Schizophrenia Research xxx (2016) xxx–xxx

Contents lists available at ScienceDirect

Schizophrenia Research

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

Lifetime psychopathological dimensions, cognitive impairment and functional outcome in psychosis

Sánchez-Torres, Ana M. [a,b,c], Elosúa, M. Rosa [c], Lorente-Omeñaca, Ruth [a,b,c], Moreno-Izco, Lucía [a,b], Peralta, Victor [a,b], Cuesta, Manuel J. [a,b,*]

[a] Department of Psychiatry, Complejo Hospitalario de Navarra, Pamplona, Spain
[b] IdiSNA, Navarra Institute for Health Research, Pamplona, Spain
[c] Department of Basic Psychology I, Universidad Nacional de Educación a Distancia (UNED), Madrid, Spain

ARTICLE INFO

Article history:
Received 12 January 2016
Received in revised form 23 September 2016
Accepted 1 October 2016
Available online xxxx

Keywords:
Functional outcome
Cognition
Psychosis
Schizophrenia
Lifetime psychopathological dimensions
Premorbid adjustment

ABSTRACT

Psychopathological symptoms and cognitive impairment are related to psychosocial functioning. However, the nature of the association of cognitive impairment with psychosocial functioning still remains under scrutiny. We aimed to examine the relationships of premorbid adjustment, lifetime psychopathological dimensions, and cognitive performance with the typical level of psychosocial functioning during the previous year. We assessed ninety patients with schizophrenia spectrum disorders and affective disorders with psychotic symptoms to collect data on premorbid adjustment, lifetime psychopathological dimensions, cognitive performance and psychosocial functioning. Sixty-five healthy volunteers were included as controls. Pearson's correlations and hierarchical regression analyses were performed to ascertain to what extent the aforementioned variables predicted psychosocial functioning. Functional domains were significantly correlated with most of the premorbid features, lifetime psychopathological dimensions and cognitive domains. However, lifetime negative symptoms were the best predictors of psychosocial functioning in the hierarchical regression analyses (explaining between 47 and 64% of the variance). For psychosocial outcome in patients with psychoses, lifetime negative symptoms showed a stronger predictive validity than cognitive impairment or premorbid adjustment.

1. Introduction

Research on the value of cognitive impairment for the prediction of poor psychosocial functional outcome in psychosis has proliferated during the last three decades, with repetition of the initial proposals that the cognitive domain has greater predictive power than symptom domains (Green, 1996; Green et al., 2000). However, the nature of the association of cognitive impairment with psychosocial functioning still remains under scrutiny.

Psychosocial functioning is a broad construct that encompasses a wide range of behaviours. Most assessment scales include at least the following domains: self-care, social and interpersonal functioning, employment achievement and even independent living and financial independence. The VALERO study, research considering all these aspects of functional outcome in 195 patients with schizophrenia or schizoaffective disorder, found that half of the sample achieved more than one of these functional milestones at some point, but only 19% of the sample had achieved all these milestones at least once in their lifetime (Harvey et al., 2012).

It is widely assumed that inconsistent results in neurobiological and outcome studies in schizophrenia and other psychoses may be partly explained by psychopathological heterogeneity within psychoses (Kapur et al., 2012). A dimensional approach in psychosis seems to provide a better account of the clinical reality and it may be potentially more informative for neurobiological purposes than a system based upon categorical diagnoses (Peralta et al., 2002).

From a clinical perspective, there are three main approaches to examining the relationships between psychopathological dimensions and psychosocial functioning namely cross-sectional, longitudinal and lifetime studies. The bulk of studies investigating the influence of clinical domains over psychosocial functioning in psychosis, either directly or comparatively with cognitive impairment, have been carried out using cross-sectional scores (index episode or stable-phase scores). Reliance on cross-sectional assessments might lead to misinterpretation since symptom scores usually denote state characteristics but cognitive impairment and psychosocial functioning tend to show a dominantly trait-like pattern (Klingberg et al., 2008).

Despite the fact that longitudinal designs may be better than cross-sectional ones for examining the relationships between cognition and

* Corresponding author at: Department of Psychiatry, Complejo Hospitalario de Navarra, c/ Irunlarrea, 4, 31008 Pamplona, Navarra, Spain
E-mail address: mcuestaz@cfnavarra.es (M.J. Cuesta).

http://dx.doi.org/10.1016/j.schres.2016.10.002
0920-9964/

outcome, very few studies have taken this approach (Bergh et al., 2016; Galderisi et al., 2009). Further, in some of those that have, the longitudinal design consisted of a series of consecutive cross-sectional assessments of psychopathological status (Allott et al., 2011; Milev et al., 2005) but not of the frequency and severity of these symptoms over the course of the illness. Another longitudinal study examined degrees of functional change between different points in time related to changes in predictors, to identify potential targets of treatment (Stouten et al., 2014).

A lifetime approach to psychopathology might provide a broader knowledge of the course of the illness than current operational diagnoses and individual cross-sectional assessments (Craddock et al., 2004). Moreover, rating of psychopathological dimensions over a patient's lifetime may help us understand the frequency and severity of psychopathological dimensions from the beginning of the illness to the most recent assessment (Peralta and Cuesta, 2007).

Even though antipsychotic medication is associated with a modest improvement in psychosocial functioning (Swartz et al., 2007), antipsychotics may also negatively affect cognition (Cuesta et al., 2009) and even produce negative symptoms (Artaloytia et al., 2006). Hence, it is important to consider drug treatment in models attempting to explain psychosocial functioning.

In this study, we chose a lifetime approach to explore the relationships of relevant premorbid features, lifetime psychopathological dimensions, medication and cognitive functioning with psychosocial outcome in psychosis. Specifically, we hypothesized that lifetime negative symptoms and cognitive performance would be the variables that contributed the most to functional outcome.

2. Material and methods

2.1. Participants

The study was conducted in the Psychiatry Department of the Complejo Hospitalario de Navarra, in Pamplona (Spain). Ninety patients diagnosed with a DSM-IV (APA, 1994) psychotic disorder were recruited from consecutive admissions to the hospital for psychotic exacerbations. Sixty-five healthy volunteers were also included as a control group. Eligible patients were aged 18 to 50 years, with no history of head trauma or dependence on drugs (except tobacco) and an IQ over 70. Controls were also required to have no personal history or history in first-degree relatives of major psychiatric illness. All participants gave written informed consent and the study was approved by the Navarra clinical research ethics committee (CEIC).

2.2. Procedure

A psychiatrist (LM) collected clinical and functional data, and one of two neuropsychologists, blinded to the clinical status data (RL and AMS), carried out the neuropsychological testing. In all cases, patients were assessed once they had clinically stabilized, in two 1.5- to 2-hour sessions.

2.3. Measures

2.3.1. Premorbid measures

The Premorbid Social Adjustment Scale (Foerster et al., 1991), derived from the Premorbid Adjustment Scale (Cannon-Spoor et al., 1982), was used to assess premorbid functioning. This scale covers socialization, peer relationships, scholastic performance, school adaptation and hobbies and interests. Each item is rated for two age periods: childhood (5–11 years old) and early adolescence (12–16 years old). This premorbid scale was only administered when a close relative, preferably the mother, was available (91% of the patient sample). As described in Table 1, we also estimated premorbid IQ using the Vocabulary subtest of the third edition of the Wechsler Adult Intelligence Scale (WAIS-III) (Wechsler, 1999).

2.3.2. Clinical assessments

The Comprehensive Assessment of Symptoms and History (CASH)(Andreasen, 1992) interview was employed to collect demographic and clinical data. For the aims of this study, we considered lifetime psychopathology in terms of the frequency and severity of the predominant symptoms over the course of the illness. This was assessed based on patient reports and all available medical records. The lifetime presence and severity of positive, negative, disorganization, manic and depressive dimensions were evaluated on a six-point rating scale (each point corresponding to an operational definition of frequency and severity adapted for each symptom – 0: none, 1: questionable, 2: mild, 3: moderate, 4: marked and 5: severe) on each of items of the CASH.

Five psychopathological syndrome scores were obtained from the CASH: positive, negative, disorganized and affective (manic and depressive) dimensions (Sanchez-Torres et al., 2013). Lifetime exposure to antipsychotics was also assessed, considering the total duration of antipsychotic treatment since illness onset. Antipsychotic daily doses were transformed to chlorpromazine equivalents (Ho et al., 2011).

2.3.3. Functional outcome: specific levels of functioning (SLOF) scale

The SLOF (Schneider and Struening, 1983) is an observer-rated scale which assesses patients' real world performance in six domains, including physical functioning, personal care skills, interpersonal relationships, social acceptability, activities of community living and work skills. For the purposes of this study, we only used the interpersonal relationships, activities and work skills measures. We also calculated a total score for these domains.

The SLOF scores reflected the typical functioning of the individual during the previous year and prior to the current episode. Higher scores indicate better functioning.

2.3.4. Neuropsychological assessments

Participants were asked to complete 17 cognitive tasks representative of the 7 cognitive domains proposed in the MATRICS battery (Green and Nuechterlein, 2004; Nuechterlein and Green, 2006): processing speed, attention/vigilance, visual and verbal memory, working memory, executive functioning and social cognition. Then, tests were assigned to a cognitive dimension to reduce the number of variables in the analysis. In addition, we estimated premorbid and current IQ (Table 1).

An overall cognitive performance score (Global Cognitive Index, GCI) was calculated by averaging scores for the seven cognitive domains.

The two neuropsychologists showed a good-to-excellent inter-rater reliability, as indicated by intraclass correlation coefficients (>0.80) in the WAIS Vocabulary subtest. We considered this test because the final score may partially depend on the judgement of the evaluator.

2.4. Data analysis

Sociodemographic data were compared using *t*-tests and chi-squared tests.

To explore cognitive domains, scores of the neuropsychological tests were z-transformed using the means and standard deviations of the control group. Then, z-scores were averaged to calculate composite scores for each cognitive domain. When cognitive domains were composed of more than one measure (all except visual memory), Cronbach's alpha was calculated to assess the internal consistency of composite scores.

The association between functional outcome, premorbid status, clinical characteristics and cognitive performance was explored using Pearson's correlations. Then, we performed hierarchical linear

Please cite this article as: Sánchez-Torres, A.M., et al., Lifetime psychopathological dimensions, cognitive impairment and functional outcome in psychosis, Schizophr. Res. (2016), http://dx.doi.org/10.1016/j.schres.2016.10.002