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Anomalous self-experiences and their relationship with symptoms, neuro-cognition, and functioning in at-risk adolescents and young adults

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Abstract

Empirical and theoretical studies support the notion that anomalous self-experience (ASE) may constitute a phenotypic aspect of vulnerability to schizophrenia, but there are no studies examining the relationship of ASE with other clinical risk factors in a sample of ultra-high risk (UHR) subjects. The aim of the present study was to explore the relationship between ASE, prodromal symptoms, neurocognition, and global functioning in a sample of 45 UHR adolescents and young adults (age range 15–25 years) at first contact with Public Mental Health Services. Prodromal symptoms and global functioning were assessed through the SIPS interview. ASE was evaluated through the Examination of Anomalous Self-Experience (EASE); for neurocognition, we utilized a battery of tests examining seven cognitive domains as recommended by the Measurement And Treatment Research to Improve Cognition in Schizophrenia.

In the UHR group, higher levels in two domains of the EASE (stream of consciousness and self-awareness) were found in comparison with help-seeking subjects. Correlational analysis corrected for possible confounding variables showed a strong association ($p > 0.001$) between higher EASE scores and global functioning. A principal factor analysis with Varimax rotation yielded a two-factor solution, jointly accounting for 70.58% of the total variance in the UHR sample. The first factor was comprised of SOPS domains, while the second was comprised of EASE-total, EASE-10, and GAF variables. Our findings provide support for the notion that disorders of self-experience are present early in schizophrenia and are related to global functioning. As such, they may constitute a potential marker of risk supplementing the UHR approach.

1. Introduction

In schizophrenia, the development of standardized assessment instruments and specific criteria defining the so-called ultra-high risk (UHR) paradigm [1] with good predictive validity has encouraged research on early detection and establishment of early recognition and intervention worldwide. The resulting perspective research has confirmed that, as well as attenuated or brief self-limited psychotic symptoms, the first episode of psychosis is generally preceded by a prodromal phase that is characterized by non-specific negative symptoms, difficulty in social and age-appropriate role functioning, self-experienced cognitive symptoms, and impaired neuro- and social cognition.

Although the UHR approach has shown diagnostic validity and feasibility of prospective ascertainment of individuals at risk for psychosis [2,3] and provided a platform for studies assessing the risks and benefits of early interventions [4,5], there is a wide consensus that it suffers from several conceptual and methodological shortcomings that need to be addressed in order to improve its scientific and clinical utility. In fact, UHR predictive criteria, which use increasing intensity of positive

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psychotic symptoms to predict psychosis, in contrast to a comprehensive psychopathological theory about the nature of psychosis, are rather limited in their informative value about the phenotypic markers of vulnerability for psychosis. Moreover, there is a large body of evidence that calls into question the specificity of attenuated psychotic symptoms, which are quite common in a broad range of non-psychotic psychiatric conditions [6] and even in the general population [7]. Addressing these problems has become increasingly important in light of the reducing rates of transition to psychosis and growing number of 'false positives' in more recent UHR cohorts [8].

Empirical and theoretical studies support the notion that anomalous self-experience (ASE) may constitute a phenotypic aspect of vulnerability to schizophrenia [9]. Recent prospective findings suggest that identifying ASE in a UHR population may provide a means of further 'closing in' on individuals who are truly at high risk of psychotic disorders, and particularly of schizophrenia spectrum disorders [10]. However, there are currently no empirical data that elucidate how UHR criteria and ASE might differentially characterize the risk for psychosis.

In this study, we examined the relationship between ASE and other clinical risk factors for psychosis. More specifically, our aims were: (1) to compare the prevalence and nature of ASE between a group of non-psychotic, help-seeking adolescents and young adults and a group of UHR subjects; (2) to examine the relationship between ASE and other risk factors such as prodromal negative, disorganized and general symptoms, global functioning, and neurocognitive impairment in a group of UHR patients; (3) to examine the mutual relationships between ASE and the domains of clinical risk encompassed in the UHR paradigm. In this way, we expect to improve the informative value of the phenotypic markers for vulnerability to psychosis.

2. Materials and methods

2.1. Subjects

The population recruited for this study included 159 adolescents and young adults who consecutively came to seek help for emotional and behavioral difficulties in two clinical outpatient settings: (1) the Outpatient Clinic for Psychosis Prevention at Sant'Andrea Hospital in Rome; (2) the Adolescent Care Unit at the Mental Health Service of Viterbo. Data were collected as part of an ongoing prospective clinical trial on prevention of mental health disorders.

Enrolled patients met all of the following criteria: (1) first contact with the mental health service; (2) age between 15 and 25 years; (3) a level of understanding that was sufficient to communicate with investigators and to understand the nature of the study.

Exclusion criteria included: (1) current or past diagnosis of psychosis; (2) comorbid or past diagnosis of autistic disorder or other pervasive developmental disorder; (3) history of severe head injury; (4) severe medical conditions or major neurological disorders; (5) current drug abuse. Of the 159 subjects initially screened, 39 were excluded for current substance abuse, 11 presented a diagnosis of current or past psychosis and 4 presented with severe medical conditions, neurological disease, or past diagnosis of developmental disorder. Forty-five patients met the criteria for psychosis risk syndrome according to McGlashan et al. [11], based on the presence of Attenuated Psychotic Symptoms (APS), Brief Intermittent Psychotic Symptoms (BIPS), or functional decline and family history of schizophrenia or Schizotypal Personality Disorder (Genetic Risk and Deterioration, GRD). The UHR group was stratified as follows: 35 (78%) in the APS group, 4 (9%) in the GRD group, 1 (2%) in the BLIPS group, and 5 (11%) in both the APS and the GRD groups. Based on the Structured Interview for DSM-IV Disorders-I (SCID-I) [12], patients met the diagnoses shown in Table 1. Patients were free from any psychotropic medication at the time of first evaluation. All participants (or a stable guardian for minors) provided informed consent for participation in the study and publication of results. The research was approved by the local Ethics Committee.

Table 1
Demographic and psychopathological features of the sample.

	UHR(45) *(SE)*	HS (70) *(SE)*	*P value*
Age	21.04 (0.4)	20.63 (0.3)	0.4
Sex (Males)	22 (48.9%)	42 (60%)	0.2
Education	12.40 (0.3)	11.00 (0.3)	**0.009**
Unusual Thought Content (SOPS P1)	2.76 (0.1)	1.11 (0.1)	**<0.001**
Suspiciousness (SOPS P2)	2.09 (0.2)	1.46 (0.1)	**0.02**
Grandiosity (SOPS P3)	.91 (0.2)	.43 (0.1)	0.08
Perceptual Abnormalities (SOPS P4)	1.09 (0.2)	0.71 (0.1)	0.2
Disorganized Communication (SOPS P5)	1.09 (0.2)	.40 (0.1)	**0.01**
EASE 1	19.02 (2.0)	9.03 (1.1)	**<0.001**
EASE 2	24.73 (1.9)	14.73 (1.4)	**<0.001**
EASE 3	2.64 (0.5)	2.12 (0.3)	0.04
EASE 4	1.71 (0.4)	.88 (0.2)	0.08
EASE 5	3.04 (0.6)	1.91 (0.6)	0.2
EASE total	51.09 (4.4)	28.67 (4.6)	**0.001**
EASE 10 subscale	12.3 (1.4)	6.8 (6.9)	**0.02**
Diagnosis (DSM-IV)			
Anxiety Disorders	10	18	
Relational Problems	5	17	
Personality Disorders	12	16	
Adjusting Disorders	1	9	
Affective Disorders	16	7	
Eating Disorders	1	3	

2.2. Assessment

2.2.1. Psychopathology

Data on socio-demographic and psychopathological variables were collected at clinical interview. Criteria for prodromal syndrome were determined using the Italian version of the Structured Interview for Psychosis Risk Syndrome (SIPS) [13,14], including the Scale of Prodromal Symptoms (SOPS). The SIPS also includes the Global Assessment of Functioning (GAF) scale, used to determine