**Mediation**

*In this write-up I swapped the generic variable names with constructs*

*x1 = Conformity Motives*

*x2 = Anxiety*

*x3 = Trauma History*

*y1 = Lack of Self-Efficacy*

*y2 = Protective Behavioral Strategies*

*y3 – Drinks per Drinking Day*

*\*Note: does not include information about temporality. In a real write up you should include temporality information.*

**Analysis Plan**

A path analysis was conducted to test the study hypotheses that Drinks per Drinking Day is predicted by Conformity Motives indirectly via Lack of Self-Efficacy and Protective Behavioral Strategies, controlling for Anxiety and Trauma History. All variables were scored on a continuous scale and were normally distributed. A path model is presented in Figure 1. Our analyses were conducted using Mplus 7.4 (Muthén & Muthén, 1998–2012).

The primary challenge in making appropriate determinations regarding the strength of an indirect effect is that the product of two regression slopes is not normally distributed. The violation of the normality assumption results in a loss of statistical power for many traditional approaches to testing mediation (e.g., the Sobel Test). In order, to circumvent this issue the best practices approach is to assess asymmetrical confidence intervals (ACIs) that best represent the true distribution of the product of coefficients. ACIs that do not contain zero are considered to be statistically significant. We examined the indirect effects of each predictor variable on outcomes using bias-corrected bootstrapped estimates (Efron & Tibshirani, 1993) based on 1,000 bootstrapped samples, which provides a powerful test of mediation (Fritz & MacKinnon, 2007) and are asymmetrical. Statistical significance was determined by 95% bias-corrected bootstrapped confidence intervals that do not contain zero. We further evaluated the effect size of our indirect effects using Lachowicz, Preacher, and Kelley’s (2017, under review) 𝝊 index of effect size, which examines the total joint variance in Y accounted for by the IV and the Mediator(s) using the MBESS (Kelley & Lai, 2010) R (R Development Core Team, 2010) package.

To evaluate overall model fit, we used model fit criteria suggested by Hu and Bentler (1999) including the comparative fit index (CFI) > .95, Tucker–Lewis Index (TLI) > .95, root mean square error of approximation (RMSEA) < .06, and standardized root mean square residual (SRMR) < .08. In addition, we evaluated the Chi-Square test of model fit, where a non-significant test indicates perfect fit of the model to the data.

**Results**

*Overall Model Fit.* The path analysis resulted in excellent model fit. The Chi-Square test of model fit was not significant (χ2(3) = .757, p = .86). Overall fit indices were all in the excellent range (RMSEA = .00 [.00, .04], p = .97; CFI = 1.00; TLI = 1.00; SRMR = .001).

*Direct Effects.* All direct effects specified in the model were significant. Specifically, Conformity Motives, Anxiety, and Trauma History significantly and positively predicted Lack of Self-Efficacy (Conformity Motives: b = .99, SE = .04, p < .001; Anxiety: b = 2.00, SE = .04, p < .001; Trauma History: b = 3.05, SE = .04, p < .001), Protective Behavioral Strategies (Conformity Motives: b = 2.94, SE = .05, p < .001; Anxiety: b = 1.99, SE = .05, p < .001; Trauma History: b = 1.023, SE = .05, p < .001), and Drinks per Drinking Day (Conformity Motives: b = ..51, SE = .02, p < .001; Anxiety: b = .74, SE = .02, p < .001; Trauma History: b = 1.05, SE = .08, p < .001). This suggests that higher values of Conformity Motives, Anxiety, and Trauma History were associated with higher values of Lack of Self-Efficacy, Protective Behavioral Strategies, and Drinks per Drinking Day.

*Indirect Effects.* Examination of the bias-corrected bootstrapped confidence intervals revealed that the total effect and both specific indirect effects were statistically significant (Total = 2.69 [2.58, 2.82]; Conformity Motives🡪Lack of Self-Efficacy🡪Drinks per Drinking Day = .50 [.45, .56]; Conformity Motives🡪Protective Behavioral Strategies🡪Drinks per Drinking Day = 2.19 [2.06, 2.32]).

We examined two indices of effect size (a)Pm = ab/c (Alwin & Hauser, 1975), which is the ratio of the indirect effect to the total effect, and 𝝊 (Lachowicz et al., 2017, under review) which is the total joint variance in the DV accounted for by the IV and the Mediator(s). The ratio of the indirect to total effect for the Conformity Motives🡪Lack of Self-Efficacy🡪Drinks per Drinking Day path was Pm = 1.32, and, Pm for the Conformity Motives🡪Protective Behavioral Strategies🡪Drinks per Drinking Day was 1.06.

However, in the present model Pm should be interpreted with caution because of the small magnitude of c’. Pm becomes increasingly unstable as c’ approach 0, and in the current model c’ was -.119. Indeed, Pm in the current models exceeds 1, which makes it more difficult to interpret. However, it is clear that the indirect effect is stronger than the total effect in the present model. Comparing indirect effects using a more rigorous effect size 𝝊, we can see that Conformity Motives and Lack of Self-Efficacy accounted for (𝝊 = .005) of the joint variance in Drinks per Drinking Day while, Conformity Motives and Protective Behavioral Strategies accounted for (𝝊 = .003) of the total joint variance in Drinks per Drinking Day. A comparative interpretation of 𝝊 suggests that Conformity Motives and Lack of Self-Efficacy explain nearly twice the joint variance in Drinks per Drinking Day compared to Conformity Motives and Protective Behavioral Strategies.

**Discussion**

The present study demonstrated that Conformity Motives influence Drinks per Drinking Day indirectly via Lack of Self-Efficacy and Protective Behavioral Strategies. Further, we can see that Lack of Self-Efficacy is a stronger mediator of the Conformity Motives🡪Drinks per Drinking Day relationship compared to Protective Behavioral Strategies. However, the magnitude of these indirect effects are hard to interpret given the small size of c’. Thus, it is not possible to rule out the need to consider additional predictors of Drinks per Drinking Day, as well as additional predictors of the Conformity Motives🡪Drinks per Drinking Day relationship. In addition, the results indicated that Conformity Motives, Anxiety, and Trauma History were all directly positively associated with Lack of Self-Efficacy, Protective Behavioral Strategies, and Drinks per Drinking Day.