



Motivational conflicts, coping strategies and ego defense mechanisms in middle-age patients with essential hypertension: the network analysis

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Introduction

Many studies show that patients with essential hypertension (EH) demonstrate certain patterns of motivation, coping strategies, ego defense mechanisms, and personality traits. Network analysis could help to discover and visualize them.

Objectives

The purpose of this study was to examine the interconnection of psychological variables in EH patients (motivation, coping strategies, ego defenses), compared to healthy individuals, using the network approach.

Methods

Network analysis (Bomsbroom, 2013), 16PF Questionnaire (Cattell, Mead, 2008), TAT by H. Heckhausen, Multi-Motive Grid (MMG) (Sokolowski, et al., 2000), Life Style Index (Plutchik, Kellerman, Conte, 1979), The Ways of Coping Questionnaire (Folkman, Lazarus, 1988), Cognitive Emotion Regulation Questionnaire (Garnefski, Kraaij, Spinhoven, 2001), Hamilton Depression and Anxiety Rating Scales.

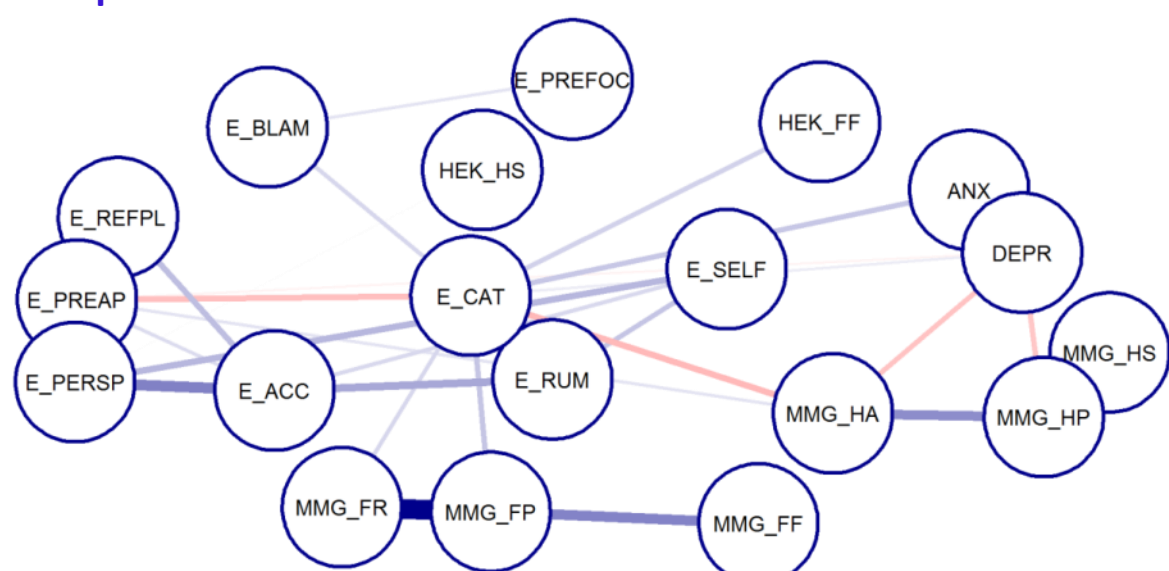
The study involved 83 naive middle-age EH patients with uncomplicated EAH, stage 1-2, average age is 51.1 ± 6.78 , and 70 normotensive persons, average age is 47.9 ± 6.6 .

Network analysis was performed using R software ver. 3.5.3 and qgraph package ver. 1.6.1. GLASSO regularization was used to obtain partial correlation networks (Epskamp, 2018).

Results

Due to relatively small sample sizes and many variables measured, several networks containing subset of variables were composed. Each subset comprised results from one test method, we studied all possible combinations of 2, 3 and 4 subsets (50 total). Networks composed from 3 subsets appeared to be the most meaningful. Figure 1 shows the network consisting of variables that represent motivation, emotion regulation strategies, anxiety and depression in HE patients, that can serve as a good example of such a network.

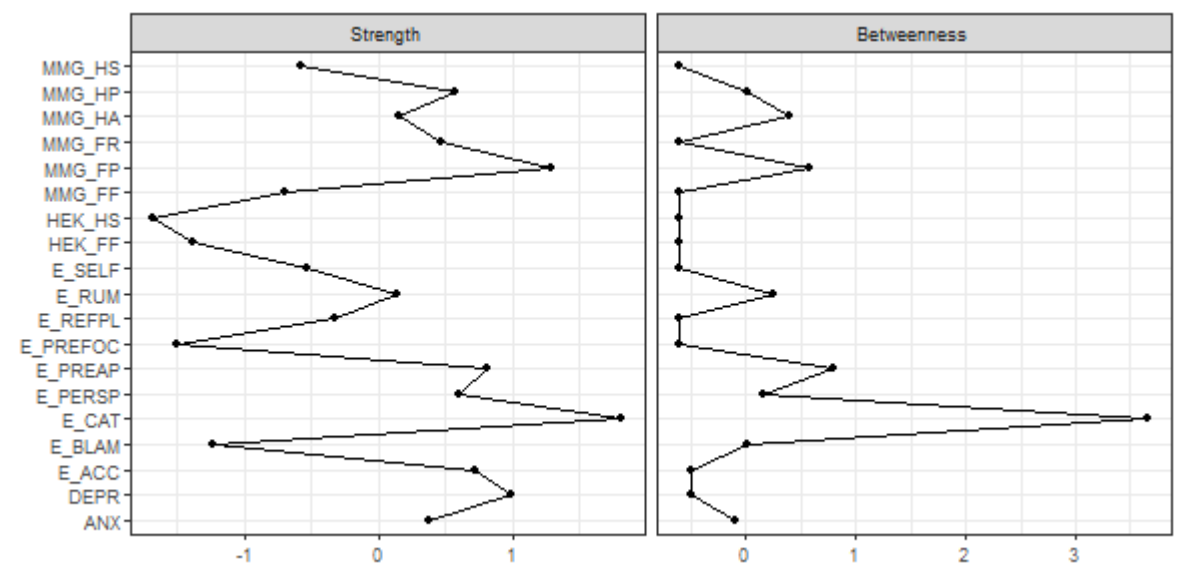
Figure 1. Motivation, regulation of emotions, anxiety and depression in EH patients



In this network motivational components (prefixed with MMG_ for MMG test, HEK_ for TAT by Heckhausen) and Cognitive Emotion Regulation Questionnaire results (prefixed with E_) form clusters. Variable E_CAT (catastrophizing emotion regulation strategy) appears to serve as mediator between other variables. It is positively correlated with fear components of motivation (fear of power of others, fear of rejection, fear of failure) and negatively with hope-components cluster. Moreover, depression (DEPR) and anxiety (ANX) are also connected to catastrophizing.

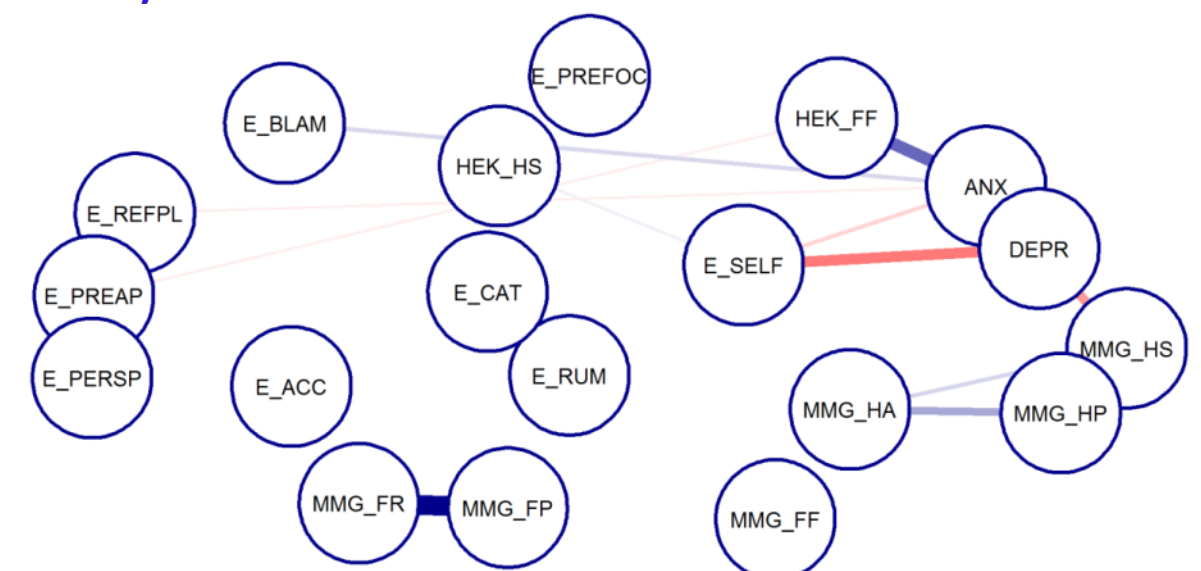
Centrality analysis confirms special role of the E_CAT variable (Figure 2).

Figure 2. Centrality analysis of partial correlation network



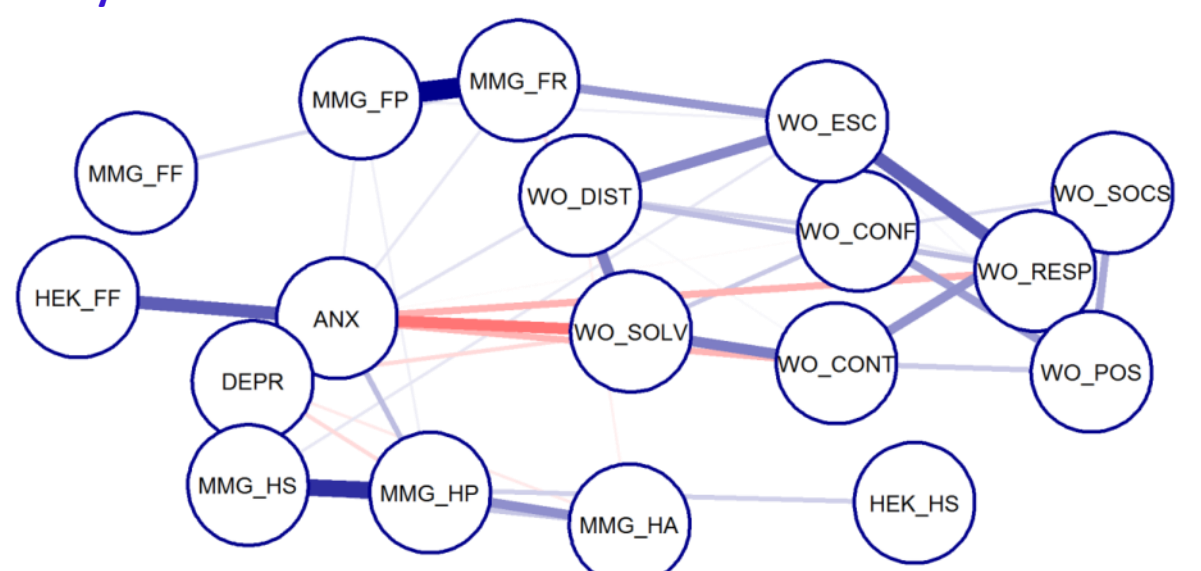
In healthy individuals the network is more sparse, there are no variables with high centrality rates (Figure 3).

Figure 3. Motivation, regulation of emotions, anxiety and depression in healthy individuals



There are opposite examples, where problem-solving (WO_SOLV) coping strategy seem to play role in both mediating anxiety and managing motivational conflicts in healthy individuals (Figure 4), but have no connections to other variables in EH patients.

Figure 4. Motivation, coping strategies, anxiety and depression in healthy individuals



Conclusion

Network analysis helps to reveal hidden relationships in personality variables, which are hard to spot using other techniques. Applied to clinical sample, it gives an opportunity to reveal paths connecting symptoms (anxiety, depression) to motivation through personality traits and unhealthy coping strategies (self-blame, catastrophizing, vigilance etc.). On the other hand, it can show ways used by healthy individuals to overcome anxiety and motivational conflicts (e.i. by using problem-solving oriented strategies). These findings can help in selecting strategies for psychotherapy with EH patients.

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