

# Unique longitudinal associations between symptoms of psychopathology in youth:

## A cross-lagged panel network analysis in the ABCD study

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### INTRO

- Disorders may be networks of *dynamic* and *causal* relationships between Sx
- Most network models have used cross-sectional data, which cannot identify directionality

Aim: examine (1) unique *longitudinal* relationships between individual Sx (“edges”), and (2) Sx centrality (i.e., how connected each Sx is to all other Sx)

### METHODS

- 4,093** youth from the ABCD study
  - $M_{age} = 10.5$  years
- Transdiagnostic Sx assessed twice (**6 months apart**)
  - Youth-report Brief Problem Monitor

#### Data Analysis

- Cross-lagged panel network model
  - Series of regularized regressions with all Sx at T1 predicting each Sx at T2
  - Edges = unstandardized regression coefficients
    - Blue = positive; Red = negative
- Centrality
  - Out-expected influence** = sum of outgoing edges
  - In-expected influence** = sum of incoming edges
- Note: the network plot excludes autoregressive and weak ( $< .3$ ) edges for interpretability

### DISCUSSION

- Strongest longitudinal edges = depressed mood  $\rightleftharpoons$  worthlessness
  - Consistent with hopelessness theory of MDD
- Destructiveness and threats of violence had highest in-expected influence
  - Most predicted by other symptoms at T1
- Results may differ for different time lags
  - More frequent sampling may be beneficial
  - ‘True’ time lag may differ for different edges and/or people

# Depressed mood, inattention, and worry were the strongest prospective predictors of other symptoms in a longitudinal symptom network of 4,093 youths.

