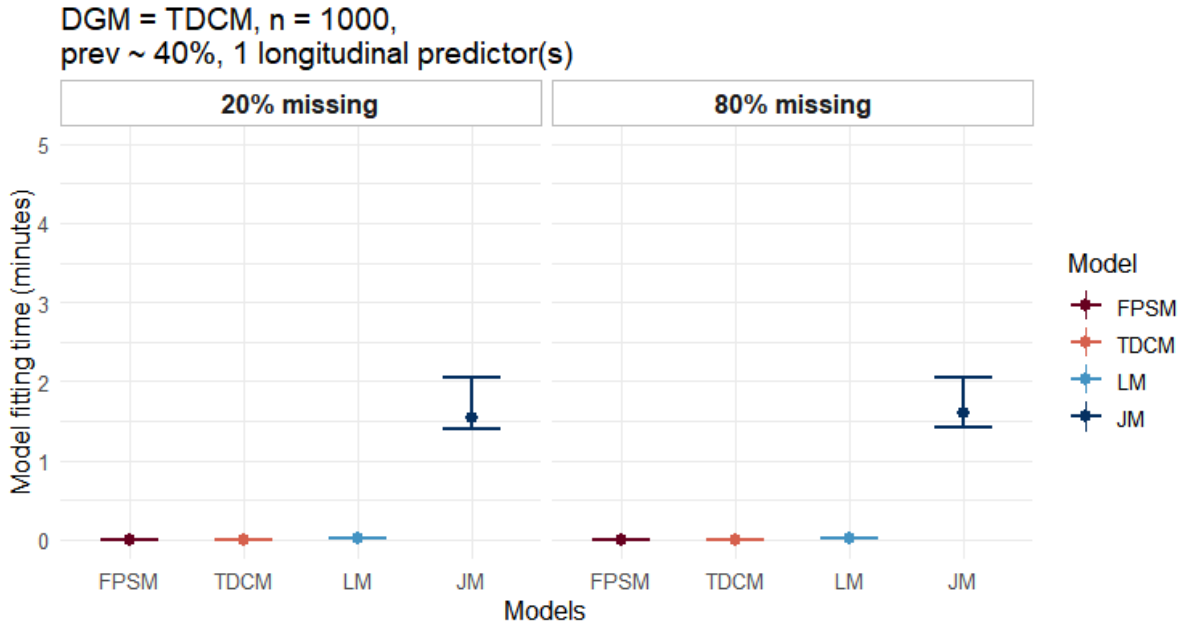

DGM = TDCM, n = 1000,
20% missing, 3 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Model fitting time (minutes)
0
1
2
3
4
5
FPSM
TDCM
LM
JM
Models

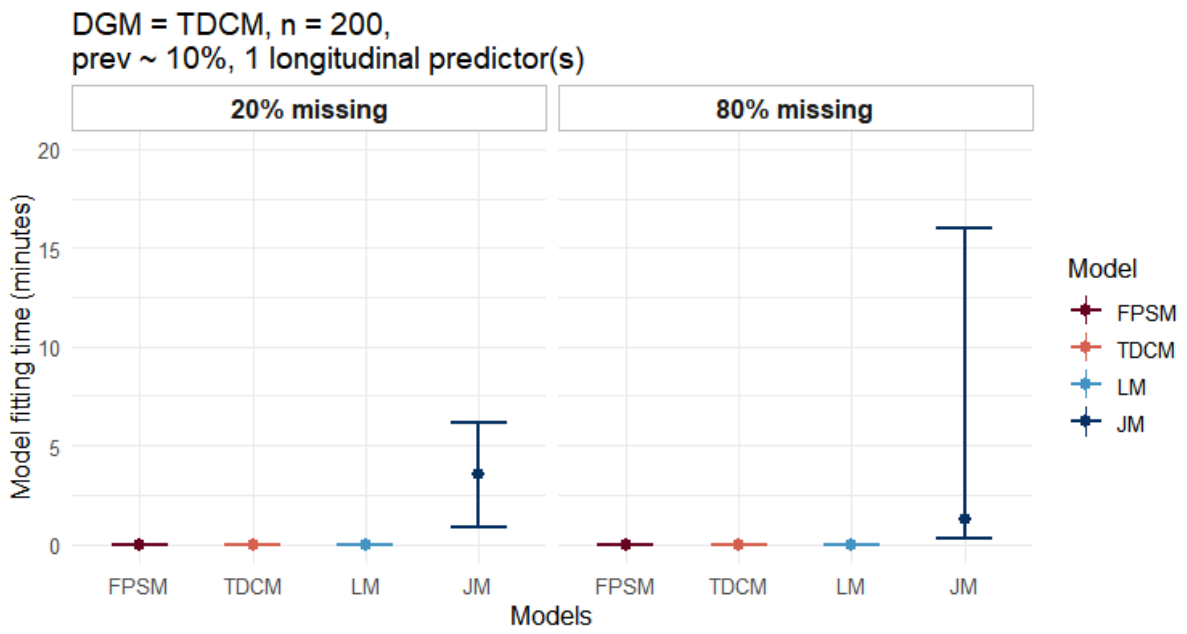

DGM = TDCM, n = 200,
80% missing, 3 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Model fitting time (minutes)
0
1
2
3
4
5
FPSM
TDCM
LM
JM
Models
Model
FPSM
TDCM
LM
JM

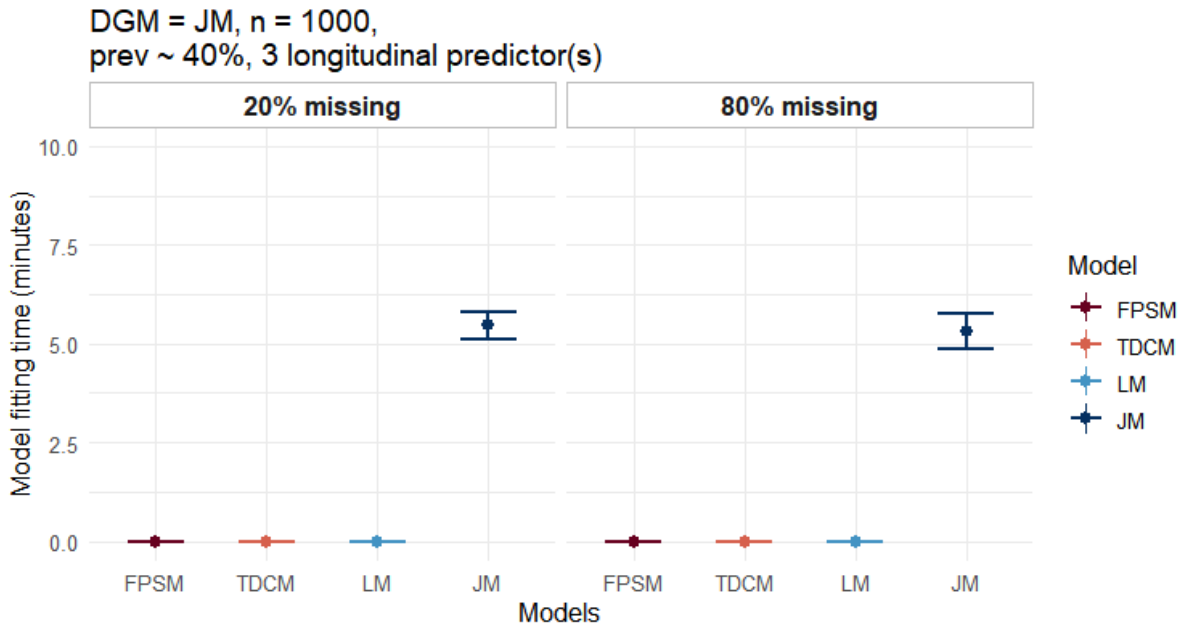
1.4.1.3. Follow-up missingness

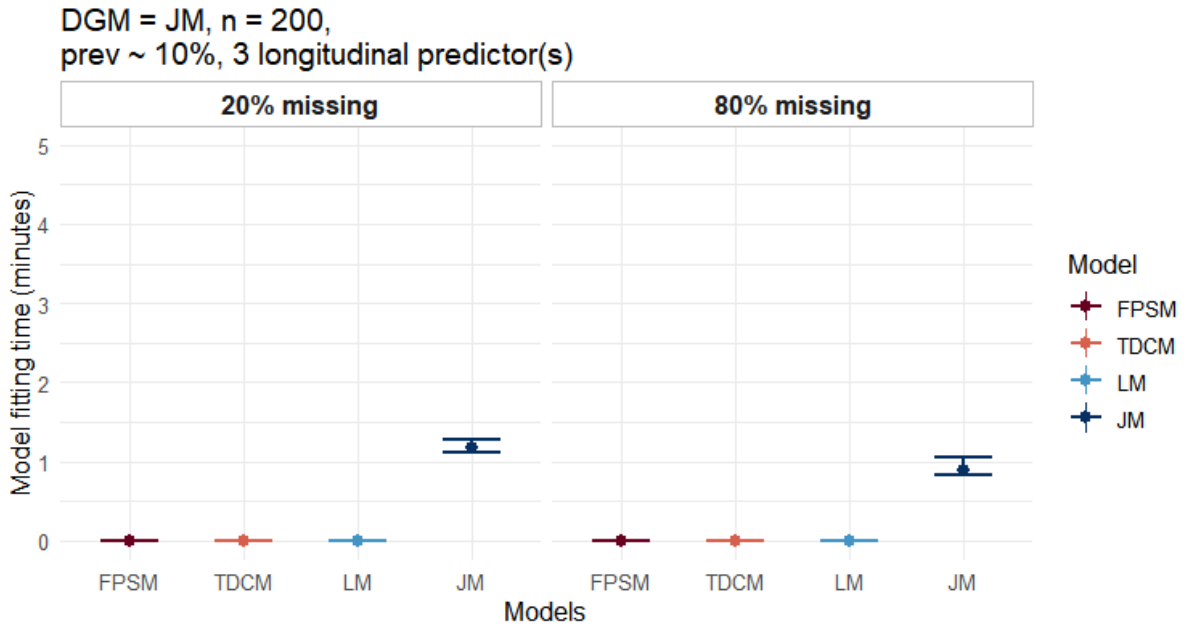


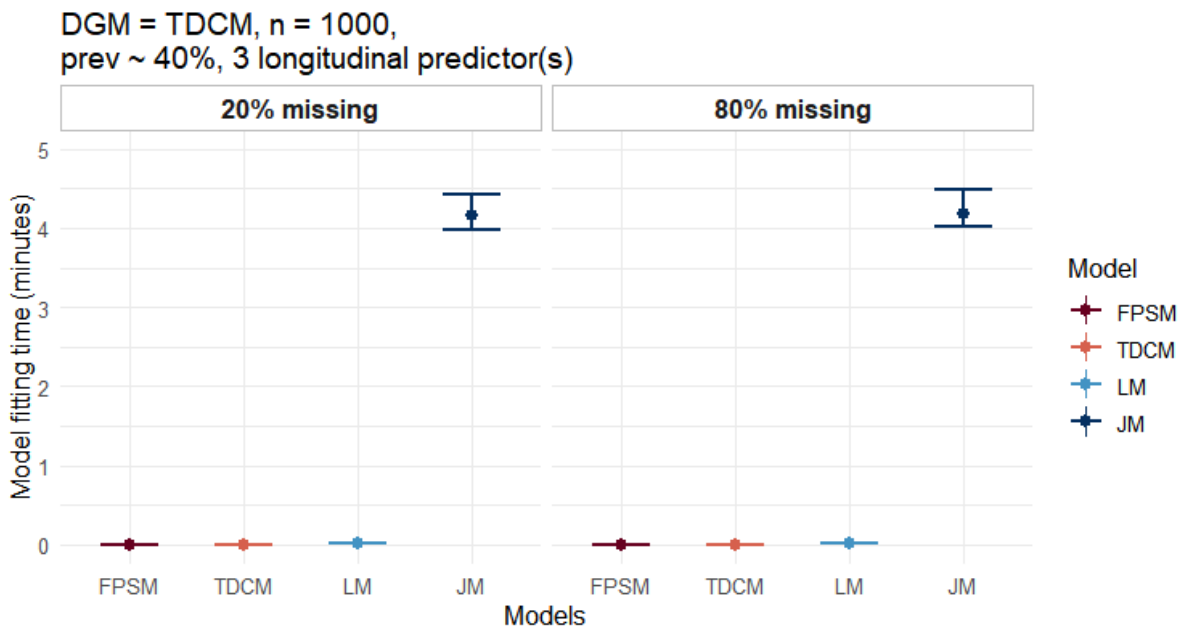


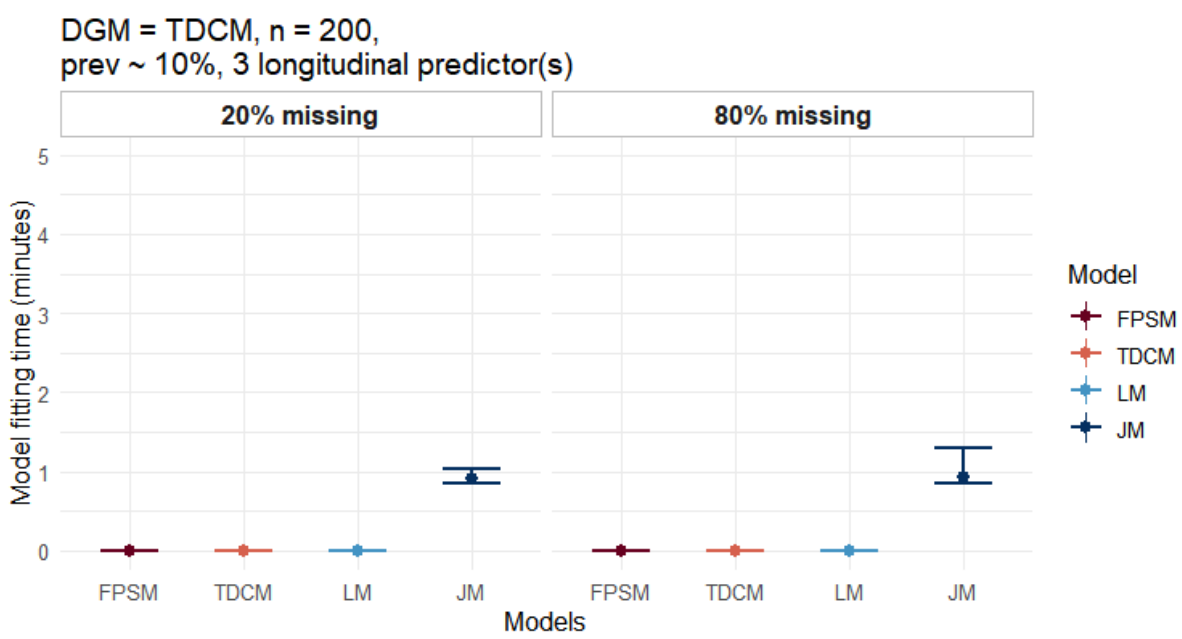



DGM = TDCM, n = 200,
prev ~ 10%, 1 longitudinal predictor(s)
20% missing
80% missing
Model fitting time (minutes)
20
15
10
5
0
FPSM
TDCM
LM
JM
Models
Model
FPSM
TDCM
LM
JM

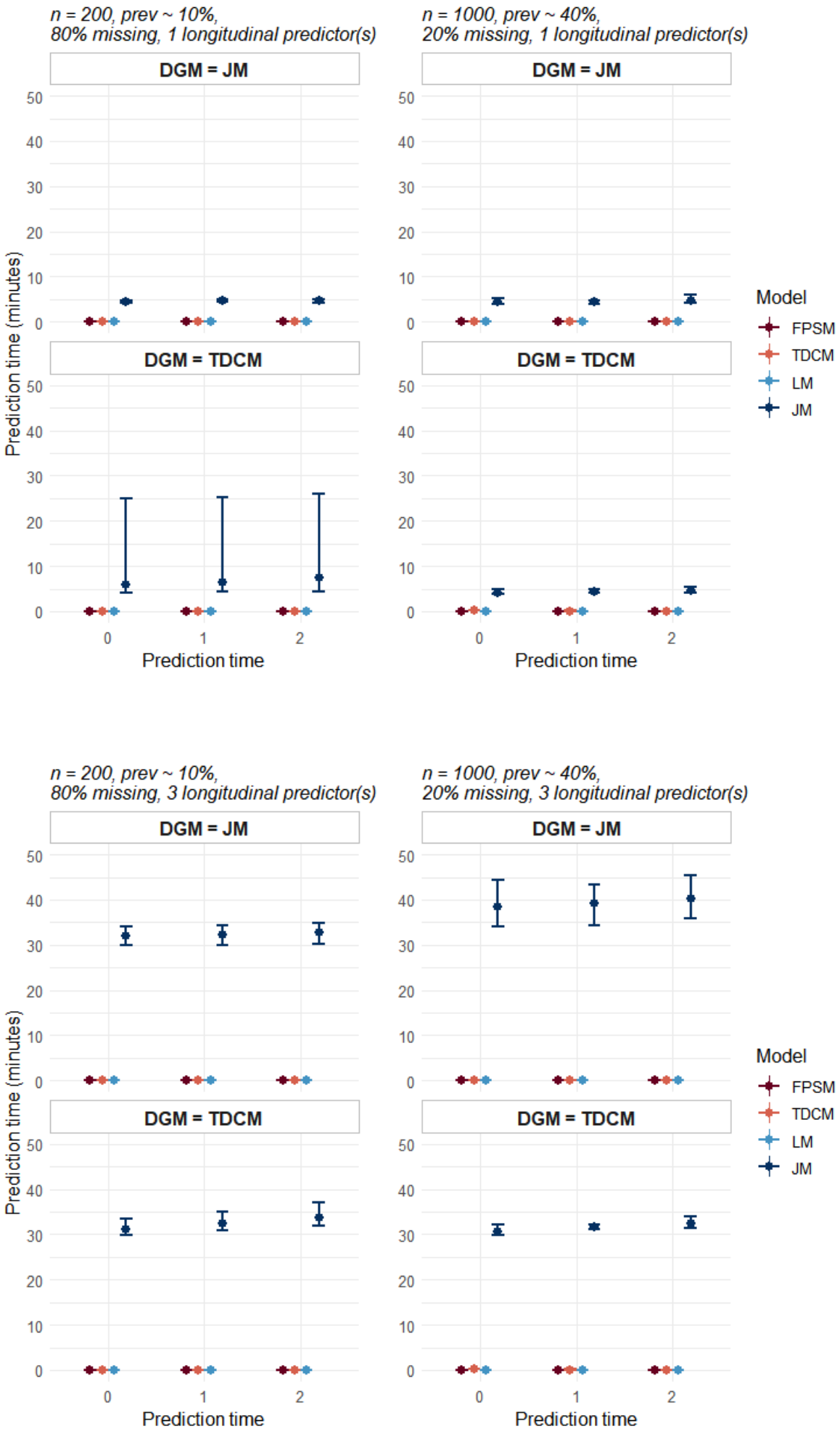

DGM = JM, n = 1000,
prev ~ 40%, 3 longitudinal predictor(s)
20% missing
80% missing
Model fitting time (minutes)
10.0
7.5
5.0
2.5
0.0
FPSM
TDCM
LM
JM
Models
Model
FPSM
TDCM
LM
JM


DGM = JM, n = 200,
prev ~ 10%, 3 longitudinal predictor(s)
20% missing
80% missing
Model fitting time (minutes)
5
4
3
2
1
0
FPSM
TDCM
LM
JM
Models
Model
FPSM
TDCM
LM
JM

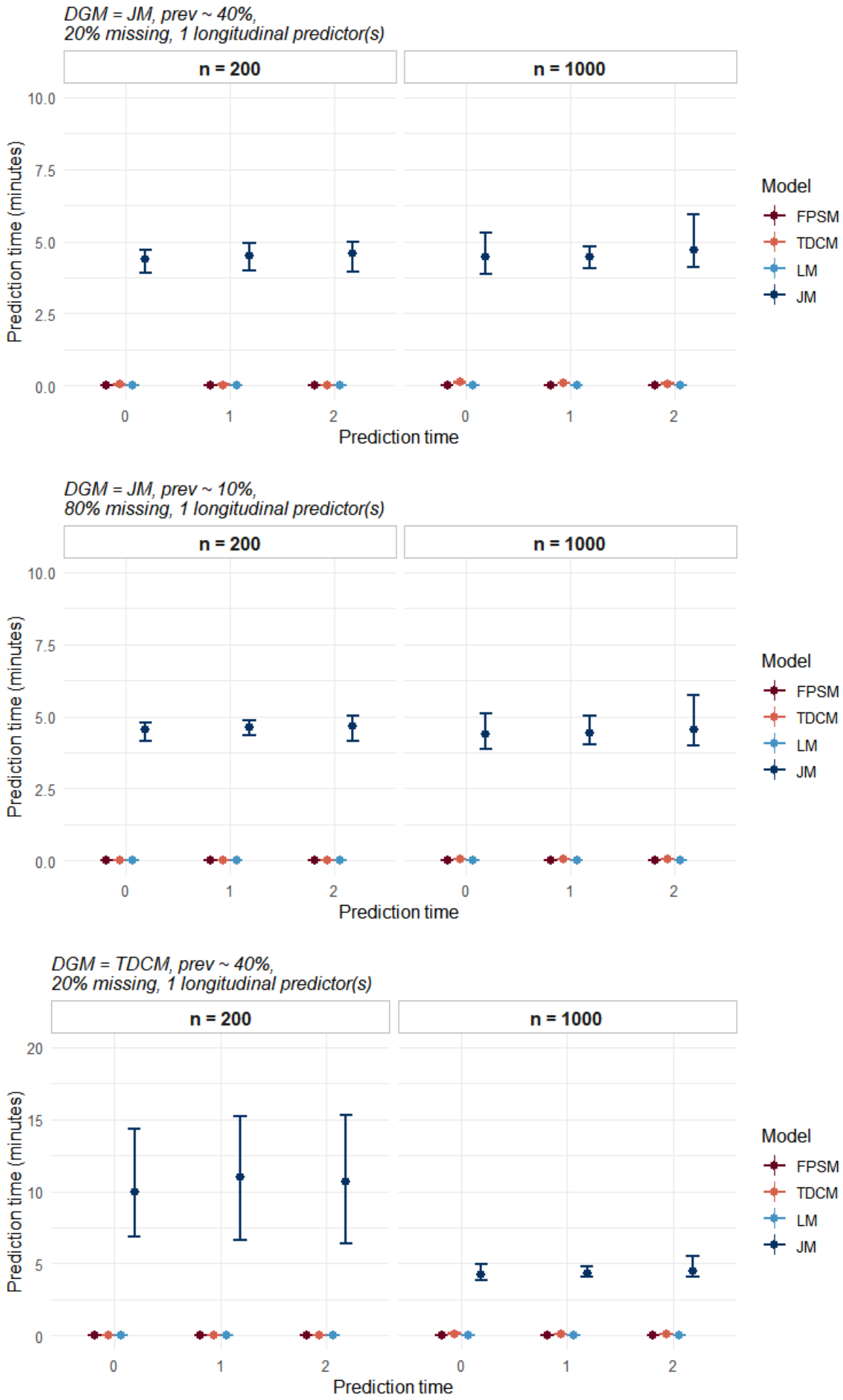

DGM = TDCM, n = 1000,
prev ~ 40%, 3 longitudinal predictor(s)
20% missing
80% missing
Model fitting time (minutes)
0
1
2
3
4
5
FPSM
TDCM
LM
JM
Models
Model
FPSM
TDCM
LM
JM

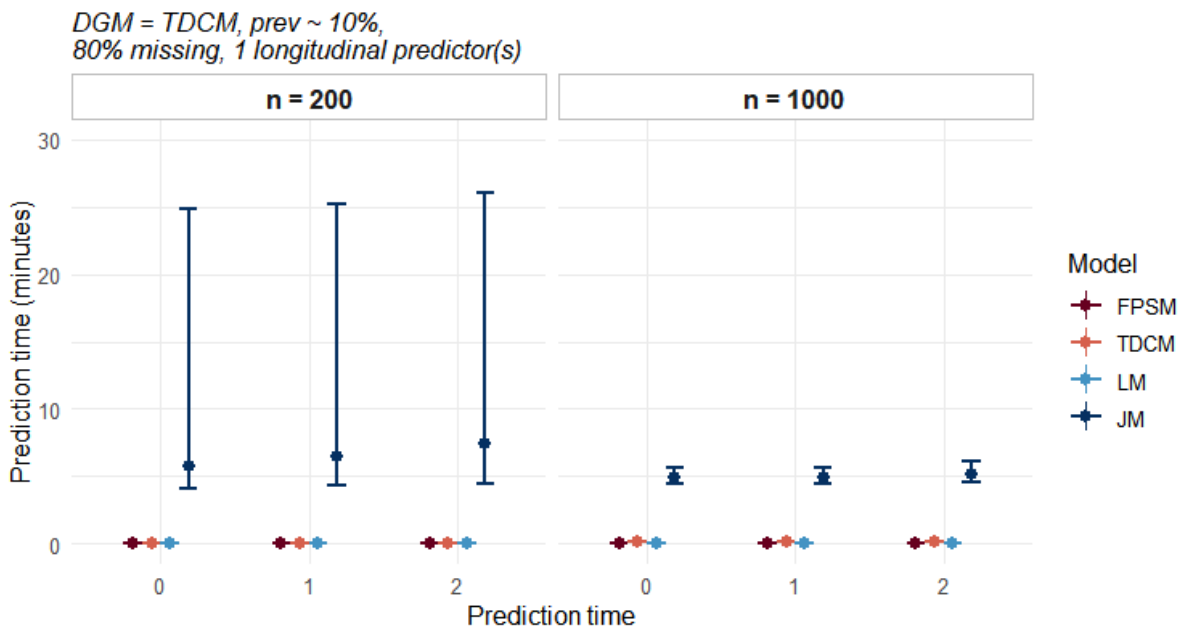

DGM = TDCM, n = 200,
prev ~ 10%, 3 longitudinal predictor(s)
20% missing
80% missing
Model fitting time (minutes)
0
1
2
3
4
5
FPSM
TDCM
LM
JM
Models
Model
FPSM
TDCM
LM
JM

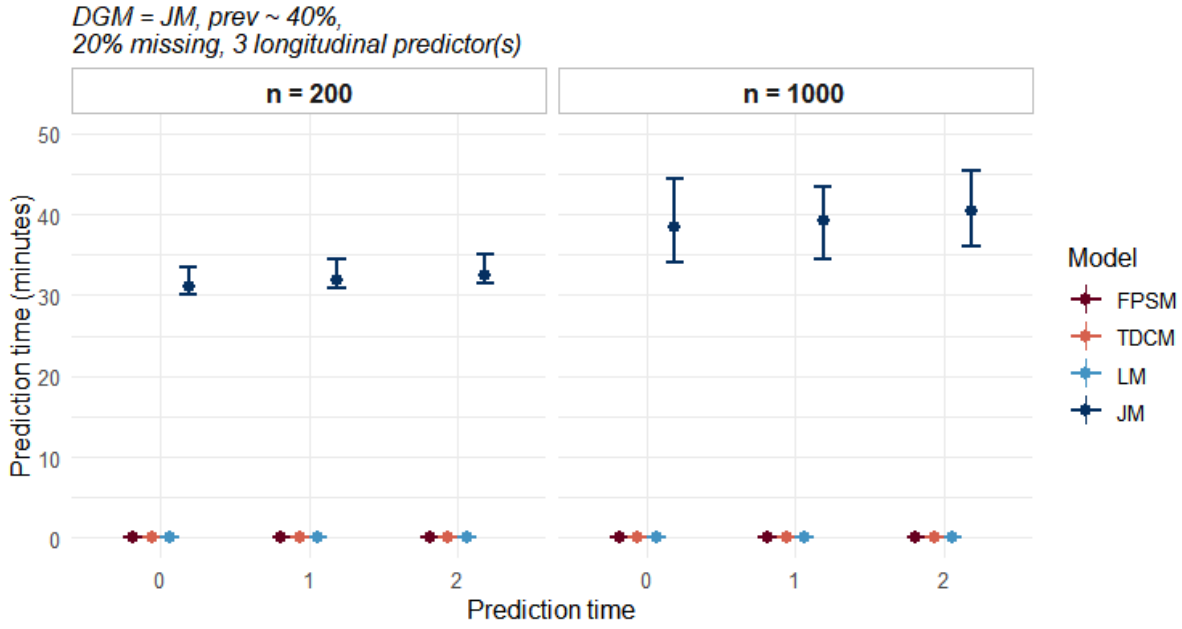
1.4.2. Prediction time

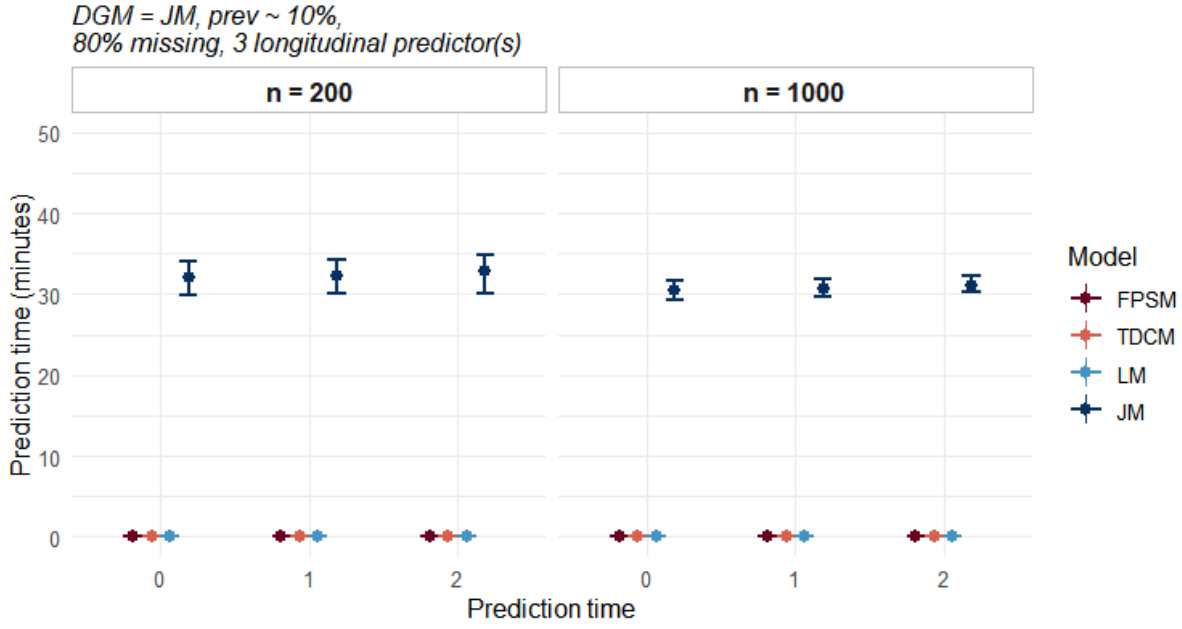


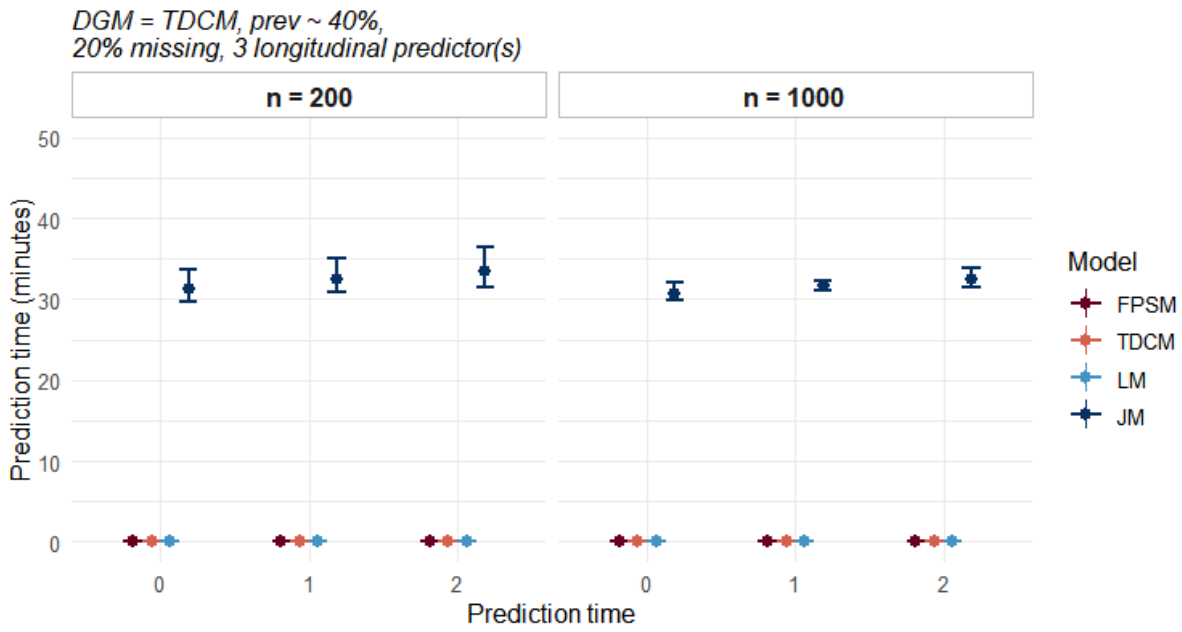
1.4.2.1. Sample size

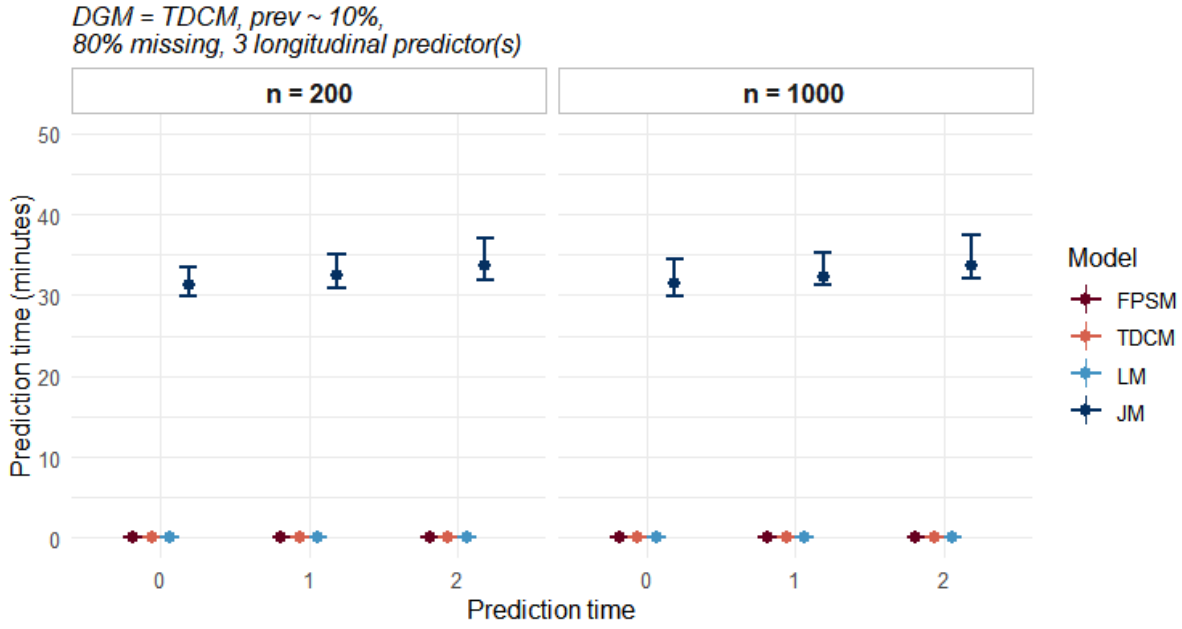



DGM = TDCM, prev ~ 10%,
80% missing, 1 longitudinal predictor(s)
n = 200
n = 1000
Prediction time (minutes)
0
10
20
30
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

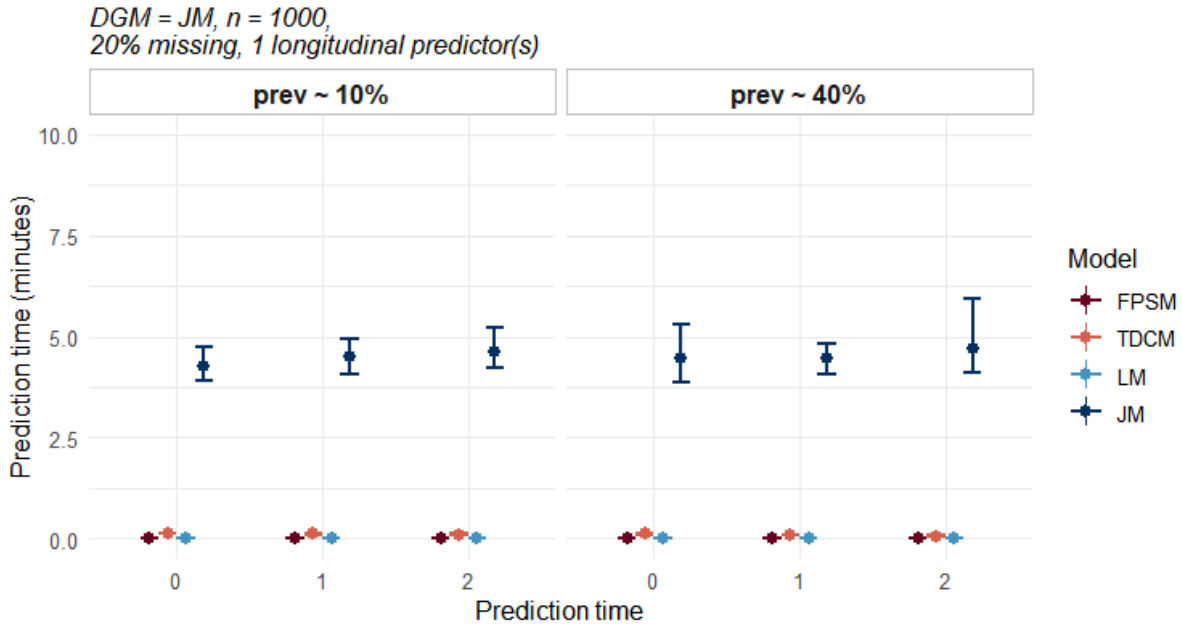

DGM = JM, prev ~ 40%,
20% missing, 3 longitudinal predictor(s)
n = 200
n = 1000
Prediction time (minutes)
0
10
20
30
40
50
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

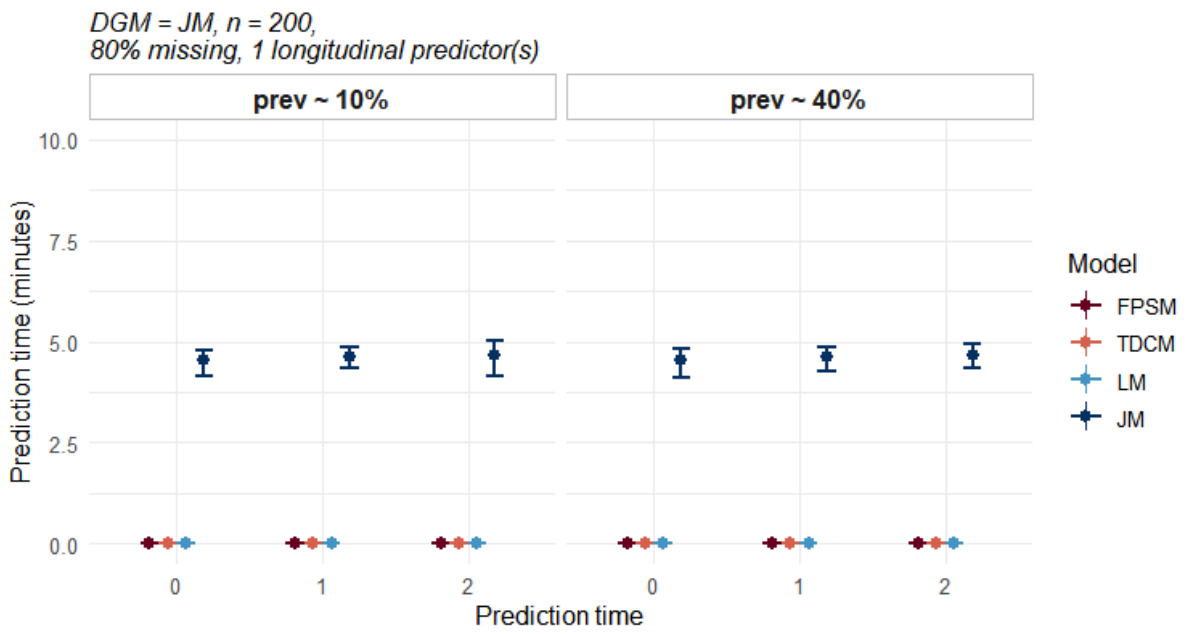

DGM = JM, prev ~ 10%,
80% missing, 3 longitudinal predictor(s)
n = 200
n = 1000
Prediction time (minutes)
0
10
20
30
40
50
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

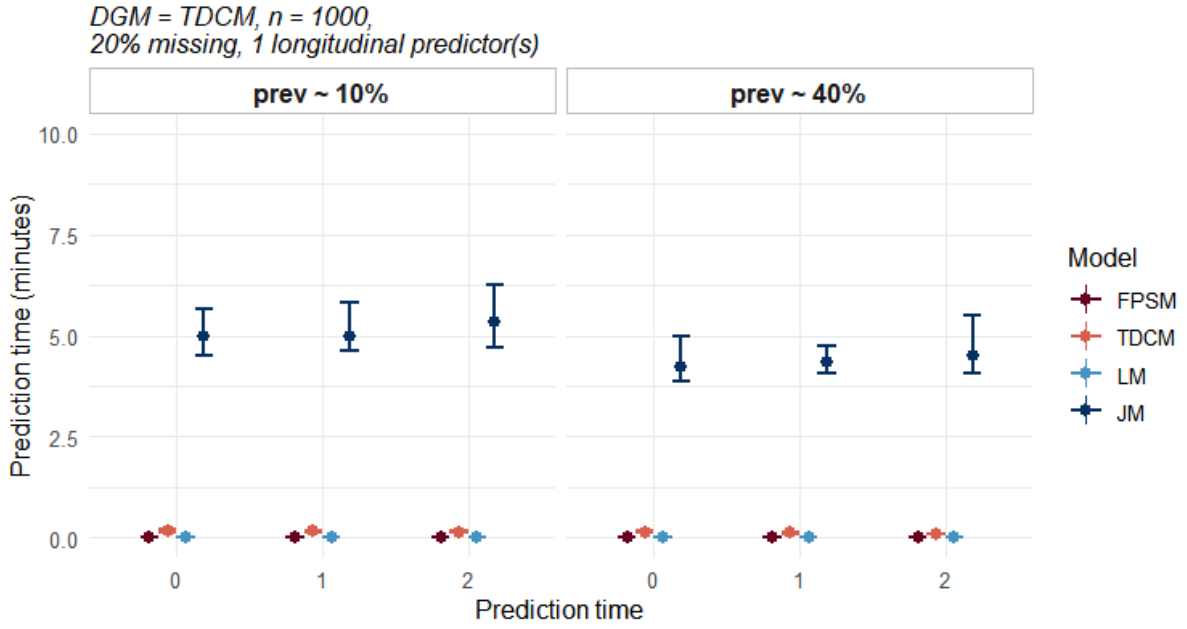


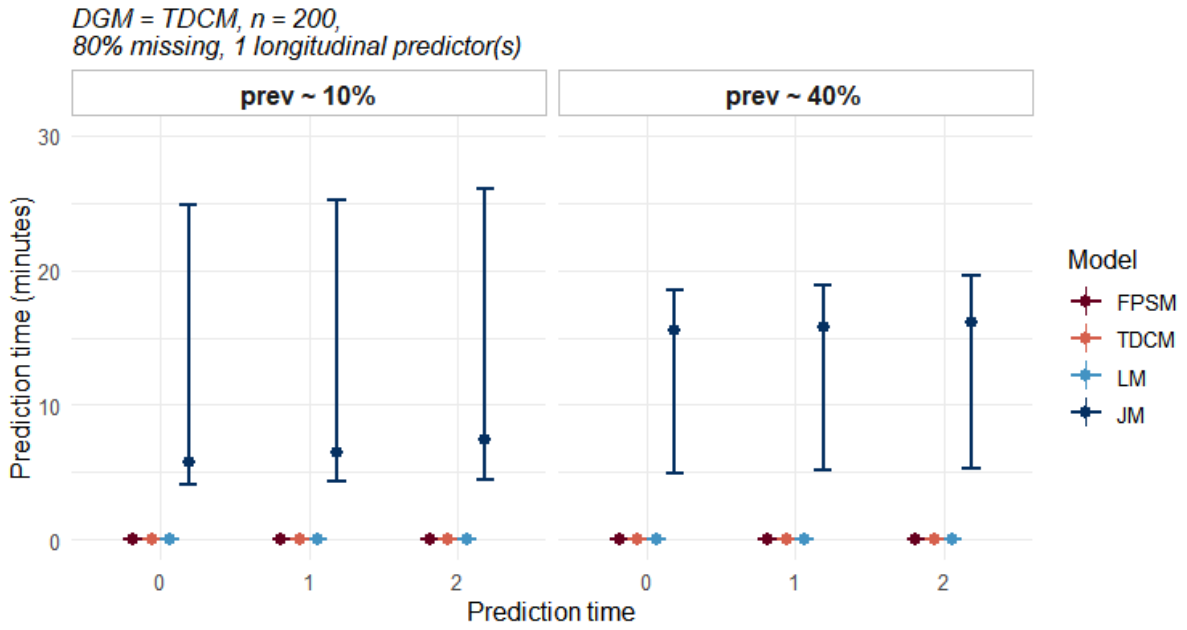


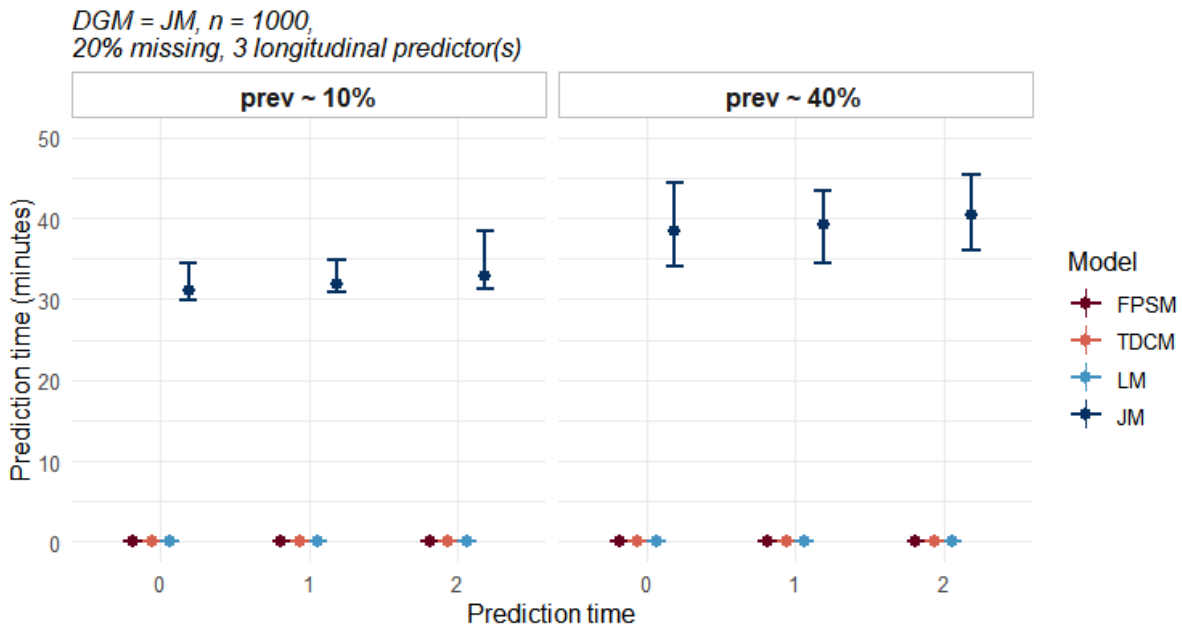
1.4.2.2. Event prevalence

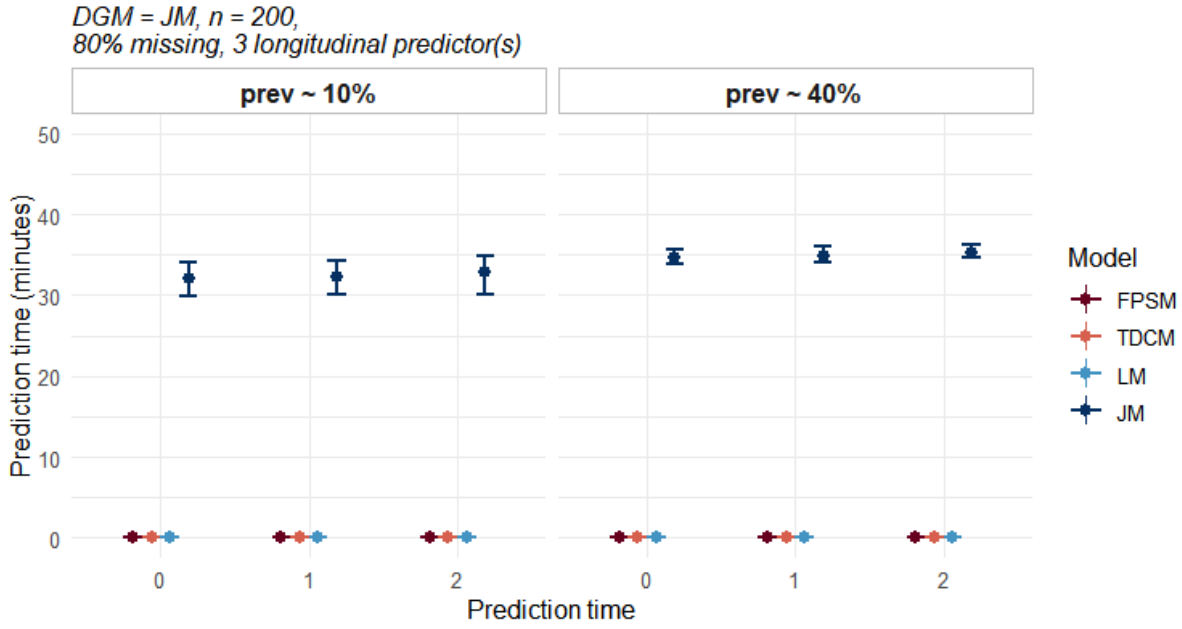


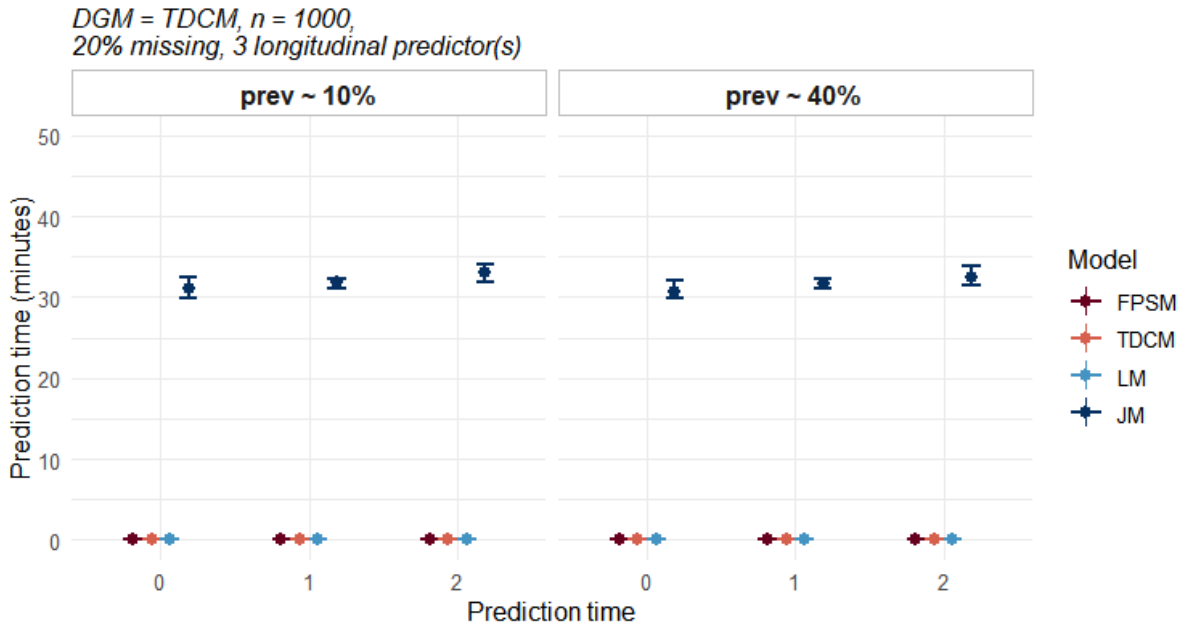

DGM = JM, n = 200,
80% missing, 1 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Prediction time (minutes)
10.0
7.5
5.0
2.5
0.0
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

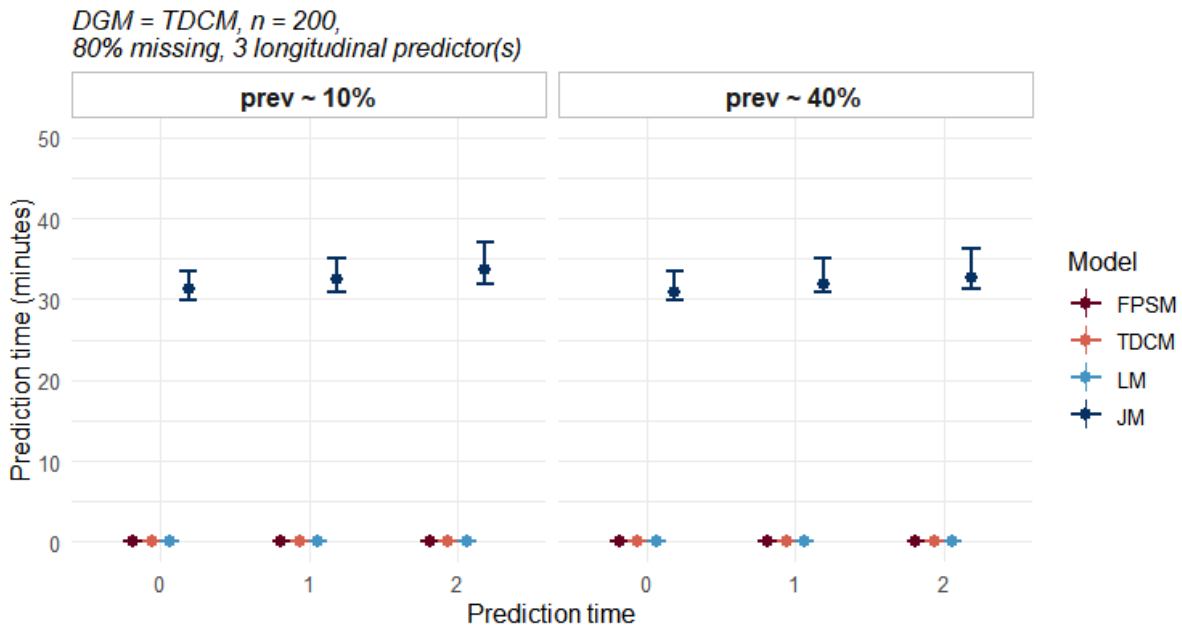

DGM = TDCM, n = 1000,
20% missing, 1 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Prediction time (minutes)
10.0
7.5
5.0
2.5
0.0
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM


DGM = TDCM, n = 200,
80% missing, 1 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Prediction time (minutes)
30
20
10
0
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

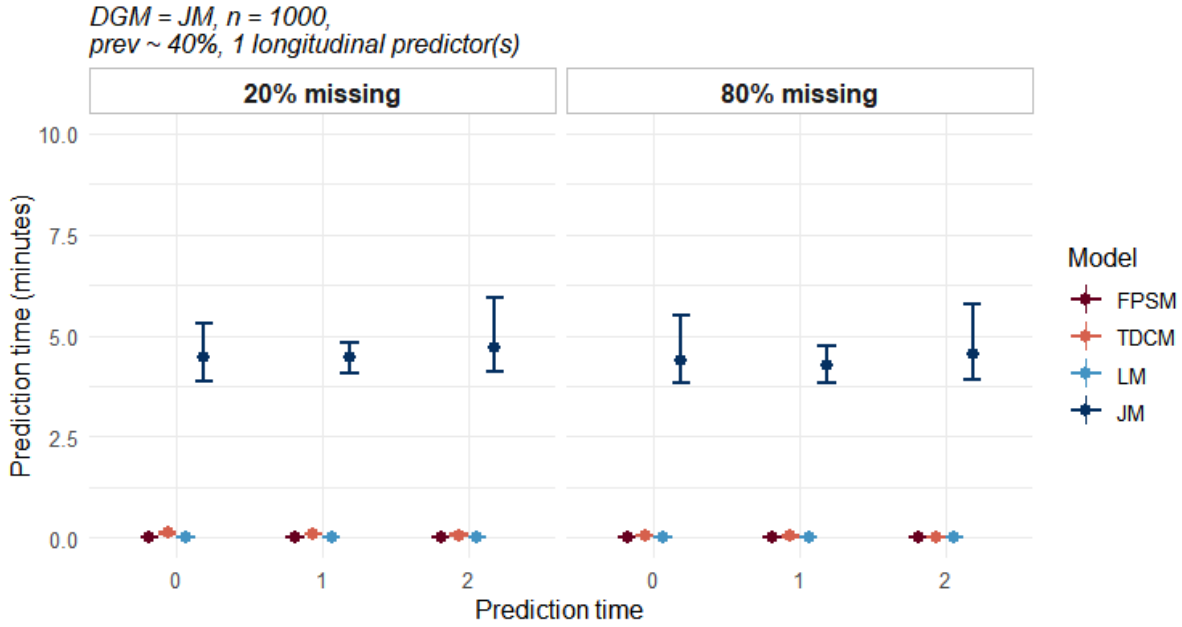

DGM = JM, n = 1000,
20% missing, 3 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Prediction time (minutes)
Prediction time
Model
FPSM
TDCM
LM
JM

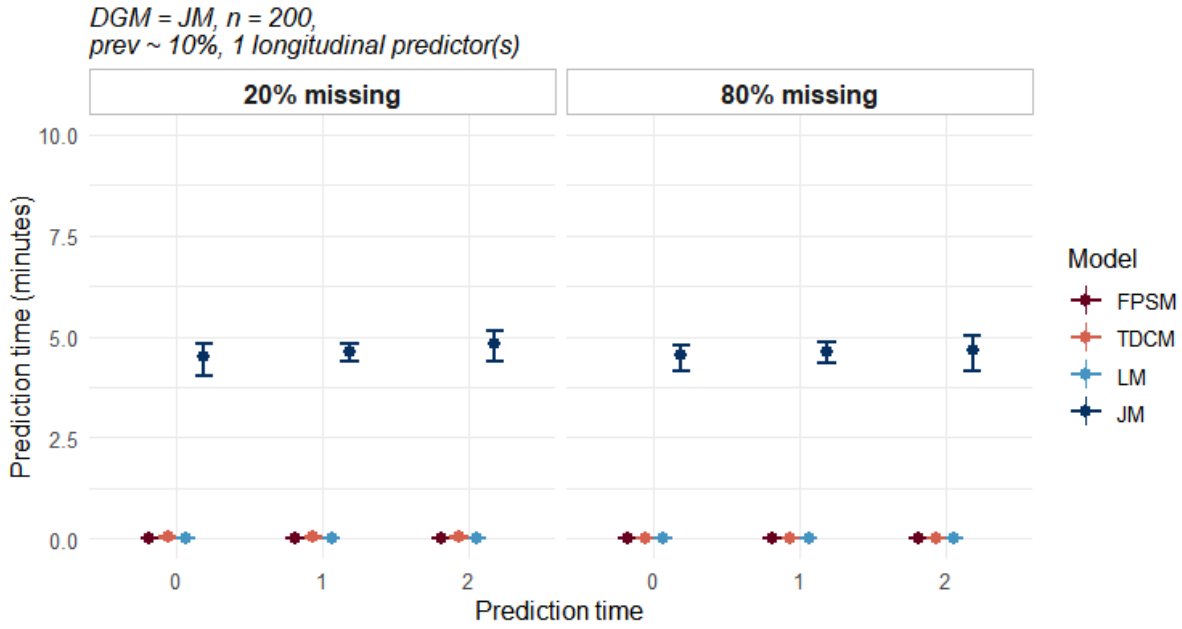

DGM = JM, n = 200,
80% missing, 3 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Prediction time (minutes)
Prediction time
Model
FPSM
TDCM
LM
JM

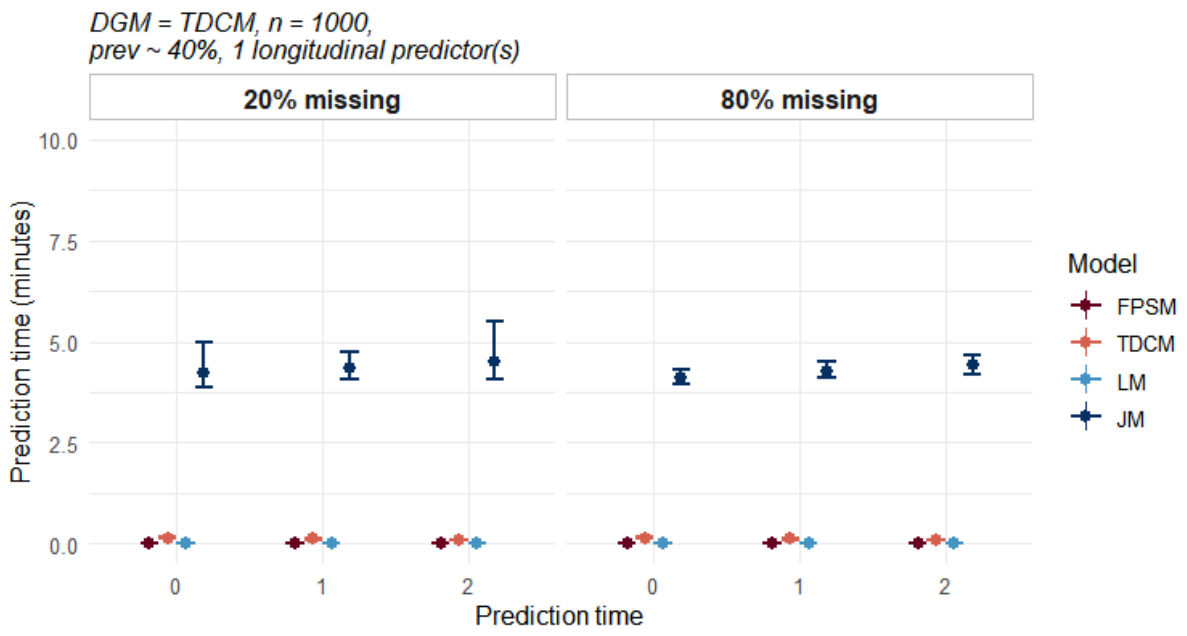

DGM = TDCM, n = 1000,
20% missing, 3 longitudinal predictor(s)
prev ~ 10%
prev ~ 40%
Prediction time (minutes)
Prediction time
Model
FPSM
TDCM
LM
JM

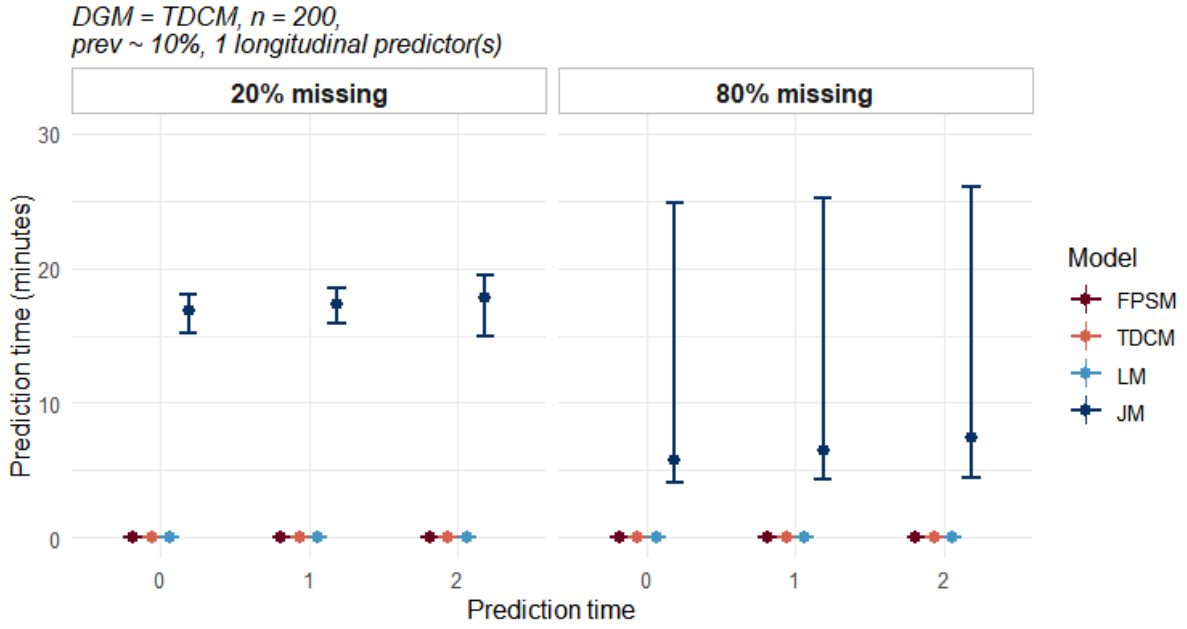


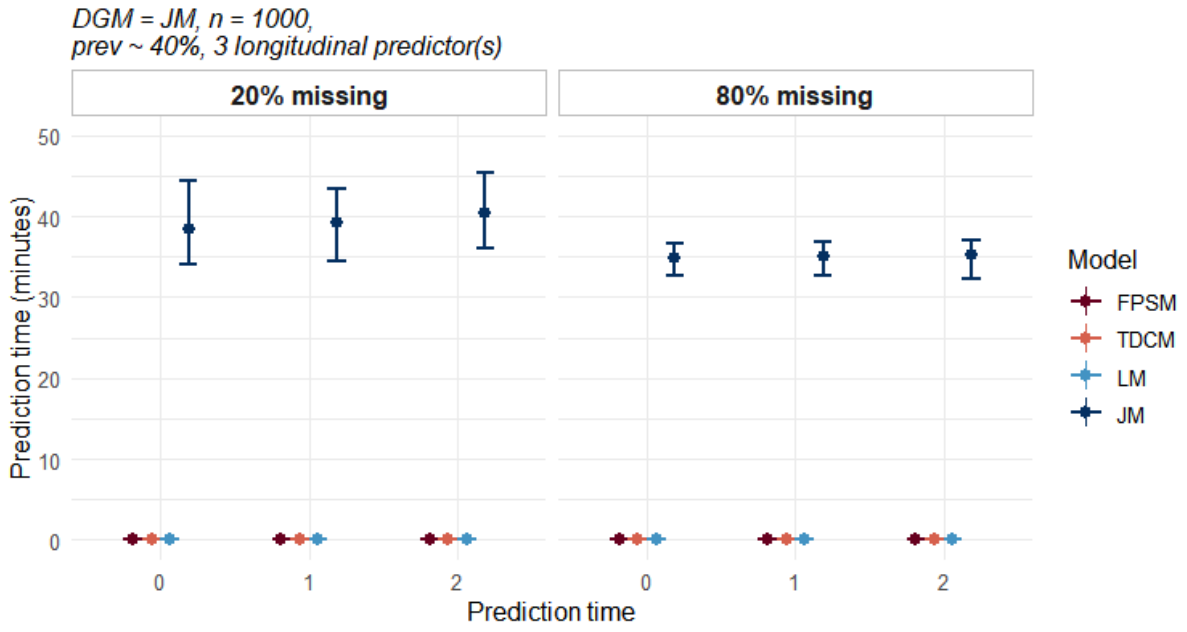
1.4.2.3. Follow-up missingness

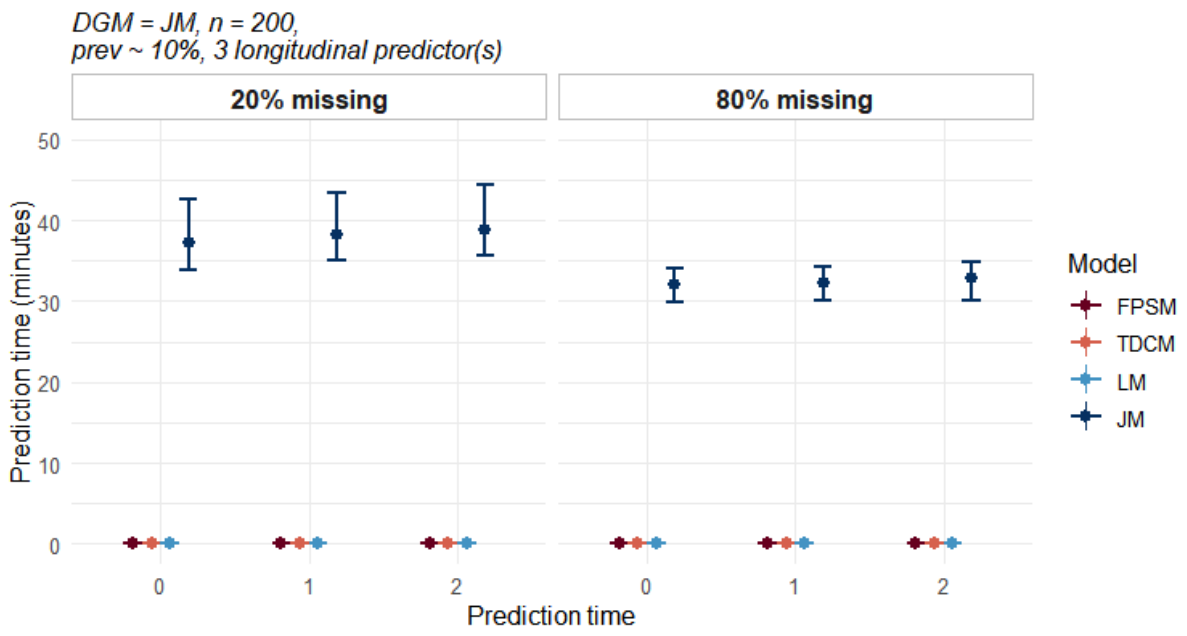


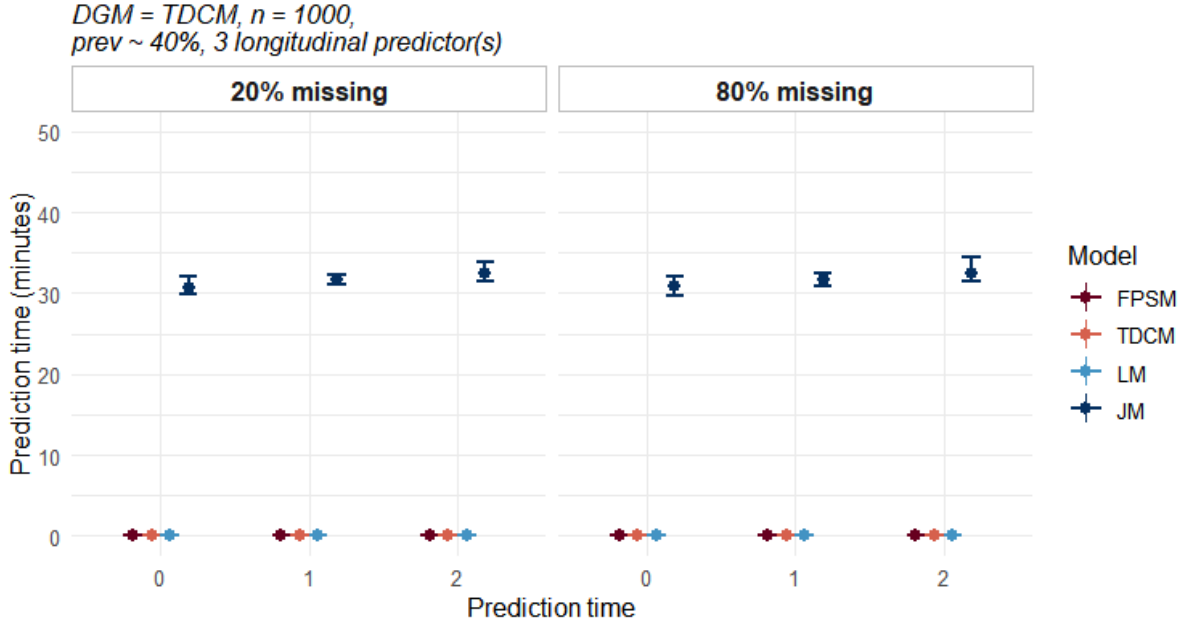


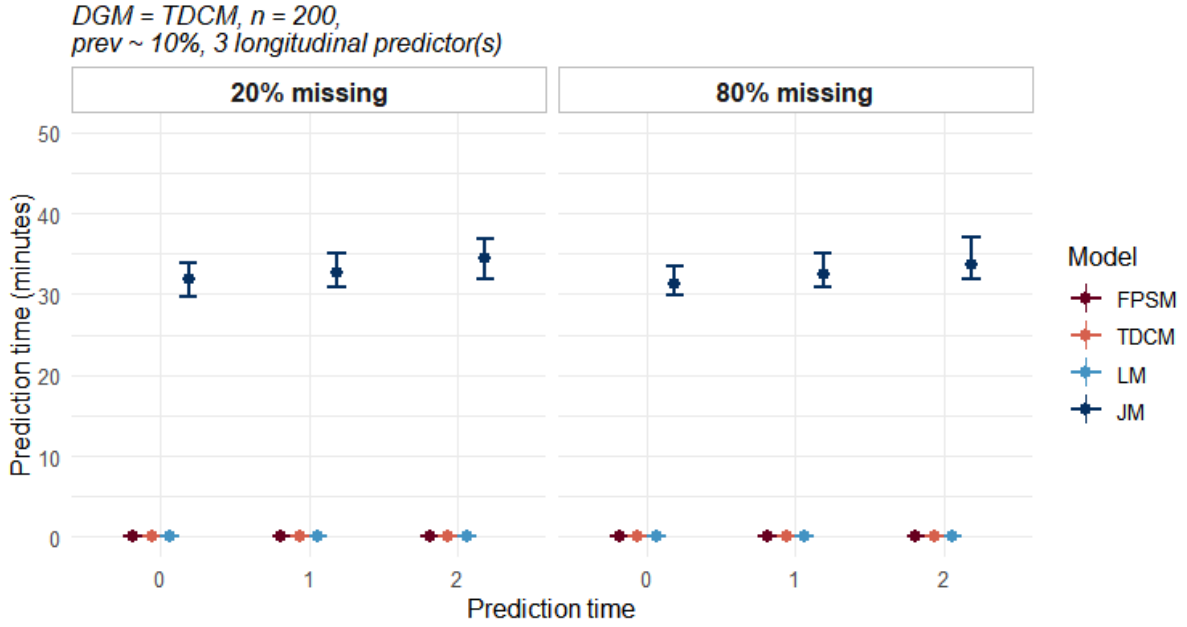

DGM = TDCM, n = 1000,
prev ~ 40%, 1 longitudinal predictor(s)
20% missing
80% missing
Prediction time (minutes)
10.0
7.5
5.0
2.5
0.0
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM


DGM = TDCM, n = 200,
prev ~ 10%, 1 longitudinal predictor(s)
20% missing
80% missing
Prediction time (minutes)
30
20
10
0
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM


DGM = JM, n = 1000,
prev ~ 40%, 3 longitudinal predictor(s)
20% missing
80% missing
Prediction time (minutes)
50
40
30
20
10
0
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM


DGM = JM, n = 200,
prev ~ 10%, 3 longitudinal predictor(s)
20% missing
80% missing
Prediction time (minutes)
50
40
30
20
10
0
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM


DGM = TDCM, n = 1000,
prev ~ 40%, 3 longitudinal predictor(s)
20% missing
80% missing
Prediction time (minutes)
50
40
30
20
10
0
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM


DGM = TDCM, n = 200,
prev ~ 10%, 3 longitudinal predictor(s)
20% missing
80% missing
Prediction time (minutes)
50
40
30
20
10
0
0
1
2
Prediction time
Model
FPSM
TDCM
LM
JM

1.5. Fitting failures