

Editorial

Psychotic symptoms in young people without psychotic illness: mechanisms and meaning†

Graham K. Murray and Peter B. Jones

**Summary**

Psychotic symptoms are common in the general population. There is evidence for common mechanisms underlying such symptoms in health and illness (such as the functional role of mesocortico-striatal circuitry in error-dependent learning) and differentiating factors (relating to non-psychotic features of psychotic illness and to social and emotional aspects of psychotic symptoms). Clinicians should be aware that psychotic symptoms in young people are more often

associated with common mental disorders such as depression and anxiety than with severe psychotic illness.

Declaration of interest

P.B.J. sat on a scientific advisory board for Roche in 2011, and directs the NIHR CLAHRC for Cambridgeshire and Peterborough.

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Psychotic symptoms in the general population

The past decade has seen an increasing recognition that psychotic phenomena, once thought the preserve of the asylum and classical psychiatry, are common in the young adult population. They were first identified as incidental and unexpected findings when epidemiological surveys of common mental disorders such as depression and anxiety included the relevant questions. Recently, such psychotic phenomena in people without clinical diagnoses of psychotic illness have assumed centre stage in schizophrenia research because they may provide a context for prevention of that disorder.

The paper by Kelleher and colleagues¹ in this issue of the *Journal* provides further evidence that psychotic symptoms are quite common in community samples of adolescents, and are especially common in adolescents who have common mental disorders such as depression and anxiety. These findings suggest that we have become much too focused on schizophrenia and other psychotic outcomes when thinking about psychotic symptoms in adolescents.

Kelleher and colleagues show that 21% of youth in early adolescence answer yes to the question 'Have you ever heard voices or sounds that no-one else can hear?' This high prevalence may reassure child psychiatrists that hallucinations are by no means necessarily pathological. However, although common, these symptoms are not always benign, as they are associated statistically with a range of other non-psychosis-specific psychopathology, including emotional symptoms, hyperkinetic symptoms and conduct disorder symptoms. The results dovetail with those from a recent population-based study of Australian young adults in which the risk of scoring highly in measures of

psychotic experiences was fivefold higher in those with depressive and anxiety disorders than in individuals without these common conditions.²

Biological and psychological mechanisms

The implications of epidemiological data are paradoxical. On the one hand, psychotic experiences are common, and so are not necessarily pathological; on the other, they index increased risk for a wide range of psychiatric conditions (not just schizophrenia or bipolar disorder), and they are associated with considerable functional impairments in some people, particularly those seeking help who are studied in clinical settings. Does this mean that the mechanisms giving rise to psychotic symptoms in healthy people and in those with mild mental disorders are different from the mechanisms that underlie psychotic symptoms in schizophrenia? Not necessarily – both psychological and physiological studies provide evidence of common underlying mechanisms. Presynaptic striatal hyperdopaminergic function is closely linked both to psychotic symptom severity in schizophrenia and to the degree of schizotypal traits (although not to non-distressing hallucinations) in healthy volunteers.^{3,4} It has been suggested that such dopaminergic states relate to psychotic symptoms through a disruption of dopamine's normal role in learning relevant associations and in updating inferences and beliefs about the world.⁵ In support of this, mesocortico-striatal function and error-dependent associative learning measures are not only abnormal in people with psychotic illness,⁶ but also index vulnerability to experimentally induced psychosis in healthy research participants.⁷

What factors, apart from frequency and severity of psychotic symptoms, differentiate clinical psychosis from non-clinical psychotic experience? The emotional connotations of the psychotic symptoms, such as distress and anxiety, are important.⁵ Psychological factors and cognitive abilities relate to the extent to which the experiences preoccupy and dominate the mind of the individual or can be coped with and controlled.⁸ This distinction is relevant for disability and thus is as important in defining the boundary of health and illness as the symptoms themselves. Schizophrenia and other severe psychotic illnesses are often associated with a number of additional characteristics such as

†See pp. 26–32, this issue.

evidence of abnormal neurodevelopment, cognitive deficits and neuroanatomical changes; these and other non-psychotic features are important aspects of severe psychotic illness and may cause considerable functional impairment.

Developmental perspectives

Are the causes of general population psychotic symptoms the same as the causes of psychotic illness? There are common risk factors that suggest common causal mechanisms. It has been known for many years that the incidence of schizophrenia is raised in the offspring of people with schizophrenia, but recent familial risk studies have shown that psychotic experiences are common even in those offspring who do not develop psychotic illness, suggesting shared genetic mechanisms that contribute to non-pathological psychotic experience and to schizophrenia.⁹ Urban living is a risk factor for both schizophrenia and general population psychotic experiences. One of the most interesting findings from the paper by Kelleher *et al* is that the association between age and psychotic symptoms appears different from that between age and psychotic illness: psychotic symptoms are more common in the early teens than in later adolescence, whereas the peak age at onset for schizophrenia is in the 20s. This suggests that related, but not identical, mechanisms underlie psychotic symptoms and severe psychotic illness that may partly be seen as a persistence of a normal developmental phenomenon. Many adolescents outgrow psychotic symptoms as they mature, but for those with persistent psychotic symptoms or psychotic symptoms in later adolescence, the symptoms are more likely to be pathological, indexing increased later risk of common mental disorder as well as of psychotic illness.^{1,10} It appears that during adolescent development, a substantial minority of young people will have mild psychotic experiences just as they have individual symptoms of depression and anxiety from time to time. For most, these psychotic experiences will be transitory or, at worst, persist in a trait measured as schizotypy that will never deteriorate. Yet for a proportion of these individuals, the presence of psychotic and other symptoms heralds either concomitant or later psychiatric illness. Some adolescents and young adults manifest an eruption of mixed affective, psychotic and behavioural phenomena from which more specific blends of psychopathologies may emerge, some eventually crystallising syndromes familiar from the DSM and ICD. In this model, low diagnostic specificity and predictive value of mild psychotic symptoms in terms of later psychotic illness is unsurprising given the frailty of our current diagnostic categories.

Clinical implications

There remains much to learn about the relationship between psychotic symptoms, neurotic symptoms and psychotic illness; nevertheless, some conclusions are clear. Psychotic symptoms in youths can no longer be regarded as having predictive specificity for subsequent psychotic illness. In the general population they may be innocuous, transitory phenomena or occur alongside a range of other psychopathology. Where there is help-seeking or a need for care, clinicians should view psychotic symptoms in the same way as they view depressive symptoms: psychological states that require assessment but that, in themselves, do not signify any particular diagnosis or any specific course of action. The context is key in determining the treatment.

From the point of view of phenomenology, this view avoids the need to invent distinct entities for individual symptoms that do not fit the most likely or helpful clinical diagnosis. An example

is the use of the ambiguous term pseudo-hallucinations in individuals with mild depression and hallucinatory experience, irrespective of its precise form or content. Berrios has compared the use of the ambiguous term pseudo-hallucination to playing a joker in order to resolve a diagnostic conundrum.¹¹ Rather than engaging in such phenomenological convolutions, clinicians should document the psychopathology they elicit, and be aware that not every psychotic symptom requires a diagnosis of a psychotic illness or antipsychotic treatment. This is especially important as clinical services emphasise assessment and intervention early in the course of illness when phenomenology may involve a dynamic or even kaleidoscopic array of symptoms that, with careful management, may never crystallise into the conventional syndromes within which psychiatry has stagnated.

Clinicians must not reach instinctively for the antipsychotic prescription at the first sign of a psychotic symptom. Equally, the combination of impaired functioning and psychotic experience merits an expert assessment, probably in secondary care, by someone experienced in the management of psychotic illness, as early detection and treatment of psychotic illness and its comorbidities are associated with better outcomes.¹² How to treat psychotic symptoms in people who do not have a clear psychotic illness but who are distressed by these experiences is a matter for ongoing research, but current views suggest a stepped-care approach starting with psychological treatments targeting any and all psychopathology together with its functional consequences before antipsychotic drugs are considered.¹³ We acknowledge that this adds nuance and judgement rather than certainty into the drive to reduce the duration of untreated psychosis in established psychotic disorder. What is certain is that the risk:benefit ratio for targeted antipsychotic drug treatment *v.* a broader psychological approach to mild psychotic symptoms within a plethora of co-occurring psychopathology differs according to the evolution of a psychosis syndrome and not simply on the presence or absence of individual psychotic phenomena.

In the light of findings such as those by Kelleher and colleagues, research should encompass a range of clinical outcomes in young people with psychotic experiences and not focus solely on schizophrenia. The most common psychiatric outcomes for young people with psychotic experiences are not severe psychotic illnesses but common mental disorders with social and occupational disadvantage; therefore, the presence of psychotic symptoms in themselves should not necessarily be seen as a prodrome to psychotic illness.

In the light of this new formulation, we congratulate the DSM-5 Task Force for recently rejecting the proposal to introduce a psychosis risk syndrome as a new disorder in the main body of the DSM-5. This proposal seemed a completely unnecessary contortion once we acknowledge the fact that a psychotic component is often a part of common mood and anxiety disorders; this acknowledgement is the key amendment required, not the invention of a new disorder that does not usually progress to psychotic illness but that usually involves depression and anxiety.

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poem

On Magritte's Healer

Kate Evans

The man does not mind being vulnerable
Does not mind letting us see
That in his heart and head live birds,
Nothing but birds and air.

He tries to look like everyone else
With his big stick, coat and hat,
But inside there is nothing but this singing.
He is bewildered.
What can he do?

He comes and sits down in the art gallery,
Attracted by the pictures of birds
And suddenly, for him, time stops.
He does not care if he ever moves again.

He has all at once become a teacher,
Has found himself, his destination
And the right surroundings for his birds.

Kate Evans' poems are from *Journey into Healing*, published by Survivors' Poetry in 2006 as part of Survivors' Poetry Mentoring Pamphlet Series. She was mentored by Dave Russell.

Chosen by Femi Oyeboode.

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