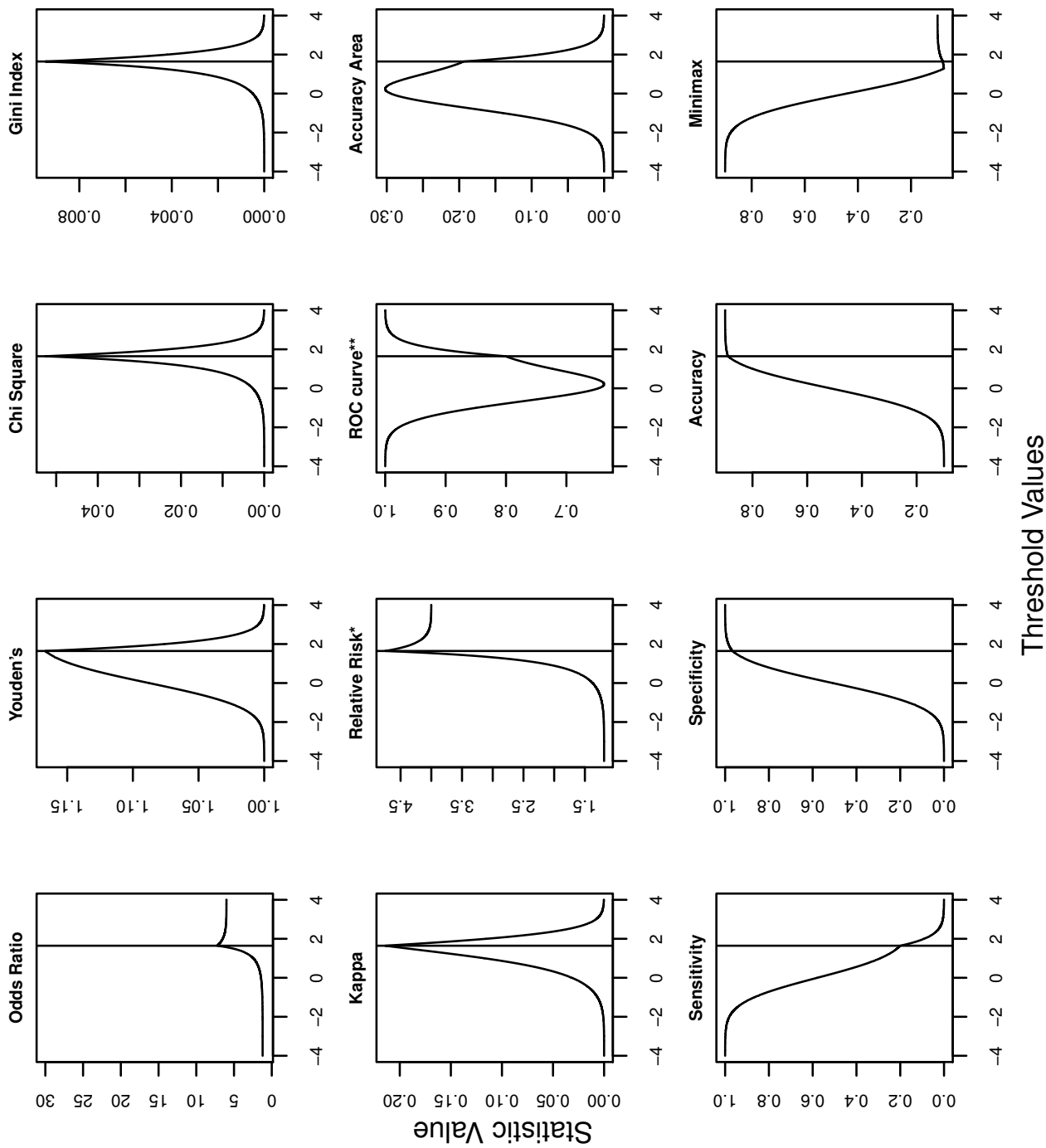


7 Supplemental Material

Scenario	OR	Chi	RR	Gini	Youden's	Kappa
1	1.5	0.38	1.36	0.3187	0.021	0.029
2	1.5	0.49	1.25	0.478	0.019	0.023
3	1.5	1.20	1.37	0.318	0.069	0.069
4	1.5	1.63	1.26	0.478	0.066	0.072
5	1.5	1.62	1.38	0.318	0.100	0.064
6	1.5	2.44	1.27	0.478	0.101	0.096
7	3.0	3.67	2.17	0.318	0.066	0.091
8	3.0	3.53	1.69	0.478	0.052	0.062
9	3.0	10.32	2.27	0.318	0.203	0.203
10	3.0	11.92	1.77	0.478	0.178	0.194
11	3.0	10.89	2.43	0.318	0.260	0.167
12	3.0	17.12	1.94	0.478	0.267	0.256
13	6.0	11.21	3.15	0.318	0.115	0.160
14	6.0	8.16	2.07	0.478	0.080	0.094
15	6.0	29.60	3.62	0.318	0.344	0.344
16	6.0	29.24	2.32	0.478	0.279	0.304
17	6.0	24.62	4.37	0.318	0.392	0.251
18	6.0	41.66	3.00	0.478	0.416	0.400

Table S1: Specific parameter values for each method given the different scenarios in a case-control setting for sample size of 250.



*For cohort study only

**Distance from ROC curve to point (0,1)

Figure S1: Statistic Maximums

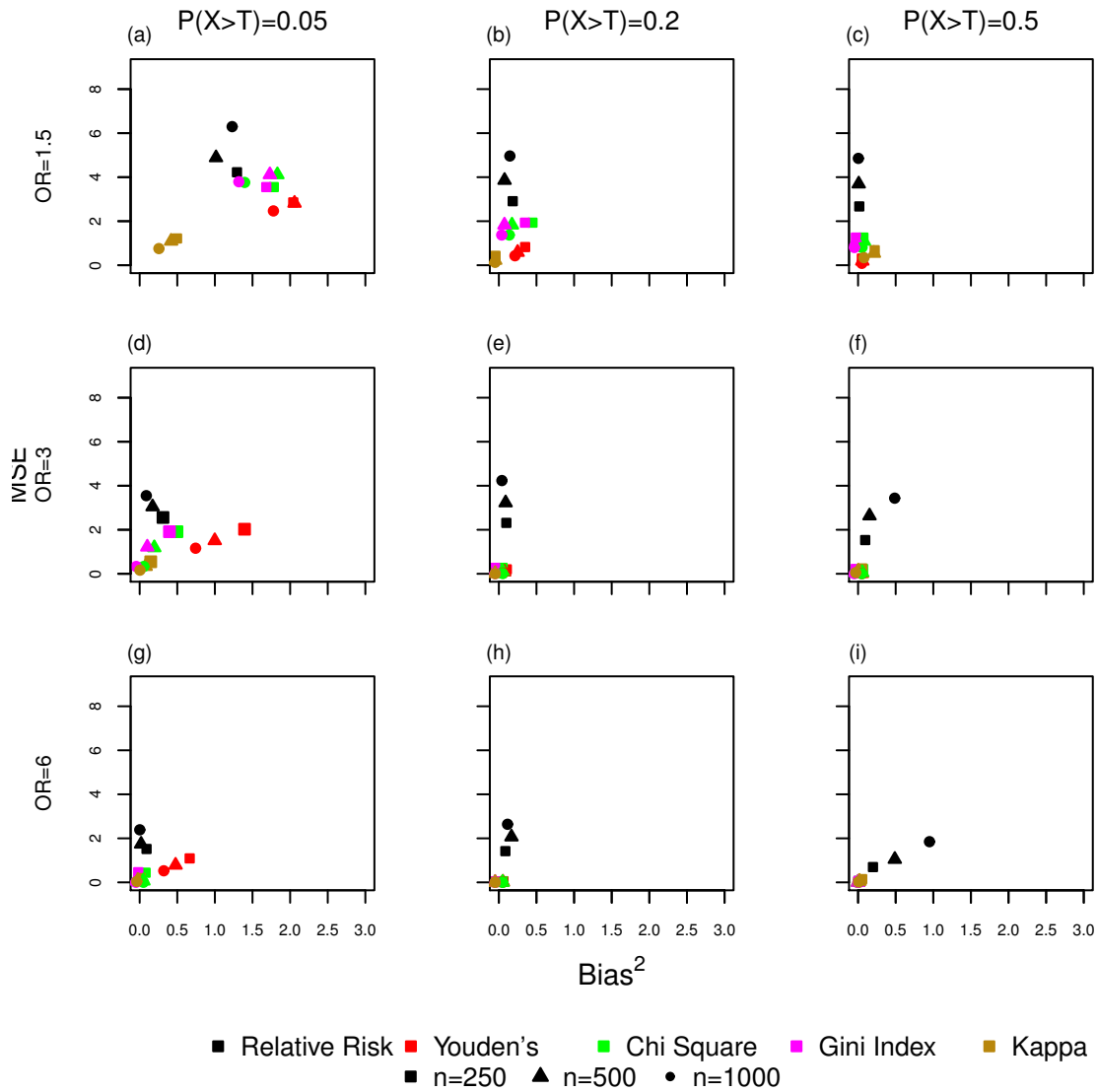


Figure S2: Simulation results showing mean-squared error (MSE) by Bias² under the cohort study design for the estimated threshold obtained by maximizing the statistics: odds ratio, Youden's, chi-square, Gini Index, and kappa. Rows represent strength of association between X and Y and columns represent the probability that the independent variable X is greater than the true threshold T .

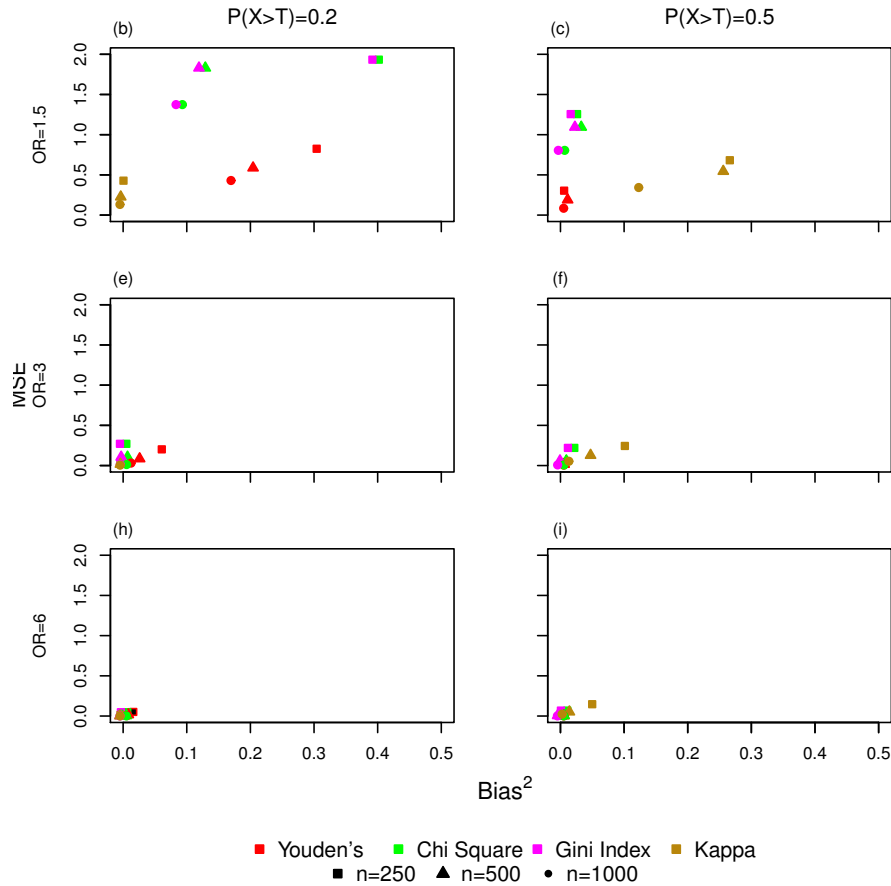


Figure S3: Simulation results showing mean-squared error (MSE) by Bias^2 under the cohort study design for the estimated threshold obtained by maximizing the statistics: Youden's, chi-square, Gini Index, and kappa, excluding $P(X \geq T)=0.05$. Rows represent strength of association between X and Y and columns represent the probability that the independent variable X is greater than the true threshold T .

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