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Longitudinal relationship between expressed emotion and cannabis misuse in young people with first-episode psychosis

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ABSTRACT

Carers' expressed emotion (EE) and patients' cannabis misuse are two of the most robust predictors of psychotic relapse. We aimed to examine the temporal relationship between EE and cannabis misuse. Sixty-three key carers of young people with first-episode psychosis (FEP) were assessed at baseline and 7-month follow-up. EE was measured in carers using the Family Questionnaire (FQ) and cannabis misuse in patients using the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST). Correlational and hierarchical logistic regression analyses were conducted to examine the temporal relationship between EE components (i.e. criticism and emotional over involvement) and cannabis misuse. Carers' criticism at baseline significantly predicted cannabis misuse according to the ASSIST at 7-month follow-up. The association remained significant after controlling for baseline symptom severity and social functioning ($B = 0.15$, $P = .02$). Conversely, baseline cannabis misuse was not associated with carers' criticism at 7-month follow-up. Patients in families with high criticism showed a tendency to increase cannabis misuse over time whereas the opposite trend was observed in those with carers with low criticism. A family environment characterized by high criticism may become a key risk factor for worsening cannabis misuse over time in young people with FEP. Further studies should investigate the potential mechanisms (e.g., patient's anxiety or perceived stress) through which criticism increases cannabis misuse in FEP.

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1. Introduction

Over the past four decades, research findings have provided strong support for the view that patients with a diagnosis of schizophrenia who live with family members characterized by high expressed emotion (EE) are more prone to relapse than those living in low EE environments [9]. EE describes features of the family environment, based upon the affective attitudes and behaviours of a significant other towards a patient with a mental disorder. Emotional over-involvement (EOI), critical comments

and hostility are the key dimensions of EE. The association between EE and relapse was initially described in chronic schizophrenia patients who left the hospital to live with one or more relatives who displayed high EE, but it has also been extended to young outpatients with schizophrenia [29]. A recent meta-analysis has shown that carer's critical comments, a key component of EE, increased 2.3-fold the risk of relapse in first-episode psychosis (FEP) patients [5]. However, it remains unclear that what are the mechanisms and processes that result in this robust association between family environments and relapse.

Cannabis use is another well-documented major risk for relapse in schizophrenia and related disorders [21,26,48]. People with psychotic disorders have higher rates of cannabis use compared with the population at large [41] and cannabis use disorders are common in schizophrenia patients, particularly in FEP. Indeed, approximately one-half of FEP patients have a lifetime diagnosis of

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cannabis abuse or dependence, and more than a quarter have a current cannabis use disorder [31]. The etiology of cannabis use in this population has attracted growing interest. The extant literature shows that patients with psychotic disorders smoke cannabis largely for pleasure and to ease negative emotional states not primarily related to psychosis [30]. This provides support to the so-called 'alleviation of dysphoria' model, an extension of the traditional self-medication hypothesis, which proposes that substance misuse occurs to lessen dysphoric experiences [37].

Despite the clear impact of EE and cannabis use on the course of psychosis, there is little research examining the temporal association between these two variables. Specifically, it remains unclear whether high EE may lead to a more problematic use of substances or whether the severity of substance use increases the levels of family EE over time. Barrowclough et al. (2005) showed in a cross-sectional study that relatives of patients with schizophrenia and comorbid substance misuse were found to attribute patient problems to factors more internal, personal and controllable than did relatives of single diagnosis patients. These attributional biases seem to be evident early in the illness course. Interestingly, high EE is a relevant predictor of psychotic relapse among people with comorbid substance use disorders [40]. Likewise, in a study by Linszen and colleagues [33] cannabis abuse was the only major predictor of relapse in the group of patients with high-EE families, suggesting an interaction between cannabis misuse and EE.

Given the possible interaction between relapse and cannabis misuse and the potential treatment implications, our current study uses a secondary analysis of data from the EPISODE-II trial [17] in order to test the hypothesis that family EE, particularly criticism, is associated with cannabis misuse. Specifically, we aimed to explore whether higher criticism at baseline was associated with higher levels of cannabis misuse at follow-up or whether, alternatively, higher levels of cannabis misuse predicted higher levels of criticism at follow-up.

2. Method

2.1. Participants

The study participants have been presented previously [2,17–19] and so relevant details only are given here. In the present study we analyzed all the participants of Episode II trial as one cohort. The Episode II trial compared a combined family and individual relapse prevention treatment (RPT) plus treatment as usual (TAU) with TAU within two specialists FEP services. Patients from the Early Psychosis Prevention and Intervention Centre (EPPIC) in Melbourne and from Barwon Health in Geelong, Victoria, Australia, were recruited between November 2003 and May 2005. The study inclusion criteria were a diagnosis of a first episode of a Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) psychotic disorder [7], less than 6 months of prior treatment with antipsychotic medications, age 15–25 y inclusive, and remission on positive symptoms of psychosis. Remission was defined as 4 weeks or more of scores of 3 (mild) or below on the subscale items hallucinations, unusual thought disorder, conceptual disorganization, and suspiciousness on the expanded version of the Brief Psychiatric Rating Scale [BPRS] [35]. Exclusion criteria were ongoing active positive psychotic symptoms, severe intellectual disability, inability to converse in or read English, and participation in previous CBT trials. The patient nominated the family member with whom they had the most frequent contact to complete all of the family assessments. All patient participants provided written informed consent to participate and provided additional consent for their family to be approached to be involved.

Family participants provided verbal consent. The study was approved by the Northwestern Mental Health and the Barwon Health Research and Ethics Committees.

2.2. Assessment

EE was measured using the Family Questionnaire [FQ] [46]. The FQ is a 20-item self-report questionnaire measuring the EE status of relatives of patients with schizophrenia in terms of EOI and criticism (or critical comments). EOI includes unusually over-intrusive, self-sacrificing, overprotective, or devoted behaviour, exaggerated emotional response, and over-identification with the patient. Criticism is defined as an unfavourable comment on the behaviour or the personality of the patient. The measure consists of 10 items for each subscale. Responses range from 1, "never/very rarely" to 4, "very often". The authors give a cut-off point of 23 as an indication of high criticism, and 27 for EOI. Carers are rated as high-EE when they were high in EOI and/or criticism. The FQ was created as an efficient self-report alternative to the Camberwell Family Interview (CFI). Specifically, FQ criticism cut-off scores correctly classified 78% of the families with a relative with schizophrenia in relation to CFI criticism scale, FQ EOI cut-off score had 71% of correct classifications in relation to CFI EOI, and the combined FQ scales (i.e. cases were rated as high EE if their score on at least one of the two scales was above the cut-off point) correctly identified 74% of the cases with respect to overall CFI ratings of EE [46].

Cannabis misuse was assessed by using the Alcohol, Smoking and Substance Involvement Screening Test [ASSIST] [45]. The ASSIST also screens for lifetime and recent (past 3 months) problem or risky use of tobacco, alcohol, cocaine, amphetamines, sedatives, hallucinogens, inhalants, opioids and 'other drugs'. Specific scores were calculated for each substance. Higher scores represent more problems associated with substance use. Questions 1 and 2 measure lifetime and recent (past 3 months) use. Questions 3 to 7 provide measures of symptoms of substance abuse (e.g., how often has your use of substance led to health, social, legal or financial problems) and dependence (e.g., how often have you had a strong desire or urge to use substance) in the past 3 months. Item 8 asks about lifetime injecting drug use. The ASSIST is a valid screening test for psychoactive substances in individuals who use a number of different substances and a valid measure of severity of dependence for the substance that is most problematic for the person concerned. The validity of this scale has been proven across different cultures, including the Australian context [38], and in the FEP population [25]. Using ASSIST-cannabis baseline data, a cut-off score set at 2 had a sensitivity of 83% and a specificity of 87% for the DSM-IV diagnosis of cannabis disorder in the present study. Sensitivity and specificity values above 0.8 are considered optimal for screening tools [39].

The Structured Clinical Interview for DSM-IV, including psychoses, mood disorders and disorders of substance dependence and abuse and personality disorders was completed at baseline [14]. Symptom measures included the Montgomery–Åsberg Depression Rating Scale [MADRS] [36], which provides a measure of the severity of depressive symptoms, the BPRS, which provides severity ratings across a broad range of psychotic and non-psychotic symptoms, and the Scale for the Assessment of Negative Symptoms [SANS] [6], a measure of negative symptoms. Psychosocial functioning measures included the Social and Occupational Functioning Assessment Scale [SOFAS] [20]. The SOFAS was developed as an additional AXIS V clinician-rated measure of global social and occupational functioning measure, whilst excluding the severity of symptoms. The Pre-morbid Adjustment Scale (PAS) was used to evaluate pre-morbid functioning [10]. To focus on early adjustment, we created an average score for