INTRODUCTION

• The Negative Symptom Assessment (NSA-16) is increasingly used as a validated measure to track response to treatment of negative symptoms in clinical trials of schizophrenia.
• NSA-16 takes up to half an hour to administer. As clinical trials have become more complex, a briefer assessment tool would be useful.
• The NSA-4 is proposed as a reliable and valid brief alternative to the NSA-16 (Alphs et al., 2011).
• Four NSA-16 items are included: restricted speech quantity, reduced emotion, reduced social drive, and reduced interests, as well as an overall global rating of negative symptoms.
• The goal of this study was to replicate the findings by Alphs et al. (2011) that the NSA-4 is an effective brief alternative to the longer NSA-16.

METHODS

• Data collected from two Phase 2 randomized double-blind studies of subjects with schizophrenia with prominent negative symptoms (n=483).
• All subjects were interviewed using live two-way videoconferencing at screen, baseline, and 11 more visits, including endpoint. This method has been demonstrated to be valid and reliable (Williams, Alphs et al., 2012).
• Subjects were assessed by blinded independent Central Raters with ongoing calibration (n=20).
• At each visit, administration of the PANSS was immediately followed by the NSA-4 and NSA-16 (n=2804 interviews).
• Correlation coefficients (r) were calculated for the NSA-4 and NSA-16 with each subscale of interest. (Tables 1 and 2)
• Internal consistency of the NSA-4 and NSA-16 were calculated using Cronbach’s alpha (α).
• Inter-rater reliability (determined by Intraclass Correlation Coefficient, ICC) was calculated between clinicians’ and observers’ scoring items of the same subjects (n = 152).

RESULTS

How Does the NSA-4 Compare to the NSA-16?

To be useful, a scale must have convergent validity (high correlation with other scales that measure the same construct) and divergent validity (relatively low correlations with other scales that measure different constructs).

Table 1. Convergent Validity – Subscale Correlations with NSA-4

<table>
<thead>
<tr>
<th>Subscale</th>
<th>NSA-4</th>
<th>NSA-16</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSA global rating</td>
<td>0.97</td>
<td>0.95</td>
</tr>
<tr>
<td>NSA negative subscale</td>
<td>0.97</td>
<td>0.95</td>
</tr>
<tr>
<td>NSA positive symptoms</td>
<td>0.70</td>
<td>0.72</td>
</tr>
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</table>

The NSA-4 in this study had correlation coefficients of 0.67 or greater with the full-scale NSA-16, the global rating, the PANSS negative subscale, and the PANSS negative symptoms Marder factor. (Table 1)

Figure 1. Correlation between NSA-4 and PANSS negative subscales

The NSA-4 is negatively correlated with the PANSS Marder factor anxiety/depression (r = -0.11), and poorly correlated with the PANSS Marder factors disorganized thought and hostility/reclusiveness (r = 0.29 and 0.03, respectively). In addition, the NSA-4 correlated poorly with the PANSS positive symptoms (r = 0.10). (Table 2) These findings show even better divergent validity than found by Alphs et al. (2011).

Table 2. Divergent Validity – Subscale Correlations with NSA-4

<table>
<thead>
<tr>
<th>Subscale</th>
<th>NSA-4</th>
<th>NSA-16</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSA-4 Factor anxiety/depression</td>
<td>0.11</td>
<td>0.06</td>
</tr>
<tr>
<td>NSA-4 Factor disorganization</td>
<td>0.29</td>
<td>0.03</td>
</tr>
<tr>
<td>NSA-4 positive symptoms</td>
<td>0.19</td>
<td>0.15</td>
</tr>
</tbody>
</table>

In this study, the ICC = 0.94 for the NSA-4 and 0.97 for the NSA-16. In Alphs et al. (2011), the ICCs were slightly lower (0.82 and 0.87, respectively), but still good/excellent.

CONCLUSIONS

The NSA had very good overall agreement with the NSA-16, in the hands of highly trained and calibrated Central Raters, and even higher convergent and divergent validity and interrater reliability than demonstrated by Alphs et al. (2011). Overall, results were very similar to those obtained by Alphs et al. (2011).

The PANSS and NSA-16 in this study were not administered independently of one another, so the usefulness of the NSA-4 alone can only be evaluated in the context of its pairing with the PANSS. Further, scores on the NSA-4 were derived using the four items that were administered as part of the overall NSA-16 scale. While we examined the 4 items separately, their scores may have been informed by responses on the remaining 12 items.

A brief but valid version of the NSA-16 would be useful in clinical and research work. Future research comparing independent administration of the NSA-4 to the NSA-16 is needed.

REFERENCES


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