Chapter 4
Letter to the editor:
Chronotype not associated with non-remission, but with current state?

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With great interest we read the paper by Chan and colleagues.\(^1\) In their paper they showed the importance of studying chronotype, whether people are morning or evening persons, in patients diagnosed with major depressive disorder (MDD). The number of citations to our esteemed colleagues' paper (20 in 31 months according to a Scopus search in January 2017) shows the impact of the paper. However, when studying the citing papers we noticed that over half of the citing papers misinterpreted the results and conclusions of the paper by Chan and colleagues.\(^1\) We want to point out two terms, which were used in the paper, that may be related to the incorrectly interpreted causality of the reported findings. Although incorrect citations are more common in research, these used terms might have unintentionally triggered some of the confusion.

First, Chan et al.\(^1\) described a longitudinal cohort of patients diagnosed with current status of MDD (current episode in the past month) at inclusion in 2006 (T0). At T0, 419 MDD patients were included. This cohort was followed-up in 2010 (T1, n=371) and in 2011 (T2, n=253). At T2, diagnosis of MDD was confirmed, and severity of depression, evennessness and sleep-wake habits were assessed with valid instruments. For their publication data collected at T2 were tested (p911) to assess group differences in chronotype. This makes the study a cross-sectional study, as they indeed stated in their Discussion (p916). The statistical analysis used to test the relationship between evennessness and MDD is a logistic regression analysis. The independent variable, evennessness, is described as a 'risk-factor' for depressive symptomatology (p915). This term implies a causal relationship, while this cannot be studied in their cross-sectional study. Misinterpretation of this cross-sectional analysis in this longitudinal cohort is likely when the term risk factor is used, as we saw in citing papers.\(^2,3\)

Second, another misinterpretation of the citing papers might be the result of the categorisation of the MDD patients.\(^4,5\) Prior analysis, patients were categorized into a 'remission' group and a 'nonremission' group. The patients in this latter group have a cut-off score of 8 or higher on the Hamilton Rating Scale for Depression and a current status of MDD according to the 1-month prevalence on the Mini-International Neuropsychiatric Interview at T2 (note: independent of their depressive status at T1).\(^6,7\) We agree with the definition of the remission group as all patients were depressed at T0 and remitted at T2. However, for the nonremission group the definition is lacking precision. It is unknown from the collected data whether this group also included patients who were in remission at T1 and subsequently diagnosed with MDD at T2 and thus should be defined as suffering from a relapse. A more straightforward, or purely descriptive way of labelling this group is 'not-in-remission' or, even more precisely 'current depressive status according to the 1-month prevalence data'. Patients fulfilling the criteria of this latter definition are reported to be more evening type in the literature before.\(^8\) To define a better non-remission group, Chan and colleagues could have selected patients with a persisting depressive status (current depressive episode at T0, T1 and T2) as their non-remission group. This could decrease the sample size and negatively affect the power of the statistical analysis, although it likely creates more homogeneous groups, which may increase power. Albeit a subtle difference, we would like to point out that providing specific labels could make an important difference for the interpretability of the conclusions by the readers. In this case, it is important as the
The combination of the two terms (risk factor and nonremission) may unintentionally have implied a causal relationship between eveningness and the course of depression, something that should not be concluded from Chan and colleagues’ paper. We are grateful Chan et al. increased the knowledge of the field by studying the influence of sleep problems on the association between eveningness and depression. However, whether there is a causal relationship between chronotype and the course of depression remains unknown and a relevant subject for future research.
References


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