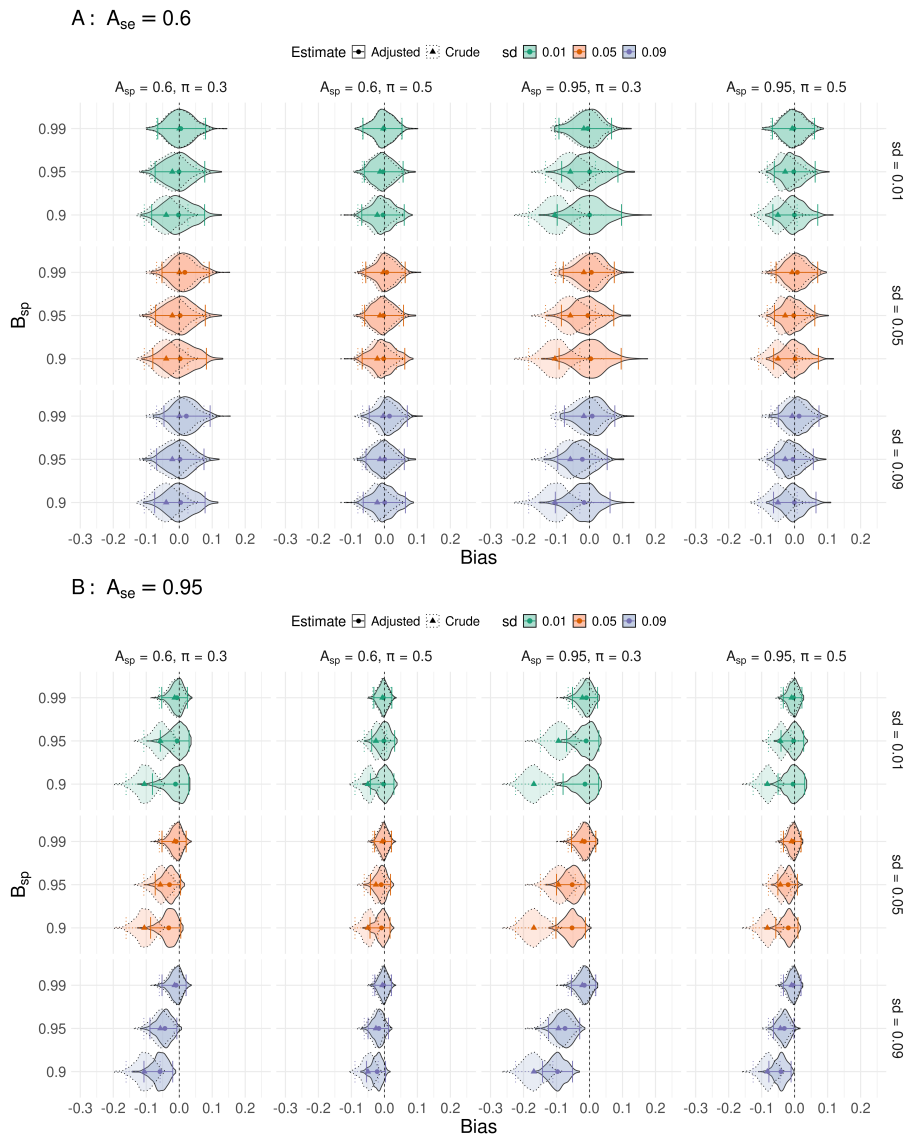
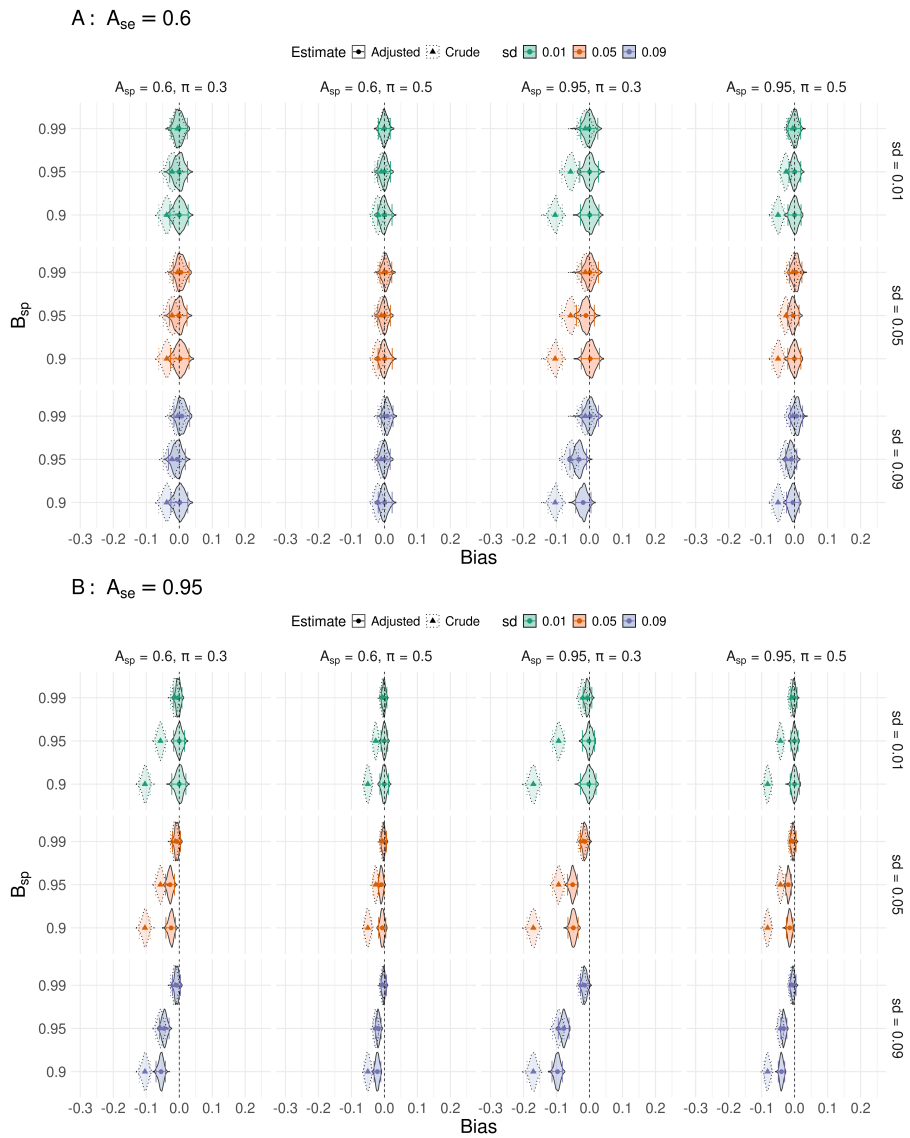


## Supporting Information S3

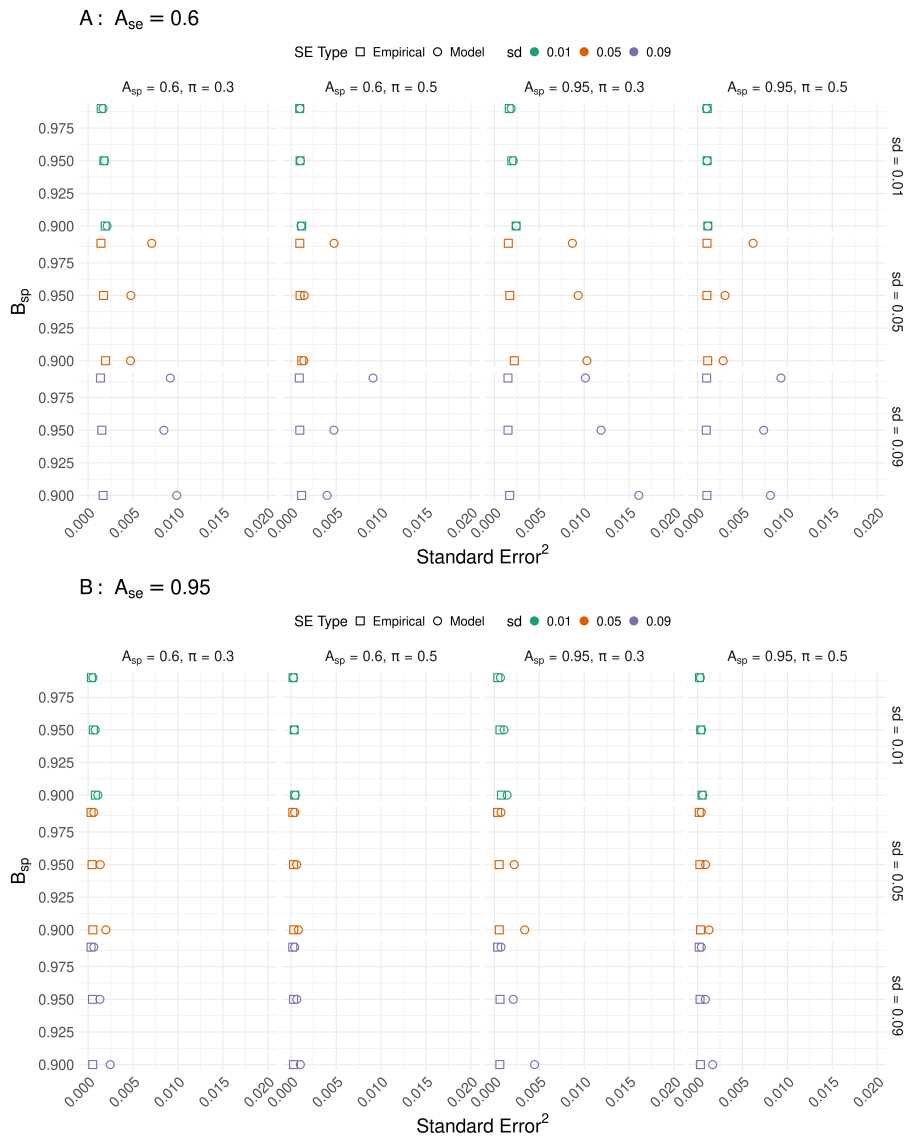
Bias and standard error plots for  $n = \{500, 5000\}$ , for correctly centred priors.



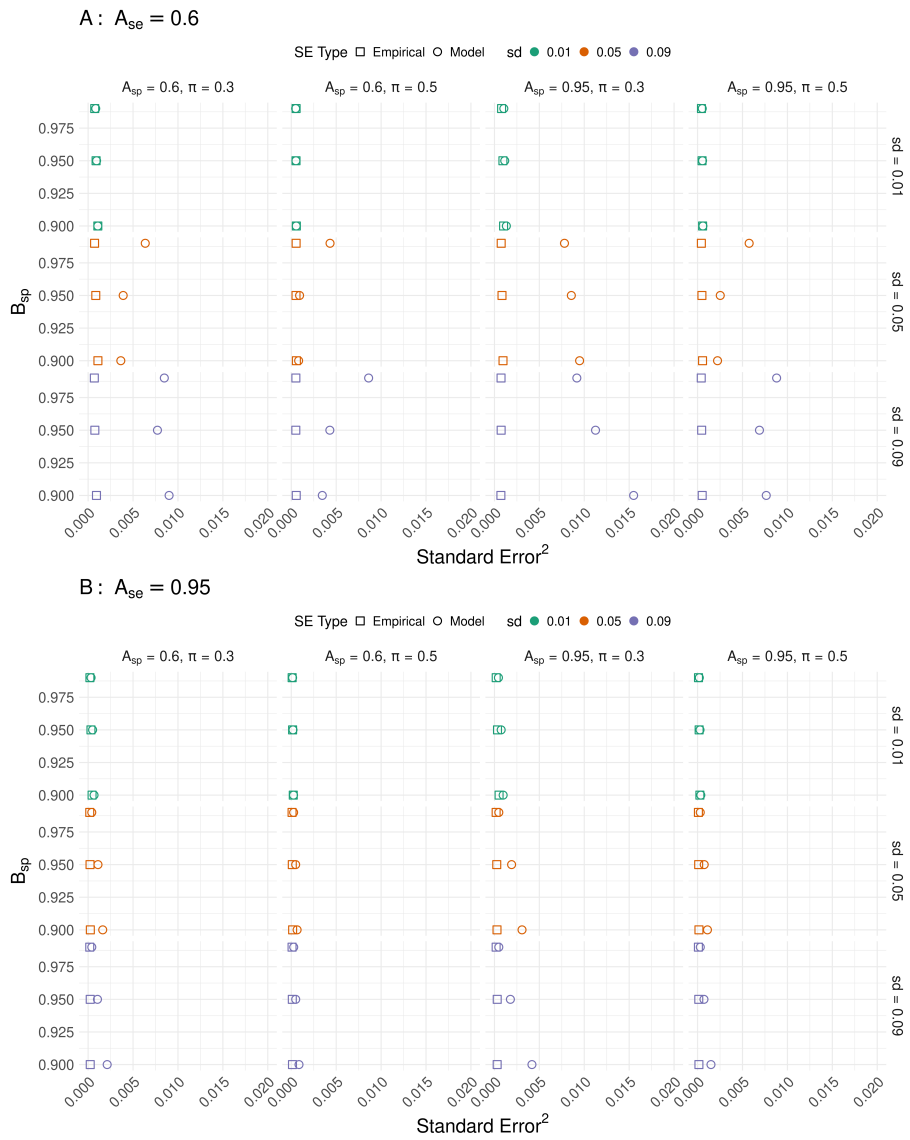
S3.1: Bias in the adjusted and crude estimates of  $A_{se}$ , for low (A) and high (B) values of  $A_{se}$ , when  $n_{obs} = 500$ , for correctly centred priors. Points represent the mean bias across simulations, and vertical lines show the 2.5th and 97.5th percentiles.



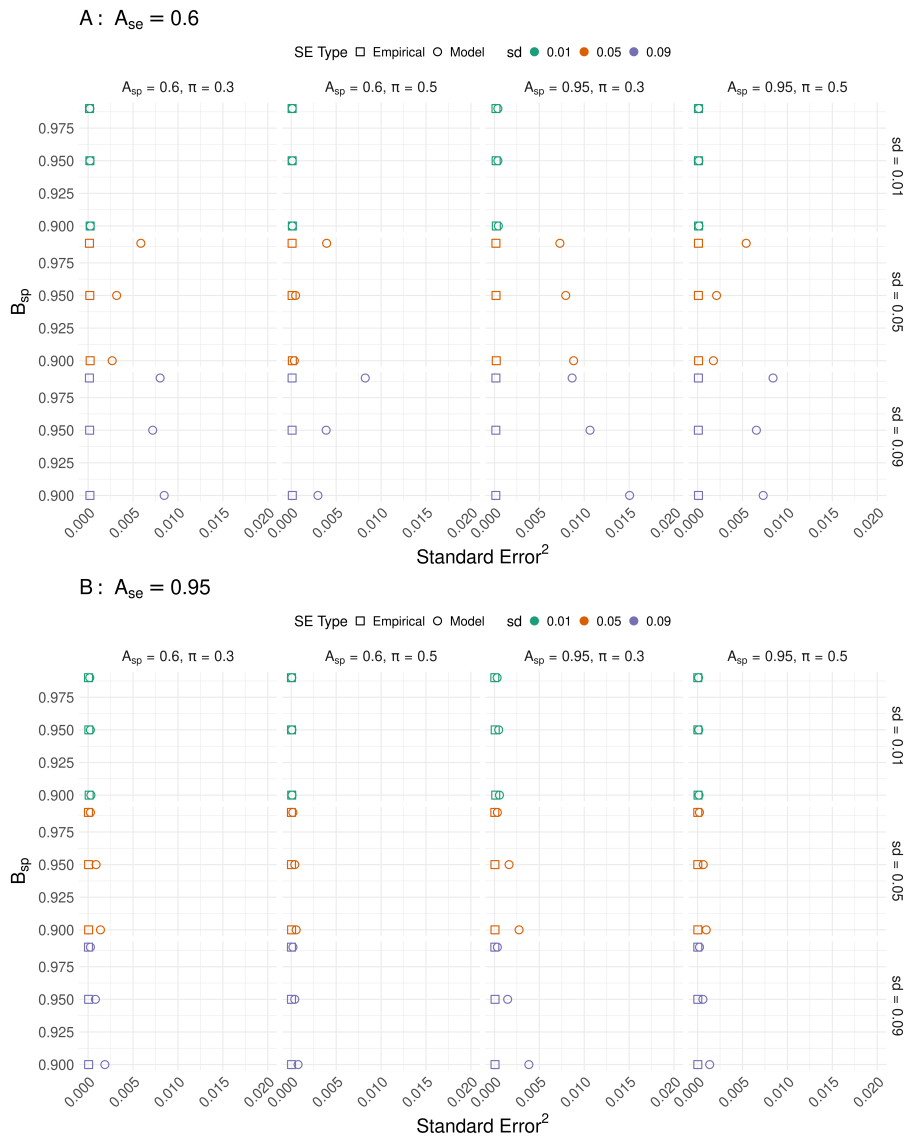
S3.2: Bias in the adjusted and crude estimates of  $A_{se}$ , for low (A) and high (B) values of  $A_{se}$ , when  $n_{obs} = 5000$ , for correctly centred priors. Points represent the mean bias across simulations, and vertical lines show the 2.5th and 97.5th percentiles.



S3.3: EmpSE<sup>2</sup> and ModSE<sup>2</sup>, for low (A) and high (B) values of  $A_{se}$ , when  $n_{obs} = 500$ , for correctly centred priors.



S3.4: EmpSE<sup>2</sup> and ModSE<sup>2</sup>, for low (A) and high (B) values of  $A_{se}$ , when  $n_{obs} = 1000$ , for correctly centred priors.



S3.5: EmpSE<sup>2</sup> and ModSE<sup>2</sup>, for low (A) and high (B) values of  $A_{se}$ , when  $n_{obs} = 5000$ , for correctly centred priors.