Concordance of self- and observer-rated motivation and pleasure in patients with negative symptoms and healthy controls

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ABSTRACT

This study examined the validity of using a self-rating scale for assessing the motivation and pleasure domain of negative symptoms in a healthy sample and by comparing it with a patient sample. The motivation and pleasure domain of negative symptoms was assessed using the observer-rated Clinical Assessment Interview for Negative Symptoms (CAINS) and the self-rated Motivation and Pleasure Scale-Self-Report (MAP-SR). We found 52.9% of the healthy individuals and 46% of the patients to have relatively equal self- and observer-ratings. Despite the absence of extreme discrepancies, 31.4% of the healthy individuals and 14% of the patients rated their negative symptoms as more severe, whereas 15.7% of the healthy individuals and 40% of the patients rated them as less severe than the observers. By using self-ratings in combination with observer-ratings, possible discrepancies can be uncovered, which may be relevant for the successful treatment of negative symptoms.

1. Introduction

Abundant research from the last decades supports the notion of a continuous distribution of psychotic symptoms in the population rather than the notion of a true disease dichotomy (e.g., Kelleher and Cannon, 2011; Stip and Letourneau, 2009). Although most of this research has focused on positive symptoms (for a review see: Van Os et al., 2009), there is also evidence for a continuum of negative symptoms (for a review see: Kaiser et al., 2011). Moreover, negative symptoms in form of asociality have been shown to precede the onset of psychotic disorders in cohort-studies of young people at genetic risk for schizophrenia (Keshavan et al., 2011; Lenz et al., 2004). Thus, in order to better identify people at risk and enhance our understanding of the psychological processes involved in the development of negative symptoms, it can be informative to further investigate the prevalence, stability and predictive value of negative symptoms in the healthy population.

This type of research requires reliable rating scales that are sensitive to detecting negative symptoms in the general population. So far, negative symptoms in healthy individuals have mainly been assessed via self-rating scales such as the Community Assessment of Psychic Experiences (CAPE; Konings et al., 2006; Stefanis et al., 2002) that was derived from the Scale for the Assessment of Negative Symptoms (SANS; Andreasen, 1989). However, the CAPE negative symptom scale and the SANS have been criticized for conceptual reasons such as lacking criterion validity (Schlier et al., 2015) or including items that measure cognitive functioning, which are now considered as conceptually distinct from negative symptoms (Blanchard et al., 2011). Therefore, research across the continuum of negative symptoms would benefit from using instruments that reflect the current understanding of negative symptoms and address the conceptual limitations of available measures.

In order to use these scales that are more time- and cost-efficient than observer ratings, it would be helpful to ascertain that they are a valid way of assessing negative symptoms in population samples. Most relevantly, it needs to be shown that they correspond sufficiently with what is captured in the well-validated observer-rating scales. In clinical samples, the question of the correspondence between self- and observer-rating scales to assess negative symptoms has not been clearly answered. Some studies find patients to be unable to accurately report negative symptoms (Hamra et al., 1996; Selten et al., 2000), whereas others show that, independent of insight, patients are very well aware of their negative symptoms (Jaeger et al., 1990; Liraud et al., 2004; Mass, 2000). Only few studies, however, have directly compared self- and observer-ratings of negative symptoms in patient samples. Using the CAPE (Stefanis et al., 2002) and the SANS (Andreasen, 1989), Liraud et al. (2004) found significant correlations in the small to moderate range between self- and observer-rated negative symptoms (r=0.3–0.5). Bottlender et al. (2003) found the total SANS score as rated by patients to be comparable to the score rated by psychiatrists.

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Studies that used the more recently developed Clinical Assessment Interview for Negative Symptoms (CAINS; Krings et al., 2013) and the Motivation and Pleasure Scale-Self-Report (MAP-SR; Llerena et al., 2013; Park et al., 2012) found self- and observer-rated negative symptoms to be more strongly associated (r=0.6–0.7). Thus, the concordance between self- and observer-ratings appears to be higher for the newer scales.

From a methodological point of view, however, neither correlation coefficients nor a comparison of total scores are the ideal way of assessing concordance (Kwiecien et al., 2011). By using z-transformation to compare the scores on the self- and observer-rated scales and defining an area of acceptable concordance, the degree of agreement can be studied in greater detail. This method allows determining for each participant whether symptoms have been under- or overestimated can be studied in greater detail. This method allows determining for each participant whether symptoms have been under- or overestimated compared to the observer and thus also allows to identify variables that are associated with more or less concordance.

Moreover, we argue that the results of the patients cannot be automatically transferred to healthy individuals with subclinical symptoms. Although insight-related problems that can bias patient ratings might prevent them from admitting to clinical symptoms.

Hence, this study examined the concordance between the self- and observer-rated motivation and pleasure domain of negative symptoms by using rating-scales that reflect the current understanding of negative symptoms, such as the CAINS (Krings et al., 2013) and the MAP-SR (Llerena et al., 2013). The purpose of the study was to: (1) replicate the validity of using self-ratings in clinical populations by assessing the concordance between the self- and observer-ratings using correlations as well as an improved methodology to identify rates of acceptable concordance. Based on previous literature we expected a high concordance in the patient sample, indicated by correlations in the moderate to high range and by the majority of patient ratings fulfilling criteria for high concordance which we defined as the z-transformed patient score being in the range of half a standard-deviation below or above the z-score of the observer; (2) ascertain the validity of using a self-rating scale for assessing the motivation and pleasure domain of negative symptoms in the general population by examining the concordance of self- and observer-rated negative symptoms in a healthy sample; (3) explore putative predictors of good concordance, such as demographic- and clinical variables and patient versus non-patient status.

### 2. Method

#### 2.1. Participants and procedure

The sample consisted of 70 healthy participants and 50 patients with acute or remitted schizophrenia (n=39) or schizoaffective disorder (n=11). Healthy participants were recruited via leaflets in and around the University of Hamburg. As a compensation for participating, participants were invited to partake in a lottery for amazon.com-vouchers. Exclusion criteria for the healthy sample were a present or past mental disorder as assessed with two questions (i.e. “Have you had or do you have a mental health problem?”, “If yes, what kind of mental health problem was or is this?”) and a family history of schizophrenia or schizoaffective disorder as assessed with two questions (i.e. “Is there anybody in your family who has had or has a mental health problem?”, “If yes, what kind of mental health problem was or is this?”) before the assessment started. The clinical participants were recruited from inpatient (n=27) and outpatient (n=23) mental health settings in Hamburg. The assessment of the patient participants began with the Structured Clinical Interview for the DSM-IV-TR Axis I disorders (SCID-I; First et al., 2002) in order to confirm the diagnoses made by the treating psychiatrists. Almost all (n=47) patient participants were currently taking antipsychotic medication. Exclusion criteria were: (1) neurological disorder, (2) acute substance use disorder, and (3) inability to effectively agree and participate in the assessment due to severe psychopathology. Demographic and clinical characteristics of both samples are depicted in Table 1. After providing informed consent, participants partook in a 1.5 h assessment that included two observer- and two self-rating symptom measures (see 2.2) in randomized order. Interviews were performed by one clinical rater with master-degree in clinical psychology and extensive prior experience in conducting clinical interviews including the CAINS (M.E.) and by three research assistants with bachelor-degree in clinical psychology and appropriate training. Training included manual reading, role plays and ratings of videotaped assessments. With regard to the CAINS the targeted competency level was an Intraclass Correlation Coefficient of ≥0.90 between the last two ratings of the videotaped assessments and the gold standard ratings provided by the developers of the original CAINS. Because many of the interviews for the clinical participants took part within the mental health settings it was impossible to mask patient status. Thus, the raters knew whether they were rating a clinical- or a healthy participant. Study procedures were approved by the ethical committee of the Chamber of Psychotherapists Hamburg.

#### 2.2. Measures

As an observer-rating of negative symptoms we used the CAINS (Krings et al., 2013), a recently developed 13-item interview that assesses the presence and severity of negative symptoms. All items are scored on a 5-point scale from 0 (no impairment) to 4 (severe deficit). The CAINS includes items that assess motivation and pleasure for relevant social, vocational and recreational activities (experience scale) and emotion expression (expression scale). The validity and reliability of the German version of the CAINS (Engel et al., 2014) were comparable to the original version of the CAINS (Krings et al., 2013).

As a self-rating scale of negative symptoms we used the MAP-SR (Llerena et al., 2013), a 15-item self-report version of the CAINS motivation and pleasure subscale. In its preliminary version (Park et al., 2012), it contained an expression subscale, which was removed because of its lack of internal consistency. The MAP-SR items tap motivation, effort and interest to engage in activities or to be around family, romantic partner and friends, as well as consummatory and

### Table 1

Demographic and clinical characteristics of the healthy and patient sample.

<table>
<thead>
<tr>
<th></th>
<th>Mean (SD) or percent</th>
<th>Patient sample (N=50)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy sample (N=70)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>31.61 (13.44)</td>
<td>35.70 (10.36)</td>
</tr>
<tr>
<td>Sex: female</td>
<td>62.9%</td>
<td>44%</td>
</tr>
<tr>
<td>Years of education</td>
<td>12.43 (9.93)</td>
<td>10.94 (1.48)</td>
</tr>
<tr>
<td>PANSS positive</td>
<td>7.53 (1.10)</td>
<td>12.34 (4.63)</td>
</tr>
<tr>
<td>BDI-II depression</td>
<td>18.73 (7.38)</td>
<td>27.30 (6.46)</td>
</tr>
<tr>
<td>CAINS experience</td>
<td>7.76 (5.38)</td>
<td>19.78 (6.16)</td>
</tr>
<tr>
<td>CAINS expression</td>
<td>0.67 (0.81)</td>
<td>4.66 (4.12)</td>
</tr>
<tr>
<td>MAP-SR</td>
<td>17.10 (9.01)</td>
<td>25.34 (9.80)</td>
</tr>
</tbody>
</table>

Note. PANSS=Positive and Negative Syndrome Scale, positive subscale; BDI-II=Beck Depression Inventory, revision; CAINS=Clinical Assessment Interview for Negative Symptoms, experience and expression subscales; MAP-SR=Motivation and Pleasure Scale - Self-Report.

1 The patient data was also used for investigating the psychometric properties of the German version of the MAP-SR (Engel et al., 2016)
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