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Personality features in ultra-high risk for psychosis: A comparative study with schizophrenia and control subjects using the Temperament and Character Inventory-Revised (TCI-R)

Ana Fresán [a], Pablo León-Ortiz [b, c], Rebeca Robles-García [d], Mariana Azcárraga [b], Diana Guizar [a], Francisco Reyes-Madrigal [b], Carlos Alfonso Tovilla-Zárate [e], Camilo de la Fuente-Sandoval [b, f, *]

[a] Clinical Research Division, Instituto Nacional de Psiquiatría Ramón de la Fuente, Mexico City, Mexico
[b] Laboratory of Experimental Psychiatry, Instituto Nacional de Neurología y Neurocirugía, Mexico City, Mexico
[c] Department of Education, Instituto Nacional de Neurología y Neurocirugía, Mexico City, Mexico
[d] Epidemiological and Social Research Direction, Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz, Mexico City, Mexico
[e] Multidisciplinary Academic Division, Universidad Juárez Autónoma de Tabasco, Comalcalco, Tabasco, Mexico
[f] Neuropsychiatry Department, Instituto Nacional de Neurología y Neurocirugía, Mexico City, Mexico

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ABSTRACT

Several variables have been identified as risk factors for conversion to overt psychosis in ultra-high risk for psychosis (UHR) individuals. Although almost two-thirds of them do not experience a transition to psychosis, they still exhibit functional disabilities. Other subjective developmental features may be useful for a more precise identification of individuals at UHR. Avoidant behaviors are consistently reported in schizophrenia and in UHR individuals and may be the reflection of a pattern of personality. Thus, personality features in UHR individuals deserves further research. The objective of the present study was to compare temperament and character dimensions between UHR individuals, patients with schizophrenia and healthy controls. One hundred participants (25 UHR individuals, 25 schizophrenia patients and 50 control subjects) where evaluated with the Temperament and Character Inventory-Revised (TCI-R). Univariate ANOVAs followed by Bonferroni tests were used. UHR individuals and schizophrenia patients exhibited higher levels of Harm Avoidance (HA) when compared to control subjects. For HA1 *Anticipatory worry vs Uninhibited optimism* and HA4 *Fatigability & asthenia*, UHR and schizophrenia groups showed similar scores and both groups were higher compared to control subjects. With respect to Cooperativeness (CO), UHR and schizophrenia reported lower scores than control subjects, in particular CO2 *Empathy vs Social disinterest* and CO3 *Helpfulness vs unhelpfulness*. This study replicates and extends the consideration of HA as a psychopathological related endophenotype and gives us further information of the possible role of personality features in the expression of some of the social dysfunctions observed both in prodromal subjects and schizophrenia patients.

1. Introduction

Schizophrenia and related psychoses remain among the most debilitating mental disorders (Tandon et al., 2008) that have negative consequences for the patient, the family and the society. The onset of schizophrenia is usually preceded by subthreshold psychotic symptoms and a progressive functional decline (Yung and McGorry, 1996). Individuals who meet criteria for the putative prodrome of psychosis are referred to be at ultra-high risk for psychosis (UHR). To date, research efforts are strongly focused on this phase as it has been asserted that an early intervention and treatment during the prodrome could delay or even prevent the onset phase, lessen its severity and reduce functional deterioration associated with progression to full-blown psychosis (Cadenhead and de la Fuente-Sandoval, 2013, Lieberman and Fenton, 2000; Singh et al., 2012).

* Corresponding author. Laboratory of Experimental Psychiatry & Neuropsychiatry Department, Instituto Nacional de Neurología y Neurocirugía, Insurgentes Sur 3877, La Fama, Tlalpan, 14269 Mexico City, Mexico.
E-mail address: fcamilo@unam.mx (C. de la Fuente-Sandoval).

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Several demographic, clinical and biological factors have been identified as risk factors for conversion to overt psychosis. Almost two-thirds of UHR subjects do not convert to frank psychosis even though they clearly exhibit functional disabilities when compared to non-UHR subjects (Cannon et al., 2008; de la Fuente-Sandoval et al., 2013; Ruhrmann et al., 2010). Therefore, examining other subjective features formed during development may be useful for a more precise identification of individuals at UHR. Personality, defined as a covariation among a pattern of traits that vary among individuals (Von Drass and Siegler, 1997), has been associated with stress vulnerability, personal adjustment and functioning (Ravaja et al., 2006).

Personality differences between patients with schizophrenia and healthy controls are detectable and personality features are stable in schizophrenia after illness onset (Donat et al., 1992; Horan et al., 2005; Kentros et al., 1997). In addition, several studies have evidenced that personality dimensions can be a clue to symptom expression in schizophrenia and other psychosis (Cortés et al., 2009; Song et al., 2013). Avoidant behaviors, passivity and introversion, which seem to be related to negative or depressive symptoms, are features that have been consistently reported for schizophrenia using different theoretical approaches and personality assessments (Fresan et al., 2012; Goldberg and Schmidt, 2001; Horan and Blanchard, 2003; Hori et al., 2008; Jetha et al., 2013; Kurs et al., 2005). These features, that can be reflected as maladaptative coping strategies or inadequate interpersonal interactions, have also been found in UHR individuals (Lee et al., 2011b; Masillo et al., 2012) and may contribute to social withdrawal (Freeman et al., 2008), which is the most commonly reported symptom in UHR individuals (Lencz et al., 2004).

These current findings in UHR and their continuous replication in patients has led to the consideration of personality dimensions, in particular those that characterize avoidant, socially detached and amotivated personalities, as schizophrenia-related endophenotypes of schizophrenia (Smith et al., 2008). The psychobiological model proposed by Cloninger and colleagues (Cloninger, 1987; Cloninger et al., 1994, 1993) provides a useful alternative for the study of personality in schizophrenia and related disorders. This model of personality is based on four higher-order temperament dimensions – Novelty Seeking (NS), Harm Avoidance (HA), Reward Dependence (RD) and Persistence (P) – which are considered to be biologically-based and heritable differences in habits and skills, and three higher-order character dimensions – Self-directedness (SD), Cooperativeness (CO) and Self-transcendence (ST) – which are related to self-concepts about values and goals that impact the meaning of what is experienced (Cloninger et al., 1993). Higher HA and ST and lower RD, SD and CO are consistently reported in schizophrenia (Ohi et al., 2012) and in some studies with non-psychotic high risk individuals (Bora and Veznedaroglu, 2007; Cortés et al., 2009; Smith et al., 2008; Song et al., 2013). With these previous results, it seems that temperament dimensions may play an important role in terms of vulnerability for schizophrenia as its dimensions are closely related to neurotransmitter systems associated to the disorder (Cloninger, 1987), while character dimensions are proposed to play a protective role for the observed psychosocial impairment (Smith et al., 2008; Svrakic et al., 2002).

Therefore, personality features in UHR individuals deserves further research to determine the particular role of personality in developing schizophrenia. The aim of the present study was to compare temperament and character dimensions between UHR individuals, patients with schizophrenia and control subjects. We hypothesized that UHR individuals will show more similarities in their temperament and character dimensions with patients with schizophrenia than with control subjects.

2. Materials and methods

The Ethics and Scientific Committees of the National Institute of Neurology and Neurosurgery (INNN) and the National Institute of Psychiatry (INP), both located in Mexico City, approved this study. All participants were enrolled after they received a comprehensive explanation of the nature of the study and gave their written informed consent to participate.

2.1. Participants

Ultra-high risk individuals: Twenty-five UHR individuals were recruited from the Adolescent Program of Neuropsychiatric and Imaging Study (PIENSA) of the INNN and assessed using the Structured Interview for Prodromal Syndromes (SIPS) criteria (Miller et al., 2003). None of the included UHR individuals were on any medication (eg, benzodiazepines, antipsychotics or antidepressants) at the time of the assessment.

Patients with schizophrenia: Twenty-five patients with paranoid schizophrenia according to DSM-IV diagnostic criteria and the SCID-I (Structured Clinical Interview for DSM-IV Axis I Disorders) structured interview (First et al., 1996) were recruited at the INP. All patients were under antipsychotic medications and were clinically stable according to treatment physician.

Control subjects: A total of 50 control subjects were included. All subjects were screened with the SCID-I and were excluded if they presented any psychiatric disorder or family history of schizophrenia.

2.2. Measurement instrument

Personality was assessed the Temperament and Character Inventory-Revised (TCI-R), a 240-question self-report instrument, which is a modified version of the TCI that improves subscales description and assessment. The TCI-R includes seven higher-order dimensions, four of temperament and three of character and each of these higher-order dimensions is composed of several subscales. The higher order dimensions are: 1) Novelty Seeking (NS) is characterized as the tendency to respond impulsively to novel stimuli with active avoidance of frustration; 2) Harm Avoidance (HA) reflects the tendency the tendency to inhibit responses to aversive stimuli leading to avoidance of punishment or non-reward; 3) Reward Dependence (RD) is defined as the tendency for positive attachment as well as positive response to signals of reward that maintain behavior; 4) Persistence (P) reflects the tendency to perseverance despite frustration and fatigue based on resistance to extinction of reinforced behavior.

The character dimensions are: 1) Self-directedness (SD) which refers to the ability of an individual to control, regulate and adapt behavior to fit a situation in accordance to personal goals; 2) Cooperativeness (CO) accounts for individual differences in the acceptance of other people; it measures features related to agreeability vs. self-centered aggression and hostility; and 3) Self-transcendence (ST) is viewed as the identification with everything conceived as essential and consequential parts of a unified whole (Cloninger et al., 1994, 1993). The TCI-R psychometric properties were tested for its use in Mexican population, providing high internal consistency values and an adequate construct validity (Fresan et al., 2011).

The scores of each higher-order dimension and subscales were obtained in accordance to the calculation method indicated by R. Cloninger: scores of each subscale are obtained by the sum of specific items of the total 240 (from 1 to 5, direct or reverse order), while the scores of the higher-order dimensions were obtained by the sum of the correspondent subscales.