**Path Analysis**

**Analysis Plan**

A path analysis was conducted to test the study hypotheses that (a) hostility, rumination, and substance use are predictors of both anxiety and depression, and (b) that having a history of being bullied was a predictor of anxiety. All variables were scored on a continuous scale and were normally distributed. A path model is presented in Figure 1. Direct effects from all predictor variables to outcome variables were specified as indicated in Figure 1. Depression and anxiety were expected to be correlated with one another. Standardized regression coefficients (i.e., β) are an index of effect size, with values of .1, .3, and .5 being considered small, medium, and large, respectively. Maximum Likelihood Estimation was used to derive parameter estimates and indices of model fit using Mplus version 7.4 (Muthén & Muthén, 1998–2012). 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. When evaluating regression coefficients, we examined both standardized and unstandardized regression coefficients, standard errors, p-values, and confidence intervals.

**Results**

*Overall Model Fit.* The path analysis resulted in excellent model fit. The Chi-Square test of model fit was not significant (χ2(1) = .001, p = .97). Overall fit indices were all in the excellent range (RMSEA = .00 [.00, .00], p = .99; CFI = 1.00; TLI = 1.00; SRMR = .00).

*Direct Effects.* All direct effects specified in the model were significant.

*Depression.*Hostility significantly predicted depression (b = .99, SE = .04, p < .001), such that a one unit increase in hostility was associated with a one unit increase in depression. This is a small to medium sized effect (β = .25). Rumination significantly predicted depression (b = 2.00, SE = .05, p < .001), such that a one unit increase in rumination was associated with a two unit increase in depression. This is a large effect (β = .50). Substance abuse significantly predicted depression (b = 3.05, SE = .05, p < .001), such that a one unit increase substance abuse was associated with a three unit increase in depression. This is a large effect (β = .76).

*Anxiety.* Hostility significantly predicted anxiety (b = .37, SE = .16, p = .02), such that a one unit increase in hostility was associated with a .37 unit increase in anxiety. This effect did not meet criteria to be considered a small effect (β = .07). Rumination significantly predicted anxiety (b = 1.98, SE = .12, p < .001), such that a one unit increase in rumination was associated with a 1.98 unit increase in anxiety. This is a medium sized effect (β = .36). Substance abuse significantly predicted anxiety (b = 1.52, SE = .05, p < .001), such that a one unit increase substance abuse was associated with a 1.52 unit increase in anxiety. This is a small to medium sized effect (β = .28). Having a history of being bullied significantly predicted anxiety (b = .78, SE = .05, p < .001), such that a one unit increase in hostility was associated with a .78 unit increase in anxiety. This is a large effect (β = .58).

**Discussion**

The present study suggests that hostility, rumination, and substance abuse predict both depression and anxiety. In addition, having a history of being bullied predicted anxiety. Substance abuse was the strongest predictor of depression, whereas, having a history of bullying was the strongest predictor of anxiety.