Let and denote the partially latent pre and post-scores, respectively, for individual i.

In this expression, denotes covariates that depend linearly on (e.g., itself and interaction terms) and are vectors of parameters.

We assume that these scores have both ceiling and floor effects. More specifically, we assume that the observed post-score is given by:

if

if

if

Similarly, we assume that the observed pre-score follows the same rules:

if

if

if

Because and are partially latent, we have to estimate these variables whenever the observed scores are at the ceiling (i.e., or ) or at the floor (i.e., or ). The prior for is given by the regression model itself. However, we need to specify the prior for . We assume that:

In relation to the other priors in our model, we assume standard uninformative priors:

The full model is given by:

#--------------------------------

Full conditional distributions

* For

Let and . Therefore:

where .

This implies that

* For

This implies that:

* For

This implies that

* For

This implies that

* For

Because all terms in depend linearly on , we can write . Therefore, we have that:

This implies that

* For

If , then

If , then