Author’s response to reviews

Title: The Adolescent Depression Rating Scale (ADRS): A validation study

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Author’s response to reviews: see over
We thank the reviewers for the in-depth and insightful reading of the paper. We have taken into account all remarks and suggestions. We feel the paper is much improved now.

You will find here a point-by-point response to the different concerns that were raised.

All our papers are edited by a professional native English editor; the new version of the paper (and this response letter) have not been edited by our editor since she is presently in vacations. If the paper is accepted or required new corrections we shall present to BMC psychiatry a fully English edited version of the paper. It is however noticeable that this first validation phase of the ADRS has been done in other languages than French: the instrument is already available in Spanish, Italian, Hebrew, Arabic, if needed we can put them in the annex.

**Reviewer: Glenn Alexander Melvin**

**Major compulsory revision**

1. We obviously have been misleading about this point. We do not assume that the ADRS is appropriately designed and validated to assess adolescents for depression. We have looked for items related to adolescent’s depression. When added, these items reflect in a dimensional way the load of the depressive symptomatology. The proposition of a cut off that could discriminate depressed adolescent to non depressed adolescent leads to some confusion: rating scales are not diagnostic instruments and should not substitute for diagnostic evaluation. It is now specified in the paper, that these cutoff are indicative and should be used only in an epidemiological setting.

2. A copy of the qualitative interview questions is now accessible as an appendix, questions to the adolescents and to the psychiatrists.

3. The reviewer is right, we change the names in the manuscript: initial version clinician and patient, ADRSic ADRSip, final versions ADRSc, ADRSp

4. The sample description was not clear enough. We included a population of adolescents with a wide type of disorders, only subjects with mental retardation or psychosis were excluded. We individualized a MDD depression group cause this population is specially
important, but a depression measure is indeed useful in a large population. An important example about that point concerns evaluations done in clinical trial a long time after treatments: many patients do not present any depression disorders and even symptoms and need nevertheless to be evaluated. That is why we decided to set the validation of ADRS in a large adolescent population, with various level and kind of depressive symptoms. The patients recruited were all treated but not necessary for depression, they were attending a psychiatric clinic or adolescent medicine clinic (80%; 20%).

We must notice that none adolescents decline to participate.

The sample included patients up to 20 years of age because the adolescence as a process does not end at 18 years (Jeammet P., 2001), even if for legal reasons the cut off of adolescence as used in clinical trials is 18 years.

Adolescents with bipolar disorder were also included as we explained above, only mental retardation and psychosis were excluded.

5. This is a major point. We acknowledge a lack of rigor in our definition of the subsyndromal depression. We propose modifications in the manuscript, especially in the discussion section. The word subsyndromal does not correspond to the population of the group 2, we should call it “intermediary group”. Indeed the patients of this group are considered depressed according to the clinician evaluation but without the DSM IV MDD criteria, and these patients were experiencing different kind of depression as noticed by the reviewer (excepted the MDD). This “intermediary group” is quiet heterogenous, but it was likely to be less severe than the MDD group, and the results show this intermediary group is actually less severe than the group MDD. It is important to validate ADRS in such sample, as mentioned above, because the ADRS as a dimensional scale and therefore must be able to assess different level of depression from none to severe, as we can find in clinical trials.

When the clinician gives his spontaneous opinion, it is not a first impression at all, it is given after the comprehensive clinical interview, a 30 minutes interview, as in an usual practice. The word spontaneous must be removed.

6. OK, this is an important point.

7. Sexe and age for the three sample groups are presented now in the manuscript.

We have computed these statistics for each item but results take several pages we don’t feel to put it in the manuscript, but we can reconsider it if needed.
Concerning the other part of question 7, as mentioned above, our description of the sample was not clear enough, all adolescents were included except psychotic and mental retardation, so the patients present different kind of diagnoses and of level of depression. The “clinical question” to the clinician, his/her clinical judgment leads to classify patients in experiencing depression, or no experiencing depression, whatever the diagnoses. The ADRS dimensional scale can then measure the level of the depressive experience in different groups of intensity, no matter is the diagnoses.

8. Factor analyses have been run for the initial versions and the final versions. Factor analyses have been computed again for the three groups, results are presented now in the manuscript

9. Response of items with floor effect <50%
   Response of items with ceiling effect <50%
   Missing data per item <5%
   Inter-item correlation <0.70, meaning no redundancy.
   Done in the manuscript.

10. Cut-offs are useful for identifying individuals for further clinical evaluation, but they always represent a trade-off between sensitivity and specificity. Sensitivity and specificity are presented now in the manuscript (clinician and patient version).

11. The approach used to assess MCRD is in fact the standard proposed by G. Norman et all in their review (reference 21). Since the paper contains already many results and is not a statistical paper, we propose not to include the details of the regression analysis. We may however come back on this point.

12. Seven patients were excluded because there were missing data. So we have 402 patients

13. The table 2 shows now the final versions after reduction. Factor analysis were performed on the initial and final versions of the scale. cf manuscript.

14. The criterion for stability comes from a multiple sample confirmatory factor analysis model which compares two models: one with loadings equal in both samples and one with loadings estimated in each samples. The test which compares both models leads to a p.value. It
is mentioned in the manuscript if this p-value is < or > to 5%. Since this is a rather technical point, we decided not to develop it in the manuscript, but we may come back on this point if required.

15. The important point of item reduction was not clear enough.

Items were removed according to:
- Clinical considerations: readability, pertinence, redundancy, items corresponding to the different domains of the depressive experience issued from the qualitative phase
- Statistical considerations: loading < 0.4; inter-item correlation > 0.6.

Done in the manuscript

16. OK. Done

17. OK. Done

18. It refers to ideas of death. One of the translation suggested was “When things are like that, I think I just want to die”. This item is from the French verbatim of the qualitative interview with adolescents, the translation is not clear; we must control its pertinence in the different cultural context and language.

Minor comments
1. Done
2. Done
3. Done
4. Relevance of clinical trials.
5. CDRS-R is mentioned at the end of the paragraph.
6. Done
7. Done
8. Done
10. Identify the facets of adolescent depression from the qualitative data. Cf manuscript.
11. Ok
12. Ok.
13. Guide in English encloses to the cover letter and explanations are provided in the manuscript.
14. Indeed, ideally with should have reported all co morbidities. Unfortunately, we had no time, during the interview, to collect these co morbidities with enough reliability.

Discretionary Revisions

1. CESD is the most common measure used in epidemiological studies
2. Done.
3. Ok
4. Experienced clinicians of the qualitative phase: from 15 years to 25 years of experience.
5. It can be discussed.
6. Done
7. Done
8. Done
9. The appetite disturbance symptom is very sensitive but not specific of depressive experience, this is the reason we did not include it.
Reviewer: Janet Williams

Major revisions
1/ We made a mistake in the manuscript, in fact the clinicians first complete ADRSc, then HDRS, then the CGI, then the clinical evaluation question, and after all the DSM criteria. We can, if required, enclose the data collection form which shows it clearly.
2/ Indeed we are presenting the validation of the French versions, the translation work in English is not ended, we must, as a first validation phase in English, test the face validity with English clinicians and patients.

Minor
- More details about the qualitative phase are now in the manuscript.
- It takes 15 minutes to administrate the ADRS clinician.
- The question of the response format of the ADRSp was a major question. We have made our decision of yes/no response format on a preliminary feasibility study in adolescents and after discussion with epidemiologists who told us that yes/no response format were more adequate with adolescents populations.
- The use of both versions can be useful in clinical trials, and also in clinical settings as recommended by Myers and Winters.

ADRSp is especially useful in epidemiological studies.