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Introduction

In this study we investigated the statistical underpinnings of Alexithymia in 122 psychology students. Alexithymia is a neuropsychological phenomenon characterized by significant challenges in recognizing, expressing, sourcing and describing one's own emotions. The Toronto Alexithymia Scale (TAS-20; Bagby, Parker, & Taylor, 1994) is a well-established instrument for diagnosis and disease monitoring. It has been shown that items from the TAS-20 can predict depressive symptomology, measured by the Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977). Our goal was to further characterize the underlying structure of the TAS-20 items to better understand alexithymia disease manifestation. Prior research could show that a three-factor strucure could account for the majority of disease variability (Bagby et al., 1994).

Methods

We can Principle Component Analysis (PCA) on the 20 TAS-20 items. Data were checked for missing values. Age, Sex and depressive symmptomology scores (CES-D) were not included in the analysis.

Results

All variables were normalized and centered to have mean zero and standard deviation one. Running PCA revealed 20 principal components (PC’s). Principal component 1 explained 23.63% of the variance, and PC2 explained 12.78% of the variance. All other components explain less than 8% of variance. After computing the Eigenvalues of the correlation matrix we used Kaiser’s rule to keep 7 components (Eigenvalues > 1). These 7 components explain 67.5% of the variance.

A diagram of a number of numbers

Description automatically generated with medium confidenceA graph of different components

Description automatically generated with medium confidence

Discussion

Interestingly, especially the describe item is the only item that has a high negative load on PC1 (- 0.33). All other items show highly positive loads on PC1, the highest being right.words (0.372). For PC2, daily activities, entertainment and let.happen show high positive factor loadings, and uselul and analyze.problems show highly negative factor loadings. This suggests that these variables might grasp the same underlying neuropsychological latent processes, and that an easy despription of one’s own feelings is a strong predictor for bad disease outcomes.

Conclusion

All together, we could identify 7 components in the TAS-20 data after running PCA. This sheds new light on the underlying structure of diagnosis of Alexithymia. Further research is needed to check if these findings can be transferred to clinical practice.