**Time to abandon the ‘Clinical High Risk State for Psychosis” (CHR-P) concept in adolescence? Commentary on Frearson et al. “Efficacy of Preventative Interventions for Children and Adolescents at Clinical High Risk of Psychosis: a Systematic Review and Meta-analysis of Intervention Studies”**

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**Abstract**

There has been much academic interest in ‘the clinical high-risk for psychosis’ (CHR-P) concept. Indeed, as two child and adolescent psychiatrists interested in psychosis prediction and prevention, we enthusiastically embraced the paradigm in our clinical and academic work. However, despite more than two decades of research there is no definition of CHR-P in adolescence that has proven to be able to usefully predict transition to psychosis. Indeed, research suggests that much, if not all, of the risk associated with CHR diagnoses in adolescents is captured by being help-seeking for mental health problems, rather than being associated with a CHR diagnosis itself. In this commentary we critique the systematic review by Frearson et al. [1]. In particular, we challenge the conceptualisation around the CHR-P concept, as applied to under 18s, and the assumptions underpinning it. We also highlight issues with the terminology used when describing the experiences of young people categorized as being at CHR-P. Rather, we make the case for understanding and supporting help-seeking young people with distressing perceptual and ideational disturbance employing a needs-based, person-centred approach.

The clinical high risk for psychosis (CHR-P) approach has been highly influential in psychiatry, placing a new and welcome focus on prediction and prevention of schizophrenia. As two child and adolescent psychiatrists interested in the prevention of severe mental illness, we were enthusiastic adopters of the CHR approach in our own work, carrying out CHR studies in both mental health services and community samples of children and adolescents. With time, however, a clearer evidence base emerged about the strengths and weaknesses of the CHR-P approach. As the evidence changed, so too did our research and clinical practice.

Frearson et al’s review [1] is based on a conceptualisation of the CHR-P that is increasingly challenged by the evidence around its validity in children and adolescents. Moreover, in the light of emerging research findings, the terminology used around the relevant phenomenology appears ill-suited, if not hazardous, when describing the experiences of this group of children and adolescents. In this commentary we will highlight some of the limitations of this review and meta-analysis. We will also argue that the “CHR-P” concept, as it is currently defined, lacks clinical utility. Rather, we propose a different approach to understanding the experiences and needs of young people with psychopathology that includes ideational and perceptual disturbance.

Frearson et al. [1] took a robust approach to identifying CHR-P studies in young people. A key problem with their approach, however, was that data were not extracted specifically for children and adolescents (i.e., up to ages 18); rather, the average age of participants was used as a proxy. In effect, this means, that some of the studies included data from individuals aged into their 30s. It is therefore challenging to understand how distinct these studies are from those included in similar reviews of studies in working age adults and, more importantly, to know how to apply this evidence specifically to children and adolescents.

A key case-in point is the authors reporting on the Miklowitz et al (2014) study of a family focused therapy (FFT) trial in individuals at CHR-P [2]. In their systematic review, Frearson et al. reported that individuals treated with FFT had superior outcomes than those in the control condition, who received a brief psychoeducational intervention. While participants in this study had a mean age of just under 18 (17.4 years), in fact their ages ranged from 12 to 32 years.

Miklowitz et al. did, indeed, find an overall improvement in functioning associated with FFT treatment in their study. They also, however, recognised the potential for important developmental effects in a family-based intervention and, therefore, completed further age-specific analyses. They found that the beneficial effect of FFT only occurred in adults aged 20 years+. Children aged 12-15 years did not benefit from FFT. More importantly, adolescents aged 16-19 years had *poorer* outcomes when they were treated with FFT. These are important developmentally-sensitive findings. Ironically, because the review by Frearson et al. included all studies with a sample mean age <18, a study that specifically identified a treatment as causing poorer outcomes for adolescents is cited as benefiting this population because the age-specific effect was “washed out” by the inclusion of adults aged up to 32 years in Frearson et al.’s review [1].

More broadly, Frearson et al. did not find evidence that interventions reduced the rates of transition to psychosis in young people deemed to meet the CHR-P criteria. Nevertheless, a key practitioner message offered by the authors was that “*The CHR-P paradigm is relevant throughout different stages of development, including children and adolescents*.” But relevant in what sense? In particular, when the authors of the review talk about ‘*preventative interventions’* what is it they are hoping to prevent? The failure to identify interventions that reduce psychosis transition risk is unsurprising given the low transition rates reported in this group- something noted by the authors themselves. Indeed, one meta-analysis estimated this to be around 12.1% at 2 years and 16.5% at 5 year+ follow-up [3].

Critically, studies that have used comparator groups of adolescents referred to mental health services have reported similar transition rates to adolescents defined as having the CHR-P state [3]. Where does this leave the utility of the CHR-P? Studies of young people diagnosed as CHR-P often involve opaque referral processes and study recruitment strategies. These referral processes may, by themselves, be doing an equally efficient job of identifying those at increased risk of psychosis compared to the (resource-intensive) psychometric instruments or other categorization tools employed to define the CHR-P.

Perceptual and ideational disturbance is common, especially in younger individuals in non-clinical populations. Indeed, such transient or ‘subthreshold’ psychosis-like experiences are reported by approximately 5 in 100 adolescents per year [4]. These often take the form of ‘voice experiences’, that may or may not be considered as ‘hallucinatory’ (i.e. experiences in external space with the solidity of a real percept). Nevertheless, defining what is considered ‘hallucinatory’ or ‘dissociative’ in nature is not always straightforward with such experiences representing a dynamic continuum [5]. Even referring to such experiences as ‘attenuated psychotic symptoms’ risks inappropriate pathologisation.

More concerningly, the use of ‘positive’ and ‘negative’ symptoms, as used by the Frearson et al. in their paper, is especially unhelpful. These terms were introduced by Crow in the 1980s as way of linking the phenomenology associated with the schizophrenia-spectrum to the dopamine hypothesis [6]. This is problematic in several ways. Firstly, there is no evidence that perceptual or ideational disturbance in young people, generally, is linked to anomalies in dopaminergic pathways. Second, the use of this language is potentially harmful, in that it manufactures a strong link between the schizophrenia-spectrum and the CHR-P concept- an association that now appears to be tenuous at best. Thirdly, it makes an assumption that such experiences are on a continuum with the disturbances of perception, ideation and thinking characteristic of the schizophrenia-spectrum. For example, when Frearson et al. state *“…preventative interventions at reducing CHR-P participants’ negative symptoms..*.’ what are they referring to? The participants, by definition, in the study cannot have the characteristic neuropsychiatric impairments associated with a diagnosis related to the schizophrenia-spectrum. It is therefore unclear what phenomena are being referred to in this context? That is not to say that there are no difficulties in daily functioning, but the aetiology is unlikely to be the same as that for the schizophrenia-spectrum of disorders. The fact that functioning improves in young people offered psychosocial interventions in no way implies that an insidious, neurobiological process, responsible for much of the disability in the schizophrenias, has been ‘prevented’.

In the future it may be possible, especially in light of advances in bioinformatics and machine learning, to combine various markers and derive a clinically useful level of psychosis-risk prediction. However, this prospect currently seems some way off. Whether the CHR-P is defined by ‘symptom’ profile or familial-risk, the sensitivity values of such approaches are very low. For example, an analysis of data from a London-based CHR clinic reported that only about 0.5% of future psychosis cases were captured using CHR assessments in under 18s [3]. Moreover, the utility of screening programmes is largely determined by their positive predictive value (PPV). The PPV increases with higher prevalences in the ‘target’ condition. Thus, in the case of psychosis prediction PPV is likely to be extremely low due to a very high proportion of ‘false positive’ cases.

By definition, young people included in CHR-P research studies are almost always help-seeking and experiencing some level of distress associated with their ideational and perceptual disturbance. Most will have clinically significant levels of anxiety and/or low mood. The intensity and distress associated with such phenomena, such as voice experiences or increased suspiciousness, are generally associated with arousal levels [7]. Thus, it is unsurprising if, even low-intensity, psychosocial interventions reduce the frequency, intensity and distress associated with these. The framing of such apparent benefits of intervention by Frearson et al., and other CHR-P researchers, as ‘treating positive symptoms’ is inappropriate.

Rather, young people should have their experiences understood as part of a holistic assessment. A management plan that addresses the primary mental health issue, which could be anxiety, low mood, or obsessive-compulsive symptoms should be co-produced with the young person, and their carers if appropriate. Ideational and perceptual disturbance should be explored, and normalised where appropriate. Young people may find such experiences puzzling. Helping them construct meaning, and general psychoeducation may be sufficient to reduce their intensity and associated distress [8]. Signposting to organisations such as Voice Collective (www.voicecollective.co.uk), which supports young people experiencing perceptual disturbance, may be helpful. That is not to say that all CAMHS clinicians should not be vigilant for the emergence of a psychotic-illness in the young people they serve. However, individuals who are general CAMHS patients seem to be equally at such risk compared to those deemed to be at CHR-P [3].

Many clinical academics, including the authors of this commentary, have invested considerable time, energy and resources in researching the CHR-P concept. However, to paraphrase the economist John Meynard Keynes; “*When the facts change, I change. What do you do?”.* It is time to abandon a potentially anxiety-inducing label that neither confers prognostic information, nor guides treatment approach. Rather it is time to approach and support this group of young people from an individual and needs-based perspective.

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