Metacognition, symptoms and premorbid functioning in a First Episode Psychosis sample

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Abstract

Significant metacognitive impairments are observed in chronic psychosis samples but metacognition is less understood in first episode psychosis (FEP). The current study explored correlations between metacognition, symptoms and premorbid functioning in an FEP sample. In a cross-sectional cohort study, individuals in the first 12 months of treatment metacognition were assessed with the Metacognition Assessment Scale-Revised version (MAS-R). Psychotic symptomatology, premorbid adjustment, and clinician rated service engagement were also measured. Lower scores for metacognitive understanding of other's minds were significantly correlated with greater negative symptoms, poorer early adolescent social adjustment and poorer clinician rated help-seeking. Our findings suggest that FEP individuals with difficulties in understanding other's minds have more social deficits and may be less able to make effective use of treatment.
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1. Introduction

Individuals with psychotic disorders experience significant difficulties in reflecting upon their own mental states, mental states of others, and in using mental state information to solve problems [1]. These difficulties can be understood as semi-independent capacities, associated with, but not reducible to functional or neurocognitive deficits [2]. Difficulties in mental state capacities have been variously referred to as theory of mind (ToM), social cognition or metacognition. There is evidence of significant metacogni-

tive impairments in chronic psychosis samples [e.g. 1], related to social function, negative symptoms, cognitive disorganization and work performance. The most consistent finding is the association between poor metacognition and greater negative symptoms [3]. Indeed deficits in metacognition are risk factors for suboptimal vocational and functional outcomes, linked to social cognitions and communication difficulties [4–7].

However, there is accumulating evidence to suggest that there are differences between discrete forms of social cognition such as ToM that refer to an individual's capacity to make judgements regarding one aspect of a given social situation (e.g. presence or absence of sadness), as opposed to synthetic metacognitive processes that refer to the ability to organise complex social information in such a way as to enable the individual to understand and reflect upon the other's mental state and use this information to cope with distressing experiences and guide the individual's own actions in a given situation [8–10]. Similarly, there are nuanced differences between ToM's focus on using mental state information to inform understanding of the physical

world, or to develop cognitive understanding of other's beliefs; as compared to the greater emphasis in synthetic metacognition on the interplay of cognition, affect and meaning [11]. As evidence suggests that social cognition influences outcome in psychotic disorders [4–7], thus delineation of the boundaries and areas of overlap between discrete and synthetic aspects of metacognition, as they relate to specific outcome domains in psychotic disorders, can enable better matching of specific interventions to specific metacognitive profiles.

Impairments in social cognition and function precede the onset of a first episode of psychosis (FEP), and are associated with poorer outcome in the early stages of the disorder [12,13] however the profile of metacognitive impairment is poorly understood in FEP. Evidence has accumulated suggesting deficits in discrete metacognitive processes, such as Theory of Mind, are present in FEP [e.g. [14,15]. Evidence also suggests that greater degrees of mentalization (a psychological construct related to meta-cognition and similarly predicated on individuals' capacity for understanding of self and others' behaviour in terms of mental states) are not associated with symptoms [16]. In this sample higher levels of metacognition were associated with better engagement with treatment. Furthermore, associations between premorbid factors and synthetic metacognition have not been examined in this population. Therefore, the current study sought to establish the magnitude of associations between synthetic metacogntion and other variables, specifically symptoms and premorbid functioning in a FEP sample. Specifically, we hypothesized that lower metacognition scores would be associated with greater negative symptoms, poorer premorbid adjustment and poorer engagement with treatment.

2. Method

Participants were 20 males and 14 females presenting to Early Intervention for Psychosis services in two Scottish cities. Mean age (SD) of participants was 23.3 years (7.6 years) and the median duration of untreated psychosis was 20.5 weeks (range = 1–520). The majority of participants were prescribed antipsychotic medication. Individuals were eligible if they were in the first 12 months of treatment for first episode psychosis. This was defined as presentation to clinical services with psychotic symptoms for the first time, with positive psychotic symptoms of sufficient severity and/or distress to require antipsychotic medication; meeting DSM criteria for an affective or non-affective psychotic disorder [17]; substance misuse, head injury or organic disorder not judged to be the primary cause of psychotic symptoms; and retaining capacity to consent. Identification of participants was facilitated through collaboration with clinicians. The study received review and ethical approval from Greater Glasgow and Lothian Research Ethics Committees (REC: 04/S0703/91),

and received managerial approval from the local Research and Development Departments in Lothian and Glasgow. All participants gave voluntary and informed consent to participate in the study.

2.1. Measures

The PANSS [18] is a 30 item semi-structured interview of psychotic symptomatology. We adapted a five factor scoring model, yielding scores for: positive symptoms, negative symptoms, cognitive disorganization, excitement and emotional distress [19]. Each item is scored on a Likert scale from minimal (1) to extreme (7). Inter-rater reliability estimates for PANSS subscales were adequate (all intra-class correlation coefficients > .82).

Duration of untreated psychosis (DUP) was measured using an unstructured interview protocol adapted from Beiser and colleagues' [20] methodology. Information regarding the circumstances of onset and development of psychotic symptomatology was collected from the individual and (where a clear DUP could not be estimated) a carer or loved one, cross-referenced with clinical case notes, and discussed with the individual's clinician. The DUP interview was conducted when patients were no longer floridly psychotic. Date of onset of psychosis was calculated to the nearest week and transition to psychosis was indicated by presence of one or more symptoms on the positive symptom scale of the PANSS, rated as 4 or greater (indicating significant impairment). Where the exact date of onset was unclear, the date was taken as the 1st day of the month for which symptoms rated above threshold. The endpoint of the DUP was considered to be the date at which antipsychotic medication was prescribed and/or multi-disciplinary team involvement initiated; and where compliance with the treatment plan could be ascertained at one month after initiation of treatment. DUP was established via a consensual judgement of the information gathered. This was facilitated through monthly consensus meetings between the authors. Failure to reach consensus triggered further assessment of DUP with individuals and key informants, usually family and friends. Test–retest reliability for this method of determining DUP from Larsen et al. [21] is reported as good (intraclass coefficient $r = .96$, $p < 0.01$).

Premorbid Adjustment was measured using the Premorbid Adjustment Scale [PAS; 22] a semi-structured interview that retrospectively measures level of functioning prior to onset of psychosis. The measurement period is from birth till adulthood; sub-divided into four age periods — childhood, early adolescence, late adolescence and adulthood. Given the potential overlap between adult adjustment and DUP we follow the convention of only reporting data pertaining to the first three time periods [23]. Scores are calculated for academic and social functioning components [22]. Service Engagement was measured using the Service Engagement Scale [SES; 24] a 14-item, clinician-completed scale to