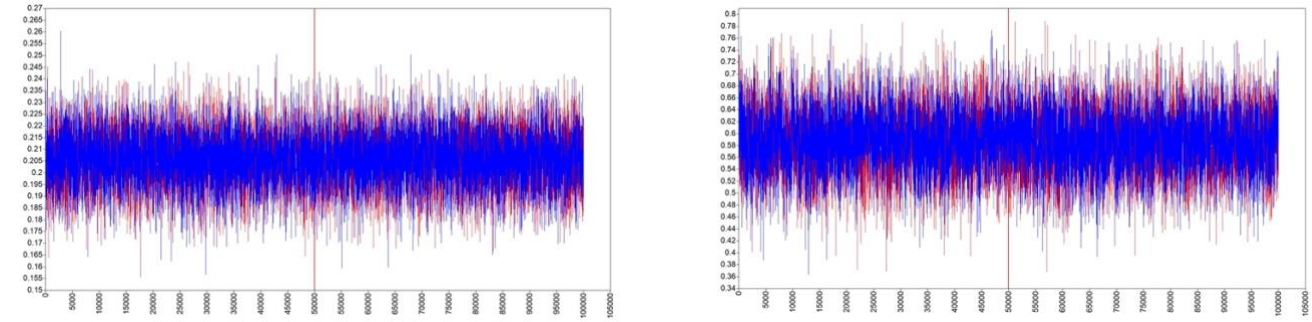
An Event-Level Evaluation of Women's Self-Medicated Drinking:
The Role of Sexual Assault Severity, Affect, and Drinking Motives

Supplemental Materials

Below are sample plots to investigate Bayesian model convergence. For simplicity, plots for two parameters are displayed below, but corresponding plots were examined for each parameter in the model.

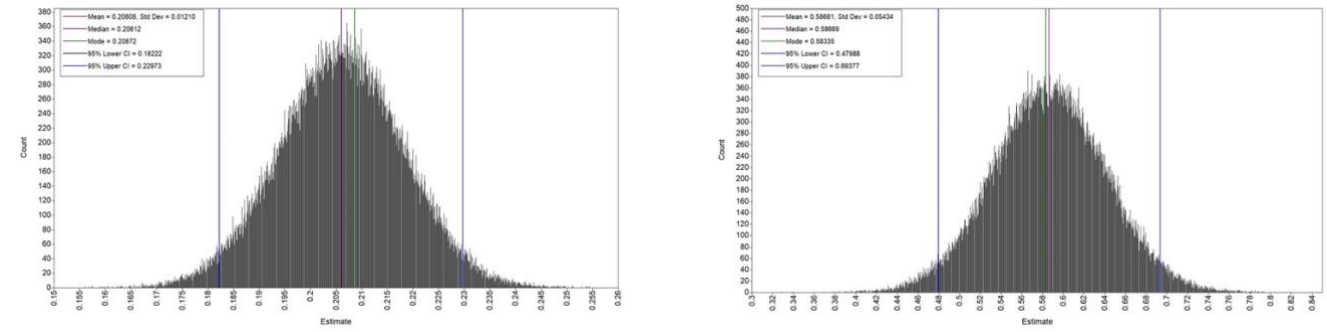
Within Person: Negative Affect → Coping Motives	Between Person: Negative Affect → Coping Motives

Trace Plot



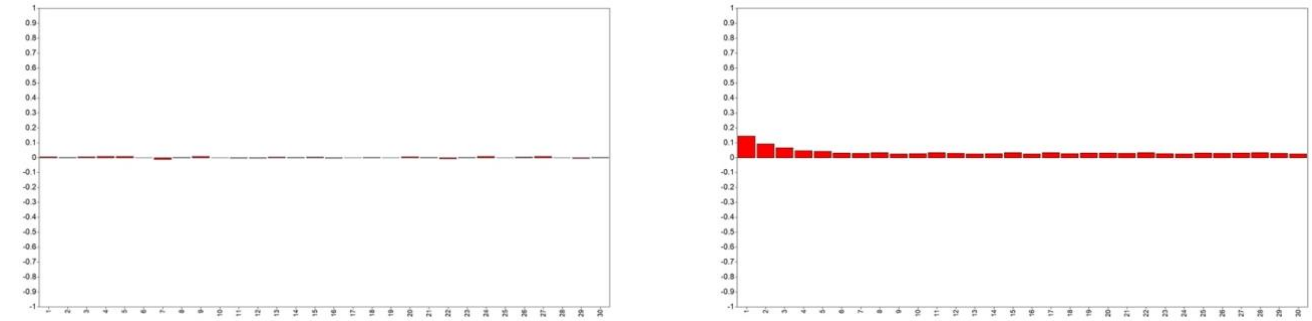
Note. Number of iterations is on the x-axis; value of the parameter estimate is on the y-axis. Each trace plot reveals that both Markov chain Monte Carlo (MCMC) chains (one in red, one in blue) coverge around a single parameter estimate. The parameter estimates appear relatively stable across the first half of all iterations (which are considered "burn-in" and discarded in analyses) and the remaining iterations.

Posterior Parameter Histogram



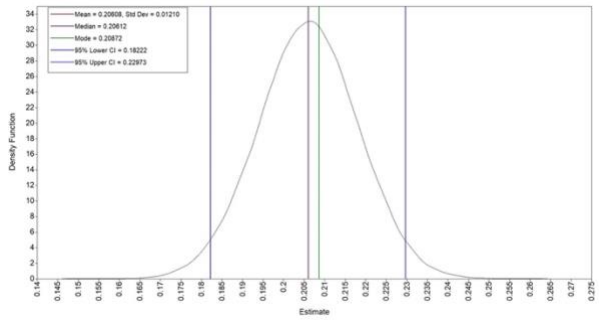
Note. These histograms display the distribution of the parameter estimates, aggregated across all post-burn-in iterations. In support of convergence, the histograms appear relatively smooth with no notable gaps, such that there appears to be sufficient information to inform the estimate of the posterior distribution.

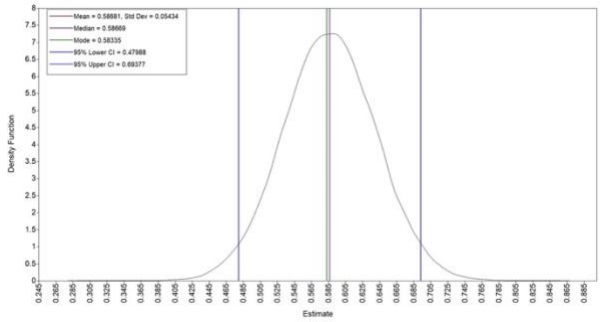
Autocorrelation



Note. The x-axis represents the lag between iterations; the y-axis represents the correlation between parameter estimates. Convergence is supported by low autocorrelations between iterations here, which suggests the iterations that generate parameter estimates are independent.

Posterior Parameter Kernel Density





Note. The point estimate shown in Table 2 corresponds to the median of the posterior distribution; the 95% credibility interval (CI) falls between the lower and upper CI bounds displayed here. Convergence is supported by the smooth Kernel density plot, alongside estimates that make sense. In this case, a 1-unit increase in negative affect is associated with an increase in drinking to cope motives (0.21 units at the within-person level; 0.59 units at the between-person level), holding all other variables constant in the model.

Potential Scale Reduction

The Potential Scale Reduction (PSR) factor is estimated for each model parameter in each iteration. The PSR provides information about the variation in the parameter estimate between chains relative to variation within chains. A PSR of 1 represents perfect convergence; values below 1.05 represent convergence (Depaoli & van de Schoot, 2017). Mplus provides output for the highest PSR value within the model for every 100 iterations. PSR values were plotted below. Supporting convergence, PSR values were consistently at or near 1 (e.g., 1.001) for the all iterations after burn-in, with no evidence of increasing.