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Relationship between behavioural problems and use of mental health services in patients with severe mental illness and the mediating role of the perceived burden of care

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ABSTRACT

Mental health models proposed for predicting more use of mental health resources by patients with severe mental illness are including a wider variety of predictor variables, but there are still many more remaining to be explored for a complete model. The purpose of this study was to enquire into the relationship between two variables, behaviour problems and burden of care, and the use of mental health resources in patients with severe mental illness. Our hypothesis was that perceived burden of care mediates between behaviour problems of patients with serious mental illness and the use of mental health resources. The Behaviour Problem Inventory, which was filled out by the main caregiver, was used to evaluate 179 patients cared for in a community mental health unit. They also answered a questionnaire on perceived family burden. A structural equation analysis was done to test our hypothesis. The results showed that both the behaviour problems and perceived burden of care are good predictors of the use of mental health resources, where perceived burden of care mediates between behaviour problems and use of resources. These variables seem to be relevant for inclusion in complete models for predicting use of mental health resources.

1. Introduction

In mental health, severe mental illness is defined as psychotic disorders lasting for over two years and leading to severe impairment of personal functioning (NIMH, 1987). These disorders are associated with an enormous personal cost for those who suffer from them, but also have significant repercussions on their families (Awad and Voruganti, 2008; Kuipers, 2010; Szkultecka-Debek et al., 2016; Thornicroft and Tansella, 2013) and on the community they live in (Carr et al., 2003). In this respect, and specifically schizophrenia patients, have been found to make high use of healthcare resources, which is associated with high economic cost to society (Chong et al., 2016; Knapp et al., 2004).

Therefore, many attempts have been made to analyse the use of health-care resources by patients with severe mental illness and find variables which can predict the use of these resources. The purpose of this line of research is to arrive at models of these predictors that are as complete as possible and plan the specific mental-health resources necessary to care for patients effectively and efficiently.

In these mental-health resource prediction models, several previous studies have determined the importance of sociodemographic variables, such as age (Jin et al., 2003) or gender (Usall et al., 2012) and others have included more clinical variables, such as diagnosis (Moreno-Kustner et al., 2011). Although relevant, these variables may lack specificity since the same diagnosis may be manifested in different ways in different persons (APA, 2013). Therefore, a predictor such as diagnosis provides few clues as to the specific problems of patients that influence greater use of resources. With this argument, the latest studies have started to introduce a wider range of variables, such as social functioning (Bellido-Zanin et al., 2015) and behaviour problems (Raudino et al., 2014).

Study of behaviour problems in severe mental illness such as schizophrenia and other psychotic disorders emerges from the need to develop measures able to provide information on the adaptation by individuals with severe mental illness to their social setting (Carpenter and Strauss, 1991; Wykes and Sturt, 1986). Behaviour problems are intended to be a more objective and observable approach than classic symptoms, which are sometimes hard to be objective about. Harvey et al. (1996) proposed a model of four broad classes of behaviour

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problems which was later replicated and confirmed (Curson et al., 1999). Some of the few studies on behaviour problems as variables predicting the use of resources show social isolation to be the most relevant predictor variable (Raudino et al., 2014).

However, to our knowledge, no previous study has attempted to explore the processes involved in the relationship between behaviour problems and use of resources to find out why behaviour problems influence the use of mental-health resources or what other variables may be involved in this prediction.

Since the process of deinstitutionalization in which patients with severe mental illness have gone from living in psychiatric hospitals to communities, there has been growing interest in studying the burden of care and what variables contribute to increasing it.

The behaviour problems of patients with severe mental illness have been one of the variables mentioned, along with symptomatology, as predictors of a heavier perceived burden of care (Boye et al., 2001; Wolthaus et al., 2002), which would indicate that the families of patients with stronger behaviour problems could be overwhelmed by home caregiving.

However, burden of care is not only associated with the patient's characteristics but also with the characteristics of the family itself. Expressed emotion, a variable including overinvolvement and criticism of the patient by family members correlates positively with a heavier burden perceived by family members (Carra et al., 2012).

Expressed emotion has also been shown to be a reliable predictor of the progress of patients with schizophrenia associated with a higher percentage of relapse (Hanzawa et al., 2013; Moller-Leimkuhler and Wiesheu, 2012). Thus some authors have suggested that a reduction in the burden of care could lead to better progress of patients with mental disorders (Sono et al., 2012) with fewer relapses and less hospitalisation. As burden of care is observed to be related to progress of the disorder, it would be appropriate to wonder whether it could also be related to heavier use of mental health resources. A previous study has observed such a relationship between caregiver characteristics and the use of mental-health resources (Smith, 2003).

This study attempted to enquire into the relationship between these two variables (behaviour problems and perceived burden of care) and the use of mental health resources by patients with mental disorders. It specifically tried to test the following hypotheses:

- A heavier perceived burden of care is a predictor of more use of resources by patients with severe mental illness.
- The perceived burden of care mediates the relationship between behaviour problems and use of resources by patients with severe mental illness such that perceived burden of care strengthens the relationship between behaviour problems and use of mental health resources.

2. Method

2.1. Subjects

The sample was comprised of 179 patients who were received at a community mental health unit (CMHU) and were diagnosed with a severe mental illness: schizophrenia (F. 20 according to ICD-10), other psychotic spectrum disorders (F.21–F.29 according to ICD-10) and bipolar disorder Type 1 (F.31 according to ICD-10). The sample was selected by convenience sampling, from participants in family psychoeducation group programs routinely carried out at the CMHU. All of the patients agreed to participate in the evaluation.

The diagnosis was made by the clinical psychologist or psychiatrist responsible for each patient using a clinical interview. The criteria for inclusion in the study were 1) be under treatment in the CMHU at the time of the study, 2) have one of the diagnoses mentioned above, 3) be 18–65, and 4) give their consent to participating in the study. Exclusion criteria were a primary diagnosis of substance use disorder or mental retardation.

2.2. Instruments and measures

2.2.1. Behaviour Problem Inventory

The scale is comprised of 14 items, which enumerate the most relevant behaviour problems found in individuals with psychosis. The instrument was designed mainly for evaluating behaviour problems observed in patients with severe mental illness quickly and effectively. The items were based on a review of other instruments, such as the Social Behaviour Schedule (Wykes and Sturt, 1986), the REHAB (Baker and Hall, 1988) and the PC section of the Social Behaviour Assessment Schedule (SBAS) (Platt et al., 1980) combined with the clinical and research experience of the authors themselves. The criterion followed was that each item be, insofar as possible, an observable behaviour. All answers refer to the patient's behaviour during the past three months.

A total score is found from the sum of the scores on each of the 14 items, and those on the three subscales (identified by factor analysis): 1) Underactivity/social withdrawal, 2) Active problems and 3) Lack of impulse control. Another two scores are also found: 1) Moderate behaviour problem score (MBP) equal to the number of items with a score over 2 and 2) Severe behaviour problem score (SBP), equal to the number of items with a score of 3. Higher scores on each scale and index show greater presence of behaviour problems in the patient evaluated. Preliminary psychometric data on the scale (Vázquez Morejón et al., 2005) confirm that scale characteristics are adequate, and the final adaptation of the instrument is now in press. The Cronbach's alpha calculated for the sample in this study was 0.82. In this study, five measures were included in this instrument, the three main subscales plus the severe and moderate behaviour problems indices.

2.2.2. Perceived burden of care

Perceived burden of care was made operable using two questions, where Burden of care 1 was “Do you feel you can bear the illness and the problems it causes?” (from 0 (no) to 4 (well)) and Burden of care 2 was “How often do you feel overwhelmed by the problems of the illness?” (from 0 (Never) to 4 (Often)). These two questions were added to the List of Behaviour Problems.

2.2.3. Mental health resource use measures

Resource use variables were found using data available in the Andalusian healthcare system's computerized records. These records contain all the contacts of every patient with the mental health services.

Variables related to outpatient visits: total number of CMHU interventions. The CMHU is a community outpatient resource with a variety of mental health professionals (psychiatrists, clinical psychologists, social workers and nurses) specialized in all kind of mental health disorders.

2.3. Procedure

After acquiring their informed consent, the families of the patients with severe mental illness filled out the List of Behaviour Problems and the two items related to perceived burden of care, as well as other evaluation instruments routinely included for evaluation in the psychoeducational programme.

Later, each patient whose relative had filled in the questionnaire was followed up for 36 months from evaluation. Each contact with the mental health services described under Instruments was collected by means of its identity number in the computerized records of the Andalusian health system.

2.4. Data analysis

X^2, *RMSEA* and *CFI* were used to evaluate the fit of the models analysed. The recommended cut-off points were *RMSEA* $\leq .08$ (Brown