Psychiatry Research ■ (■■■■) ■■■–■■■

Contents lists available at ScienceDirect

Psychiatry Research

journal homepage: www.elsevier.com/locate/psychres

Assessment of self-disorders in a non-clinical population: Reliability and association with schizotypy

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ARTICLE INFO

Article history:
Received 21 July 2014
Received in revised form
6 May 2015
Accepted 10 May 2015

Keywords:
Schizophrenia
Observer variation
Psychometrics

ABSTRACT

This study explores whether self-disorders occur and can be assessed reliably in a non-clinical sample, and whether the prevalence of these anomalies depends upon the degree of psychometrically defined schizotypy. Participants with either high ($n=30$) or low ($n=20$) schizotypy scores were interviewed using a modified version of the Examination of Anomalous Self-Experience (EASE). The degree to which interviewees experienced self-disorder symptoms was rated by the interviewer and an independent rater. Inter-rater reliability was calculated for each item, domain scores and the total score. For the total, sample most items ($=66$) showed substantial or perfect agreement ($\kappa > 0.61$), with a few ($=6$) showing moderate agreement ($\kappa > 0.41$). Reliability scores were only slightly lower when just the more homogeneous group of individuals with high Schizotypal Personality Questionnaire (SPQ) scores were examined. As expected, high SPQ scores were associated with a high level of self-disorders. In sum, the results suggest that self-disorders can be measured reliably in non-clinical samples and are particularly frequent in individuals with pronounced schizotypical traits.

1. Introduction

Since its conception, schizophrenia has been characterised as a disorder of self: described as a "splitting of the psychological functions: as the disease becomes distinct, the personality loses its unity" (Bleuler, 1911). The so-called "first-rank symptoms" of schizophrenia define the blurring of the distinction between self and other (Schneider, 1959). This loss of ego-boundaries, resulting in a distorted experience of self, has been described as the fundamental experience of schizophrenia, which gives rise to all other symptoms (Sims, 1991; Kimura, 2001; Parnas and Sass, 2001). Examples of self-disorder symptoms are the feeling as if the boundary between self and world is unclear, difficulty in distinguishing experience from a memory or a dream, or feeling as if the mind does not reside comfortably within the body (Cermolacce et al., 2007). These symptoms exemplify the failure to correctly identify self-produced actions and thoughts, due to a disturbance in the processing of information relating to self versus other.

Although the relevance of self-disorders is well-established in the phenomenological literature (e.g. Sims, 1991; Sass, 2000; Parnas and Handest, 2003; Moe and Docherty, 2014), there is relatively little knowledge of their biological and psychological underpinnings. This is partly due to the idiosyncratic nature of the putative phenomena, which makes it difficult to operationalise the construct in a reliable and valid way.

The Examination of Anomalous Self-Experience (EASE) (Parnas et al., 2005) aims to assess self-disorder experiences through a clinical interview and a rating on a descriptive-psychopathological checklist of 57 items. All items are rated on a 4-point Likert scale (0=absent, 1=questionably present, 2=present [mild], 4=present [moderate], and 5=present [severe]).

The EASE and other approaches to assessing self-disorders (e.g., parts of the Bonn Scale for the Assessment of Basic Symptoms (BSABS), Gross, 1989) have been developed for use in clinical settings with patients with schizophrenia or other severe psychotic disorders. Investigation of such patients may be limited by medication and the multitude of different functional impairments found in many patients. Hence, research into anomalies of self-experience may be complemented by the investigation of less severely impaired individuals. Self-disorder symptoms have been observed in people who are at high risk for psychosis (Nelson et al., 2012), and experiences traditionally considered markers of schizophrenia may be found in the non-clinical population too

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http://dx.doi.org/10.1016/j.psychres.2015.05.011
0165-1781/

(Peters and Garety, 1996; Verdoux and van Os, 2002). There is a growing consensus that psychotic symptoms exist on a continuum (van Os et al., 2000). Previous studies into self-disorder symptoms have found these symptoms to be prevalent among help-seeking adolescents, which provides support for the use of these symptoms in early detection of risk for schizophrenia (Koren et al., 2013).

The extent of psychotic-like symptoms in non-clinical subjects is likely influenced by their degree of schizotypy – a personality trait characterised by unusual perceptions, beliefs and language, as well as eccentric behaviour and restricted affect (Raine, 1991). The concept of schizotypy relates to the assumption of a psychosis continuum and the schizophrenia spectrum approach. The former posits that so-called psychosis-prone individuals may experience some psychotic symptoms, however these symptoms are less stable and less disturbing than in individuals with manifest schizophrenia (Linscott and van Os, 2013). The schizophrenia spectrum approach assumes that different psychotic disorders (e.g., delusional disorder and schizophreniform disorder) not only resemble schizophrenia clinically, but also share genetic and psychosocial risk factors. Schizotypical personality disorder is sometimes considered a prototype of schizophrenia spectrum disorders (Siever and Davis, 2004).

Schizotypy has been traditionally considered a risk marker for the development of schizophrenia (Chapman et al., 1978), a postulate which has found support in recent studies into at-risk populations (Miller et al., 2002; Johnstone et al., 2005). However, other authors have proposed a separate construct, schizotaxia, which represents liability to schizophrenia and which focus more on negative schizotypical symptoms (Tsuang et al., 2002), or have argued that some schizotypical features may reflect psedoschizotypy, unrelated to schizophrenia (Raine, 2006). Here we focus on schizotypy as a dimension of normal individual differences, which correlates with the risk of developing schizophrenia. A widely used measure of schizotypy is the Schizotypal Personality Questionnaire (SPQ) (Raine, 1991), which has good reliability and consistent underlying factors (Calkins et al., 2004).

The present study was designed to explore the possibility of assessing self-disorders in a non-clinical sample, especially in high-schizotypy individuals, using the EASE. However, we expected the interview would not be adequate for use in a non-clinical setting, as other typical sources of information (e.g., clinical observation, patient charts) are not available. Hence, we developed a semi-structured interview with questions designed to provoke the subject to discuss the topics of interest. Participants of high- or low-schizotypy were interviewed, and their interviews were rated by two people to determine the inter-rater reliability of the assessment.

2. Methods

2.1. Overview

The study consisted of (1) an internet-based schizotypy screening using the SPQ (Raine, 1991; German version by Klein et al. (1997)), and (2) a personal assessment of self-disorders in a sub-sample of participants high or low in schizotypy.

2.2. Participants

The internet screening was advertised on mailing lists for students at the Humboldt-Universität zu Berlin and the Freie Universität Berlin, in a local newspaper, and on a public classified advertisements board. Informed consent was given by all participants before the survey. After the screening, those who were willing to attend a personal assessment were asked for contact information. A total of 1296 participants completed the screening, of which 428 were discarded from further analysis due to having not completed all questions, and SPQ scores for the remaining participants were calculated. Of the remaining 868 participants, those who scored above the 90th percentile (SPQ score ≥ 41, $n=129$) or below the 10th percentile (SPQ score ≤ 7, $n=145$) were assigned to the high- and low- SPQ groups, respectively. The cutoff scores are similar to those in Raine (1991), who found a cutoff for SPQ scores at 41 for the 90th percentile and 12 for the 10th percentile.

Participants who indicated that they did not wish to partake in further experiments ($n=215$) were excluded from the second part of the study. It was agreed that participants who had a history of severe head injury or who were currently taking anti-psychotic medications should be excluded from the sample, but no participants met these criteria. From the remaining participants, we randomly selected members from the high-SPQ group and the low-SPQ using a numerical list and a random number generator. Sixty-three high-SPQ participants were invited in total (of which 30 accepted), and 25 low-SPQ participants (of which 20 accepted). The larger size of the high-schizotypy group is due to the desire to use this data for further analysis, and for future planned experiments using this group.

The demographic data for the final groups were as follows: high-SPQ group: 23 female and seven male, mean age of 27.5 (S.D.=6.6) and mean 12.8 years in education (S.D.=1.7). The low-SPQ group: 14 female, six male participants, mean age of 32.7 (S.D.=11.0) and mean 12.6 years in education (S.D.=0.92).

Before the examination, informed consent was again obtained by all participants for the second part of the study. Participants were reimbursed for their time at a rate of 10€/h. The study was approved be the ethics committee of the Institute for Psychology of the Humboldt-University.

2.3. Development and execution of EASE interview

In formalising the EASE checklist into a semi-structured interview, each item was assigned a question. These questions were open-ended and implied a broad definition of the phenomena to encourage participants to address the topic with their own words. Interviewees were instructed to disregard experiences which they had while under the influence of drugs or alcohol. Some items had follow-up questions for more specific information. These follow-up questions were asked when the interviewee responded that they were familiar with the experience in question. The follow-up questions asked for information on when the interviewee first experienced the phenomena, how long the experience persisted, and to give examples of their experience. Follow-up questions which were specific to each item are listed in Appendix.

The interviews were conducted in German. For interview questions translated into English, see Appendix. For the German language version used in this study, please contact the corresponding author.

The three interviewers were advanced Psychology students with clinical experience. One author (G.T.) was trained on the use of the EASE, and passed this training on to the interviewers (interviewers trained for around 30 h total), including understanding the underlying phenomenological constructs of each item, building rapport with participants, and interpreting the descriptions of the participants.

The rating took place after all interviews were completed. The interviewers viewed the full videotapes and rated each item for each participant. Independently, one other interviewer also rated each interview. The second rater did not have access to the participant or to the original interviewer's notes. Both the interviewer and the second rater were blind to the schizotypy score.

2.4. Other assessment instruments

The internet-based screening comprised the Schizotypal Personality Questionnaire (SPQ) (Raine, 1991), questions on basic demographic data (age, gender, years and level of education) and a 26-item questionnaire on conspiracy theories, which is not topic of the current paper. The SPQ is a 74-item questionnaire to assess schizotypy, which has high internal reliability (0.91), test–retest reliability (0.82), convergent validity (0.59–0.81), discriminant validity, and criterion validity (0.63, 0.68) (Raine, 1991). It is based on the DSM criteria for schizotypal personality disorder (SPD) (American Psychiatric Association, 2000) but was also designed to measure schizotypal traits in non-clinical groups.

In the second part of the study we checked for diagnoses of mental disorders using the German version (Wittchen et al., 1997) of the Structured Clinical Interview for DSM-IV (SCID I) (Spitzer et al., 1994). Three members of the low-SPQ group had a former depressive episode. In the high-SPQ group, 11 members had a former single major depression episode. Three further high-group participants had a recurrent major depressive disorder currently in remission, and two members had bipolar I disorder (both currently in a depressive episode) and two further members had biploar II disorder (one currently in a depressive episode and one currently in remission). None of the participants were currently in treatment for these symptoms. Formerly, four of the high-SPQ group and two of the low-SPQ group had been in cognitive therapy treatments, but none took medication. There were no other axis I diagnoses in either group. To check whether participants fulfilled the criteria for SPD we applied the respective part of the SCID II interview (Spitzer et al., 1994; German version by Wittchen et al. (1997)). No participant fulfilled all criteria for SPD.

A demographic data questionnaire of our own design was used to assess age, gender, first language, educational information, current employment, history of

Please cite this article as: Torbet, G., et al., Assessment of self-disorders in a non-clinical population: Reliability and association with schizotypy. Psychiatry Research (2015), http://dx.doi.org/10.1016/j.psychres.2015.05.011