Five-year stability of ICD-10 diagnoses among Chinese patients presented with first-episode psychosis in Hong Kong

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ARTICLE INFO

ABSTRACT

Background: Diagnostic stability is one measure of predictive validity for psychiatric syndromes. It is an under-studied area in functional psychosis despite its clinical and research implications. We aimed at evaluating the stability of ICD-10 diagnoses in a sample of young people with first-episode psychosis.
Method: One hundred and sixty-six Hong Kong Chinese enrolled in a regional first-episode psychosis treatment program were studied. Subjects' baseline and final 5-year consensus diagnoses were established via systematic medical records' review to determine diagnostic stability and to identify predictors of diagnostic shift towards schizophrenia spectrum.
Results: The overall diagnostic consistency was 80.7%. Bipolar affective disorder and schizophrenia were the most stable diagnostic categories over 5 years with prospective consistency of 100% and 95.8% respectively. The least stable baseline diagnoses were unspecified non-organic psychosis, acute and transient psychotic disorders and delusional disorder. Around one-fifth (19.3%) of subjects had diagnostic revision in 5 years. The predominant pattern of diagnostic shift was towards schizophrenia spectrum disorder. Family history of psychosis and longer duration of untreated psychosis were associated with diagnostic transition towards schizophrenia spectrum.
Conclusions: Schizophrenia and bipolar affective disorder were diagnostically stable and could be reliably classified at intake in a Chinese first-episode psychosis sample using the ICD-10 criteria. Diagnostic instability in the least prevalent categories of functional psychosis highlights the limitations of current taxonomies and calls for ongoing revision of diagnostic criteria. In the absence of biological marker, longitudinal validation across consecutive episodes is necessary for accurate diagnostic ascertainment.

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1. Introduction

Diagnosis is regarded as a sine qua non for clinical practice and research (Guze, 1992). Currently, owing to unknown underlying aetiopathophysiology and lack of objective indicator for definitive diagnostic ascertainment, diagnoses of functional psychosis defined by contemporary taxonomies still rely on explicit operational criteria on the basis of phenomenological approach. Although valid diagnoses should

be defined by more fundamental characteristics such as physiological, pathological or genetic abnormality (Kendell and Jablensky, 2003), accurate delineation of clinical syndromes can facilitate the process of uncovering biological dysfunctions via enhancing homogeneity (Kendell, 1989; Peralta and Cuseta, 2000). Diagnostic stability is the degree to which a diagnosis remains unchanged at subsequent evaluations (Stanton and Joyce, 1993). It has been suggested as one of the five validating criteria for verifying psychiatric syndromes (Robins and Guze, 1970). It is assumed that the more stable the diagnosis, the more likely it is to reflect a basic and consistent pathophysiological process (Beiser et al., 1989).

In many studies, lifetime diagnosis used for analysis of longitudinal outcome of psychotic disorders such as schizophrenia is based on cross-sectional diagnosis deriving from baseline assessment. Yet, it is known that diagnosis of a given patient can change over time (Chen et al., 1996). Diagnostic change can be attributable to illness evolution and methodological artifacts such as information variance, unreliable assessment, inconsistent application of diagnostic criteria and low inter-rater reliability (Fennig et al., 1994). Diagnostic instability thus raises concerns regarding validity of research results on aetiology, genetics, prognosis and treatment efficacy (Baca-Garcia et al., 2007). Clinically, diagnostic misclassification can lead to iatrogenic effects to patients through inappropriate treatment recommendations (Schimmelmann et al., 2005).

In recent years, a number of studies utilizing first-episode psychosis samples have been conducted to evaluate diagnostic stability over a broad range of functional psychosis (Addington et al., 2006; Amin et al., 1999; Amini et al., 2005; Baldwin et al., 2005; Rahm and Cullberg, 2007; Schimmelmann et al., 2005; Schwartz et al., 2000; Subramaniam et al., 2007; Veen et al., 2004; Whitty et al., 2005). Most of these studies adopted DSM-IV criteria (American Psychiatric Association, 1994) for diagnostic assignment while reports applying ICD-10 scheme (WHO, 1992) were scarce (Amin et al., 1999; Amini et al., 2005) despite the fact that ICD-10 being recognized as the most widely used classification system in psychiatric clinical practice and training worldwide (Mezzich, 2002). Majority of these studies had follow-up duration of less than 2 years (Addington et al., 2006; Amini et al., 2005; Baldwin et al., 2005; Rahm and Cullberg, 2007; Schimmelmann et al., 2005; Schwartz et al., 2000; Subramaniam et al., 2007) and few investigated predictors of diagnostic shifts (Addington et al., 2006; Schimmelmann et al., 2005; Schwartz et al., 2000; Whitty et al., 2005). Besides, almost all first-episode studies investigating diagnostic consistency were conducted in Caucasian populations and only two such studies were done in Asia (Amini et al., 2005; Subramaniam et al., 2007).

Given the clinical and research significance of diagnostic instability, along with its relevance to nosological framework of functional psychosis, we conducted a 5-year retrospective follow-up study to determine diagnostic stability of a representative first-episode psychosis cohort in Hong Kong based on ICD-10 DCR (WHO, 1993), and to assess the pattern of diagnostic change and factors predictive of diagnostic shift towards schizophrenia spectrum disorder.

2. Method

2.1. Subjects

The initial sample comprised 203 Chinese who were consecutively enrolled from July 2001 to December 2002 for initial assessment in a regional first-episode psychosis service in Hong Kong Special Administrative Region (HKSAR) of China. Since 2001 this publicly-funded first-episode psychosis service (abbreviated as "EASY" that stands for "Early Assessment Service for Young People with Psychosis") has been providing early assessment and intensive case management for all individuals aged 15–25 years experiencing their first-episode psychosis (Chen, 2004). One special feature of

this program is the continuity of care in the first three years provided by the same consultant psychiatrist leading a team of case managers. All patients are discharged to the generic psychiatric service at the end of three years. The study site, namely the EASY team of New Territories East (NTE), is one of the four regional first-episode psychosis services in HKSAR that is responsible for a catchment population of approximately 1.2 million (roughly one-fifth of the total population of HKSAR). This program excludes patients with moderate or severe mental retardation, psychotic disorder due to general medical condition or substance-induced psychosis. Of the 203 subjects in the initial sample, only 166 subjects fulfilled the inclusion criteria of the EASY program and were retained in the study sample.

2.2. Procedures

Subjects' socio-demographic profile, relevant family history, symptoms and behavioral/functional disturbance in the first and subsequent psychotic episodes were retrieved by systematically reviewing the inpatient and outpatient medical records available at hospitals in NTE, as well as computerized clinical information from a centralized medical database owned by the Hospital Authority of HKSAR. The medical records and computerized database detailed longitudinal entries by multidisciplinary professionals including consultant psychiatrist, treating psychiatrists, case managers and psychiatric nurses. Supplementary information from clinical psychologists, occupational therapists and social workers was secured when available. The lead author of this paper, who had not been the treating psychiatrist of this cohort, did all the data collection and compiled anonymous extracted clinical summaries for all subjects. Two research psychiatrists (C.S.S.M. and C.D.W.S.) independently reviewed the extracted summaries to assign the baseline and final (5-year) longitudinal diagnoses according to ICD-10 DCR. The two research psychiatrists were blind to the subjects' identities and raw clinical information. They were blind to the follow-up data when baseline diagnoses were reviewed and ascertained. The kappa values indicated a good agreement for both baseline ($\kappa = 0.77$, $p < 0.01$) and final longitudinal diagnoses ($\kappa = 0.79$, $p < 0.01$) between the two research psychiatrists. At consensus meetings the research diagnoses made by the two independent raters were scrutinized and the ultimate consensus diagnoses were ascertained and justified by classifying the clinical data presented in the extracted clinical summaries on the basis of ICD-10 DCR.

Diagnostic stability was affirmed if the final diagnosis at the end of the 5-year follow-up was consistent with the original baseline diagnosis, irrespective of whether the symptoms of the original diagnosis were actively present at follow-up (Fennig et al., 1994). For subjects who did not complete the 5-year follow-up at the NTE psychiatric service, we ascertained their health care utilization pattern from the computerized centralized medical database. This medical database captured the principal diagnosis related to each hospital admission and attendance at emergency room, prescription record and outpatient service utilization history of patients presenting to public health care system in any part of HKSAR. If there was no new clinical information suggestive of diagnostic revision, the latest available longitudinal diagnosis was regarded as the final diagnosis.