Reviewer's report

Title: Social anxiety increases visible anxiety signs during social encounters but does not impair performance

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Reviewer: Paula Vagos

Reviewer's report:

This work set out to investigate if the social performance of young adults (i.e., students) was impaired in the beholders' eyes based on their own account of their social anxiety. The goal of the work is very significant and the findings are new and intriguing. In turn, the work presents an evident lack of information that may put into question the methodological rigor of these findings (e.g., who were the observers - they were a complete sample of their own, how were observers trained, when did they assess the social performance of the participant etc.) and some methodological choices are questionable (e.g., a "two-step" approach to data analyses rather then a single SEM approach). It also presents some limitations that do not prevent the work from being published but need further considerations (e.g., not including a "control" group that would be performing, for instance, based on levels of social anxiety). Still, the work has many merits and so I would like to know if the authors can complement their work. I provide a set of commentaries, questions and suggestions that are intended to help them do just that.

Abstract:

- Please provide more information on the sample (e.g., adult community sample?), the reader only gets to know it is a subclinical sample (which is not a clear term of itself) in the conclusions. Also, more information on what "methodological variation" was controlled and on the nature/procedure of the speech and interaction tasks would be welcome, particularly because they are described - in the conclusions - as representing "high demand social challenges".

Keywords:

- Social skills doesn't seem to be a key word (at least taken from the abstract). Maybe social discomfort (which the authors consider and is with a significant finding would be preferable).

Introduction

- Please be more explicit about what is considered "social anxiety below the diagnostic threshold". This comment follows from my previously mentioning, in relation to the abstract, that "subclinical" is not a conclusive term. In extreme, all human beings should present with social anxiety below the threshold, being it not at all (not likely) to somewhat, to a lot, to
psychopathology, to put it in simple terms. I completely agree that social anxiety exists on a severity continuum, but think the idea of the various "levels" within this continuum needs to be better addressed.

- Please provide a reference for the first sentence, second paragraph of the introduction. This is necessary because the literature on social skills deficit associated with social anxiety is controversy, with some authors arguing that socially anxious individuals indeed have social skills deficits that hamper their perform while others state that socially anxious individuals have perfectly adequate social skills but are unable to practice them due to their anxiety. The authors argue for this controversy in their third paragraph of the introduction.

- The authors focus on the methodological rigor of their work as applied similarly to men and women, which I find to be a very significant endeavor. They trace that methodological rigor to the need of overcoming contradictions from previous studies that are based on methodological inconsistency. Still, it is not clear what methodologies were previously used on this field of work, nor on what methodological plan are the authors reproducing and why, or why they are proposing a new methodological plan and which. Because methodology is a stepping stone of their argument, this would seem important.

Method

- The recruitment add may have hampered the participation of more highly socially anxious individuals, because it clearly references to the study involving social challenges. Do the authors have any information on the levels of social anxiety of their sample, in relation, for example, to a clinical culturally similar sample? In the results section they refer to something similar to this; I think it would be reviewed (see below) and take part of the sample description.

- What was the inter-rater reliability for the current work?

- Were confederates for the speech task also trained, for example, for maintaining a neutral facial expression? Because socially anxious individuals seem to cling to negative social clues from an audience, this may have significance.

- Did the participants undergo the relaxing procedure again between the 1st and 2nd task?

- How were observers trained? What can the authors offer on the reliability of their account? Was the same confederates used for each task for all participants? Were the confederates used for the speech task again used for the interaction task? Please give more detailed information on the tasks and on the observation procedures.

- Why not a priori conduct a structural equation modelling, take sex as a moderator, and test for model invariance, instead of a two-step approach (i.e., 1st regression analyses and then equality constraints based on SEM)? Why were only the outcome variables of the SPRS (and which ones) were tested for gender equality?
Results

- Please statistically compare the sample's mean score with that of the clinical, undergraduate and community volunteers.

- Please report if men and women of the current sample had the same or different mean score on the SPS. It is not clear to me why the authors refer to a "subsample" of 17 participants, unless they will be using groups later on their analyses. If this is the case, it needs to be much more explicitly put.

- The authors had participants rate their anxiety three times (the first to guarantee a baseline state of calmness). Why only compare two of those moments (even if only using the sample available at each time)? Also, please differentiate these results by task (i.e., speech versus performance). Finally, because sex is a relevant independent variable of this study, these results should be presented having sex as a covariate (i.e., ANOVA with sex as covariate).

- The information on inter-rater agreement for the observers should be in the procedure section.

- Please provide information on the mean scores for the SPRS ratings by sex, again because this is a relevant independent variable for the current work.

- Table 1: The associations between sex and the SPS or the anxiety scores are not referred to in the text.

Discussion

- Again the authors refer to some diffuse concepts (e.g., subclinical social anxiety, behavior agitation - vs discomfort which was used in the results section, social challenges).

- At the end of page 12 going on to page 13, the authors refer so those high or low in social anxiety. How were those groups defined (i.e., groups of high or low social anxiety)? Please also see above my comment on referring to 17 participants with social anxiety in the sample description.

- The authors understandably left out "observation" which is the third core social fear in social anxiety. Could they discuss on the relevance of considering this dimension in the realm of studies such as theirs?

- When suggesting intervention guidelines, the authors propose them to be helpful for social success and go further in suggesting that such success may increase self-esteem. How does this relate with the cognitive models of social anxiety that the authors refer to in the introduction? Are socially anxious individuals able to accurately perceive social clues they receive from others or are they prone to negative bias when interpreting such clues?
The authors have a measure of "anxiety" associated with the social tasks (the one immediately before). It would be interesting to strengthen their results by finding that this more "immediate" measure is predictive of the same kind of feedback from observers using the SPS.

References

- References are not formatted according to the APA 6th edition guidelines

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

No

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**
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