Simplified Negative and Positive Symptoms Interview (SNAPSI): An Abbreviated Assessment Technique for Schizophrenia Studies

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Methodological question: *CAN THE PANSS BE MODIFIED TO BE USEABLE IN CLINICAL SETTINGS AS WELL AS IN RESEARCH?*

BACKGROUND

- There is currently a "measurement gap" between research and clinical care in schizophrenia.
- The Positive and Negative Syndrome Scale (PANSS), one of the most widely used instruments in schizophrenia, is a 30-item complex scale with different scoring rules and conventions. Due to the large number of items, the structured clinical interview for PANSS (SCI-PANSS) often takes an hour or more to administer.
- As such, the SCI-PANSS has remained a research tool, despite evidence that supports its use to help characterize, predict, and manage the course of illness.[1,2]
- The abbreviated, 6-item version of PANSS (PANSS-6) was derived empirically from the full PANSS-30 to reduce the original scale to a shorter and more scalable version.
- The Simplified Negative and Positive Symptoms Interview (SNAPSI), is a newly developed assessment guide that includes probes and structures modeled on both standard and semi-structured tools. The SNAPSI stand-alone interview yields information to rate the PANSS-6 (as well as other brief rating scales)[3].
- The present study examined the utility of PANSS-6, guided by SNAPSI, in bridging the measurement gap between research and clinical care in schizophrenia.

METHODS

- The scalability of PANSS-6 was investigated in two datasets. First, data from two large randomized controlled trials in schizophrenia were analyzed to identify identified PANSS-6 by means of item response theory analysis[4,5,6].
- PANSS-6 contains the following six items that tap into the core positive and negative symptom dimensions of schizophrenia (and other psychotic disorders): Delusions, Conceptual Disorganization, Hallucinations, Blunted Affect, Passive/Apathetic Social Withdrawal, and Lack of Spontaneity and Flow of Conversation.
- Secondly, since the initial study on PANSS-6 was based on data from trials in which the participants were acutely ill hospitalized patients with schizophrenia, (4,5) the psychometric properties of PANSS-6 in chronic schizophrenia were assessed via a reanalysis of data from the Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE) study[7].
- Finally, the utility of SNAPSI in rating the PANSS-6 investigated in a feasibility study. Seven clinical raters (three medical doctors, one psychologist, and three research assistants) at two hospitals in the United States and one hospital in Denmark interviewed patients with schizophrenia or schizoaffective disorder (n = 16) using the SNAPSI and tested whether they themselves and the patients understood the questions—and whether the targeted psychopathology was covered sufficiently to allow for quantitative rating after the interview. The feedback from the feasibility tests led to minor revisions of the SNAPSI[3].

CONCLUSION

- The full 30-item PANSS is often used in research studies, but is too time consuming to allow for routine clinical use. The much briefer PANSS-6 is a psychometrically valid measure of core symptoms of schizophrenia and is sensitive to symptom improvement following pharmacological treatment.
- SNAPSI can enable rating on PANSS-6 and has the benefits of allowing a direct and more efficient evaluation of thought disorder than passive observation.
- Additionally, a well-integrated assessment section for caregivers adds an important component, clearly delineating how to evaluate collateral information from third party sources.
- Furthermore, SNAPSI can be used to: (1) collect information to rate selected items from other scales[11]; (2) to supplement evaluations of negative symptoms, including those considered in the BNSS[11] or the NSA[12]; and (3) to facilitate standardized rating on global severity rating scales such as the Clinical Global Impression Severity and Improvement Scales[13].
- As such, we propose PANSS-6 rating, guided by SNAPSI, as prime candidate in bridging the gap between research and clinical care in schizophrenia.

One or more authors report potential conflicts which are described in the program.

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RESULTS

- Analysis results from the first study showed that PANSS-6, as opposed to the full 30-item version of PANSS, is "scalable," meaning that each item adds unique information regarding severity and that the total score is therefore a valid measure of severity (Figure 1).[8]
- Furthermore, this study showed that PANSS-6 is sensitive to changes in the severity of schizophrenia and can separate the effects of typical and atypical antipsychotics from that of placebo (Figure 2).[6]
- The results of the analysis of the data from CATIE further confirmed those from our study in acutely ill patients, namely that PANSS-6 adequately measures symptom severity and antipsychotic efficacy in schizophrenia (Figures 3 and 4).[9] The findings also established that PANSS-6 can identify symptom remission as defined by the Andreasen et al. expert consensus criteria[10] with very high accuracy.
- Furthermore, results from the feasibility tests indicated SNAPSI has taken approximately 15 minutes to administer (by raters who are unfamiliar with the interview and involving patients hearing the questions for the first time).

Figure 1. Illustration of the concept of scalability (1a) and the scalability of PANSS-6 (1b).

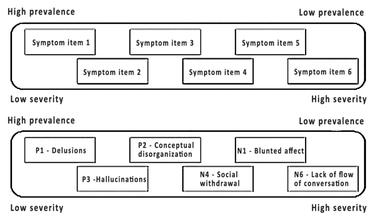

Figure 1. Illustration of a hypothetical six-item rating scale, which is scalable because the symptoms represented by the items appear in an orderly fashion as the severity of the syndrome increases, such that scoring on higher prevalence items (less severe items) precedes scoring on lower prevalence items (more severe items). Thus, when an outcome measure is scalable, each individual item adds unique information about the severity of the latent syndrome being rated and the individual item scores can therefore be added to a meaningful total score. B) Illustration of the scalability of the Positive and Negative Syndrome Scale-6 (PANSS-6) based on the Rasch locations at baseline. This figure and the figure text is reproduced from Ostergaard et al.[6] with permission from the publisher via RightsLink.

Figure 2. PANSS-6's sensitivity to change in the severity of illness during treatment

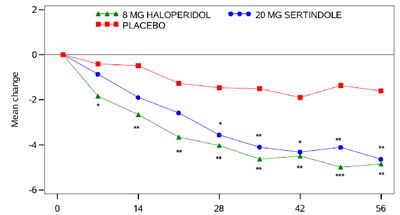

Figure 2. Change in PANSS-6 scores by treatment. Fig.2a is based on data from Zimbroff et al.[5]. Statistics: analyses of covariance (ANCOVA) of mean change from baseline including the baseline score as covariate *p<0.05, **p<0.01, ***p<0.001. This figure and the figure text is reproduced from Østergaard et al.[6] with permission from the publisher via RightsLink..

Figure 3. Correlation between PANSS-6 and full PANSS (PANSS-30) total scores in CATIE

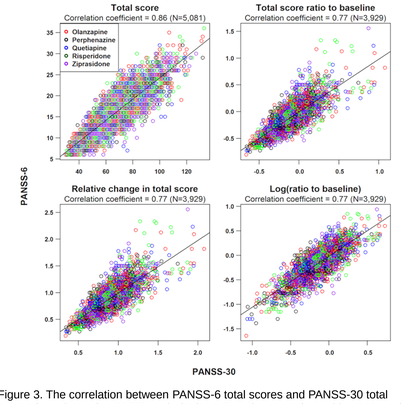

Figure 3. The correlation between PANSS-6 total scores and PANSS-30 total scores from the entire CATIE study (ratings=5,081) was performed by means of Spearman correlation analysis. For PANSS-6 and PANSS-30, we also assessed the correlation between the i) relative change in total score ((current total score – baseline score) / baseline score), ii) total score ratio to baseline (current total score / baseline score), and iii) log(ratio to baseline) (i.e., log(current total score / baseline total score), which corresponds to: log(current total score) - log (baseline total score)). These three correlations were based on 3,929 ratings, i.e., 5,081 ratings minus the baseline ratings. This figure and the figure text is reproduced from Østergaard et al.[9] with permission from the publisher via RightsLink.

Figure 4. Illustration of the similarity of the trajectories of PANSS-6 and full PANSS (PANSS-30) scores during CATIE Phase 1, stratified by treatment

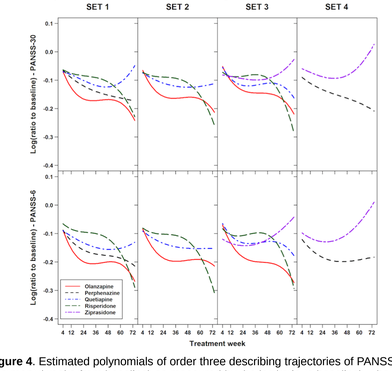

Figure 4. Estimated polynomials of order three describing trajectories of PANSS-30 and PANSS-6 scores with treatment (weeks from baseline) as measured by the log(ratio to baseline). The models included drug specific coefficients, four parameters for each drug, and were adjusted for tardive dyskinesia (SET 2 and SET 3) and exacerbation (all four sets). The SETs refer to those used for pairwise drug-comparisons in the CATIE publication by Lieberman et al.[7]. The comparison between pairs of drugs was carried out by the four degrees of freedom likelihood ratio test of the null hypothesis that all two times four coefficients in the polynomials shown above were equal. The results showed that PANSS-6 and PANSS-30 identified the exact same statistically significant (Bonferroni-adjusted level = 0.005) differences in antipsychotic efficacy, namely that olanzapine was superior to risperidone (P-value PANSS-6=0.0003 & P-value PANSS-30=0.0003) and ziprasidone (P-value PANSS-6=0.0018 & P-value PANSS-30=0.0046). This figure and the figure text is reproduced from Østergaard et al.[9] with permission from the publisher via RightsLink.

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