Network analysis investigating links between child maltreatment and BPD (#46114)

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Author(s)
Annegret Krause-Utz (Leiden University, Leiden, the Netherlands) - a.d.krause@fsw.leidenuniv.nl
Sandeep Karthikeyan (CIMH Mannheim, Germany) - Sandeep.Karthikeyan@zi-mannheim.de
Leonie Cloos (Leuven University, Belgium) - leonie.cloos@gmail.com
Stefanie Lis (Central Institute of Mental Health Mannheim, Germany) - stefanie.lis@zi-mannheim.de

1) Have any data been collected for this study already?
It's complicated. We have already collected some data but explain in Question 8 why readers may consider this a valid pre-registration nevertheless.

2) What's the main question being asked or hypothesis being tested in this study?
Q1: Do specific childhood maltreatment types (emotional abuse, physical abuse, sexual abuse, emotional neglect, physical neglect) relate to different BPD features (affective instability, identity disturbance, self-harming impulsivity, relationship problems)?
H1: All types of childhood maltreatment are related to all BPD features.
This hypothesis is based on previous research (e..g, Bornovalova et al., 2006; Pietrek et al., 2013; Porter et al., 2020).

Q2: Is there a unique association between ACE and BPD features that is not explained by their common association with social support and attachment anxiety?
We expect that the current experience of social support is a protective factor which attenuates the effects of ACE on the level of BPD features, while it is negatively related to an insecure attachment style (characterized by increased anxiety). In other words, we expect a link between attachment anxiety and a lower level of perceived social support. We further expect that the interrelationship between ACE and BPD is linked to social support and attachment anxiety. At the same time, we expect that there is a unique association between ACE and BPD features that is not explained by their common association with social support and attachment anxiety.

3) Describe the key dependent variable(s) specifying how they will be measured.
1) severity and types of childhood maltreatment (emotional abuse, physical abuse, sexual abuse, emotional neglect, physical neglect) with Childhood Trauma Questionnaire Short Form (CTQ-SF) (Bernstein et al., 2003). 28-Items (five items per type: 1= "never true" to 5= "very often true").
2) severity of Borderline personality disorder features in the four domains affective instability, identity problems, negative relationships, and self are measured with subscales of the Personality Assessment Inventory - Borderline Features Scale (PAI BOR; Jackson & Trull, 2001). It has 24 items with 4 response categories (1 = false to 4 = very true).
3) three dimensions of attachment (closeness, anxiety and dependence) are measured with the Revised Adult Attachment Scale (RAAS) Close Relationships Version (Collins & Read, 1990). It has 18-items with responses indicated on a 1 to 5 Likert scale (1 "not at all characteristic", 5 "very characteristic for me").
4) the level of current perceived social support with the Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet & Farley, 1988). This has 12-items on social support by family, friends and significant other (7-point likert scale).

4) How many and which conditions will participants be assigned to?
data is collected in a cross-sectional online survey.

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.
We will estimate three network models of increasing complexity. The constructs included in the first network (N1) are the four core features of BPD (PAI-BOR subscales), and the severity of five types of childhood maltreatment (CTQ subscales). In the second (N2) and third (N3) network analysis, we will extend the first network by including additional variables. N2 will include the level of the three dimensions of attachment (RAAS subscales) and N3 will additionally be extended by perceived social support (MSPSS score). In both networks, we will use age (in years) and sex as additional control variables. The constructs are represented as nodes that are connected by edges. An edge between two nodes is an estimate of the partial correlation between these variables. These edges represent unique relations between variables that cannot be explained by other nodes of the network. Variables in the network are continuous, and categorical, we will therefore base the networks on spearman correlation matrices from which we estimate Gaussian Graphical models. It will be implemented using ggmModSelect function in R. With this method lasso and unregularized Gaussian Graphical models networks will be fitted to the data testing all possible models with edge weights added and removed and selecting the best model guided by the Extended Bayesian Information Criterion (EBIC). To estimate the stability and accuracy of the parameter estimates we will implement bootstrapping routines in the boonet package in R. With this function we calculate confidence intervals around the edge weights and use these to compare each edge against another edgeother using the edge weight difference test. Hereby, we can examine differences in connections between the constructs within each network.

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.
Outliers will be checked and excluded if there are influential cases (Leverage, Cooks distance)

7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the

number will be determined.

Inclusion criteria were age above 18 years and sufficient English proficiency as checked at the beginning and end of the survey. We want to analyze data of 1000-1700 participants

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)

We have stated data collection with the online survey but have not finished, processed nor analysed the full data yet.