Author's response to reviews

Title: Lowering of self-esteem mediates the association between social phobia and depression in middle adolescence. A two-year follow-up of a prospective population cohort study.

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Author's response to reviews: see over
Dear editor,

We kindly thank You and the reviewers for comments on our manuscript “Lowering of self-esteem mediates the association between social phobia and depression in middle adolescence. A two-year follow-up of a prospective population cohort study.”

We are thankful for the important notions about our manuscript. We have considered all suggestions the reviewers have made and we have improved our manuscript according to those comments. Here are our replies to comments and we attached here new version of manuscript where changes are included.

Our manuscript is now also copyedited by SciTechEdit International, and based on that we have made several amendments on the text.

Reviewer 1

This is an interesting report stemming from a large community-based sample of Finnish adolescents followed prospectively over two years. The authors find different longitudinal associations between depression and social phobia depending on gender, each mediated by low self-esteem (social phobia preceding depression in boys; depression preceding social phobia in girls). They conclude that self-esteem should be a focus of intervention for adolescents suffering from either disorder.

Overall, the authors review most relevant literature, describe their methods in sufficient detail, and undertake the analyses with care. The topic is an important one in adolescent mental health, in that both conditions (depression and social phobia) are prevalent and associated with high morbidity. The paper is clear and easy to follow, and the research questions are original.

I believe some revision is indicated, however, to ensure accurate interpretation of the findings.

Minor Essential Revisions:
1) The authors define depression and social phobia based on certain cut-points on self-report scales. There is no indication of their level of functional impairment and thus no way of ascertaining which teens actually met diagnostic criteria. Therefore, rather than referring to ‘depression’, ‘social phobia’, ‘adolescents with depression’, and ‘adolescents with social phobia’, the authors need to refer to ‘symptoms of depression’, ‘symptoms of social phobia’, ‘adolescents with symptoms of depression’, and ‘adolescents with symptoms of social phobia’ throughout the paper, as this would be more accurate.

Response: We have changed the terms according to reviewers suggestions.
2) In the abstract, the results should indicate that the first association was found among boys but not girls and the second association was found between girls but not boys. Otherwise, the reader cannot tell that both associations were examined for both genders.

Response: We have clarified the results section of the abstract as follows: Symptoms of social phobia without symptoms of depression at age 15 and symptoms of depression at age 17 were associated only among boys, and this association was mediated by decrease in self-esteem. Symptoms of depression without symptoms of social phobia at age 15 and symptoms of social phobia at age 17 were associated only among girls, and this association was partially mediated by decrease in self-esteem.

3) In the conclusion of the abstract and also in the discussion, there should be a call for replication in other jurisdictions or in more ethnically diverse samples. It is possible, for example, that in jurisdictions where the baseline rates of depression or social phobia are different than in this area of Finland, the analyses might yield different findings.

Response: We have added the following sentence in the conclusion section and in the abstract: These findings are based on a sample of Finnish adolescents and should be confirmed in other jurisdictions or in more ethnically diverse samples.

4) In the conclusion of the abstract and also in the conclusion of the paper, one should advocate not only interventions for self-esteem (and I’m not sure what the best evidence-based ones are—perhaps worth adding these to the discussion), but also aggressive treatment of the initially appearing disorder. For example, providing exposure and other cognitive-behavioral techniques to socially anxious boys might prevent the lowering of self-esteem that led to subsequent depression; similarly implementing behavioral activation to reduce depression-related social withdrawal might preserve self-esteem and prevent social phobia in girls.

Response: We have added the following sentence in the conclusion section and in the abstract: Efficient intervention for the first disorder might help to prevent the decline in self-esteem and thus the incidence of the subsequent disorder.

5) On page 3, there is a reference (#25) to findings that are very similar to this study, and that were published in 2011 with the same lead author. Please clarify: is this paper from a different data set, or are these two different papers/analyses
based on the same data set?

Response: We have clarified this reference by changing the sentence: In an earlier analysis of the present sample, social phobia predicted depression among boys, while depression predicted social phobia among girls [25].

P 5, Par 2, Li 11, 12 (in double line spacing format)

To clarify the originality of the current manuscript we will emphasize, that the main finding of the article Väänänen J, Fröjd S, Ranta K, Marttunen M, Helminen M, Kaltiala-Heino R: Relationship between social phobia and depression differs between boys and girls in mid-adolescence. J Affect Disord 2011, 133:97-104, was that the association between earlier social phobia and subsequent depression, or vice versa, was different among boys and girls. Differently, the main findings of the current manuscript were the association between low self-esteem and social phobia and depression, and the mediating role of lowering of self-esteem in the association between earlier social phobia and subsequent depression among boys and between earlier depression and subsequent social phobia among girls.

6) Looking at Table 1, it appears that some of the ‘clinical’ cells have a rather small number of subjects, as most of this community-based sample had neither depression symptoms nor social phobia symptoms. Given these small cell sizes and the fact that 4 or 5 variables are controlled for in each analysis, I wonder if some of the non-significant findings may relate to insufficient power. Please clarify or cite as a limitation.

Response: We added following sentences in the limitation paragraph of the discussion section: Although the baseline sample was large, the number of adolescents suffering from symptoms of depression and social phobia was quite low, and the non-significant findings in the difference in self-esteem between the different disorder groups may have been due to insufficient statistical power. This possible lack of statistical power, however, does not affect our main finding regarding the mediating effect of decrease in self-esteem.

P16 Par 3, Li 17-22

7) Figure 2 seems to have disappeared unless it was mis-labeled ‘Figure 3’?

Response: Figure 2 was mis-labeled to figure 3, we have corrected it to Figure 2.

Discretionary Revisions:

8) On page 3, the 4th hypothesis is not linked to any literature that has been reviewed up to that point, and I don’t think it is discussed extensively in the manuscript. I suggest either deleting this hypothesis, or linking it to literature & discussing it more.

Response: We have omitted the 4th hypothesis
9) On page 7, paragraph 3, it may be worth noting that acceptance and rejection by others as a source of self-esteem is particularly salient in the adolescent developmental stage (versus younger children or adults).

Response: We have emphasized this important notion by changing the sentences: Perceived acceptance or rejection by others affects self-esteem especially strongly during adolescence [43]. Decrease in self-esteem during adolescence further leads to the development of a subsequent disorder (depression or social phobia).

Reviewer 2:
This article presents notable information about the mediation of self esteem in adolescent populations with depression and social phobia and its prediction of development of succeeding disorders (social phobia or depression). The report also aims to explore the relationship between self esteem, gender, social phobia, depression and comorbid disorder. This study examined adolescents amongst two cities by administering the Finnish modification of the Beck Depression Inventory (RBDI) to assess for depression, the Social Phobia Inventory (SPIN) to identify participants with social phobia and a Finnish translation of the Rosenberg Self-Esteem Scale (RSES) was used to measure self esteem. Data was collected at T1 and eligible participants at T1 were asked to participate at a 2 year follow up (T2). A variety of methods were offered to obtain the data from the participants including, in class supervised survey, postal survey and internet survey. The authors’ predictions are justified by their findings that it appears lowering of self-esteem does in fact mediate depression in boys with earlier social phobia without depression and subsequent social phobia and girls with early depression without social phobia and subsequent social phobia. In a cross-sectional analysis, low self-esteem at both the age of 15 and at the age of 17 was associated with social phobia, depression and comorbid disorders with comorbid disorders having the strongest association. Boys were also found to have higher self esteem than girls in populations that had neither disorder however the same did not hold true for boys suffering from depression without social phobia at 15 and 17, comorbid depression and social phobia at 15 and social phobia without depression at age 17.

Discretionary Revisions
1. The title does not address the gender differences presented in this report. It appears as though gender plays a significant role in these findings and should be considered to be represented more so in the title.

Response: We have changed the title: Decrease in self-esteem mediates the association between symptoms of social phobia and depression in middle adolescence in a sex-specific manner. A 2-year follow-up of a prospective population cohort study.
Title

2. In the abstract results section does not clearly state if both associations were looked at for both genders or if early social phobia without depression in males or if early depression without social phobia in females were solely being examined. More information could be presented here.

Response: We have clarified the result section of the abstract concerning this notion as follows: Symptoms of social phobia without symptoms of depression at age 15 and symptoms of depression at age 17 were associated only among boys, and this association was mediated by decrease in self-esteem. Symptoms of depression without symptoms of social phobia at age 15 and symptoms of social phobia at age 17 were associated only among girls, and this association was partially mediated by decrease in self-esteem.

P 2 Par 3, Li 12 - 16

3. A limitation to be considered would be the different methods used to obtain the information from the participants. Perhaps students who took the measures at home from the internet or postal service were more likely to report accurate results than those in a supervised setting.

Response: We have added this limitation to the discussion, as follows: Further, different methods used to obtain the information in the follow-up may have affected the responses of the participants. For example, students who responded to measures at home or via the internet or postal services may be more or less likely to provide accurate results than those responding in supervised school settings.

P 17, Par 1, Li 4-7

Minor Essential Revisions

4. The third and fourth paragraph under the results section mentions “Figure 2” but I believe the figure at the end of the article is mislabeled as “Figure 3.”

Response: Figure 2 was mis-labeled to figure 3, we have corrected it to Figure 2

Fig 2

Sincerely Juha Väänänen