An examination of components of recovery after five years of treatment in an early intervention program for psychosis

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ABSTRACT

Recovery from psychotic disorders includes both symptomatic and functional components. Progress in understanding recovery requires careful replication and extension of findings using comparable measures. In the current paper, we present a study of five year recovery rates in an early intervention program in London, Canada with the same operational criteria as those used in a previous report from the OPUS cohort in Denmark. Our analysis extends the OPUS reports by including additional potential predictors of overall recovery, such as cognitive functioning, adherence to medication and early social support, and examining rates and predictors of individual components of recovery at five year follow-up. Consistent with reports from OPUS, we found younger age of onset and lower initial severity of negative symptoms to predict greater likelihood of overall recovery. Different patterns of predictors emerge when we examine individual components of recovery. Adherence to medication during the first year was the sole independent predictor of remission of positive symptoms, while early social adjustment and social support were more likely to predict negative symptom and functional aspects of recovery at five years. Cognitive functioning, as represented by IQ, did not predict any aspects of recovery. Our findings suggest the importance of examining the predictors of individual components in the quest to improve overall recovery.

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1. Introduction

Recovery from psychotic disorders should, at least, include symptom remission and good psychosocial functioning (Harvey and Bellack, 2009; Jääskeläinen et al., 2013; Liberman, 2002; Whitley and Drake, 2010). Prospective studies from initial treatment are particularly important in establishing rates and predictors of recovery. Such studies, which include long term follow-ups, use varying operational definitions of recovery, although a combination of symptom remission and scoring above 60 on the Global Assessment of Functioning (GAF) or Social and Occupational Functioning Assessment Scale (SOFAS) are the most common elements (Albert et al., 2011; Austin et al., 2013; Chang et al., 2012; Mason et al., 1995; Verma et al., 2012).

Among the most specific and conservative criteria are those in follow-up studies of the OPUS program (Albert et al., 2011; Austin et al., 2013; Petersen et al., 2008), which require stable remission of both positive and negative symptoms, no psychiatric admissions and independent living over two years, as well as employment and a GAF-function score of over 60 [GAF-F; (Pedersen et al., 2007)]. Albert et al. (2011)

report 15% of patients in their cohort met these criteria at five years with independent predictors of recovery being female sex, younger age of onset, better premorbid adjustment and lower negative symptoms at presentation. In a 10 year follow-up of the same cohort, Austin et al. (2013) found sex no longer predicted recovery, but younger age and initial negative symptoms did. These authors noted the importance of replication and the desirability of assessing other predictors of recovery.

Relationships between symptom remission and psychosocial functioning, can be modest (Carpenter and Strauss, 1991; Revier et al., 2015) and, therefore, insight into predictors of recovery requires investigation with reference to each its components.

Why identify predictors of recovery? One purpose relates to understanding intrinsic variations in course. For instance, it has been suggested that an acute onset can denote an illness with more benign course (Harrison et al., 1996; Jablensky et al., 1992; Röpcke and Eggers, 2005; Wiersma et al., 1998). Acuity of onset, however, is unlikely to be modifiable and, therefore, of limited interest as a target of intervention. Prognostic indicators could also inform decisions about service provision. Demographics or early course characteristics, if predictive of recovery, could have implications for the type or intensity of service provision. Finally, prognostic indicators, which are potentially modifiable, could be targets for intervention. For instance, to the extent that

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early adherence to treatment or social support predict recovery, there are implications for interventions addressing these factors.

Here we examine rates of overall recovery and constituent elements at five years, as well as the significance of early characteristics in predicting them for patients in the Prevention and Early Intervention Program for Psychosis (PEPP) in London, Canada.

2. Method

Participants entered treatment between March 18, 1997 and February 20, 2002. Criteria for inclusion were having a diagnosis of a psychotic disorder, not previously treated with antipsychotic medication, living within the catchment region and between age 16 and 50. The PEPP treatment protocol is described elsewhere (Malla et al., 2003; Norman et al., 2011).

There were 233 individuals admitted to PEPP during the recruitment period, of whom 188 (81%) agreed to participate, and provided informed consent as approved by the Western University Ethics Board.

2.1. Measures and procedures

Diagnosis was based on the Structured Clinical Interview for DSM-IV (SCID) (First et al., 1995). The Course of Onset and Relapse Schedule (CORS) (Norman and Malla, 2002), was completed using information provided by the patients and collateral sources. Onset of psychotic symptoms was identified by hallucinations, delusions or gross disorganization. Duration of untreated psychosis (DUP) was calculated as time between the onset of psychotic symptoms and initiation of antipsychotic medication. Onset of any noticeable change in behavior, such as social withdrawal or mood changes, was also identified. Mode of onset was defined by time between initial behavioral changes and onset of psychotic symptoms, with a period ≤1 month classified as acute, and >1 month as insidious (Compton et al., 2008; Morgan et al., 2006). Substance abuse was identified by comorbid diagnosis of substance abuse or dependence during the first year of treatment.

Given evidence that social support during the first year of treatment better predicts outcomes than social support at presentation (Norman et al., 2012), we focused on the former. It was assessed using three items from the Wisconsin Quality of Life Scale-Provider Version (WQL-P) (Becker et al., 1993), completed by the patient's case manager at one year follow-up. Items reflect overall support from family and friends: the extent of friendships, and the quality of relationships.

Adherence to treatment during the first year was rated by patients primary clinicians using a 5-point rating scale anchored by 0, indicating the individual not taking medication, to 4, meaning the individual was judged to be adherent 75–100% of the time. This measure has been found to correlate with pill counts (Cassidy et al., 2010).

Premorbid adjustment was assessed using the Premorbid Adjustment Scale (PAS) (Cannon-Spoor et al., 1982). Separate scores for social (PAS-social) and education (PAS-educ.) domains were calculated for childhood and early adolescence.

Symptom assessments included the Scale for the Assessment of Positive Symptoms [SAPS; (Andreasen, 1984)], and the Scale for the Assessment of Negative Symptoms [SANS; (Andreasen, 1983)], with reference to the previous month at entry and annually during follow-up. The GAF-F was also completed at these times. These assessments were completed by the treating psychiatrist. While the primary time frame for assessment was the previous month, assessors also indicated if there had been changes in the patient's symptoms during the previous year. In addition, all clinicians were asked to rate and record the presence of positive, negative and disorganized symptoms based on the severity criteria of the SAPS and SANS, as recommended by Andreasen et al., 2005, at each clinical appointment during follow-up. All relevant records were reviewed by research personnel blind to early characteristics, to rate course of symptoms during each year of follow-up. During annual follow-up assessments between years two and five, the Life Chart Schedule (LCS) (Sartorius et al., 1996), provided assessments of housing arrangements, employment, and hospital admissions. Reliabilities of indices related to course of symptoms and functioning were assessed by having ratings completed by two independent assessors on at least 15 patients. All relevant intra-class correlations were 0.80 or greater.

As part of the PEPP protocol, when feasible cognitive assessments were carried out as soon as the individual was stable. This assessment was repeated approximately one year after the initial testing. A total of 97 patients completed the initial assessment and 73 completed the one year assessment. Given findings that global indices of cognitive functioning are more reliable predictors of long-term outcomes in first episode patients (Leeson et al., 2009; Norman et al., 2015), we used IQ, assessed by the Wechsler Adult Intelligence Scale III (WAISIII, Wechsler, 1997), as our primary index of cognitive functioning.

For current purposes, assessments at baseline and with reference to the final two years are of greatest relevance. To allow direct comparison to the OPUS study (Albert et al., 2011), we defined recovery as: (1) a stable remission of both positive and negative symptoms (Andreasen et al., 2005) during the final two years; absence of hospitalization or supported housing for 2 years; having a GAF-F score of over 60 and having a job in a competitive job market or studying at least 18 h a week. The latter criterion was adopted based on specifications received from the authors of the Albert et al. (2011) report.

2.2. Statistical approach

Univariate and multivariate logistic regression were used to examine predictors of recovery and its components. Log transformed DUP was used because of a skew in the raw data. Raw PAS scores were multiplied by 10 resulting in ORs representing change in outcome for each ten percentage change in scores (Albert et al., 2011).

3. Results

It was possible to complete assessments up to five years for 132 individuals recruited into the study (70.2%). There were no significant differences in early characteristics between those who were and were not retained. To facilitate comparisons to Albert et al. (2011) we restricted our analysis to the 116 clients who did not have an affective or substance-induced psychotic disorder. Clinical and demographic characteristics are in Table 1. Only ten individuals (7.1%) dropped out of treatment in PEPP prior to five year follow-up.

3.1. Rates of recovery and components

Rates of overall recovery and each component at 5 years, are presented in Table 2. As over 93% of patients met criteria for remission of disorganized symptoms, we do not include this separately, but integrate it into criteria for positive symptoms. The criterion most often met was independent living and absence of hospital admissions during the 4th and 5th year of follow-up. There was greater remission of positive symptoms than negative symptoms (McNemar test = 3.48; $p < 0.001$), with a quarter of the sample showing remission of both. Roughly half of the clients met criteria for employment and GAF-F scores above 60. Just over 16% met all the criteria for recovery.

3.2. Predictors of recovery

Table 3 presents univariate logistic regression analyses to predict outcomes. Younger age and acute onset predicted increased likelihood of full recovery. When components are examined, acute onset predicts most outcomes except hospitalizations/use of supported housing, with borderline significance for positive symptom remission. Early social adjustment and/or social support during the first year predicts greater likelihood of both positive and negative symptom remission, as well as employment and GAF-F > 60, and approaches significance for