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Duration of untreated psychosis in adolescents: Ethnic differences and clinical profiles

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ABSTRACT

Background: Duration of Untreated Psychosis (DUP) is an important measure associated with outcome of psychosis. This first study in the UK compared DUP between adolescent and adult-onset individuals and explored whether the adolescent-onset group showed variations in DUP that could be accounted for by sociodemographic and selected risk factors.

Methods: This naturalistic cohort study included 940 new first-episode psychosis cases aged 14–35 years (136 adolescent-onset versus 804 adult-onset psychotic individuals) referred to nine Early Intervention Services for Psychosis in London (2003–2009). Sociodemographic characteristics, age of onset, family history of mental illness, duration of untreated psychosis, suicidality and substance use information were collected at entry to the services.

Results: Adolescents presented with significantly greater median DUP (179 days) than adults (81 days, $p = 0.005$). Large differences in DUP were found amongst adolescent ethnic groups (median DUP: White: 454 days; Black: 103 days; Asian and mixed: 28.5 days). In addition, younger age of onset and higher lifetime cannabis use were associated with longer treatment delay amongst adolescents.

Conclusions: This study of DUP in adolescent-onset psychosis found it to be approximately twice the length of DUP amongst adults. For the adolescent White sub-group, DUP was far greater than the UK Department of Health target (<3 months). Both the high rates of lifetime cannabis use and the lower age of onset might explain the long DUP in this ethnic group. Physicians need to be particularly vigilant about identifying and managing early psychosis in adolescents.

1. Introduction

Duration of Untreated Psychosis (DUP), defined as the time between the onset of psychotic symptoms continuous with the presenting episode and the onset of continuous antipsychotic medication (30 days or less if symptoms remitted) (Norman and Malla, 2001), has become established as an important measure associated with psychosis outcome. Two systematic reviews (Marshall et al., 2005; Perkins et al., 2005) reported that longer DUP in First Episode Psychosis (FEP), including the broad range of full-blown psychotic conditions (Verdoux et al., 2001; Melle et al., 2004), is associated with more severe negative symptoms at treatment initiation, and more severe (negative, positive and depression/anxiety) symptoms, poorer functioning and less likelihood to achieve remission at 6, 12 and 24 months. Conversely, shorter DUP was associated with greater treatment responsiveness reflected by greater reduction in psychotic, negative, and global psychopathology.

Although a clear time cut-off has not been established, previous studies have identified that outcomes were significantly worse when DUP exceeded either 3 or 6 months (Carbone et al., 1999; Harrigan

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et al., 2003; Melle et al., 2004). In 2003, the UK Department of Health set a national target to reduce DUP to a service median of 3 months and an individual maximum of 6 months (Department-of-Health, 2003).

Previous studies suggest that DUP is two to three times greater for adolescents than for adults, but the reasons for this are unclear (Ballageer et al., 2005; White et al., 2006; Schimmelmann et al., 2007; Joa et al., 2009). The current study aimed to explore whether the adolescent-onset group shows variations in DUP and what might account for these differences. We hypothesized that: (i) adolescent-onset psychotic individuals would show a significantly longer DUP than adult-onset individuals in a large pan-London naturalistic cohort, and (ii) ethnic and clinical characteristics would play a role shaping DUP amongst adolescents.

2. Method

2.1. Study design and sample

In a naturalistic cross-sectional cohort study, the sample included patients referred to nine Early Intervention Services for Psychosis (EIS) in London (UK) between 2003 and 2009. These teams serve 13 of London's 33 boroughs including a population of 2.7 million. Inclusion criteria were new referrals of individuals: (i) aged between 14 and 35 years, (ii) who had presented for the first time within the last year to mental health services with more than a week of unremitting frank psychotic symptoms, and (iii) who had less than 6 months of antipsychotic treatment for psychosis. Further details on the sample are available (Fisher et al., 2008; Ghali et al., 2012).

Detailed sampling procedures for the current study are illustrated in Fig. 1. Out of the total of 1363 referred individuals, 17 of them did not fulfill criteria for FEP, and another 406 did not have data on age of onset of psychosis. Consequently, this study included a sample of 940 FEP individuals (136 adolescent-onset versus 804 adult-onset psychotic individuals). Included ($n = 940$) and non-included ($n = 406$) samples of FEP did not show significant differences in either gender or ethnic distribution.

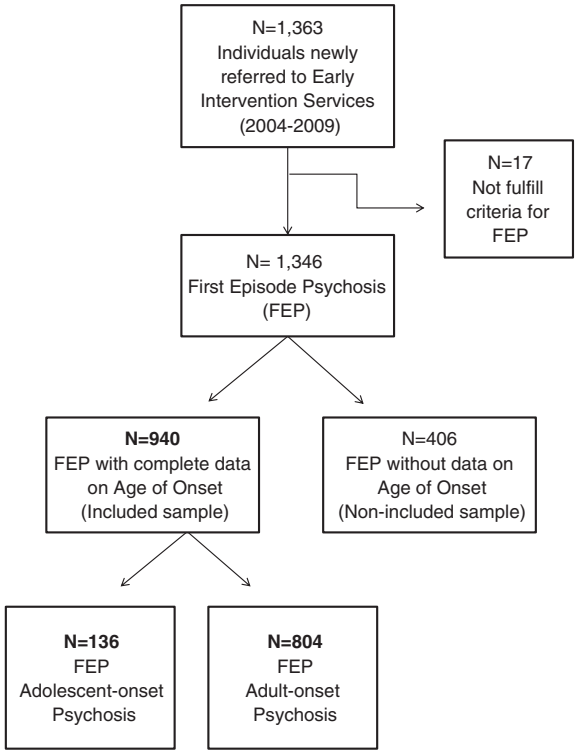

Fig. 1. Sampling procedures for the purpose of the current study. *FEP:* First Episode Psychosis.

2.2. Data collection

Data were collected using MiData (minimum data-set) (Fisher et al., 2008). This tool contains standardised measures chosen for the coverage of key areas, feasibility, brevity and established use within the literature for FEP patients. Experienced clinicians, mostly care coordinators, collected and entered the data following the completion of a comprehensive clinical assessment on entry into EIS and having had access to clinical records and collateral history. Multicentre ethical approval to merge anonymised MiData datasets was granted by the Wandsworth Research Ethics Committee.

2.3. Sociodemographic characteristics

Gender, country of birth and, where possible, that of their mother and father were routinely obtained at baseline. Based on this information, clinicians recorded *Ethnicity* largely in accordance with the 2001 Census of Population for England & Wales (Office for National Statistics, 2001). Individuals were initially assigned to one of the 19 categories. For descriptive and analysis purposes, these were subsequently distilled to five ethnic groups (White, Black British, Other Black, Asian and Mixed people), and further reduced to three broad categories (White, Black, Asian and Mixed) excluding all other ethnic groups (Ghali et al., 2012).

Family history of psychosis (including bipolar disorder) and that of any other psychiatric disorder in first-degree relatives were systematically collected. Additionally, a combined variable of *Family history of any psychiatric disorder* (coded as '1' for either psychosis or any other psychiatric disorder versus '0' for no psychiatric disorders) was created.

2.4. Clinical characteristics

(a) The shortened version of the Nottingham Onset Schedule (Singh et al., 2005) (NOS-DUP) is a standardised and reliable instrument for recording relatively precise time-points in emerging psychosis (i.e. the emergence of First Positive psychotic Symptoms (FPS) based on the Positive and Negative Syndrome Scale (PANSS) (Kay et al., 1987) and transition into a psychotic episode). Clinicians achieved satisfactory inter-rater reliability with PANSS and NOS-DUP before completing the assessment. *DUP* was defined as a continuous variable based on the number of days between date of FPS, and the date of commencement of regular prescribed antipsychotic medication with adherence for at least 75% of the time during the subsequent month. *Service-DUP* was defined as a continuous variable based on the number of days between date of FPS and date of referral to EIS. *Age of Onset* was defined as the age of the individual (in years) at which there was clear evidence of the presence of an FPS (i.e. hallucinations, delusions and/or thought disorder, rated as 4 or more on the PANSS), and subsequently dichotomized into adolescent-onset (<age 18) versus adult-onset (≥age 18) groups (AACAP, 2001).

(b) The Drake Substance Misuse Scale (Drake et al., 1996) assesses the client's use of alcohol and numerous substances. *Lifetime Cannabis Use* was dichotomously defined as presence versus absence of any use of cannabis during the lifetime.

(c) As part of the clinical risk assessment, *Lifetime Suicidality* was dichotomously rated as the presence versus absence of any incidents of suicide attempts in client's lifetime.

2.5. Statistical analyses

Chi-square tests were applied for comparisons of categorical variables. The distributions of DUP, Service DUP and age of onset were significantly