

British Medical Journal

Early detection and intervention evaluation for people at risk of psychosis: multisite randomised controlled trial

Re: Early detection and intervention evaluation for people at risk of psychosis: multisite randomised controlled trial

10 May 2012

Dear Sir/Madam

We read with interest Morrison et al. 'Early detection and intervention evaluation for people at risk of psychosis: a multisite randomised controlled trial' as well as the subsequent coverage in the Guardian <http://www.guardian.co.uk/society/2012/apr/06/drugs-psychosis-schizophr...>

The authors' concluded that cognitive therapy did not significantly reduce transition to psychosis or symptom related distress. However, the most surprising finding of the study was the low transition rate (8%), which meant that the study was not sufficiently powered to detect a true difference between the interventions. The authors suggest several reasons for this: the exclusion of participants at risk of imminent transition; the sampling and recruitment strategy may have led to including participants who, due to their pathways into care and degree of help-seeking, may not have been 'risk enriched' [1-3]; those most at risk may not be willing to enter trials; the relatively short follow-up period; and that the 'control' condition (monitoring of mental state, with warm, empathic supportive listening) may itself have reduced transition rates. Whatever the reasons, the transition rate was much lower than that reported in the existing literature. A recent meta-analysis of 27 studies found that in a combined sample of about 2500 subjects, the transition rate was 18% at 6 months after onset of symptoms, 22% at 1 year, 29% at 2 years, and 32% at 3 years [4]. In agreement with the meta-analytic cohort findings, substantially higher 12 months transition rates (12.5% to 37.5%) were observed in the control conditions of earlier randomised controlled intervention trials in this population [5-10].

It would be interesting to know how many of the cohort remitted from the at-risk mental state during their time in the study, and whether this was influenced by the two interventions [11]. The clinical significance of the results is difficult to interpret because the ordinal CAARMS intensity scales appear to have been weighted by the corresponding frequency ratings to create a 'severity scale' which was statistically analysed as though it were a continuous variable. The authors then commented that a 4 point reduction in this severity scale represented clinically significant change. However, spread across the four subscales examined this might actually reflect a modest clinical change.

The authors reported that of n=634 participants assessed for eligibility, n=346 were excluded and n=288 were randomised. Of those excluded, 156 either were taking antipsychotic

medication or were found to be psychotic (24.6%) and n=110 were sub threshold for psychosis (17.35%). It is worth bearing in mind that many of those on anti-psychotics will not have had a psychotic disorder, but have been at-risk subjects with a relatively high risk of transition [12]. Hence, excluding this group may have contributed to the low transition rate. In the study by Morrison et al, 45.4% of those assessed met inclusion criteria. However, in an earlier publication from the same group that described the study design [13], the authors indicated that n=867 participants had been referred to the study, suggesting that n=233 were not assessed. This was reported as being due to a loss of contact or subjects lacking interest. However, this loss of potential participants is another potential source of bias, as these individuals may be those who are the most distressed or disadvantaged, and hence at greatest risk of psychosis. Without knowing more about the sampling procedures employed by the study, such as how the team tried to engage with those with whom they had lost contact, and demographic data comparing this subgroup to those included in the study, it is hard to know whether this may have also contributed to the low transition rate.

The authors suggest that the low transition rate that they identified raises questions about the validity of the At Risk Mental State. However, given how atypical the rate is relative to that in the literature, this may be premature. The concept of the At Risk Mental State has stimulated a body of new research that has significantly advanced our knowledge of the mechanisms underlying psychosis [14-22], and has led to the development of clinical services that permit the earlier detection and management of mental health problems [23, 24]. Research at this stage is a particularly powerful way of investigating the mechanisms underlying psychosis, as the same individual can be studied before and after the onset of illness, without the confounding effects of previous treatment or long-lasting disease-related effects [25]. Nevertheless, the data from this and other studies [26-29] suggest that the existing inclusion criteria, which are relatively recent and mainly based on positive psychotic symptoms [11, 30-35], could certainly be improved. In particular, it would be useful to include items relating to affective and negative psychotic symptoms, and self-perceived [36] and cognitive changes [37] or through the introduction of second step risk stratification [38, 39].

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1. Van Os, J. and P. Delespaul, Toward a world consensus on prevention of schizophrenia. *Dialogues in Clinical Neuroscience*, 2005. 7(1): p. 53-67.
2. van Os, J. and R.J. Linscott, Introduction: The Extended Psychosis Phenotype—Relationship With Schizophrenia and With Ultrahigh Risk Status for Psychosis. *Schizophrenia Bulletin*, 2012. 38(2): p. 227-230.
3. Broome, M.R., et al., What causes the onset of psychosis? *Schizophrenia Research*, 2005. 79(1): p. 23-34.
4. Fusar-Poli, P., et al., Predicting Psychosis: Meta-analysis of Transition Outcomes in Individuals at High Clinical Risk. *Arch Gen Psychiatry*, 2012. 69(3): p. 220-229.
5. Amminger, G.P., et al., Long-chain omega-3 fatty acids for indicated prevention of psychotic disorders: a randomized, placebo-controlled trial. *Archives of General Psychiatry*, 2010. 67(2): p. 146-54.
6. Bechdolf, A., et al., Preventing progression to first-episode psychosis in early initial prodromal states. *British Journal of Psychiatry*, 2012. 200(1): p. 22-9.
7. McGlashan, T.H., et al., Randomized, double-blind trial of olanzapine versus placebo in patients prodromally symptomatic for psychosis. *American Journal of Psychiatry*, 2006. 163(5): p. 790-9.
8. McGorry, P.D., et al., Randomized controlled trial of interventions designed to reduce the risk of progression to first-episode psychosis in a clinical sample with subthreshold symptoms. *Arch Gen Psychiatry*, 2002. 59(10): p. 921-8.
9. Morrison, A.P., et al., Cognitive therapy for the prevention of psychosis in people at ultra-high risk: randomised controlled trial. *Br J Psychiatry*, 2004. 185: p. 291-7.
10. Addington, J., et al., A randomized controlled trial of cognitive behavioral therapy for individuals at clinical high risk of psychosis. *Schizophrenia Research*, 2011. 125(1): p. 54-61.
11. Simon, A.E., et al., Ultra high-risk state for psychosis and non-transition: A systematic review. *Schizophrenia Research*, 2011. 132(1): p. 8-17.
12. Cornblatt, B.A., et al., Can antidepressants be used to treat the schizophrenia prodrome? Results of a prospective, naturalistic treatment study of adolescents. *Journal of Clinical Psychiatry*, 2007. 68(4): p. 546-57.
13. Morrison, A.P., et al., Early detection and intervention evaluation for people at high-risk of psychosis-2 (EDIE-2): trial rationale, design and baseline characteristics. *Early Intervention in Psychiatry*, 2011. 5(1): p. 24-32.
14. Shaikh, M., et al., Reduced mismatch negativity predates the onset of psychosis. *Schizophrenia Research*, 2012. 134(1): p. 42-48.
15. Allen, P., et al., Transition to Psychosis Associated With Prefrontal and Subcortical Dysfunction in Ultra High-Risk Individuals. *Schizophrenia Bulletin*, 2012.
16. Fusar-Poli, P., et al., Abnormal prefrontal activation directly related to pre-synaptic striatal dopamine dysfunction in people at clinical high risk for psychosis. *Mol Psychiatry*, 2011. 16(1): p. 67-75.
17. Fusar-Poli, P., et al., Prefrontal Function at Presentation Directly Related to Clinical Outcome in People at Ultrahigh Risk of Psychosis. *Schizophrenia Bulletin*, 2011. 37(1): p. 189-198.
18. Broome, M.R., et al., Neural correlates of visuospatial working memory in the 'at-risk mental state'. *Psychological Medicine*, 2010. 40(12): p. 1987-1999.
19. Howes, O.D., et al., Elevated Striatal Dopamine Function Linked to Prodromal Signs of Schizophrenia. *Archives of General Psychiatry*, 2009. 66(1): p. 13-20.
20. Broome, M.R., et al., Neural correlates of executive function and working memory in the 'at-risk mental state'. *The British Journal of Psychiatry*, 2009. 194(1): p. 25-33.
21. Broome, M.R., et al., Delusional ideation, manic symptomatology and working memory in a cohort at clinical high-risk for psychosis: A longitudinal study. *European Psychiatry*, 2012. 27(4): p. 258-263.

22. Carletti, F., et al., Alterations in White Matter Evident Before the Onset of Psychosis. *Schizophrenia Bulletin*, 2012.
23. Valmaggia, L.R., et al., Economic impact of early intervention in people at high risk of psychosis. *Psychological Medicine*, 2009. 39(10): p. 1617-1626.
24. Broome, M.R., et al., Outreach and support in south London (OASIS): implementation of a clinical service for prodromal psychosis and the at risk mental state. *European Psychiatry: the Journal of the Association of European Psychiatrists*, 2005. 20(5-6): p. 372-8.
25. Fusar-Poli, P., S. Borgwardt, and P.K. McGuire, eds. *Vulnerability to psychosis: from psychopathology to neurosciences*. . Maudsley Monographs 2011, Psychology Press, Routledge: London.
26. Miller, T.J., et al., Prodromal assessment with the structured interview for prodromal syndromes and the scale of prodromal symptoms: predictive validity, interrater reliability, and training to reliability.[see comment][erratum appears in *Schizophr Bull*. 2004;30(2):following 217]. *Schizophrenia Bulletin*, 2003. 29(4): p. 703-15.
27. Miller, T.J., et al., Prospective diagnosis of the initial prodrome for schizophrenia based on the Structured Interview for Prodromal Syndromes: preliminary evidence of interrater reliability and predictive validity. *Am J Psychiatry*, 2002. 159(5): p. 863-5.
28. Yung, A.R., et al., Psychotic-Like Experiences in Nonpsychotic Help-Seekers: Associations With Distress, Depression, and Disability. *Schizophr Bull*, 2006. 32(2): p. 352-359.
29. Yung, A.R., et al., Psychosis prediction: 12-month follow up of a high-risk ("prodromal") group. *Schizophr Res*, 2003. 60(1): p. 21-32.
30. Broome, M. and P. Fusar-Poli, Philosophical Issues in the Prodromal Phase of Psychosis. *Current Pharmaceutical Design*, 2012. 18(4): p. 596-605.
31. Fusar-Poli, P. and A.R. Yung, Should attenuated psychosis syndrome be included in DSM-5? *Lancet*, 2012. 379(9816): p. 591-2.
32. Kaymaz, N., et al., Do subthreshold psychotic experiences predict clinical outcomes in unselected non-help-seeking population-based samples? A systematic review and meta-analysis, enriched with new results. *Psychological Medicine*. FirstView: p. 1-15.
33. Kelleher, I., J.A. Jenner, and M. Cannon, Psychotic symptoms in the general population – an evolutionary perspective. *The British Journal of Psychiatry*, 2010. 197(3): p. 167-169.
34. Yung, A.R., et al., Declining transition rate in Ultra High Risk (prodromal) services: dilution or reduction of risk? *Schizophrenia Bulletin*, 2007. 33: p. 673-681.
35. Kelleher, I., et al., Clinicopathological significance of psychotic experiences in non-psychotic young people: evidence from four population-based studies. *The British Journal of Psychiatry*, 2012.
36. Schultze-Lutter F, et al., *Schizophrenia Proneness Instrument - Adult version (SPI-A)* 2007, Rome: Giovanni Fioriti.
37. Fusar-Poli P, et al., Cognitive functioning in prodromal psychosis: A meta-analysis. . *Archives of General Psychiatry*, in press.
38. Ruhrmann, S., et al., Prediction of psychosis in adolescents and young adults at high risk: results from the prospective European prediction of psychosis study. *Archives of General Psychiatry*, 2010. 67(3): p. 241-51.
39. Riecher-Rossler, A., et al., Efficacy of using cognitive status in predicting psychosis: a 7-year follow-up. *Biological Psychiatry*, 2009. 66(11): p. 1023-30.

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