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Impairment in Social Functioning differentiates youth meeting Ultra-High Risk for psychosis criteria from other mental health help-seekers: A validation of the Italian version of the Global Functioning: Social and Global Functioning: Role scales

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ABSTRACT

Social and occupational impairments are present in the schizophrenia prodrome, and poor social functioning predicts transition to psychosis in Ultra-High Risk (UHR) individuals. We aimed to: 1) validate the Italian version of the Global Functioning: Social (GF: S) and Global Functioning: Role (GF: S) scales; 2) evaluate their association with UHR criteria. Participants were 12–21-years-old (age, mean = 15.2, standard deviation = 2.1, male/female ratio = 117/120) nonpsychotic help-seekers, meeting (N = 39) or not (N = 198) UHR criteria. Inter-rater reliability was excellent for both scales, which also showed good to excellent concurrent validity, as measured by correlation with Global Assessment of Functioning (GAF) scores. Furthermore, GF:S and GF: R were able to discriminate between UHRs and non-UHRs, with UHRs having lower current scores. After adjusting for current GAF scores, only current GF:S scores independently differentiated UHR from non-UHR (OR = 1.33, 95%CI: 1.02–1.75, p = 0.033). Finally, UHR participants showed a steeper decrease from highest GF:S and GF: R scores in the past year to their respective current scores, but not from highest past year GAF scores to current scores. GF:S/GS: R scores were not affected by age or sex. GF:S/GF: R are useful functional level and outcome measures, having the advantage over the GAF to not confound functioning with symptom severity. Additionally, the GF:S may be helpful in identifying UHR individuals.

1. Introduction

Social and occupational impairments are central characteristics of schizophrenia (Bellack et al., 1990). These impairments are among the most debilitating and treatment-refractory aspects of schizophrenia since they are associated with neurocognitive deficits and negative symptoms (Bellack et al., 2007). Research showed such impairments to occur not only during the first episode of psychosis (Addington et al., 2006), but also prior, in the Ultra-High Risk (UHR) phase (Cornblatt et al., 2003; Woods et al., 2009). Furthermore, different prospective

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and retrospective studies of specific cohort populations (Jones et al., 1994; Cannon et al., 1999) and UHR individuals (Dannevang et al., 2016) have reported pre-illness presence of social and academic difficulties. Therefore, the assessment of social and occupational functioning should be an integral part of the assessment of patients at risk for and with established schizophrenia, both in research and in the clinical setting. Nevertheless, there is a lack of reliable and valid scales to be used, and a gold standard measure has still not been established (Figueira and Brissos, 2011). The progress in developing effective interventions to ameliorate social and occupational impairment in the prodromal phase of schizophrenia has been affected by the absence of valid measures suitable for use in clinical trials. To address these needs, investigators at the Zucker Hillside Hospital, and the University of California, developed two new measures of global functioning in the UHR phase, namely the Global Functioning:Social (GF:S) (Auther et al., 2006) and Global Functioning:Role (GF:R) (Niendam et al., 2006) scales.

The GF:S and GF:R have been already tested in the UHR phase in adolescents and young adults (Auther et al., 2012; Cornblatt et al., 2007), and in adults with first-episode schizophrenia (Piskulic et al., 2011). In both populations, the GF:S and GF:R, showed excellent inter-rater reliability (the intraclass correlation coefficient for current level of functioning was 0.85 for the GF:S scale and 0.93 for the GF:R scale) (Cornblatt et al., 2007).

Since psychotic disorders often have their onset in adolescence and early adulthood, there is a growing need for validated scales that can also be used in adolescence and young adulthood for the assessment of work, academic/school functioning and age-specific social issues, such as peer acceptance and dating. Availability of such measures can help to better recognize and characterize UHR states. Furthermore, through this enhanced characterization and quantification of functional deficits, such measures can hopefully assist in preventing long-term social and work impairment through targeted interventions. The aim of this study was to establish the reliability and both concurrent and discriminant validity of the Italian version of the global functioning social and role scales in a population of help-seeking adolescents and young adults, a proportion of whom met UHR criteria.

2. Method

2.1. Study participants

The project was carried out in six Italian community mental health services belonging to the RMH district, one of the eight Rome health districts, and two general hospital child-and-adolescence mental health services: the Neuropsychiatric Unit of “Bambino Gesù” Children's Hospital of Rome (OPBG) and the Neuropsychiatric Unit of “Sapienza” University, Rome. Between January 2012 and January 2013, we enrolled 237 consecutive help-seeking youth referring to four different mental health services in Rome: the Childhood and Adolescence Mental Health Service (CAMHS) and the Adult Mental Health Service (AMHS) (CAMH/AMHS are community outpatient services), the OPBG and Sapienza neuropsychiatric units (OPBG/Sapienza are general hospitals with inpatient and outpatient services).

Patients (parents or guardians in case of minors) who met study inclusion criteria were approached, received a clear explanation of the study's aims and procedures and signed the written informed consent before participating. The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008.

Inclusion criteria were: age between 12 and 21 years; IQ $\geq$70; sufficient knowledge of the Italian language; willingness and ability to provide written informed consent. Exclusion criteria were: any DSM-IV psychotic disorder (*i.e.*, schizophrenia, schizophreniform disorder, schizoaffective disorder, delusional disorder, brief psychotic disorder, psychotic disorder not otherwise specified, psychotic disorder due to medical conditions or substance abuse, major depressive disorder with psychotic features, bipolar disorder with psychotic features). Included participants meeting criteria for the Attenuated Positive Symptoms (APS), Brief Limited Intermittent Psychotic Symptoms (BLIPS) and/or the Genetic Risk State and Deterioration Syndromes (GRD) (McGlashan et al., 2001), were included in the UHR group.

2.2. Assessment instruments

Socio-demographic, illness and treatment data were recorded during the clinical assessment using a non-standardized questionnaire. Diagnoses were made according to the DSM-IV criteria, using clinical interviews for patients referring to CAHMS/AMHS and research interviews for patients referred to OPBG/Sapienza.

Axis I diagnoses were evaluated with the Kiddie-SADS-Present and Lifetime Version (KD-SADS-PL), for patients referred to OPBG/Sapienza, who were all aged < 18 years. The K-SADS-PL is a semi-structured psychiatric interview that ascertains both lifetime and current diagnostic status (Kaufman et al., 1997) based on DSM-IV criteria. Inter-rater reliability was excellent, test-retest reliability κ coefficients were also in the excellent 0.77–1.00) and good 0.63–0.67) range depending on the diagnosis (present and/or lifetime) (Brasil and Bordin, 2010).

The presence of the UHR Syndrome was evaluated using the Structured Interview for Prodromal Syndromes/Scale of Prodromal Symptoms (SIPS/SOPS) (McGlashan et al., 2001; Miller et al., 1999). The SIPS includes the SOPS, the Schizotypal Personality Disorder Checklist (American Psychiatric Association, 1994), a family history questionnaire (Andreasen et al., 1977), and the Global Assessment of Functioning scale (GAF) (Hall, 1995). The SIPS also includes criteria of three prodromal syndromes (*i.e.* APS, BLIPS, GRD) and an operational definition of psychosis onset (Presence of Psychotic Syndrome). The SOPS is a 19-item scale designed to measure the severity of prodromal symptoms and changes over time, and contains four subscales for Positive, Negative, Disorganization, and General Symptoms. The SIPS/SOPS inter-rater reliability and the predictive validity were high in several studies (Miller et al., 1999; Yung et al., 2003). In addition, the factor-structure of the SOPS Italian version has shown to be similar to that of the English version (Comparelli et al., 2011).

We assessed social and role functioning with the Global Functioning:Social (GF:S) and Global Functioning:Role (GF:R) scales (Cornblatt et al., 2007). The GF:S and GF:R scores range from 1 to 10, with 10 indicating superior functioning and 1 representing extreme dysfunction. Both scales include focused, detailed anchor points for each rating interval to increase reliability. Each scale generates 3 scores: lowest level of functioning in the past month (referred to as “current functioning”) as well as lowest level and highest level of functioning reported over the past year. The two scales were translated into Italian by MC, AS, JFL, and MB, and back-translated by NLC and GDK; the final versions were approved by the original authors.

The GF:S assesses quantity and quality of peer relationships, level of peer conflict, age-appropriate intimate relationships, and involvement with family members. Emphasis is placed on age-appropriate social contacts and interactions outside of the family, with a particular focus on social withdrawal and isolation. The scale is rated regardless of etiology of social dysfunction or level of clinical symptoms. The GF:R anchor points refer to school, work, or homemaking performance, depending on age. Ratings are based on demands of the role, level of independence or support provided to the individual (ranging from fully independent to increasing need for monitoring and guidance), and the individual's overall performance in the role, given the level of support.

Global functioning was also evaluated using the Global Assessment of Functioning scale (GAF) included in the SIPS/SOPS. The GAF includes the scoring of both the current and the highest global functioning level during the past year. The original GAF with the score