Letter to the Editor

Current versus recently resolved attenuated psychotic symptoms: Same level of risk for transition to psychosis?

While the at-risk for psychosis mental state approach to identifying emergent psychotic disorders has been catalytic in driving clinical research for youth populations, calls have been made to rethink the operationalisation of the construct (McGorry et al., 2018). The rationale for this is in part due to studies indicating a declining rate of transition to psychosis in recent years, reducing from around 40% in initial research, down to ~10% in more recent work (Morrison et al., 2012).

The ultra-high risk (UHR) criteria for psychosis, operationalised using the Comprehensive Assessment of At-Risk Mental States (CAARMS), are commonly adopted and internationally accepted criteria for assessing psychosis risk in help-seeking youth populations. The UHR criteria identify three groups: a vulnerability group, an attenuated positive psychotic symptoms group, and a brief limited intermittent psychotic symptoms group (Yung et al., 2005). According to the UHR criteria, attenuated positive psychotic symptoms are required to be present for at least one week over the previous 12-month period. While the criteria have long been considered as a gold-standard assessment procedure for detecting individuals at ultra-high risk of psychosis, recent meta-analytic evidence has questioned the longer-term prognostic accuracy and specificity of the construct, suggesting the need for construct refinement (Oliver et al., 2018).

It is possible that individuals with recently resolved symptoms (i.e., who report transient symptoms within the last year but not at time of recruitment), who technically still meet UHR criteria, may show a different transition trajectory, or risk of transition. Such information is of clinical relevance and may assist in improving the specificity of the ultra-high risk criteria, e.g. if UHR patients with recently resolved attenuated psychotic symptoms display a substantially lower level of psychosis risk, the criteria could be amended to exclude this group.

Here we report a secondary analysis of data from the NEURAPRO multi-site placebo-controlled randomised controlled trial (RCT) evaluating omega-3 fatty acid supplementation for the treatment of patients at ultra-high risk of psychotic disorder (McGorry et al., 2017; Nelson et al., 2018). The sample comprised 304 young people (mean age placebo group 18.9 years, $SD = 4.3$; omega-3 group 19.4 years, $SD = 4.8$) who participated in the NEURAPRO double-blind placebo-controlled RCT. Participants were identified at ultra-high risk of psychosis using established CAARMS criteria (Yung et al., 2005), and were recruited from 10 specialized early psychosis treatment services in Australia, Asia, and Europe. Transition to psychosis was assessed over a follow up period of 3.4 (median = 3.3; SD = 0.9) years (Nelson et al., 2018).

Based on symptom onset and offset dates for the positive symptoms subscales, participants were classified as experiencing either ongoing or recently resolved symptoms on any one of the four subscales. Additionally, interviewer-administered assessments included the Social and Occupational Functioning Assessment Scale (SOFAS; Goldman et al., 1992), the Brief Psychiatric Rating Scale (BPRS; Overall and Gorham, 1962), the Montgomery-Asberg Depression Rating Scale (MADRS; Montgomery and Åsberg, 1979), and the Scale for the Assessment of Negative Symptoms (SANS; Andreasen, 1984).

Participants were classified into one of two groups, either (a) ongoing symptoms at baseline, or (b) recently resolved symptoms at baseline (i.e., attenuated psychotic symptoms had been present in the last 12 months but had resolved by time of baseline assessment). Most participants were classified in the ongoing symptoms group (89.5%, $n = 272$), while those with past 12-month symptoms that had resolved were classified in the recently resolved group (10.5%, $n = 32$), see Table 1. There was an association between ethnicity and group membership, with participants reporting transient symptoms being more likely to be from an Asian background (28.1% vs 10.2%), χ^2 $(3) = 9.66, p = .022$. Participants reporting recently resolved symptoms were significantly older, had been in education for longer, and were rated as having significantly higher functioning (SOFAS) at baseline than those with ongoing symptoms. Equivalent group scores were observed for the BPRS, MADRS and SANS totals and number of cognitive behaviour case management sessions received. No association was observed between baseline attenuated symptom status (ongoing vs recently resolved) and subsequent transition to psychosis. When time to event (transition) was considered, Kaplan-Meier analysis indicted no difference in time to transition between the two groups (log rank χ^2 $(1) = 0.022, p = .883$).

To our knowledge, this is the first analysis to examine whether there is a difference in rates of subsequent transition to psychosis for those reporting either recently resolved, or ongoing attenuated psychotic symptoms at study entry. Although we report no association between transient symptoms present at baseline and transition to psychosis, the finding that some young people with recent (but currently remitted attenuated symptoms) subsequently transition to psychosis underscores the importance of not only assessing current attenuated psychotic symptoms, but also assessing the short-term history of these symptoms.

The comparatively small proportion of those in the recently resolved group (10.5% of the sample) supports the notion that most referrals to UHR services have current attenuated psychotic symptoms. This analysis supports retention of attenuated symptoms experienced in the previous 12-months in the UHR criteria, and underscores the importance of appropriate monitoring, and intervention, for young people experiencing recently resolved attenuated psychotic symptoms rather than focusing exclusively on current symptomology.

This finding is worthy of additional study, and accords with the dynamic, time-varying and changeable conceptualisation of early psychopathology (Nelson et al., 2017). In this dynamic model, symptoms can vary on both a micro level e.g., momentary and day-to-day, and a macro level e.g., days and years, and the model suggests that static or one-off cross-sectional baseline assessment of symptoms may have insufficient utility and accuracy to identify progression of illness. Such

Table 1
Sample characteristics by group.

		Ongoing symptoms $n = 272$	Recently resolved symptoms $n = 32$	Stat.	Sig.
Sex	%(n), male	45.2 (123)	50.0 (16)	χ^2	0.608
Age	M(SD), years	18.84 (4.38)	21.44 (5.34)	t	**0.012**
Education	M(SD), years	9.65 (4.22)	11.75 (4.91)	t	**0.026**
SOFAS[a]	M(SD)	52.55 (11.73)	59.78 (12.33)	t	**0.003**
BPRS total[b]	M(SD)	41.69 (9.25)	37.38 (13.17)	t	0.080
MADRS total[c]	M(SD)	19.61 (8.88)	16.19 (9.83)	t	0.068
SANS total[d]	M(SD)	6.49 (3.94)	5.66 (4.04)	t	0.276
CBCM total[e]	M(SD)	10.61 (5.96)	9.5 (6.57)	t	0.400
Transition	%(n)	13.2 (36)	12.5 (4)	χ^2	0.907

Bolded values denote p < .05.
[a] Social and Occupational Functioning Assessment Scale.
[b] Brief Psychiatric Rating Scale.
[c] Montgomery-Asberg Depression Rating Scale.
[d] Scale for the Assessment of Negative Symptoms.
[e] Cognitive Behavioural Case Management – total number of sessions.

approaches may have significant implications for clinical practice and earlier identification and management of UHR young people.

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