Reviewer’s report

Title: Sleep complaints in adolescent depression: One year naturalistic follow-up study

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Reviewer: Todd Arnedt

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Sleep complaints in adolescent depression: One year naturalistic follow-up study (Urrila et al.)

This manuscript evaluated the association between sleep disturbances and clinical course in a sample of adolescents with major depressive disorder (MDD) during a one-year naturalistic follow-up. 166 adolescents with MDD participating in the Adolescent Depression Study completed questionnaires and interviews at baseline and one year follow-up that assessed sleep-related and psychiatric symptoms. Sleep complaints measured by the K-SADS-PL were less frequent after one year, although subjects with continued sleep disturbances had higher scores on measures of depression (BDI-21), anxiety (BAI), and more K-SADS-PL suicidality/self-harm symptoms. However, baseline sleep complaints did not interfere with clinical course over the one-year follow-up. In fact, adolescents with baseline sleep disturbances had a more rapid improvement of depressive and anxiety symptoms and overall psychosocial functioning compared to adolescent with minimal sleep complaints. The authors conclude that sleep disturbances at baseline do not adversely affect clinical outcome during follow-up.

The manuscript is concise, well-written, and addresses an understudied topic in the literature. A particular strength is the relatively large sample of well-characterized adolescents with depression and the naturalistic follow-up. Despite these strengths, however, there are issues that diminish overall enthusiasm for the manuscript. These issues are detailed below:

Major Compulsory Revisions:

1. Lines 105-107: please indicate if there were any socioedemographic or clinical differences between subjects who were included in this study (n=166) and subjects from the parent study who were not (n=52). Similarly, were there any differences between subjects who attended the one-year follow-up and those who did not.

2. Methods: There are major concerns with the primary study measures. The authors appropriately acknowledge the limitations of using the K-SADS-PL to assess sleep symptoms, but the validity of the nightmare measure is also unclear and the primary outcomes were either collected using non-validated measures (suicidality/self-harm, psychosocial functioning) or with scales that have unclear psychometric properties in adolescents (BDI, BAI). The authors should provide
reliability and validity statistics for these measures. In addition, for the measures that were obtained as part of a clinical interview, information on rater reliability (assuming different raters were involved) should be provided.

3. Lines 158-160: It is not entirely clear how remission and recurrence were determined. Were these categorizations based on clinical interview or K-SADS-PL score? If the latter, please indicate what score(s) was/were used. If the former, please indicate how reliability of these categorizations was determined.

4. Lines 213-219: No rationale is presented for the subgroups defined according to sleep complaints. For example, why is non-restorative sleep included in the no/minor sleep complaints subgroup, particularly since this was the most common residual sleep complaint? Why were nightmares excluded from the subgroup definitions? Is it possible that the more rapid improvement in outcome measures for those with sleep disturbances at baseline is because non-restorative sleep was included as a no/minor sleep complaint? A more convincing rationale for the subgroup determinations is needed.

5. Lines 241-248: No information is presented on any sleep-related treatment that might have been received by subjects during the one-year follow-up period. Is it possible that the reason that the trajectory of improvement was better for subjects with sleep disturbances at baseline was related to treatment for these sleep disturbances during follow-up?

6. Lines 301-305: The authors offer only limited discussion to explain why sleep disturbances at baseline would relate to a more favorable discussion. How do the authors reconcile these findings with studies from the adult depression literature indicating that baseline sleep disturbances adversely affect clinical course?

Minor Essential Revisions:

1. Lines 115-116: the severity categorization of depression adds up to 101% of the sample. Please reconcile.

2. Lines 132-134: Please use consistent terminology. Here, the authors use the terms “recovered and relapse” to describe the status of one group, but later (lines 158-160) they report only definitions of “remission and recurrence.”

3. Line 234: Figure 3 is related to the BDI not psychosocial findings.

4. Lines 258-260: The authors indicate that there were baseline differences in depression severity among the three sleep subgroups. Was this factor controlled for in the GEE analysis?

Discretionary Revisions:

1. Figure 3: The Loess curves and data points are difficult to distinguish. Please consider using color or some other way to more easily differentiate the three groups and trajectory lines.
Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests