Self-Disorders and Clinical High Risk for Psychosis: An Empirical Study in Help-Seeking Youth Attending Community Mental Health Facilities

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Anomalous subjective experiences involving an alteration of the basic sense of self (ie, Self-disorder [SD]) are emerging as a core marker of schizophrenia spectrum disorders with potential impact on current early detection strategies as well. In this study, we wished to field-test the prevalence of SD in a clinical sample of adolescent/young adult help-seekers at putative risk for psychosis attending standard community mental health facilities in Italy. Participants (n = 47), aged between 14 and 25, underwent extensive psychopathological evaluations with current semi-structured tools to assess Clinical High Risk (CHR) state (ie, Structured Interview for Prodromal Syndromes/Scale of Prodromal Symptoms [SIPS/SOPS], Schizophrenia Proneness Instrument-Adult/Child and Youth [SPI-A/CY]). SD aggregated in CHR subjects as compared to the non-CHR and revealed substantial association with sub-psychotic symptoms (SIPS), subjective experience of cognitive and cognitive-perceptual vulnerability (basic symptoms) and functional level (Global Assessment of functioning). Moreover, a combination of the 2 approaches (ie, CHR plus SD) enabled further “closing-in” on a subgroup of CHR with lower global functioning. The results confirm SD’s relevance for the early profiling of youths at potential high risk for psychosis.

Key words: psychosis/prodrome/clinical high risk/self/subjective experience/basic symptoms/positive symptoms

Introduction

Over the last 20 years, the early identification and treatment of individuals at putative risk of developing schizophrenia and other psychotic disorders has become a clinical and research priority.1-4 Indeed the aim of contemporary early intervention programs is preventing (or at least delaying) the occurrence of transition to psychosis and the development of the related psychosocial consequences.5

McGorry and Yung were the first to introduce the concept of “Ultra-High Risk” (UHR) in order to identify, among the broad help-seeking population, those individuals at imminent risk of developing frank psychotic disorders.6 Briefly, UHR criteria require that a young person (aged between 14 and 30) who is referred for mental health problems has one of the following features: (1) Attenuated Psychotic Symptoms (APS), ie, sub-threshold, attenuated positive symptoms; or (2) Brief Limited Intermittent Psychotic Symptoms (BLIPS), ie, short episodes of frank psychotic symptoms that have remitted briefly without treatment; and/or (3) Trait and State Risk Factor (TSRF), ie, a significant decline in functioning with a concomitant schizotypal personality disorder or a first-degree relative with a psychotic disorder.7 However, despite several convergent evidences that confirm the feasibility and replicability of the UHR approach, recent studies have documented declining transition rates in UHR samples compared with the past.8 This points to the topicality of further refining available criteria in order
to optimize the closing-in of at risk subjects. In particular, phenomenologically oriented research has recently indicated 2 core descriptive areas that may provide a means of further “closing-in” on individuals truly at high risk of psychotic disorder (thus supplementing the UHR identification approach). Those partly related constructs are Huber’s “Basic Symptoms” (BS) and Parnas and Sass’ “Self-disorder” (SD).

BS are subtle subclinical self-experienced disturbances in drive, stress tolerance, affect, thinking, speech, perceptions and motor action, often perceived by the person years before psychotic onset. They were considered the most immediate psychological expression of the neurobiological disturbance underlying the development of psychosis, and thus named “basic” (see Schultze-Lutter,9 for a comprehensive review). BSs are operationalized in the Bonn Scale for the Assessment of Basic Symptoms10 and its further versions, the Schizophrenia Proneness Instrument, which is available for both Adult (SPI-A)11 and Child and Youth (SPI-CY) populations.12

Strictly imparented with BS (see Parnas et al13 for the development of the Examination of Anomalous Self-Experience [EASE] from the BSABS), Parnas and Sass’ SD notion, specifically focuses on certain anomalous subjective experiences indicative of a disorder at the level of the basic sense of being a self, endowed with a unique, stable and embodied first person perspective. Indeed, according to Sass and Parnas14 schizophrenia involves subtle but pervasive and persistent changes in the very structure of subjective experience. Those changes specifically affect the core self in a phenomenological sense, ie, “the experiential sense of being a vital and self-coinciding subject of experience or first person perspective on the world.”14 SD have been shown to be specific for the schizophrenia spectrum disorders both in clinical1,15-23 and genetic high risk populations24,25 SD can be assessed with the EASE, a comprehensive checklist developed integrating insights from the BSABS as well as from major European psychopathologists (see Parnas et al13).

However, whereas due to their extensive and consolidated evidence specific clusters of BS have already been formalized as a further set of risk criteria (so called Cognitive-Perceptive basic symptoms criteria/Cognitive basic symptoms criteria [COPER/COGDIS]) that can improve the sensitivity and specificity of contemporary UHR criteria,2,26 there is still only initial evidence regarding SD.2,27,28

At the present time only few studies documented the presence of SD in a naturalistic sample of adolescents and young adults at putative risk for schizophrenia and related psychotic disorders.2,27 Therefore this study was set up to test the occurrence of SD in such population and its relation with contemporary Clinical High Risk (CHR) criteria (ie, UHR—including BLIPS, APS, and TSRF; and BS derived criteria—COPER and COGDIS).

Specifically, the aims of the study are:
1. To investigate the prevalence of SD in a clinical sample of adolescent/young adult help-seekers admitted to community mental health facilities.
2. To compare their prevalence in CHR vs non-CHR subjects.
3. To explore the association between SD and dimensional markers of CHR state, ie, subclinical psychotic symptoms, at risk BSs and global functioning.

Finally, we wished to test whether SD could supplement the CHR approach to further “close in” on individuals truly at high risk of psychotic disorder. Therefore we tested if a combination of the 2 approaches (ie, CHR plus high SD vs CHR plus low SD) could identify a subgroup of CHR with other markers of risk, such as impaired global functioning.

Methods
Participants
The sample included 47 patients in charge at 3 different outpatient units—including both adolescent and adult community mental health centers—of the Viterbo Local Health Service (catchment area: 302,547 inhabitants). All the participants were consecutively recruited from December 2010 to June 2011.

Inclusion criteria were: age between 14 and 25 years, fluency in Italian, IQ > 70, no organic causes for presentation and no known past or present psychotic episode.

Clinical diagnosis was first made according to DSM IV-TR criteria29 and then verified through a retrospective review of the patients’ charts by the study coordinator (E.P., a research psychiatrist with clinical expertise on early detection of psychosis) together with the treating clinicians. The clinical interviews were performed by 2 clinicians (A.D.E. and N.L.C.) who underwent specific training on the Italian versions of the Structured Interview for Prodromal Syndromes (SIPS) and SPI-A/CY with E.G. (ie, the certified Italian trainer for SIPS and SPI-A/CY), and on the EASE with Prof. J. Parnas (ie, the main author of the EASE). Bi-weekly, joint calibration meetings for consensus coding were held throughout the data collection phase for each of the interview-based scales. This strategy was adopted as the best possible compromise between the complexities and constraints of everyday clinical practice in real-world community MH services and the reliability of the assessment (ie, to ensure that ratings remained stable over time and that rater drift did not occur). Further, the EASE coding was double-checked under the supervision of A.R., a consultant-level senior clinician and member of the Parnas’ group, with extensive clinical and research experience in schizophrenia spectrum disorders.

Measures and Procedure
In a first step, all demographic data were collected and patients were assessed using the Global Assessment of...
functioning (GAF). Subsequently, the assessment of risk syndromes was performed with the SIPS and the Schizophrenia Proneness Instrument (SPI-A or SPI-CY where appropriate to the subjects’ age). Finally the participants were interviewed with the EASE.

The SIPS is a structured diagnostic interview used to diagnose 3 major prodromal syndromes (ie, BLIPS, APS, and trait-state risk factors). The SIPS includes the Scale of Prodromal Symptoms (SOPS), the Schizotypal Personality Disorder Checklist, a family history questionnaire, and a well-anchored version of the GAF scale. The SIPS also includes operational definitions of the 3 prodromal syndromes (the Criteria of Prodromal Syndromes [COPS]) and an operational definition of psychosis onset (Presence of Psychotic Syndrome [POPS]).

The GAF scale, which was included in DSM-IV in 1994 and is included in the SIPS, evaluates both the actual and the highest global functioning reached during the past year. GAF score ranges from 0 to 100 (with 100 indicating the superior functioning and 0 representing extreme dysfunction) and has focused anchor points for each rating interval to increase reliability. The GAF is used to evaluate the psychological, social, and occupational functioning and has no age limits.

The Schizophrenia Proneness Instrument, Adult (SPI-A) and Child Youth Version (SPI-CY) are semi-structured interview tools designed for detecting and assessing BS in the target ages for at risk mental states (ie, in children and adolescents as well as in young adults). In this protocol SPI-A and SPI-CY were used to identify the BS criteria that have been suggested to complement UHR criteria in the early detection of psychosis (ie, COPER and COGDIS—see the Appendix). In particular, COPER is more sensitive and is therefore considered suitable for broader risk detection (eg, in view of longitudinal monitoring), whereas COGDIS (which is more specific) is proposed as alternative risk criterion to UHR, detecting high-risk subjects in view of adopting specific treatment (see Shultze-Lutter and Schimmelmann for details).

Besides the categorical COPER and COGDIS criteria, we calculated for each participant a dimensional COPER (COPER-dim) and COGDIS (COGDIS-dim) scores as proxies for the level of ongoing at-risk BSs.

The EASE was used for the assessment of self-disturbances. The EASE is a semi-structured interview for the phenomenological exploration of anomalies of the basic self awareness. It consists of 57 items ordered in 5 domains: (1) cognition and stream of consciousness; (2) self-awareness and presence; (3) bodily experiences; (4) demarcation/transitivism; and (5) existential reorientation. Following similar studies the items that were rated on a 5 point likert scale (from 0, ie, absent, to 4, ie, severe) were subsequently dichotomized conservatively, counting as 0 (absent) the likert scores absent (0) or questionably present (1), and as 1 (present) the likert scores above 2 (mild, moderate, and severe).

**Statistical Analysis**

Descriptive statistics were used to characterize the prevalence of SD in the sample. The Mann-Whitney test was applied to compare EASE and GAF mean scores in CHR and non-CHR subsamples, whereas correlational analysis between EASE, GAF, SIPS, and SPI-A/CY derived scores in the whole sample was conducted via the Spearman test.

**Results**

**Sample**

The whole sample included 47 patients (see table 1 for demographic details), with the following DSM-IVTR diagnosis: Affective Disorders (n = 9, 19.1%), Anxiety Disorders (n = 13, 27.7%), Personality Disorders (n = 27, 57.4%), other diagnosis (n = 11, 23.4%); 1 patient (2%) didn’t receive a DSM-IVTR axis I or II diagnosis. 29 patients (61.7%) resulted to be at risk for Schizophrenia (ie, CHR group).

Patients’ age, gender, and concomitant diagnoses were not related to the CHR/non-CHR status and had no significant effect on both EASE and GAF scores (supplementary material S1 and S2). For further details on CHR criteria distribution and comorbid diagnoses within the CHR sample, see supplementary material S3 and S4.

**Distribution of SD**

Above 90% of the sample (44 out of 47 participants) reported at least one SD out of the 57 included in the EASE, however, the mean number of anomalies was significantly different between CHR and non-CHR.

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**Table 1. Sociodemographic Features, GAF and EASE Mean Scores**

<table>
<thead>
<tr>
<th></th>
<th>Whole Sample (n = 47)</th>
<th>Non-CHR (n = 18)</th>
<th>CHR (n = 29)</th>
<th>Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years ± SD)</td>
<td>20.17 ± 2.92</td>
<td>20.05 ± 3.29</td>
<td>20.32 ± 2.84</td>
<td>Z = 0.35 (P = .72)</td>
</tr>
<tr>
<td>Age (under 18/over 18)</td>
<td>12 (25.5%)/35 (74.5%)</td>
<td>7 (38.8%)/11 (61.2%)</td>
<td>5 (17.2%)/24 (82.8%)</td>
<td>X² = 2.74 (P = .12)</td>
</tr>
<tr>
<td>Gender (m/f)</td>
<td>30 (64%)/17 (36%)</td>
<td>9 (50%)/9 (50%)</td>
<td>21 (72.4%)/8 (25.8%)</td>
<td>X² = 2.42 (P = .12)</td>
</tr>
<tr>
<td>GAF (mean ± SD)</td>
<td>67.52 ± 13.54</td>
<td>75.89 ± 8.63</td>
<td>62.38 ± 13.53</td>
<td>Z = 1.63 (P = .01)</td>
</tr>
<tr>
<td>EASE (mean ± SD)</td>
<td>12.87 ± 9.59</td>
<td>5.72 ± 5.07</td>
<td>17.31 ± 9.06</td>
<td>Z = 4.08 (P &lt; .01)</td>
</tr>
</tbody>
</table>

*Note: GAF, Global Assessment of Functioning; EASE, Examination of Anomalous Self Experience; CHR, Clinical High Risk.*
subgroups (see figure 1 and table 1 for nonparametric test). The mean EASE score in the non-CHR sample (5.72±5.07) was comparable to the ones found in the literature for patients with non-schizophrenia spectrum disorders (eg, 5.7±5.1 in Raballo and Parnas\textsuperscript{23}; 6.3±4.8 in Haug et al\textsuperscript{3}) and higher than healthy controls (eg, 2.37±2.45 in Nelson et al\textsuperscript{3}). Similarly the mean EASE score in the CHR sample (17.31±9.06) resembled the one reported for mild schizophrenia spectrum configurations such as schizotypal disorders (eg, 17.8±6.8 in Nordgaard and Parnas\textsuperscript{18}; 17.0±7.2 in Raballo and Parnas\textsuperscript{23}).

**SD and CHR Dimensions**

Correlations between the EASE total score and the dimensions of putative prodromal psychopathology are reported in table 2. SD correlated positively with all the SIPS positive items, and the 2 SPI-A/CY at risk BSs derived scores (ie, COPER-dim and COGDIS-dim). The EASE also had a negative correlation of a comparable magnitude with the GAF.

**Combination of SD and CHR Criteria**

To test the potential of SD to enable further “closing-in” on individuals truly at high risk of psychotic disorder, we tested whether a combination of the 2 approaches (ie, CHR plus SD) could identity a subgroup with lower GAF score (ie, an alleged marker of psychosis risk\textsuperscript{38} as well as a proxy of global clinical severity and worse functional outcome\textsuperscript{39}). Hence the CHR group was dichotomized into High vs Low SD on the basis of the median EASE score within the CHR sample (supplementary material S5a). CHR subject with high SD had significantly lower GAF score than CHR subjects with low SD (Z = 2.215, \( P = .026 \)). To rule out that the effect was not merely a byproduct of the association between SD and COPER/COGDIS, we: (1) reiterated the analysis contrasting CHR plus positive COPER/COGDIS vs CHR plus negative COPER/COGDIS (no significant difference on GAF score, see supplementary material S5b), and (2) tested for the association between (CHR plus High vs Low SD) and (CHR with positive vs negative COPER/COGDIS) (no significant association, see supplementary material S5c). A scatter diagram, illustrating the distribution of the combined GAF and EASE scores according to the CHR status is presented in supplementary material S6.

**Discussion**

The present study investigated the prevalence of SD in a clinical sample of adolescents and young adults attending community mental health programs in Italy. The results indicate substantial agreement with comparable studies in

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**Table 2. Correlations Between SD, Attenuated Positive Symptoms (SIPS), GAF and at Risk Basic Symptoms (COPER and COGDIS Scores)**

<table>
<thead>
<tr>
<th>SIPS P1 (Unusual Thought Content)</th>
<th>SIPS P2 (Suspiciousness)</th>
<th>SIPS P3 (Grandiosity)</th>
<th>SIPS P4 (Perceptual Abnormalities)</th>
<th>SIPS P5 (Disorganized Communication)</th>
<th>GAF</th>
<th>Cognitive-Perceptual BS</th>
<th>Cognitive BS</th>
</tr>
</thead>
<tbody>
<tr>
<td>EASE</td>
<td>0.411**</td>
<td>0.600**</td>
<td>0.401**</td>
<td>0.367*</td>
<td>0.342*</td>
<td>-0.595**</td>
<td>0.580**</td>
</tr>
</tbody>
</table>

*Note: BS, basic symptoms; SPI-A/CY, Schizophrenia Proneness Instrument-Adult/Child and Youth; SIPS, Structured Interview for Prodromal Syndromes; COPER, cognitive-perceptive basic symptoms criteria; COGDIS, cognitive basic symptoms criteria. \( P < .05 \); \( ** P < .01 \).
adult subjects. Indeed, although SD were common among the whole help-seeking group, they mostly aggregated in the CHR as compared to the non-CHR sub-group. In this context, it is worth noting that also the rate of SD in the non-CHR subsample was comparable to the one detected in patients with non-schizophrenia spectrum disorders and higher than what reported for healthy controls. This might be a consequence of the overall clinical severity level of the participants who were anyhow outpatients regularly supported in the context of public community mental health services (ie, with a clinical caseness threshold requiring second-level, specialist intervention).

Furthermore SD revealed moderate correlations with both GAF and SPI-A/CY derived at risk scores (ie, COPER-dim and COGDIS-dim) and moderate-high correlations with SIPS positive items. To our knowledge, this is the first study assessing correlations between SD, global indexes of clinical severity (GAF) and prodromal psychotic dimensions (SIPS). Although the EASE captures disorders of self-experience that differ from those identified by the SIPS, we regard the moderate-high positive correlation between EASE and SIPS positive subscores as confirming the relation between anomalous subjective experience (SD) and emerging positive symptoms in the pre-psychotic phases. Similarly, the moderate correlation between EASE and SPI-A/CY-derived at risk scores suggests that SD are related to early, nonpsychotic prodromal experiences indexed by Huber’s BS. In particular, on a clinical ground, COPER-dim and COGDIS-dim are proxies for the not-yet psychotic subjective experience of vulnerability in the cognitive and cognitive-perceptual field that accompanies at risk mental states.

The negative correlation between EASE and GAF suggests that SD are plausibly a relevant component of functional deterioration. Moreover, the CHR subjects with high SD exhibited higher functional impairment that those CHR with lower SD, thus suggesting that a combination of the 2 approaches could be a promising identification strategy in “narrowing down” on those CHR with higher risk of psychosis and poorer longitudinal outcome.

Overall these results cohere with the notion of SD as clinical phenotype characterizing the pre-onset phase of schizophrenia spectrum and confirm SD clinical potential for refining current detection of at risk mental states.

Limitations

The current study is limited by its cross-sectional nature and by the setting. Indeed the recruitment was conducted in standard community-based outpatients services, assessing participants already enrolled in a therapeutic support. In this respect the non-CHR group is not comparable to non-help-seeking adolescents, but rather reflects a help-seeking population already exhibiting a certain degree of clinical caseness a-priori from its initial level of risk for future psychosis. Thus the generalizability of our result is limited to help-seeking youth somehow already included in community-based psychosocial care-pathways.

Also, no formal quantitative measure of inter-rater reliability was collected. Rather, we used multiple levels of joint clinical review (eg, consensus coding during biweekly calibration meetings, close supervision by expert trained clinicians [E.G. and A.R.], as a realistic compromise strategy to ensure sufficient rating uniformity and accuracy, while at the same time being compatible with the everyday clinical routines in real-world community care settings.

Despite these limitations, our results provide a substantial clinical framework for the prospective investigation of SD with respect to the development of schizophrenia spectrum conditions within the current sample.

Conclusions

The current study indicates that SD aggregate in CHR states and are associated with crucial clinical-severity proxies, ie, sub-psychotic symptoms (SIPS), subjective experience of cognitive and perceptive vulnerability (SPI-A/CY) and functional level (GAF). Furthermore, a combination of the 2 approaches (ie, CHR plus SD) enabled further “closing-in” on a subgroup of CHR with more prominent functional impairment. Thus, in line with converging literature, it corroborates SD’s relevance in profiling subjects at potential high risk for psychosis and early schizophrenia spectrum conditions.

Supplementary Material

Supplementary material is available at http://schizophreniabulletin.oxfordjournals.org.

Funding

Norwegian Centre for Mental Disorders Research (NORMENT)—University of Oslo; Department of Neurology and Psychiatry—Sapienza University of Rome; Viterbo Local Health Authority.

Acknowledgments

We thank the referees for their comments, which improved the clarity of the manuscript. The authors declare that there are no conflicts of interest in relation to the subject of this study.
### Appendix: Clinical High Risk Criteria (Adapted From: Schultze-Lutter and Schimmelmann\(^{36}\))

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Features</th>
<th>Assessment Tool</th>
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<tbody>
<tr>
<td>UHR</td>
<td>Attenuated Psychotic Symptoms (APS)</td>
<td>SIPS/SOPS (plus GAF)</td>
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<tr>
<td></td>
<td>Brief Limited Intermittent Psychotic Symptoms (BLIPS)</td>
<td></td>
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<tr>
<td></td>
<td>Trait and State Risk Factor (functional decline combined with putative</td>
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<td>genetic vulnerability, ie, a diagnosis of schizotypal personality disorder</td>
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<td></td>
<td>or a first-degree relative with a psychotic disorder)</td>
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<tr>
<td>COPER/COGDIS</td>
<td>COPER. At least any 1 of the following BSs with at least weekly occurrence</td>
<td>SPI-A or SPI-CY</td>
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<td></td>
<td>(ie, SPI-A/CY score of ≥3) within the last 3 months and first occurrence</td>
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<td></td>
<td>at least 12 months ago: thought interference, thought perseveration,</td>
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<td></td>
<td>thought pressure, thought blockages, disturbance of receptive speech,</td>
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<td></td>
<td>decreased ability to discriminate between ideas and perception, fantasy</td>
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<td></td>
<td>and true memories, unstable ideas of reference, derealization, visual</td>
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<td></td>
<td>perception disturbances (excl. hypersensitivity to light or blurred vision),</td>
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<td></td>
<td>acoustic perception disturbances (excl. hypersensitivity to sounds)</td>
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<td></td>
<td>COGDIS. At least any 2 of the following BSs with at least weekly</td>
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<td></td>
<td>occurrence (ie, SPI-A/CY score of ≥3) within the last 3 months: inability</td>
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<td></td>
<td>to divide attention, thought interference, thought pressure, thought</td>
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<td>blockages, disturbance of receptive speech, disturbance of expressive</td>
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<td>speech, unstable ideas of reference, disturbances of abstract thinking,</td>
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<td>captivation of attention by details of the visual field.</td>
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### References


