REVISITING THE FACTOR STRUCTURE OF NEGATIVE SYMPTOMS IN SCHIZOPHRENIA: DISSECTING THE CORRELATIONS OF ITEMS IN TWO CONTEMPORARY NEGATIVE SYMPTOM SCALES

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Introduction

Two contemporary negative symptom measures, the Clinical Assessment Interview for Negative Symptoms (CAINS) and the Brief Negative Symptom Scale (BNSS), have been validated across different languages and cultures. Factor analyses suggested two to five factor models and a hierarchical five-factor model to be the possible underlying latent factor models for negative symptoms. Most studies that employed exploratory analyses suggested a two-factor structure, while some confirmatory analyses suggested five-factor and second-order five-factor solutions. Almost all findings were obtained from factor analyses of either the CAINS or BNSS. The differences in operationalization and representation of negative symptom constructs in both scales might contribute to the different findings. Our study tested the model fit of a two-factor model, three five-factor models and their respective hierarchical models using confirmatory factor analyses (CFA) using both scales. Item correlations were also compared and discussed.

Method

Community dwelling patients with schizophrenia (*n*=274) were assessed on both the CAINS and BNSS. Approximately half of the time CAINS was administered prior to BNSS. Spearman correlations were performed to explore the correlations between CAINS and BNSS items. CFA was conducted to test the model fit of the proposed factor models. In two-factor model, items in CAINS Motivation and Pleasure (MAP) subscale and BNSS Anhedonia, Asociality and Avolition subscales were regressed on MAP, and items in CAINS Expression (EXP) subscale and BNSS Blunted Affect and Alogia subscales were regressed on EXP factor. In all five-factor models, facial expression, vocal expression and expressive gestures were regressed on Blunted Affect, quantity of speech and spontaneous elaboration were regressed on Alogia. In five-factor Model 1, BNSS Anhedonia and all CAINS pleasurable experiences were regressed on Anhedonia. In five-factor Model 2, BNSS Avolition and CAINS work/school-related MAP were regressed on Avolition, BNSS Asociality and CAINS social-related MAP were regressed on Asociality, and BNSS Anhedonia and CAINS recreational-related MAP were regressed on Anhedonia. In five-factor Model 3, CAINS social, work/school, and recreation-related motivation were regressed on Avolition. In all second-order five-factor models, the NIMH five factors were first-order factors, and MAP and EXP were second-order factors.

Results

Within EXP, the items measuring the same construct had very high correlations and the magnitude of correlations was indicative of Blunted Affect, Alogia and EXP factors. Correlations of items measuring Anhedonia, Asociality and Avolition also supported the validity of each construct but these factors were more interconnected. Fit indices of two-factor model were not satisfactory. The second-order five-factor Model 2 best fitted the data.

Discussion

Our results suggested that the second-order five-factor model where work-related MAP was related to Avolition, social-related MAP related to Asociality, and recreational-related MAP related to Anhedonia, best fitted the data. Operationalization of anhedonia might also need to be further explored and refined. Neurological, cognitive, behavioural, psychological and functional correlates of negative symptoms could be identified with more refined and accurate operationalization of negative symptoms, which will advance research and treatment in schizophrenia and improve functioning and quality of life in patients with schizophrenia.