Diagnostic stability and outcome after first episode psychosis

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ABSTRACT
Background: Individuals diagnosed with schizophrenia are often assigned other psychiatric diagnoses during their lives. The significance of changing diagnosis has not been widely studied.

Aims: Our aim was to examine the association between diagnostic change and later outcome.

Methods: Individuals’ diagnostic history, clinical and social outcomes were extracted from the AESOP-10 study, a 10-year follow-up of first episode psychosis cases. The association between outcome and different patterns of diagnosis over time were assessed using linear or logistic regression.

Results: Individuals always diagnosed with schizophrenia (n = 136) had worse clinical and social outcomes at follow-up than those never diagnosed with schizophrenia (n = 163), being more likely to be symptomatic, unemployed, single, and socially isolated. There was no difference in outcome between individuals always diagnosed with schizophrenia and those changing to a diagnosis of schizophrenia (n = 60), and no difference in outcome between individuals never diagnosed with schizophrenia, and those changing from a diagnosis of schizophrenia (n = 44).

Conclusions: Individuals always and never diagnosed with schizophrenia had different outcomes. In cases of diagnostic instability participants had similar outcomes to those always assigned the diagnosis they changed to irrespective of initial diagnosis.

Introduction

The validity of psychiatric diagnoses has been a topic of interest for researchers for several decades. Diagnostic categories in psychiatry are in general based on subjective features of the patient experience as opposed to underlying neuropathology (Parnas, 2014). This has led to changes in their accepted definitions over time, which in turn may change the characteristics of patients in these groups (Tandon et al., 2013).

In addition to changes over time in the accepted characteristics of diagnoses there has been interest in monitoring individual patients’ own changes between diagnostic categories. As early as 1967 it was observed that patients did not necessarily keep the same assigned diagnosis throughout their disease course (Cooper, 1967). The vast majority of subsequent research in this area has focused on schizophrenia; Schwartz et al. (Schwartz et al., 2000) in 2000 reported a 92% stability of schizophrenia diagnosis over 6 months, a figure broadly in keeping with subsequent studies; 91% (30 months) reported by Veen et al. (2004), 100% (6 months) reported by Baldwin et al (Baldwin et al., 2005), 97% (24 months) reported by Whitty et al. (2005), 91.3% (variable) by Kim et al. (2011), and 72.9% (variable, max 96 months) by Heslin et al. (2015). A 2016 meta-analysis of 42 studies of diagnostic stability reported a 90% stability of schizophrenia diagnoses (Fusar-Poli et al., 2016).

Many studies have also investigated predictors of diagnostic instability, with the vast majority focused on schizophrenia. Variables positively predicting a future change to a diagnosis of schizophrenia from another initial diagnosis include; longer initial duration of untreated psychosis (Chang et al., 2009; Haahr et al., 2008; Heslin et al., 2015; Schwartz et al., 2000), no history of substance misuse (Salvatore et al., 2011; Schwartz et al., 2000), longer initial duration of inpatient treatment (Queirazza et al., 2014; Schwartz et al., 2000), experiencing social isolation (Heslin et al., 2015) and
initial greater severity of symptoms (Bromet et al., 2005; Heslin et al., 2015; Pillmann et al., 2012; Schwartz et al., 2000; Schimmelmann et al., 2005). Conversely, however, Fusar-Poli et al. (2016) in a meta-analysis of 42 studies did not find any single variable associated with future diagnostic instability.

Despite many studies commenting on antecedents of diagnostic instability there does not exist nearly the same level of interest in the literature regarding sequelae of diagnostic instability. Bromet et al. (2005) reported on diagnostic instability as a predictor of outcome, finding that patients assigned a DSM-III diagnosis of schizophrenia at any time had worse outcomes (measured using the Global Assessment of Functioning Questionnaire) than those diagnosed with other psychotic illnesses. They also found that patients who change to a diagnosis of schizophrenia from other diagnoses have similar outcomes to those always assigned a diagnosis of schizophrenia, although they did not present a detailed statistical analysis of their data (Bromet et al., 2005). Since then no other study has reported in detail on the effect of diagnostic instability on outcomes in psychosis, although Addington et al. (2006) did track a variety of social and clinical demographics over a one-year period in a first episode psychosis cohort and observed no outcome difference between individuals diagnosed with schizophrenia at baseline and individuals changing to a diagnosis of schizophrenia (Addington et al., 2006).

In this study we present an analysis of diagnostic instability as a predictor of outcome in a cohort of first episode psychosis patients over 10 years monitored as part of the Aetiology and Ethnicity in Schizophrenia and Other Psychoses (AESOP) study. We have sought to fulfil two main aims; (1) to examine the effect of experiencing any diagnostic instability on clinical and social outcomes in first episode psychosis, and (2) to examine the significance of diagnostic instability in those finally assigned a diagnosis of schizophrenia—specifically, do individuals with a different initial diagnosis have any difference in outcome to those always diagnosed with schizophrenia?

**Method**

**Sample**

AESOP-10 is a follow-up at approximately 10 years of a cohort of 557 individuals with a first episode of psychosis initially identified in the South East London and Nottingham centres of the Aetiology and Ethnicity in Schizophrenia and Other Psychoses (AESOP) study (Kirkbride et al., 2006). Potential cases aged between 16 and 65 were screened for inclusion using the Screening Schedule for Psychosis (Jablensky et al., 1992). This questionnaire was not however used to assign diagnoses.

**Data collection and follow-up**

Clinical and demographic data were collected at baseline using the Medical Research Council Social Demographic Schedule (Mallett, 1997). The Schedules for Clinical Assessment in Neuropsychiatry (SCAN) were used in order to elicit symptom related data at the time of presentation (World Health Organization & Division of Mental Health, 1994). If the full version of the latter could not be administered the Item Group Checklist component was completed using clinical records.

Individuals were followed-up over a period of 10 years after first contact. The World Health Organisation (WHO) Life Chart (Susser et al., 2000) was completed for each individual, and at the end of follow-up the SCAN was again administered (considering the previous 30 days). The WHO Life Chart was completed for each patient using clinical interviews with patients and information from treating clinicians and clinical notes otherwise. This included symptom profile, use of psychiatric services, use of illicit drugs and alcohol, socio-economic indicators including housing, relationship and employment data, and forensic data regarding the follow-up period.

**Diagnoses**

Diagnoses at both enrolment and followup were made by committee consensus using the International Classification of Diseases Version 10 (ICD-10) (World Health Organization, 1992). At baseline this was based on all available clinical and demographic information available in the clinical records including the baseline SCAN or if a patient interview was available the Item Group Checklist (completed from case notes). At follow-up this included the follow-up SCAN or Item Group Checklist plus the Life Chart and all other available clinical information. The committee assigning diagnoses consisted of at least one principle investigator of the study, one psychiatrist and one other member of the research team. All diagnoses were made blind to ethnicity and to diagnoses assigned by the treating clinical team.

**Statistical analysis**

Statistical analysis was performed using STATA 14 (StataCorp LLC, Texas, USA). Associations between diagnostic change and individual outcomes were assessed using logistic or linear regression analyses, with number of community treatment episodes during follow-up, number of hospital admissions during follow-up, longest remission during follow-up and time spent in prison during follow-up considered as continuous outcomes, and the remainder as binary outcomes. All models included age, ethnicity, and study centre (London or Nottingham) as covariates.

**Ethics**

Local research ethics committees in South East London and Nottingham provided full ethical approval for all aspects of the follow-up (reference number: 05/Q0706/158). All researchers had substantive or honorary contracts with either the South London and Maudsley National Health
Results

Sample

Data presented here are based on the incidence sample of 505 patients collected over the first two years of the AESOP study. Of these, 102 (20.2%) individuals were lost to follow-up during the ensuing 10 years; thus 403 (79.8%) individuals are included in this analysis. Table 1 shows the difference in baseline demographic and clinical variables between those followed up and not followed up. There were no differences between groups by gender, age, diagnosis, or duration of untreated psychosis. There was, however, a difference between those followed up and those not followed up in terms of ethnicity (Table 1).

Diagnoses and diagnostic change

At baseline 180 individuals (44.7%) had a diagnosis of schizophrenia (F20~), 56 (13.9%) bipolar disorder with psychotic symptoms (F31~), 55 (13.6%) depression with psychotic symptoms (F32.3, F33.3), 25 (6.2%) schizoaffective disorder (F25.9), 23 (5.7%) acute and transient psychotic disorders (F23~) and the remaining 64 (15.8%) psychosis not otherwise specified. At follow-up, 196 (48.6%) had been assigned schizophrenia diagnoses, 61 (15.1%) bipolar disorder diagnoses, and 37 (9.2%) schizoaffective disorder diagnoses.

240 individuals (59.6%) retained the same diagnosis throughout the follow-up period, and 163 (40.5%) did not. Regarding schizophrenia specifically 136 (33.8%) individuals were stably assigned a schizophrenia diagnosis throughout the study period (Always SZ), 60 (14.9%) changed to a diagnosis at final followup of schizophrenia from another initial assigned diagnoses (Followup SZ), 44 (10.9%) changed from an initial diagnosis of schizophrenia to another diagnosis at follow-up (Initial SZ), and 163 individuals (40.5%) were never diagnosed with schizophrenia (Never SZ). The summary statistics relating to each of these four groups are listed in Appendices Tables A1–A4.

Diagnoses and outcomes

Individuals who experienced any change in diagnosis during the study period (n = 163, 40.5%) did not in general demonstrate different outcomes to those who had a stable diagnosis (n = 240, 59.6%), although they were less likely to be experiencing psychotic symptoms at the end of follow-up (OR 0.555, 95% CI 0.335–0.921). There was no obvious difference observed in any social outcome between the two groups.

When outcomes were compared between Never SZ individuals (n = 163) and Always SZ individuals (n = 136) those assigned a schizophrenia diagnosis had worse outcomes across a variety of clinical and social domains (Table 2). Unsurprisingly the most pronounced differences were in symptom profile; 53.0% of the Always SZ group had experienced psychotic phenomena within 30 days of the end of follow-up and 42.5% negative symptoms, compared to 14.9% (psychotic symptoms) and 11.3% (negative symptoms) of the Never SZ group (psychotic symptoms OR 6.066 95% CI 3.065–11.199; negative symptoms OR 5.618, 95% CI 2.824–11.364).

Table 1. Comparison of baseline demographic and diagnostic variables between those successfully followed up (included) and not followed up (excluded) over 10 years.

|                  | Followed up | Not followed up | Test statistic | p       |
|------------------|-------------|-----------------|----------------|---------|
| n                | 403 (79.8%) | 102 (20.2%)     | chi2           | 0.735 (1) | 0.391  |
| Gender           |             |                 |                |         |
| Male             | 230 (57.1%) | 63 (61.8%)      |                |         |
| Female           | 173 (42.9%) | 39 (38.2%)      |                |         |
| Baseline diagnosis |           |                 |                |         |
| Schizophrenia    | 177 (43.9%) | 41 (40.0%)      | 1.712 (8)      | 0.989   |
| Psychotic Major Depression | 55 (13.6%) | 17 (16.7%) |                |         |
| Bipolar Disorder | 56 (13.9%) | 15 (14.7%)      |                |         |
| Schizoaffective Disorder | 25 (6.2%) | 5 (4.9%) |                |         |
| Delusional Disorder | 19 (4.7%) | 4 (3.9%) |                |         |
| Psychosis Not Otherwise Specified | 27 (6.7%) | 8 (7.8%) |                |         |
| Acute and Transient Psychotic Disorder | 23 (5.7%) | 7 (6.86%) |                |         |
| Drug Induced Psychosis | 21 (20.4%) | 5 (4.9%) |                |         |
| Ethnicity        |             |                 | 11.38 (5)      | 0.04    |
| White British    | 185 (45.9%) | 42 (42.1%)      |                |         |
| African-Carribbean | 101 (25.0%) | 18 (17.6%) |                |         |
| Black African    | 48 (11.9%)  | 17 (16.7%)      |                |         |
| other white      | 26 (6.5%)   | 10 (9.8%)       |                |         |
| other            | 43 (10.7%)  | 14 (13.7%)      |                |         |
| Age at initial contact (whole years) | | | | |
| Median           | 29          | 27              | Wilcoxon z     | 0.106   |
| IQR              | 22–36       | 22–33           |                |         |
| Duration of untreated psychosis (whole days) | | | | |
| Median           | 60          | 56              |                |         |
| IQR              | 15–238      | 15–184          |                |         |
**Table 2.** Comparison of clinical and social outcomes in those never diagnosed with schizophrenia (Never SZ) \((n = 163)\) vs those stably diagnosed with schizophrenia (Always SZ) \((n = 136)\).

| Exposure                                                                 | Outcome                                                   | Regression coefficient | Odds ratio | 95% CI      | 95% CI | p       |
|--------------------------------------------------------------------------|-----------------------------------------------------------|------------------------|------------|-------------|--------|---------|
| Individuals permanently diagnosed with schizophrenia \((\text{compared to those never diagnosed with schizophrenia})\) | Experiencing positive symptoms at end of follow-up        | 6.07                   | 3.06       | 11.20       | <0.001 |         |
|                                                                           | Experiencing negative symptoms at end of follow-up        | 5.62                   | 2.82       | 11.36       | <0.001 |         |
|                                                                           | Having experienced non-psychotic illness during follow-up  | 3.65                   | 2.00       | 6.67        | <0.001 |         |
|                                                                           | Having experienced at least 1 suicide attempt during follow-up | 1.87                   | 0.92       | 3.76        | 0.08   |         |
|                                                                           | Having experienced at least 1 episode of self-harm during follow-up | 1.46                   | 0.67       | 3.21        | 0.328  |         |
|                                                                           | Number of community treatment episodes during follow-up    | 0.86                   | 0.10       | 1.62        | 0.026  |         |
|                                                                           | Number of hospital admissions during follow-up             | 0.30                   | 0.06       | 0.66        | 0.101  |         |
|                                                                           | Longest remission during follow-up (weeks)                 | −197.63                | −251.54    | −143.72     | <0.001 |         |
|                                                                           | Experiencing social isolation at the end of follow-up period | 3.26                   | 1.41       | 7.56        | 0.066  |         |
|                                                                           | Time spent in prison during follow-up (months)             | 1.29                   | 0.45       | 2.14        | 0.003  |         |
|                                                                           | Displaying any antisocial behaviour during follow-up       | 1.02                   | 0.57       | 1.83        | 0.947  |         |
|                                                                           | Harmful alcohol use during follow-up                       | 1.61                   | 0.88       | 2.96        | 0.122  |         |
|                                                                           | Living with family or friends at end of follow-up period   | 0.67                   | 0.40       | 1.11        | 0.122  |         |
|                                                                           | Living in social housing at end of follow-up               | 1.88                   | 0.92       | 3.87        | 0.080  |         |
|                                                                           | Being unemployed at the end of follow-up                   | 4.79                   | 2.24       | 10.23       | <0.001 |         |
|                                                                           | Having no close friends at the end of follow-up            | 3.27                   | 1.41       | 7.58        | 0.066  |         |
|                                                                           | Not being in a romantic relationship at the end of follow-up| 3.09                   | 1.71       | 5.59        | <0.001 |         |

Significant differences were also observed in social outcomes; 82.9% of the Always SZ group were not in a romantic relationship at the time of follow-up compared to 58.1% of the Never SZ group (OR 3.094, 95% CI 1.712–5.590). 13.2% of the Always SZ group were employed (full or part time) at the end of the follow-up period, compared to 36.7% of the Never SZ group (OR 4.790, 95% CI 2.244–10.229). Compared to the Always SZ group the Never SZ group were also more likely to spend time with friends, spent less time in prison, were less likely to live in social housing, and less likely to misuse alcohol (although the latter two findings were not statistically significant). Conversely there was no difference observed between groups in terms of antisocial behaviour.

Comparing the Followup SZ group with the Always SZ group demonstrated no clear difference in clinical or social outcome (Table 3), although there was a weak association between always being diagnosed with schizophrenia and experiencing psychotic symptoms at follow-up endpoint (OR 1.728, 95% CI 0.857–3.497).

**Table 3.** Comparison of clinical and social outcomes in those stably diagnosed with schizophrenia (Always SZ) \((n = 136)\) vs those initially assigned another diagnosis before changing to a diagnosis of schizophrenia (Followup SZ) \((n = 60)\).

| Exposure                                                                 | Outcome                                                   | Regression coefficient | Odds ratio | 95% CI      | 95% CI | p       |
|--------------------------------------------------------------------------|-----------------------------------------------------------|------------------------|------------|-------------|--------|---------|
| Individuals permanently diagnosed with schizophrenia \((\text{compared to those never diagnosed with schizophrenia})\) | Experiencing positive symptoms at end of follow-up        | 1.73                   | 0.86       | 3.50        | 0.126  |         |
|                                                                           | Experiencing negative symptoms at end of follow-up        | 0.87                   | 0.43       | 1.74        | 0.693  |         |
|                                                                           | Having experienced non-psychotic illness during follow-up  | 1.23                   | 0.54       | 2.80        | 0.622  |         |
|                                                                           | Having experienced at least 1 suicide attempt during follow-up | 1.46                   | 0.61       | 3.48        | 0.391  |         |
|                                                                           | Having experienced at least 1 episode of self-harm during follow-up | 1.45                   | 0.56       | 3.7        | 0.447  |         |
|                                                                           | Number of community treatment episodes during follow-up    | 0.11                   | −0.87      | 1.09        | 0.825  |         |
|                                                                           | Number of hospital admissions during follow-up             | 0.01                   | −0.48      | 0.49        | 0.978  |         |
|                                                                           | Longest remission during follow-up (weeks)                 | 35.60                  | −23.74     | 94.95       | 0.238  |         |
|                                                                           | Experiencing social isolation at the end of follow-up period | 0.89                   | 0.33       | 2.37        | 0.809  |         |
|                                                                           | Time spent in prison during follow-up (months)             | 0.14                   | −1.96      | 2.23        | 0.899  |         |
|                                                                           | Displaying any antisocial behaviour during follow-up       | 0.82                   | 0.39       | 1.70        | 0.586  |         |
|                                                                           | Harmful alcohol use during follow-up                       | 0.91                   | 0.42       | 1.94        | 0.798  |         |
|                                                                           | Living with family or friends at end of follow-up period   | 0.75                   | 0.38       | 1.46        | 0.400  |         |
|                                                                           | Living in social housing at end of follow-up               | 0.99                   | 0.40       | 2.40        | 0.976  |         |
|                                                                           | Being unemployed at the end of follow-up                   | 0.65                   | 0.21       | 2.06        | 0.467  |         |
|                                                                           | Having no close friends at the end of follow-up            | 1.13                   | 0.42       | 3.02        | 0.809  |         |
|                                                                           | Not being in a romantic relationship at the end of follow-up| 0.75                   | 0.31       | 1.84        | 0.531  |         |

There were also no clear differences observed when comparing the Initial SZ group \((n = 44)\) with the Never SZ group \((n = 163)\) (Table 4).

**Discussion**

Individuals stably diagnosed with schizophrenia (Always SZ) and never diagnosed with schizophrenia (Never SZ) have markedly differing clinical and social outcomes (with the schizophrenia cohort having less favourable outcomes). There is however no discernible difference in outcome between those always diagnosed with schizophrenia (Always SZ) and those initially assigned another diagnostic category before moving to a diagnosis of schizophrenia (Followup SZ), nor those moving from a diagnosis of schizophrenia to other diagnoses (Initial SZ) and those never diagnosed with schizophrenia (Never SZ). This lack of difference is somewhat surprising.
There are very few studies to compare these findings to, although the limited number that exist in general similarly demonstrate no differences in outcome between Always SZ and Followup SZ groups. Addington and colleagues (Addington et al., 2006) hypothesised that individuals who were observed during their one-year study period to change to a diagnosis of schizophrenia from other diagnoses were simply “earlier in the course of their illness” and thus did not meet the diagnostic threshold at the time of inclusion into the cohort. Fraguas et al in 2007 support this hypothesis also, finding that baseline diagnosis was consistent from first presentation to one-year follow-up in 54.2% of first episode psychosis patients, but that between one and two years illness course.

Although it may be the case that the Followup SZ group in our study were simply earlier in their illness course at initial presentation this theory does not fully explain the lack of difference in outcomes observed between those with stable and unstable schizophrenia diagnoses. It is widely proposed that prompt intervention and treatment in first episode psychosis improves clinical and social outcomes (McGorry, 2015).

| Exposure (compared to those never diagnosed with schizophrenia) | Outcome | Regression Coefficient | Odds Ratio | 95% CI   |
|---|---|---|---|---|
| Experiencing positive symptoms at end of follow-up | 0.56 | 0.19 | 1.53 | 0.245 |
| Experiencing negative symptoms at end of follow-up | 1.00 | 0.26 | 3.44 | 0.991 |
| Having experienced non-psychotic illness during follow-up | 1.28 | 0.60 | 2.71 | 0.521 |
| Having experienced at least 1 suicide attempt during follow-up | 0.86 | 0.36 | 2.07 | 0.733 |
| Having experienced at least 1 episode of self-harm during follow-up | 0.96 | 0.35 | 2.65 | 0.938 |
| Number of community treatment episodes during follow-up | -0.03 | -1.02 | 0.97 | 0.961 |
| Number of hospital admissions during follow-up | 0.07 | -0.38 | 0.51 | 0.769 |
| Longest remission during follow-up (weeks) | 27.68 | -54.36 | 109.73 | 0.506 |
| Experiencing social isolation at the end of follow-up period | 2.03 | 0.46 | 9.92 | 0.348 |
| Time spent in prison during follow-up (months) | -0.34 | -2.39 | 2.32 | 0.977 |
| Displaying any antisocial behaviour during follow-up | 0.81 | 0.32 | 2.05 | 0.660 |
| Harmful alcohol use during follow-up | 0.86 | 0.37 | 2.02 | 0.735 |
| Living with family or friends at end of follow-up period | 0.75 | 0.36 | 1.58 | 0.450 |
| Living in social housing at end of follow-up | 1.22 | 0.45 | 3.30 | 0.691 |
| Being unemployed at the end of follow-up | 2.10 | 0.77 | 5.70 | 0.145 |
| Having no close friends at the end of follow-up | 0.49 | 0.11 | 2.16 | 0.348 |
| Not being in a romantic relationship at the end of follow-up | 1.58 | 0.71 | 3.51 | 0.266 |
use DSM, in which the schizophrenia diagnostic criteria are less broad (Cheniaux et al., 2009). It important to note however that in their 2016 meta-analysis Fusar Poli et al. did not observe any difference in diagnostic stability between ICD and DSM schizophrenia diagnoses (Fusar-Poli et al., 2016). There is an additional notable inherent limitation; as with any cohort study loss to follow-up gives rise to potential bias. In this instance there was a statistically significant difference in the ethnicity of those followed up and lost to follow-up (Table 1), although there were no other differences between the cohorts, and only 20.2% of individuals did not complete the study. Another inherent limitation is in the complexity of the outcomes chosen—there are many factors beyond psychiatric diagnosis which might influence an individual’s marital, housing or employment status, for example, and it is impossible to account for all these with the dataset available.

In summary diagnostic instability is not associated with widespread difference in patient outcomes in this 10 year cohort study of first episode psychosis patients, and nor is there any demonstrated difference in outcome between those changing to a schizophrenia diagnosis from another initial diagnosis (Followup SZ) and those always diagnosed with schizophrenia (Always SZ). There is also no significant difference in outcome observed between those moving from a diagnosis of schizophrenia to other diagnoses (Initial SZ), and those never diagnosed with schizophrenia (Never SZ). It appears that only the final assigned diagnosis (be it schizophrenia or another diagnosis) correlates with clinical and social outcomes in this cohort of first episode psychosis patients. This is an interesting finding which raises questions as to the utility of initial diagnoses, and further work in this area is merited.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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## Appendix

### Table A1. Summary data used in analyses; individuals always diagnosed with Schizophrenia (Always SZ) ($n = 136$).

| Outcome                                                   | Y (%) | N (%) | Mean |
|-----------------------------------------------------------|-------|-------|------|
| Experiencing positive symptoms at end of follow-up        | 53.0  | 47.0  |      |
| Experiencing negative symptoms at end of follow-up        | 42.5  | 57.5  |      |
| Having experienced non-psychotic illness during follow-up | 22.2  | 77.8  |      |
| Having experienced at least 1 suicide attempt during follow-up | 14.9  | 85.1  |      |
| Having experienced at least 1 episode of self-harm during follow-up | 12.5  | 87.5  |      |
| Number of community treatment episodes during follow-up   |       |       | 4.0  |
| Number of hospital admissions during follow-up            |       |       | 3.9  |
| Longest remission during follow-up (weeks)                |       |       | 133.5|
| Experiencing social isolation at the end of follow-up     | 29.1  | 70.9  | 1.4  |
| Time spent in prison during follow-up (months)            |       |       |      |
| Displaying any antisocial behaviour during follow-up      | 51.6  | 48.3  |      |
| Harmful alcohol use during follow-up                       | 44.3  | 55.7  |      |
| Living with family or friends at end of follow-up period  | 49.2  | 50.8  |      |
| Living in social housing at end of follow-up              | 62.7  | 37.3  |      |
| Being unemployed at the end of follow-up                  | 86.8  | 13.2  |      |
| Having no close friends at the end of follow-up           | 29.1  | 70.9  |      |
| Not being in a romantic relationship at the end of follow-up | 17.1  | 82.9  |      |

### Table A2. Summary data used in analyses; individuals changing to a diagnosis of Schizophrenia (Followup SZ) ($n = 60$).

| Outcome                                                   | Y (%) | N (%) | Mean |
|-----------------------------------------------------------|-------|-------|------|
| Experiencing positive symptoms at end of follow-up        | 38.9  | 61.1  |      |
| Experiencing negative symptoms at end of follow-up        | 36.4  | 63.6  |      |
| Having experienced non-psychotic illness during follow-up | 25.9  | 74.1  |      |
| Having experienced at least 1 suicide attempt during follow-up | 20.3  | 83.3  |      |
| Having experienced at least 1 episode of self-harm during follow-up | 16.7  | 83.3  |      |
| Number of community treatment episodes during follow-up   |       |       | 4.1  |
| Number of hospital admissions during follow-up            |       |       | 3.7  |
| Longest remission during follow-up (weeks)                |       |       | 160.1|
| Experiencing social isolation at the end of follow-up     | 31.0  | 68.9  | 1.0  |
| Time spent in prison during follow-up (months)            |       |       |      |
| Displaying any antisocial behaviour during follow-up      | 47.1  | 52.8  |      |
| Harmful alcohol use during follow-up                       | 40.0  | 60.0  |      |
| Living with family or friends at end of follow-up period  | 43.9  | 56.1  |      |
| Living in social housing at end of follow-up              | 64.9  | 35.1  |      |
| Being unemployed at the end of follow-up                  | 89.6  | 10.4  |      |
| Having no close friends at the end of follow-up           | 31.0  | 69.0  |      |
| Not being in a romantic relationship at the end of follow-up | 16.3  | 83.6  |      |

### Table A3. Summary data used in analyses; changing from a diagnosis of Schizophrenia (Initial SZ) ($n = 44$).

| Outcome                                                   | Y (%) | N (%) | Mean |
|-----------------------------------------------------------|-------|-------|------|
| Experiencing positive symptoms at end of follow-up        | 25.7  | 74.2  |      |
| Experiencing negative symptoms at end of follow-up        | 9.7   | 90.2  |      |
| Having experienced non-psychotic illness during follow-up | 43.9  | 56.0  |      |
| Having experienced at least 1 suicide attempt during follow-up | 28.9  | 71.0  |      |
| Having experienced at least 1 episode of self-harm during follow-up | 18.4  | 81.6  |      |
| Number of community treatment episodes during follow-up   |       |       | 2.9  |
| Number of hospital admissions during follow-up            |       |       | 2.4  |
| Longest remission during follow-up (weeks)                |       |       | 294.2|
| Experiencing social isolation at the end of follow-up     | 20.0  | 80.0  | 2.1  |
| Time spent in prison during follow-up (months)            |       |       |      |
| Displaying any antisocial behaviour during follow-up      | 50.0  | 50.0  |      |
| Harmful alcohol use during follow-up                       | 50.0  | 50.0  |      |
| Living with family or friends at end of follow-up period  | 63.6  | 36.3  |      |
| Living in social housing at end of follow-up              | 56.0  | 44.0  |      |
| Being unemployed at the end of follow-up                  | 75.8  | 24.2  |      |
| Having no close friends at the end of follow-up           | 20.0  | 80.0  |      |
| Not being in a romantic relationship at the end of follow-up | 29.3  | 70.7  |      |
Table A4. Summary data used in analyses; individuals never diagnosed with Schizophrenia (Never SZ) (n = 163).

| Outcome                                                                 | Y (%) | N (%) | Mean |
|-------------------------------------------------------------------------|-------|-------|------|
| Experiencing positive symptoms at end of follow-up                      | 14.9  | 85.1  |      |
| Experiencing negative symptoms at end of follow-up                      | 11.2  | 88.7  |      |
| Having experienced non-psychotic illness during follow-up               | 54.9  | 45.1  |      |
| Having experienced at least 1 suicide attempt during follow-up         | 25.0  | 75.0  |      |
| Having experienced at least 1 episode of self-harm during follow-up    | 19.4  | 80.6  |      |
| Number of community treatment episodes during follow-up                 |       |       | 3.0  |
| Number of hospital admissions during follow-up                          |       |       | 2.6  |
| Longest remission during follow-up (weeks)                              |       |       | 329.6|
| Experiencing social Isolation at the end of follow-up period           | 11.2  | 88.8  | 1.1  |
| Time spent in prison during follow-up (months)                          |       |       |      |
| Displaying any antisocial behaviour during follow-up                    | 40.9  | 59.0  |      |
| Harmful alcohol use during follow-up                                    | 43.6  | 56.4  |      |
| Living with family or friends at end of follow-up period               | 58.9  | 41.1  |      |
| Living in social housing at end of follow-up                           | 45.6  | 54.3  |      |
| Being unemployed at the end of follow-up                               | 63.3  | 36.7  |      |
| Having no close friends at the end of follow-up                         | 11.2  | 88.8  |      |
| Not being in a romantic relationship at the end of follow-up            | 41.9  | 58.1  |      |