Comparing time use in individuals at different stages of psychosis and a non-clinical comparison group

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ABSTRACT

Social functioning difficulties are a common and disabling feature of psychosis and have also been identified in the prodromal phase. However, debate exists about how such difficulties should be defined and measured. Time spent in structured activity has previously been linked to increased psychological wellbeing in non-clinical samples and may provide a useful way of assessing social functioning in clinical settings.

The current study compared hours in structured activity, assessed with the Time Use Survey, in three clinical groups at different stages of psychosis: individuals with at-risk mental states ($N = 199$), individuals with first-episode psychosis ($N = 878$), and individuals with delayed social recovery following the remission of psychotic symptoms ($N = 77$). Time use in the three clinical groups was also compared with norms from an age-matched non-clinical group ($N = 5686$) recruited for the Office for National Statistics UK 2000 Time Use Survey. Cutoff scores for defining social disability and recovery were examined.

All three clinical groups spent significantly fewer hours per week in structured activity than individuals in the non-clinical group. Reduced activity levels were observed before the onset of psychosis in individuals with at-risk mental states. Additional reductions in activity were observed in the first-episode psychosis and delayed recovery groups compared to the at-risk mental state group. Assessing time spent in structured activity provides a useful way to assess social disability and recovery across the spectrum of psychosis.

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1. Introduction

1.1. Social functioning and psychosis

Social functioning difficulties (i.e., difficulties engaging in meaningful activities and relationships) are a common and disabling feature of psychosis (Couture et al., 2006). A reduction in functioning has been identified prior to the onset of positive psychotic symptoms (Jang et al., 2011), with individuals at-risk of developing psychosis showing comparable impairments in social functioning to individuals following transition (Addington et al., 2008). As such, social disability may play a key role in the emergence of severe mental health problems and in defining individuals at high risk (Fowler et al., 2010). Social disability is also prevalent in the recovery phase, after the remission of psychotic symptoms (Menezes et al., 2006). This is hypothesised to result from the impact of psychosis on social networks and self-esteem (Gureje et al., 2004). Social disability has significant consequences for long-term outcomes and is an important area for research.

1.2. Measuring social functioning

Despite the importance of social and functional outcomes, acknowledged by both service users and providers, debate exists about how these concepts are measured and defined (Silverstein and Bellack,

Table 1
Demographic characteristics of study groups.

Sample	N	Gender (% male)	Age range	Mean age (SD)
At-risk mental state (EDIE-II)	199	64.3	14-34	21.0 (4.4)
First episode psychosis (National EDEN)	878	69.1	14-37	22.9 (4.8)
Delayed recovery (ISREP)	77	71.4	18-52	29.0 (6.8)
Non-clinical (UK 2000 Time Use Survey)	5686	42.7	16-36	26.7 (6.2)

2008). The need for more sensitive, meaningful and appropriate functional outcome measures has been highlighted (Shepherd et al., 2008).

Existing measures of functioning often have a strong emphasis on engagement in paid work (Killackey et al., 2008). While work represents a key marker of social recovery, it is not the only marker of improvement. Engagement in other domains of activity (e.g., education, voluntary work, leisure activities) reflect realistic and meaningful goals for many service users and have wider clinical and economic benefits. This is reflected in service user models of recovery, which emphasise "living a satisfying, hopeful, and contributing life" and "having friends with whom activities are shared with on a regular basis" (Liberman et al., 2002). However, these activities are not always explicitly assessed by existing tools. In addition, many measures have been designed and validated for use with individuals with chronic schizophrenia and assess the impact of symptoms on tasks of daily living. As such, they lack face validity for use with individuals at an earlier stage of illness.

Ideally, tools assessing social functioning would be appropriate for use with individuals at different stages of psychosis, enabling trajectories of functioning to be examined over the course of illness development and recovery. In addition, tools allowing functioning to be compared with non-clinical populations would be particularly useful in providing a point of reference to define reductions or improvements in functioning.

1.3. Using time use to assess social functioning

The Time Use Survey (TUS) was developed by the Office for National Statistics (ONS) for the UK 2000 Time Use Survey, a study investigating how the general population of the UK spend their time (Short, 2006). The TUS provides a direct measure of time spent in structured activity (i.e., work, education, housework and childcare and sport and leisure activities). The TUS has been applied and validated in a normative community population enabling the time use of clinical samples to be compared with societal norms.

Assessing how people spend their time is an important way of measuring participation in activities which may have important economic, societal and personal benefits (Gershuny, 2011). It has been hypothesised that changes in patterns of time use over the last 20 years may be linked with changes in adolescent mental health (Hagell et al., 2012). Time spent in structured activity has been associated with increased mental wellbeing (Fletcher et al., 2003) and with a reduced risk of emotional and behavioural difficulties (Kantomaa et al., 2008). Moreover, individuals not in employment, education or training (NEET) have been found to have poorer long-term outcomes in relation to psychological wellbeing (Bynner and Parsons, 2002). It is argued that engagement in structured activity may protect against negative mental health outcomes due to enhancement of social competence, autonomy and relatedness (Ryan and Deci, 2000).

Given the links between wellbeing and time use, examining how young people spend their time is likely to be important in at-risk mental state research and in assessing recovery from severe mental illness. Although time use may not capture the full range of concepts associated with recovery, it arguably provides an operationalised way to assess the behavioural aspects of functional recovery. Such information could also be utilised in cost-effectiveness studies to assess the economic impact of increased time use (Knapp et al., 2014). However, to date,

time use research has focused exclusively on examining activity levels and wellbeing in non-clinical samples.

1.4. Aims of the current study

This study aimed to administer the TUS to individuals at different stages in the evolution of early psychosis and compare weekly hours spent in structured activity with norms for an age-matched non-clinical comparison group. Comparisons were used to determine cutoff scores on the TUS for defining social disability. The following research questions were posed:

1. Do individuals with and at-risk of psychosis spend less time in structured activity and thus have lower levels of social functioning than an age-matched non-clinical comparison group?
2. Does time use and thus social functioning, differ between individuals at different stages of psychosis, i.e., between individuals with at-risk mental states and first-episode psychosis?

These questions examine the hypothesis that poor social functioning is an early feature of severe mental illness. A progressive decline in activity was predicted, with time use being more severely affected in more chronic samples.

2. Methods

2.1. Participants

Four groups of participants were included in the study. Data from the non-clinical group were taken from the ONS UK 2000 Time Use Survey. Participants in the three clinical groups were recruited for other multicentre studies in which the TUS was included as an outcome measure. Demographic characteristics for all groups are shown in Table 1. There was a significant between-groups difference in age, $F(3, 6836) = 154.03$, $p < .001$, and a higher proportion of women in the non-clinical sample compared to the clinical samples, $\chi^2(3) = 257.60$, $p < .001$.

2.1.1. At-risk mental state (ARMS)

Data for the ARMS sample ($N = 199$) were taken from baseline assessments in the Early Detection and Intervention Evaluation (EDIE-II) study (Morrison et al., 2012), a multi-centre randomised controlled trial of CBT for help-seeking individuals with at-risk mental states, defined using the Comprehensive Assessment of At-Risk Mental States (CAARMS; Yung et al., 2002). None of the sample met DSM-IV criteria for psychotic disorders, but 67% had at least one other DSM-IV diagnosis at study entry. Recruitment for EDIE-II took place in centres across the UK.

2.1.2. First-episode psychosis (FEP)

Data for the FEP sample ($N = 878$) were taken from baseline assessments in the National EDEN study (Birchwood et al., 2014), a national evaluation of Early Intervention for Psychosis (EIP) services across the UK. Participants were recruited into the study upon acceptance into an EIP service and followed up over a 12-month period. All participants were presenting with their first psychotic episode and met DSM-IV criteria for broad spectrum non-affective psychosis.

Table 2
Descriptive statistics for structured time use across study groups.

	N	Min–max	Median	Mean (SD)
Non-clinical (UK 2000 Time Use Survey)	5686	0.00–140.00	61.83	63.49 (25.89)
At-risk mental state (EDIE-II)	199	1.31–139.19	29.91	35.61 (29.68)
First episode psychosis (National EDEN)	878	0.00–140.00	16.00	25.17 (26.22)
Delayed recovery (ISREP)	77	2.25–97.00	14.50	19.66 (17.54)