A dimensional comparison between delusional disorder, schizophrenia and schizoaffective disorder

José E. Muñoz-Negro [a,b], Inmaculada Ibanez-Casas [b], Enrique de Portugal [c], Susana Ochoa [d], Montserrat Dolz [d], Josep M. Haro [d], Miguel Ruiz-Veguilla [e], Juan de Dios Luna del Castillo [f], Jorge A. Cervilla [a,b,*]

[a] Mental Health Unit, Granada University Hospital, Granada, Spain
[b] Centro de Investigación Biomédica en Red de Salud Mental (CIBERSAM), Department of Psychiatry, University of Granada, Spain
[c] Centro de Investigación Biomédica en Red de Salud Mental (CIBERSAM), Gregorio Marañón Hospital, Madrid, Spain
[d] Parc Sanitari Sant Joan de Déu, Centro de Investigación Biomédica en Red de Salud Mental (CIBERSAM), Sant Boi de Llobregat, Barcelona, Spain
[e] Mental Health Unit, Virgen del Rocío University Hospital, Sevilla, Spain
[f] Facultad de Medicina, Universidad de Granada, Spain

ARTICLE INFO

ABSTRACT

Introduction: Since the early description of paranoia, the nosology of delusional disorder has always been controversial. The old idea of unitary psychosis has now gained some renewed value from the dimensional continuum model of psychotic symptoms.

Aims: 1. To study the psychopathological dimensions of the psychosis spectrum; 2. to explore the association between psychotic dimensions and categorical diagnoses; 3. to compare the different psychotic disorders from a psychopathological and functional point of view.

Material and methods: This is an observational study utilizing a sample of some 550 patients with a psychotic disorder. 373 participants had a diagnosis of schizophrenia, 137 had delusional disorder and 40 with a diagnosis of schizoaffective disorder. The PANSS was used to elicit psychopathology and global functioning was ascertained using the GAF measure. Both exploratory and confirmatory factor analyses of the PANSS items were performed to extract psychopathological dimensions. Associations between diagnostic categories and dimensions were subsequently studied using ANOVA tests.

Results: 5 dimensions – manic, negative symptoms, depression, positive symptoms and cognitive – emerged. The model explained 57.27% of the total variance. The dimensional model was useful to explained differences and similarities between all three psychosis spectrum categories. The potential clinical usefulness of this dimensional model within and between clinical psychosis spectrum categories is discussed.

© 2015 Elsevier B.V. All rights reserved.

1. Introduction

Different psychotic disorders compose the so-called schizophrenia or psychosis spectrum which mainly includes schizophrenia, schizoaffective disorder and delusional disorder. Until now, controversy persists as to whether the psychosis spectrum is better explained by categorical or dimensional approaches (Allardyce et al., 2007). Categorical nosology does not reach to comprehensively capture and incorporate the most recent advances in the realm of psychosis. Although categorical diagnoses are clinically useful, they overlap in genetics, risk factors, clinical presentation, management needs and outcomes (Murray et al., 2004). Dimensions are not diagnosis-specific, but combining them with categorical approaches gets a better predictive validity than only one of them (Dikeos et al., 2006). Furthermore, psychotic dimensions also remain stable after 5–10 years (Russo et al., 2014). Dimensions may help us with treatment planning, research and prognostic decision-making (Barch et al., 2013). van Os and other authors, demonstrated the existence of a psychopathological continuum expressing the psychotic phenotype to increasing levels of intensity, from healthy people to the most deteriorated schizophrenia (Allardyce et al., 2007; van Os et al., 2000; Stefanis et al., 2002; Hanssen et al., 2003; Rossler et al., 2007). Thus, it has been suggested that environmental risk factors would interact with genetic proneness to psychosis that could be expressed to the extreme of becoming persistent and subsequently be clinically relevant (van Os et al., 2009; Linscott and van Os, 2013). Finally, dimensions have now officially replaced categorical subtypes of schizophrenia in DSM-5 (Barch et al., 2013; van Os and Tamminga, 2007). Such dimensions are: hallucinations, delusions, disorganized speech, abnormal psychomotor behaviour, negative symptoms, impaired cognition, depression and mania (American Psychiatric Association, 2013). So far, very few studies have explored the psychopathological dimensions of the psychosis continuum with samples including

patients with delusional disorder. For this reason, we raised the question of studying psychopathological dimensions in a sample including a large number of delusional disorder patients. We set to study the psychopathological dimensions of the schizophrenia spectrum, to explore the relationship between the dimensions obtained and the categorical diagnostics and to compare the different diagnoses of psychosis from a psychopathological and functional point of view.

2. Material and methods

2.1. The sample

A cross sectional sample of 550 patients (n = 550) with a psychosis spectrum disorder (137 patients with delusional disorder, 373 patients with schizophrenia and 40 patients with schizoaffective disorder) was included. The sample was created by combining data from 5 independent studies using compatible and similar assessment methods. Each study had a single interviewer for the clinical and psychopathological assessments who were all formally trained by the same senior trainer (JC). The studies' and clinical interviewer's names are as follows: NEDENA Study (*Estudio de Necesidades en Esquizofrenia por Neurodesarrollo Anormal*, MD, Barcelona), DELIREMP Study (*Estudio Empírico de Trastorno Delirante*, EP, Barcelona), ESPIGAS Study (*Estudio de Psicosis Granada Sur*, MRV, Granada), GENIMS Study (*Genes e Inmunología en Esquizofrenia*, RML, Granada) and PARAGNOUS Study (*Estudio Descriptivo de Trastornos Paranoicos*, JEMN, Granada). Participating patients were consecutive attendees to participating psychiatric outpatient clinics and all were in a remitting or maintenance stage of their disorder in community-based out-patient care that included antipsychotic medication in all cases. Inclusion criteria were: 1. To meet DSM-IV diagnostic criteria for schizophrenia, delusional disorder and schizoaffective disorder, respectively. 2. Being older than 18 years old. 3. Patient agreement to participate. Exclusion criteria: 1. Mental retardation. 2. Any type of dementia. The clinical settings were public mental health services included in the Spanish Health Service located in Andalusia and Catalonia, Spain. All participants received a study instruction sheet giving sufficient information to enable them to sign the informed consent, after that they returned a signed copy thereof. The study was performed in accordance with ethical standards of the 1964 Helsinki Declaration and was approved by the local ethical committees of every participating hospital.

2.2. Assessments

Sociodemographic variables, including sex, age, educational level and marital status were recorded. The Spanish version of PANSS (Peralta and Cuesta, 1994) was utilized to measure psychopathology since PANSS is the standard scale valid and reliable for this purpose (Kay et al., 1987). PANNS is a measurement instrument designed to evaluate positive and negative symptoms in schizophrenia from both points of view, dimensional and categorical. It is composed by 30 items, 7 items for positive scale, another 7 items for negative scale and 16 different items for general psychopathology. Items scoring range for increasing symptoms intensity from 1 to 7. In addition, it also calculates a composed scale to set the positive or negative subtype of every patient. Global functioning was assessed using the Global Assessment of Function Scale, GAF (American Psychiatric Association, 1994). GAF is a standard procedure to measure global outcomes in psychiatric patients within in a continuum ranging from a state of total health to another of maximum illness. It is composed by only one item, ranging from 100 points scoring (satisfactory performance in a whole array of activities and excellent evaluation of his values and personal qualities by the rest of people) to a 1 point scoring (manifest death expectation).

2.3. Statistical analyses

Descriptive statistics for age, sex, educational level, GAF score and PANSS score for the different diagnostic groups were calculated. Then, 30 items of PANSS were included in an exploratory and confirmatory factor analysis. Data suitability for factor analysis was checked applying both, the Barlett's test of sphericity and the Kaiser–Meyer–Olkin test. Then, we used principal components analysis to extract the smallest number of factors that enable us to explain as much of the total variance of the data as possible. The number of factors to retain was chosen utilizing Kaiser's criterion and the Catell's scree test (Cattell, 1966). Kaiser's criterion retains only those factors with an eigenvalue of 1 or more. Scree test give us a graphical indication to the optimum number of factors to be retained. All factors above the plot's elbow were selected. Additionally, Monte Carlo parallel analysis was also performed to compare the size of the eigenvalues with those obtained from a randomly generated data of the same size, retaining only those exceeding the corresponding last ones. After the principal components analysis a confirmatory factor analysis was done. To aid in the interpretation of this factors, and assuming that they were correlated between them, oblique rotation using the Oblimin technique (Tabachnick and Fidell, 2007) was also conducted. Finally, we performed one-way ANOVA to study the distribution of the psychopathological dimensions across the categorical psychosis spectrum disorders and to evaluate psychopathological and global functioning differences among such disorders. Further post-hoc analyses were performed to study differences among diagnostic groups using SPSS Statistics 20. Since we have no previous data on inter-rater reliability procedures for diagnostic interviews and for PANSS, one-way ANOVA tests were performed to establish the grade of homogeneity among data from the different samples (Table 1. Supplementary material). In addition, we performed an alpha Cronbach technique to analyse the internal consistency of each obtained dimension.

3. Results

3.1. The sample

There were statistically significant differences between psychosis spectrum disorders regarding sex, age, global functioning and educational level. Male sex was predominant 60.3%, reaching the 65% in patients with schizophrenia and around 50% for the other groups. Mean age was 40.1 years (SD = 14.9) the patients with schizophrenia were significantly younger 35.8 years (SD = 13.1) than those with delusional disorder 49.7 years (SD = 14.7). As for educational level, incomplete primary studies were significantly more frequent among DD patients, whilst complete higher studies were more frequent among schizophrenic patients. University studies were not significantly different between DD and schizophrenic patients and both groups did differ significantly from schizoaffective patients among whom no one completed a university degree (Table 1).

3.2. Global functioning and PANNS psychotic symptoms

The overall mean score for GAF was 54.1 (SD = 15.8) and the differences between psychosis spectrum disorders showed statistical significance (F = 42.46: P ≤ 0.000). Statistical significant differences were found between patients with delusional disorder and patients with schizophrenia (P ≤ 0.000) and between schizophrenia and schizoaffective disorder (P ≤ 0.001), but it did not between delusional disorder and schizoaffective disorder. Overall, psychotic symptoms both negative and positive were less frequent among DD patients (Table 1).