Author's response to reviews

Title: Psychometric properties of self-sufficiency assessment tools in adolescents attending vocational education

Authors:

Rienke Bannink (r.bannink@erasusmc.nl)
Suzanne Broeren (s.broeren@erasusmc.nl)
Jurriën Heydelberg (jfp.heydelberg@rotterdam.nl)
Els van 't Klooster (e.vant.klooster@crgijmond.nl)
Hein Raat (h.raat@erasusmc.nl)

Version: 3 Date: 17 July 2015

Author's response to reviews: see over
July 17th, 2015

Dear Editor,

Thank you for the opportunity to revise and resubmit our manuscript entitled “Psychometric properties of self-sufficiency assessment tools in adolescents attending vocational education” (MS: 2567038721688406).

The editor’s and reviewers’ comments were constructive and helpful, and we amended the manuscript accordingly. Below we respond to the comments and describe how we have adjusted the manuscript.

Kind regards, on behalf of all co-authors,

Rienke Bannink

Contact information:
Email: r.bannink@erasusmc.nl
Telephone: +31 107044634
Affiliation: Department of Public Health, Erasmus University Medical Center Rotterdam, P.O. Box 2040, 3000 CA, Rotterdam, the Netherlands
We edited the manuscript with track changes.

**Comments of the Editor:**

1. As one of the reviewers, I am concerned with the interpretation of the across-time correlation as a reliability coefficient. During a relatively large interval of time (six months), true change can occur. I think you can use this correlation to investigate the stability of the construct under investigation, but a more nuanced theoretical framework on stability and change of self-sufficiency is needed.

**Response comment 1:**

We want to thank the editor for this comment. See for details and the adjustments that are made in the manuscript the response to Reviewer 2, comment 1.

2. Based on my own reading, I suggest to clarify the rational of having divided participants into intervention and control groups. It is not entirely clear why this has be done, and what it adds to the study.

**Response comment 2:**

In our study we have used data obtained at enrolment in the Your Health study, a cluster randomized controlled trial. Therefore, participants were divided into intervention and control groups. The intervention study itself is described in detail elsewhere. To clarify this, we have added that we used data obtained at enrolment in the Your Health study, that school classes were randomly assigned to the intervention or control condition, and that information about the intervention study can be found in detail elsewhere.

The following adjustments are made:

Old text (methods):

“This study used data obtained at enrolment in the Your Health study, a cluster randomized controlled trial, as described in detail elsewhere [19]. A total of 44 first-grade classes with students attending vocational education in the region of the Dutch city of Rotterdam participated.”

New text (methods):

“This study used data obtained at enrolment in the Your Health study, a cluster randomized controlled trial. A total of 44 first-grade classes with students attending vocational education in the region of the Dutch city of Rotterdam participated. School classes (clusters) were randomly assigned to the Your Health or control condition. The intervention study itself is described in detail elsewhere [23].”
Reviewer’s report (Reviewer 1):

Reviewer’s report:
The paper addresses a relevant topic, the assessment of self-sufficiency, and provides useful data on the psychometric properties of two instruments designed to assess this multi-facet construct. However, several minor essential revisions are needed to make the manuscript publishable in the journal. The suggested changes will be numbered and detailed above:

1. Line 48. Spelling mistake: “Questionnaires”, not “questionnaire”. Authors should carefully revise the entire manuscript for scientific use of English language and for appropriate punctuation of sentences.

Response comment 1:
The manuscript is carefully checked and revised for scientific use of English language and typos.
‘Questionnaire’ in line 48 is not a spelling mistake. The word ‘both’ refers to ‘questionnaire’ and ‘SSM-D’ (plural) (see also line 44). Therefore, we did not change the word into ‘questionnaires’.

2. From Line 62 on. In this section, it would be useful for the reader to have a more detailed description of the construct of self-sufficiency and of the instruments previously used to assess it. A more articulated picture of previous work on this topic might facilitate the comprehension of the importance of this construct, and the need to have validated and reliable instrument to assess it.

Response comment 2:
As the reviewer suggested, we have decided to give a more detailed description of the construct of self-sufficiency and the instruments previously used to assess this construct. See also Reviewer 1, response comment 19.

The following adjustments are made:
Old text (Background):
“Self-sufficiency matrices (SSM) are instruments that have adopted such an integrated approach [11,12]. In the United States, the basis for the SSM was developed. The SSM can be used by professionals during consultations to determine the strengths and areas for improvements in functioning of, for example, vulnerable adolescents. It expresses functioning in levels of self-sufficiency on several domains (e.g. mental health and social network). Self-sufficiency is thereby defined as the realization of an acceptable level of functioning either by the person him/herself or by adequately organizing the help of informal or formal care providers [2]. Although the SSM is applied in the United States [11,12] and is quickly gaining popularity in other countries as well [13], to the best of our knowledge, there is only one study available examining the psychometric properties of the SSM. Fassaert et al. [2] showed that an adapted 11 domain version of the SSM (SSM-D) is a reliable instrument to assess self-sufficiency of adolescents with severe and complex psychiatric problems by professionals. However, more insight in the psychometric properties of the SSM among other populations, such as adolescents attending vocational education is needed. The SSM is increasingly used among this population, which is considered a vulnerable group with high school dropout (i.e. approximately 40%), in which problems often accumulate [3,4].”

New text (Background):
“A self-sufficiency matrix (SSM) is an instrument that has adopted such an integrated approach [11,12]. The basis for the SSM was developed in the 1990s in the United States. That is, a
standardized tool to measure self-sufficiency. Self-sufficiency is defined as the realization of an acceptable level of functioning either by the person him/herself or by adequately organizing the help of informal or formal care providers [2]. First, a standardized tool to measure economic self-sufficiency was developed by Pearce et al. [13]. Thereafter, this economic self-sufficiency measure was extended with a number of domains into the first published version of a multidimensional SSM in 2004 [14]. Different versions of the SSM are currently being used in different settings. The SSM can be used by professionals as a screening tool during consultations to determine the strengths and areas for improvements in functioning of, for example, vulnerable adolescents. It expresses functioning in levels of self-sufficiency on several domains (e.g. mental health and social network) [2]. The SSM is a screening or assessment tool that is often used also to measure outcomes of intervention programs in populations that experience multiple interlinked problems.

Although the SSM is applied in the United States [11,12] and is quickly gaining popularity in other countries as well [15], to the best of our knowledge, there is only one study available examining the psychometric properties of the SSM. Fassaert et al. [2] showed that an adapted 11 domain version of the SSM (SSM-D), based on Utah- and Arizona-versions of the SSM, is a reliable instrument to assess self-sufficiency of adolescents (>18 years) with severe and complex psychiatric problems by professionals. As the SSM is also increasingly used among other populations, such as adolescents attending vocational education (≥15 years), further evaluation of the psychometric properties of the SSM among other populations is needed. This study focuses on these adolescents attending senior vocational education, which is considered a vulnerable group. In the Netherlands, 75% of school dropouts occur in senior vocational education [16]. Furthermore, many adolescents attending vocational education experience problems, such as debts and substance abuse, and these problems often accumulate [3,4,17].”

3. From Line 63 on. Authors first use “Self-sufficiency matrices (SSM)” as a plural noun and subsequently they refer to them as a singular noun.

Response comment 3:
We agree with the reviewer that we were not consequent in the use of SSM as a plural or singular noun. We have now described SSM everywhere as a singular noun.

4. Line 64. Please consider the following revision of the sentence: “The basis for the SSM was developed in the United States”.

Response comment 4:
The suggested change is made.

5. Line 75. Instead of “more insight in” I suggest “further evaluation of”.

Response comment 5:
The suggested change is made.

6. Line 76. The author might explain more fully why adolescents attending vocational education are a vulnerable population with high school drop-out.

Response comment 6:
Adolescents attending vocational education are considered a vulnerable group based on the problems they encounter and their high prevalence of displaying risk behaviors. In the introduction
and discussion, we have added information about why adolescents attending vocational education are considered a vulnerable population.

Old text (background):
“However, more insight in the psychometric properties of the SSM among other populations, such as adolescents attending vocational education is needed. The SSM is increasingly used among this population, which is considered a vulnerable group with high school dropout (i.e. approximately 40%), in which problems often accumulate [3,4].”

New text (background):
“As the SSM is also increasingly used among other populations, such as adolescents attending vocational education (≥15 years), further evaluation of the psychometric properties of the SSM among other populations is needed. This study focuses on these adolescents attending senior vocational education, which is considered a vulnerable group. In the Netherlands, 75% of school dropouts occur in senior vocational education [16]. Furthermore, many adolescents attending vocational education experience problems, such as debts and substance abuse, and these problems often accumulate [3,4, 17].”

Old text (discussion):
“A strength of the study is the high response rate in a vulnerable population. However, the present study also has its limitations.”

New text (discussion):
“A strength of the study is the high response rate among a vulnerable population. A high percentage of the adolescents in our sample suffers from depressive symptoms and often engages in behaviors that negatively impact their health, such as substance abuse [23].”

7. Line 86. Not “applied” but “employed”

Response comment 7:
The suggested change is made.

8. Line 112. Please, revise the sentence “until adolescent age 18 years” to make it more comprehensible.

Response comment 8:
We have amended the sentence to make it more comprehensible.

Old text:
“If parents did not want their child to participate, they could object to the participation of their child (until adolescent age 18 years).”

New text:
“If parents did not want their child to participate, and their child was not yet 18 years old, they could object to the participation of their child.”

9. Line 136. “The Dutch version of the SSM (SSM-D) was used”. The reference for this instrument is missing.
Response comment 9:
The reference is added.

10. Line 169. Authors should specify that both groups completed also the questionnaires of “related constructs”. This information is provided only in the results section but it should also be reported in the method section.

Response comment 10:
We want to thank the reviewer for this comment. We have added this information in the methods section.

Old text (Methods section, data collection):
“During a classroom session, adolescents who were present in class, were asked active written informed consent before they completed a questionnaire. The self-report questionnaire assessing self-sufficiency was included in this questionnaire. After the self-report questionnaire was administered, school classes were randomly assigned to the Your Health or control condition.”

New text (Methods section, related constructs):
“During a classroom session, adolescents who were present in class, were asked active written informed consent before they completed a set of questionnaires. The set of questionnaires included the self-report questionnaire assessing self-sufficiency and questionnaires assessing the related constructs. After the questionnaires were administered, school classes were randomly assigned to the Your Health or control condition.”

11. Form line 169 on. Authors should explain why only 8 of the 11 domains have been considered for concurrent validity

Response comment 11:
This study used data obtained upon enrolment in the Your Health study, a cluster randomized controlled trial. Therefore, questionnaires assessing primary and secondary outcomes were included with the highest priority. Because the questionnaires had to be completed in one classroom session and to reduce respondent burden, we decided not to measure related constructs on all self-sufficiency domains.

The following adjustments are made:
Old text (methods):
“Related constructs. Debts, homelessness, alcohol consumption, soft drug use, and delinquency were assessed by items based on existing instruments previously developed by Municipal Public Health Services and health institutes in the Netherlands [22].”

New text (methods):
“Related constructs. Debts, homelessness, alcohol consumption, soft drug use, and delinquency were assessed by items based on existing instruments previously developed by Municipal Public Health Services and health institutes in the Netherlands [26]. To reduce respondent burden, only a number of related construct could be assessed. No data was obtained on 3 domains of self-sufficiency (i.e. Domestic relations, Activities daily life, and Social network).”

12. Line 202. If I understand correctly, for both questionnaires each domain is described by one single item. However, authors did not mention that for both questionnaires it is possible to
compute a total score, which would make understandable why they computed Cronbach’s alphas. Are the domains indicators of a higher level self-sufficiency factor that could explain the inter-correlation between them? Is there a total “self-sufficiency” score? Authors should fully clarify this point.

Response comment 12:
We want to thank the reviewer for this comment. Because an overall score can be computed, and has been used in past research (Fassaert et al, 2013), we also calculated a Cronbach’s alpha for the 11 domains. However, we did not yet include an overall score in our manuscript. We have now decided to include an overall score (See also Reviewer 2, response comment 3), and, based on this reviewer comment, we have explored how the different domains of self-sufficiency are correlated with the total score. This information gives insight in how strong each domain is associated with the total self-sufficiency score. This information will be given in an Appendix.

Furthermore, we have decided to correlate the total self-sufficiency score with the quality of life measures (See Reviewer 2, response comment 3).

New text (methods, statistical analyses):
“Additionally, (polyserial) correlations between each domain of self-sufficiency and the total score on SSM-D, and between each domain and the total score on the self-report questionnaire were assessed (see Appendix 1).”

Appendix 1. (Polyserial) correlations between (professionals’ and adolescents’ ratings on) each domain and the total score

<table>
<thead>
<tr>
<th></th>
<th>Total score on SSM-D</th>
<th>Total score on self-report</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finances</td>
<td>0.64</td>
<td>0.64</td>
</tr>
<tr>
<td>Day-time activities</td>
<td>0.57</td>
<td>0.63</td>
</tr>
<tr>
<td>Housing</td>
<td>0.71</td>
<td>0.66</td>
</tr>
<tr>
<td>Domestic relations</td>
<td>0.71</td>
<td>0.67</td>
</tr>
<tr>
<td>Mental health</td>
<td>0.60</td>
<td>0.74</td>
</tr>
<tr>
<td>Physical health</td>
<td>0.28</td>
<td>0.60</td>
</tr>
<tr>
<td>Addiction</td>
<td>0.43</td>
<td>0.57</td>
</tr>
<tr>
<td>Activities daily life</td>
<td>0.28</td>
<td>0.55</td>
</tr>
<tr>
<td>Social network</td>
<td>0.76</td>
<td>0.68</td>
</tr>
<tr>
<td>Community participation</td>
<td>0.60</td>
<td>0.63</td>
</tr>
<tr>
<td>Judicial</td>
<td>0.57</td>
<td>0.58</td>
</tr>
</tbody>
</table>

*Note:* all correlations were significant at \( p < 0.001 \).

Reference:

13. Line 211. There is a typo : “correlations ≥0.3 and 0.5 are”

Response comment 13:
We have changed line 211.
New:
“…. correlations between 0.30 – 0.49 are considered medium.”

14. Line 228. There is a typo on punctuation: “SSM-Dfor 224”

Response comment 14:
The suggested change is made.

15. Line 230. Why did the authors comment only on “not to barely self-sufficient” level of ratings? In this section they either should comment on the overall results depicted in Table 3, or clarify why they decided to focus their comment only on the lowest level of rate.

Response comment 15:
A score of “not to barely self-sufficient” can be seen as an insufficient level of self-sufficiency or a level of self-sufficiency that can be improved. Therefore, the percentages of adolescents with these scores are interesting to show. These adolescents can improve their self-sufficiency on that specific domain. To clarify this, we have further explained why we focus in the results on the lowest level of rate. However, all the results are still presented in this table (adjusted version: table 4).

The following adjustments are made:
Old text (results):
“The domains on which the professionals deemed the highest percentages of adolescents “not to barely self-sufficient” were: Community participation (36.7%), Domestic relations (15.8%), and Social network (14.5%) (Table 3). The domains on which the highest percentage of adolescents deemed themselves “not to barely self-sufficient” were a bit different, namely: Finances (23.3%), Domestic relations (17.4%), and Mental health (16.7%).”

New text (results):
“A score of “not to bare self-sufficient” can be seen as a level of self-sufficiency that can be improved. The domains on which the professionals deemed the highest percentages of adolescents “not to barely self-sufficient” were: Community participation (36.7%), Domestic relations (15.8%), and Social network (14.5%) (Table 4). The domains on which the highest percentage of adolescents deemed themselves “not to barely self-sufficient” were a bit different, namely: Finances (23.3%), Domestic relations (17.4%), and Mental health (16.7%).”

16. Line 274. Typo: “psychometric properties. in a group of vulnerable”

Response comment 16:
The suggested change is made.

17. Line 275. Typo: “adolescents The internal consistency”

Response comment 17:
The suggested change is made.

18. Line 291. The authors already reported this information in Line 277
Response comment 18:
We have decided to remove the sentence in line 291.

19. Discussion. The authors should comment a little more on the benefits of having this kind of assessment. How could this improve the management of vulnerable populations? How could this assessment usefully impact potential interventions?

Response comment 19:
In the discussion, we now comment more on the benefits of having this kind of assessment.

First, a benefit of the self-sufficiency instruments is that they address several life domains. In the introduction of the manuscript (first paragraph), we had already explained that problems and risk behaviors often accumulate among adolescents, and, therefore, can have an influence on the functioning of adolescents on various life domains. This suggests that professionals should preferably address functioning on several life domains simultaneously. We have added this benefit of both instruments in the discussion.

Second, we now explain that both instruments can be used for screening, monitoring or evaluation purposes and that they can be used to increase transparency in the decision making processes in the health care system.

Adjustments that are made:
Old text (discussion):
“In conclusion, results of this study showed that both the self-report questionnaire assessing self-sufficiency and the SSM-D seem to possess adequate psychometric properties. Future research is necessary to investigate whether the results presented here can be replicated in different settings and populations, and to investigate additional psychometric properties as well. We recommend using the adolescent-report questionnaire assessing self-sufficiency and the SSM-D concurrently to get a more complete picture of adolescent’s self-sufficiency. A great advantage of the self-report questionnaire assessing self-sufficiency and the SSM-D is that both versions can be completed in a short time, are freely available, and can be used in a group of vulnerable adolescents.”

New text (discussion):
“In conclusion, results of this study showed that both the self-report questionnaire assessing self-sufficiency and the SSM-D seem to possess adequate psychometric properties. Future research is necessary to investigate whether the results presented here can be replicated in different settings and populations, and to investigate additional psychometric properties as well. We recommend using the adolescent-report questionnaire assessing self-sufficiency and the SSM-D concurrently to get a more complete picture of adolescent’s self-sufficiency. Both instruments express functioning in levels of self-sufficiency on several domains, and can be considered for screening, monitoring or evaluation purposes. The instruments can be used during consultations with a professional to determine the strengths and areas for improvements in functioning. Furthermore, both instruments can be used to increase transparency in the decision making processes in the health care systems [38]. A great advantage of the self-report questionnaire assessing self-sufficiency and the SSM-D is that both versions can be completed in a short time, are freely available, and can be used in a group of vulnerable adolescents.”

20. Table 2. In note a and b Authors reported results that are not mentioned at all in the text. If analyses on differences between groups have been conducted they should be reported and appropriately commented in the text.
Response comment 20:
Since these results are not relevant for this article, we have decided to remove this information in order to enhance the readability and prevent confusion.
Furthermore, since we have removed the results on temporal stability of the self-report questionnaire assessing self-sufficiency (see Reviewer 2, response comment 1), we have also decided to remove the specific information about the control group. Only the results on temporal stability were based on information from the control group alone.

21. Table 3. In the notes, it is not clear to me what “[missing data]” means. Consider also the following sentence revision: “In this table, only ratings for adolescents for whom a professional rating was available are displayed”

Response comment 21:
There is some missing data, because professionals and adolescents did not always rate all self-sufficiency domains. Therefore, these missing data was presented in the table with brackets and the note ‘[missing data]’ was meant to explain this. However, since this was not clear, we now present missing data as ‘(n=1 missing)’.

See page 18 of this document for the table (adjusted version: table 4).

Furthermore, we changed the sentence as suggested.

22. Table 4. The word “Note” is missing in the Note section. Moreover, P should be lowercase (p < .05). Please see also Notes for in Table 5 and 6 for the same correction.

Response comment 22:
We have changed ‘P’ into ‘p’. Furthermore, table 4 and 6 do not have a note. Therefore, we did not add this. According to the author guidelines, we work with superscript letters when we refer to a specific result in the table (for example: ”).
Reviewer’s report (Reviewer 2)

Reviewer’s report:
This is an interesting manuscript about a concept and measurement tool that have quickly gained popularity in the Netherlands. The results are interesting and add to our understanding of the possibilities and impossibilities of the SSM-D. However, I do have a few doubts and suggestions to improve the manuscript.

Major revisions
1. I do have serious concerns about the use of the data to measure temporal stability with a time lag of 6 months. Even though the authors mention this as a limitation in the discussion and the interpretation is a bit unclear, the general trend suggests that it would imply validity if no change had occurred, indicating a sort of test-retest reliability. However, no other data are available to suggest that in reality no change has occurred. If the situation of the population had indeed changed the opposite conclusion would be drawn, and this would be a test of the sensitivity to change. Since the interpretation of the results is unclear if no information is available about actual change, I would omit these results from the manuscript since their contribution to the validity is unclear.

Response comment 1:
We want to thank the reviewer for this comment. We acknowledge that we do not have data nor theory available that suggest that in reality no change has occurred. This makes it hard to interpret the results. Furthermore, there is also very limited literature about test-retest reliability in other populations, and on stability and change of self-sufficiency. Therefore, as suggested by the reviewer, we have decided to omit the results about temporal stability from the manuscript.

The following sentences are removed:
Abstract:
“; 219 of these adolescents completed the questionnaire again after six months.”

“The (six-month) temporal stability among the adolescents for most of the domains was fair.”

Background:
“and (3) (six-month) temporal stability of adolescents’ ratings on domains of self-sufficiency.”

“Furthermore, we hypothesize that the temporal stability of adolescents’ rating on the domains of self-sufficiency is fair since there was a relatively long period (six-months) between both measurements.”

Methods:
“Adolescents in the control group completed the self-report questionnaire assessing self-sufficiency again at six-month follow-up.”

“Of the 304 adolescents in the control group, 219 (72.0%) completed the self-report questionnaire assessing self-sufficiency again at follow-up.”

“Weighted kappa with linear weighting was also used to determine the (six-month) temporal stability of adolescents’ ratings on the self-report questionnaire assessing self-sufficiency.”

Results:
“Temporal stability of adolescents’ ratings
The six-month temporal stability of adolescents’ ratings varied between poor and moderate (Table 5). For the domains Finances (k=0.41), and Mental health (k=0.42) the temporal stability was moderate. The temporal stability was fair for the following seven domains: Housing (k=0.30), Domestic relations (k=0.33), Physical health (k=0.21), Social network (k=0.24), Activities daily life (k=0.22), Community participation (k=0.24), and Judicial (k=0.26). The temporal stability was poor for the domains: Day-time activities (k=0.16), and Addiction (k=0.19).”

Discussion:
“As hypothesized, concurrent validity was adequate and the (six-month) temporal stability was fair for most of the self-sufficiency domains.”

“In line with our hypothesis, the temporal stability of the self-report questionnaire was fair for most of the domains. The stability would probably have been higher if the test-retest interval would have been shorter [30], for example one month instead of six months. Also using a shorter test-retest interval would have been desirable, because a test-retest interval should preferably be short enough to avoid genuine changes [31].”

Furthermore, the following sentence is adjusted in the discussion:

Old text:
“Furthermore, the temporal stability of professionals’ rating could not be examined and the temporal stability of adolescents’ ratings are probably lower than if the follow-up period would have been shorter [30].”

New text:
“Furthermore, the temporal stability of both instruments could not be examined.”

Moreover, Table 5 is removed. Figure 1 and Table 2 (adjusted version: Table 3) are adjusted. Since we have removed the results on temporal stability of the self-report questionnaire assessing self-sufficiency, we have also decided to remove the specific information about the control group. Only the results on temporal stability were based on information from the control group alone.

2. The concurrent validity of self-sufficiency with other measures are all based on separate domains. It would be interesting to correlate the total SSM-score to some of the other measures, specifically the quality of life measures.

Response comment 2:
An overall score has been used in past research (Fassaert et al, 2013). However, we did not calculate an overall score in our manuscript yet. As suggested by the reviewer, we have decided to include an overall score (see also Reviewer 1, response comment 12), and to correlate this score with the quality of life measures.

In the methods section we now give information about the Pearson correlation that has been used to calculate the correlation between the total score and quality of life measures. Furthermore, these results are added to the results section and the table concerned.

The following adjustments are made:

New text (methods, statistical analyses):
“Furthermore, concurrent validity was assessed by calculating Pearson correlations (r) between the total score on SSM-D (which ranges from 11 to 55) and related constructs, and between the total score on the self-report questionnaire (which ranges from 11 to 55) and related constructs.”

New text (results):
“Furthermore, a strong correlation was found between the total score on the self-report questionnaire and Mental health-related quality of life (r=0.46).”

For the adjusted table see page 19 of this document.

Minor revisions
3. The authors describe the population as vulnerable, but the high levels of self-sufficiency suggest otherwise. Only small percentages score not to barely self sufficient, and on many domains a large majority scores completely self sufficient. Since the population is described as prone to substance use, the high percentages of a score of 5 on addiction are remarkable. They suggest either a selective response, non-valid answers, or an invalid assumption that this is a vulnerable population. The authors should discuss this in the discussion.

Response comment 3:
Adolescents attending vocational education are considered a vulnerable group based on the problems they encounter and their high prevalence of displaying risk behaviors.

In the Netherlands, a high percentage of adolescents attending vocational education suffer from depressive symptoms (+/- 30%) and these adolescents often display many risk behaviors, such as substance use [GGD Rotterdam-Rijnmond; Bannink; Wetenschappelijke Raad voor het Regeringsbeleid]. Furthermore, 75% of school dropouts occur in vocational education [Dutch Ministry of Education Culture and Science, 2011].

Moreover, other data that has been collected in our sample showed that, for example, almost half of adolescents had used 5 or more drinks on one occasion in het past 4 weeks (at least once), and almost 15% had used 5 or more drinks on one occasion in the past 4 week at least three times [Bannink, 2014].

However, this study also showed that (only) a smaller group of adolescents was ‘not to barely self-sufficient’, for example, on the domain Addiction. Only 7.8% of adolescents rated themselves as ‘not to barely self-sufficient’ on this domain, and 3.6% of professionals rated the self-sufficiency of adolescents on this domain as ‘not to barely self-sufficient’.

Therefore, these results seem to suggest that adolescents in vocational education, although they have problems and display risk behaviors, are often (still) able to maintain their daily life.

In the discussion, we have added information to clarify that adolescents in vocational education, although considered as a vulnerable group with problems, also seem to have a relatively high level of self-sufficiency.

References:
- GGD Rotterdam-Rijnmond. Onderzoek naar gezondheid en leefstijl van ROC deelnemers [Research on senior vocational students’ health and lifestyle].
- Wetenschappelijke Raad voor het Regeringsbeleid. Vertrouwen in de school. Over de uitval van ‘overbelaste’ jongeren [Confidence in school. About the dropout of ‘overburdened’


The following adjustments are made:

Old text (discussion):
“A strength of the study is the high response rate in a vulnerable population. However, the present study also has its limitations.”

New text (discussion):
“A strength of the study is the high response rate in a vulnerable population. A high percentage of the adolescents in our sample suffers from depressive symptoms and often engages in behaviors that negatively impact their health, such as substance abuse [23]. Given the fact that the level of self-sufficiency on the different domains was relatively high in this study, the results seem to suggest that adolescents attending vocational education are often (still) able to deal with problems they encounter in daily life. Furthermore, about 11% of adolescents was already a parent. Recently, additional self-sufficiency domains on parenting are developed. Since about 11% of adolescents was already parent, it would be of interest to include these domains in future research in this population. The present study has also its limitations.”

4. The SSM-D is constructed and validated to measure self-sufficiency among adults from 18 years onwards. In this study, it was applied on a population that is partly below the age of 18. Although this is an interesting application, it should be mentioned in the manuscript that this is new, and that the instrument is not validated for this group yet.

Response comment 4:
We have added information in the introduction to clarify that the SSM-D is validated in a population from 18 years onwards, and that we want to validate the instrument in a slightly younger group.

Old text (background):
“Fassaert et al. [2] showed that an adapted 11 domain version of the SSM (SSM-D) is a reliable instrument to assess self-sufficiency of adolescents with severe and complex psychiatric problems by professionals. However, more insight in the psychometric properties of the SSM among other populations, such as adolescents attending vocational education is needed.”

New text (background):
“Fassaert et al. [2] showed that an adapted 11 domain version of the SSM (SSM-D), based on Utah- and Arizona-versions of the SSM, is a reliable instrument to assess self-sufficiency of adolescents (>18 years) with severe and complex psychiatric problems by professionals. As the SSM is also increasingly used among other populations, such as adolescents attending vocational education (≥15 years), further evaluation of the psychometric properties of the SSM among other populations is needed.”

5. Another aspect worth mentioning is, that the SSM-D also has a supplement of four additional domains parents, to measure if they are self-sufficient in raising and taking care of their children.
In the study population, even though 11% is a parent, the supplement was not used. This might be mentioned as a limitation.

**Response comment 5:**
The supplement of four additional parent’s domains is developed after our study was conducted. Therefore, we could not include these domains in our study. However, in the discussion we have added information about this supplement.

Old text (discussion):
“A strength of the study is the high response rate in a vulnerable population. However, the present study also has its limitations.”

New text (discussion):
“A strength of the study is the high response rate in a vulnerable population. A high percentage of the adolescents in our sample suffers from depressive symptoms and often engages in behaviors that negatively impact their health, such as substance abuse [23]. Given the fact that the level of self-sufficiency on the different domains was relatively high in this study, the results seem to suggest that adolescents attending vocational education are often (still) able to deal with problems they encounter in daily life. Recently, additional self-sufficiency domains on parenting are developed. Since about 11% of adolescents was already parent, it would be of interest to include these domains in future research in this population. The present study has also its limitations.”

6. The question about homelessness can be interpreted in two ways. The addition “for at least one night a month, can refer to the lack of perspective or to the permanent place to sleep (at least one night no perspective, or no perspective not even for a night). This should be clarified, and if it was not clear in the questionnaire itself it should be mentioned in the discussion as a limitation.

**Response comment 6:**
We acknowledge that the sentence can be interpreted in different ways. Since the sentence was clear in the questionnaire, we have adjusted the sentence in the manuscript.

Old text (methods):
“Homelessness was assessed by the item: “In the past 3 months, have you been homeless? This means that you had no perspective on a permanent place to sleep for at least one night per month” (yes/no).”

New text (methods):
“Homelessness was assessed by the item: “In the past 3 months, have you been homeless? This means that you had no perspective, for at least one night per month, on a permanent place to sleep (yes/no).”

7. The self-report questionnaire is described a consisting of a description of the every domain. Since the indicators in the cells are not included, this is the only information the adolescents have to understand what is referred in every domain and therefore very crucial. I would therefore suggest including these descriptions in a table or box in the manuscript.

**Response comment 7:**
We want to thank the reviewer for this comment. In line with table 1, we have added a table with information about an example of a self-sufficiency domain in the self-report questionnaire. See page 17 of this document for the table.
8. It might also be helpful to add a link to the website of the SSM-D (www.zrm.nl), so readers can also view the whole instrument when interested.

Response comment 8:
In the methods section, where we describe the SSM-D, we have added a reference to the website of the SSM-D.
New table:

**Table 2.** Example of a self-sufficiency domain in the self-report questionnaire: Finances

<table>
<thead>
<tr>
<th>Description</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did you experience problems getting by financially over the past six months?</td>
<td></td>
</tr>
<tr>
<td>No problems</td>
<td>( \text{J} )</td>
</tr>
<tr>
<td>Few problems</td>
<td>( \text{J} )</td>
</tr>
<tr>
<td>Not few/not many problems</td>
<td>( \text{K} )</td>
</tr>
<tr>
<td>Many problems</td>
<td>( \text{L} )</td>
</tr>
<tr>
<td>Very many problems</td>
<td>( \text{L} )</td>
</tr>
</tbody>
</table>
Table 4. Professionals’ and adolescents’ ratings of self-sufficiency (n=224)

<table>
<thead>
<tr>
<th></th>
<th>Not to barely self-sufficient&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Acute problem</th>
<th>Not self-sufficient</th>
<th>Barely self-sufficient</th>
<th>Adequately self-sufficient</th>
<th>Completely self-sufficient</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td><strong>Professionals’ ratings (n=224)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finances</td>
<td>12.9</td>
<td>0.9</td>
<td>4.9</td>
<td>7.1</td>
<td>42.4</td>
<td>44.6</td>
</tr>
<tr>
<td>Day-time activities (n=1 missing)</td>
<td>1.3</td>
<td>0.0</td>
<td>0.0</td>
<td>1.3</td>
<td>85.2</td>
<td>13.5</td>
</tr>
<tr>
<td>Housing (n=3 missing)</td>
<td>9.0</td>
<td>0.0</td>
<td>1.4</td>
<td>7.7</td>
<td>26.7</td>
<td>64.3</td>
</tr>
<tr>
<td>Domestic relations (n=2 missing)</td>
<td>15.8</td>
<td>0.5</td>
<td>3.2</td>
<td>12.2</td>
<td>25.7</td>
<td>58.6</td>
</tr>
<tr>
<td>Mental health (n=1 missing)</td>
<td>8.5</td>
<td>0.0</td>
<td>0.4</td>
<td>8.1</td>
<td>22.4</td>
<td>69.1</td>
</tr>
<tr>
<td>Physical health</td>
<td>4.5</td>
<td>0.0</td>
<td>0.4</td>
<td>4.0</td>
<td>29.0</td>
<td>66.5</td>
</tr>
<tr>
<td>Addiction</td>
<td>3.6</td>
<td>0.0</td>
<td>0.0</td>
<td>3.6</td>
<td>34.8</td>
<td>61.6</td>
</tr>
<tr>
<td>Activities daily life (n=2 missing)</td>
<td>4.5</td>
<td>0.0</td>
<td>0.0</td>
<td>4.5</td>
<td>29.3</td>
<td>66.2</td>
</tr>
<tr>
<td>Social network (n=3 missing)</td>
<td>14.5</td>
<td>0.9</td>
<td>1.8</td>
<td>11.8</td>
<td>43.4</td>
<td>42.1</td>
</tr>
<tr>
<td>Community participation (n=3 missing)</td>
<td>36.7</td>
<td>0.5</td>
<td>12.7</td>
<td>23.5</td>
<td>47.1</td>
<td>16.3</td>
</tr>
<tr>
<td>Judicial (n=1 missing)</td>
<td>12.6</td>
<td>0.0</td>
<td>5.4</td>
<td>7.2</td>
<td>18.4</td>
<td>69.1</td>
</tr>
<tr>
<td><strong>Adolescents’ rating (n=224&lt;sup&gt;b&lt;/sup&gt;)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finances</td>
<td>23.3</td>
<td>4.9</td>
<td>5.4</td>
<td>13.0</td>
<td>23.3</td>
<td>53.4</td>
</tr>
<tr>
<td>Day-time activities (n=2 missing)</td>
<td>8.1</td>
<td>0.5</td>
<td>1.4</td>
<td>6.3</td>
<td>19.8</td>
<td>72.1</td>
</tr>
<tr>
<td>Housing (n=1 missing)</td>
<td>12.1</td>
<td>2.2</td>
<td>2.2</td>
<td>7.6</td>
<td>6.3</td>
<td>81.6</td>
</tr>
<tr>
<td>Domestic relations</td>
<td>17.4</td>
<td>2.7</td>
<td>4.0</td>
<td>10.7</td>
<td>17.9</td>
<td>64.7</td>
</tr>
<tr>
<td>Mental health (n=3 missing)</td>
<td>16.7</td>
<td>3.2</td>
<td>4.1</td>
<td>9.5</td>
<td>17.2</td>
<td>66.1</td>
</tr>
<tr>
<td>Physical health</td>
<td>11.3</td>
<td>1.8</td>
<td>2.3</td>
<td>7.2</td>
<td>18.9</td>
<td>69.8</td>
</tr>
<tr>
<td>Addiction</td>
<td>7.8</td>
<td>0.9</td>
<td>1.4</td>
<td>5.1</td>
<td>9.1</td>
<td>83.1</td>
</tr>
<tr>
<td>Activities daily life</td>
<td>6.3</td>
<td>0.4</td>
<td>0.9</td>
<td>4.9</td>
<td>10.3</td>
<td>83.5</td>
</tr>
<tr>
<td>Social network (n=1 missing)</td>
<td>8.1</td>
<td>0.9</td>
<td>0.9</td>
<td>6.3</td>
<td>12.6</td>
<td>79.4</td>
</tr>
<tr>
<td>Community participation (n=3 missing)</td>
<td>8.1</td>
<td>0.9</td>
<td>2.3</td>
<td>5.0</td>
<td>14.9</td>
<td>76.9</td>
</tr>
<tr>
<td>Judicial</td>
<td>5.4</td>
<td>0.4</td>
<td>0.9</td>
<td>4.0</td>
<td>7.1</td>
<td>87.5</td>
</tr>
</tbody>
</table>

<sup>a</sup>A rating of ≤ 3 is considered as not to barely self-sufficient.

<sup>b</sup>In this table, only ratings for adolescents for whom a professional rating was available are displayed (n=224).
<table>
<thead>
<tr>
<th>Self-sufficiency</th>
<th>Related constructs</th>
<th>Correlation With professionals’ self-sufficiency rating (n=224)</th>
<th>Correlation With adolescents’ self-sufficiency rating (n=581)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total self-sufficiency score</td>
<td>Mental health-related quality of life (SF-12)</td>
<td>0.21&lt;sup&gt;b&lt;/sup&gt;</td>
<td>0.46&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Physical health-related quality of life (SF-12)</td>
<td>0.12&lt;sup&gt;b,f&lt;/sup&gt;</td>
<td>0.28&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Finances</td>
<td>Debts</td>
<td>-0.66&lt;sup&gt;c&lt;/sup&gt;</td>
<td>-0.74&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Day-time activities</td>
<td>Not-permitted school absenteeism</td>
<td>-0.26&lt;sup&gt;d&lt;/sup&gt;</td>
<td>-0.17&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Permitted school absenteeism</td>
<td>0.01&lt;sup&gt;d,f&lt;/sup&gt;</td>
<td>-0.11&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td>Housing</td>
<td>Homelessness</td>
<td>-0.41&lt;sup&gt;e,f&lt;/sup&gt;</td>
<td>-0.39&lt;sup&gt;e&lt;/sup&gt;</td>
</tr>
<tr>
<td>Mental health</td>
<td>Mental health status (MHI-5)</td>
<td>0.30&lt;sup&gt;d&lt;/sup&gt;</td>
<td>0.60&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Depressive symptoms (CES-D)</td>
<td>-0.33&lt;sup&gt;c&lt;/sup&gt;</td>
<td>-0.59&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Mental health-related quality of life (SF-12)</td>
<td>0.29&lt;sup&gt;d&lt;/sup&gt;</td>
<td>0.54&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td>Physical health</td>
<td>Physical health-related quality of life (SF-12)</td>
<td>0.10&lt;sup&gt;d,f&lt;/sup&gt;</td>
<td>0.33&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Permitted school absenteeism</td>
<td>-0.08&lt;sup&gt;d,f&lt;/sup&gt;</td>
<td>-0.13&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td>Addiction</td>
<td>Alcoholic drinks: 5 or more on 1 occasion</td>
<td>-0.30&lt;sup&gt;c&lt;/sup&gt;</td>
<td>-0.39&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Alcohol: drunk or tipsy</td>
<td>-0.41&lt;sup&gt;c&lt;/sup&gt;</td>
<td>-0.53&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Soft drug use</td>
<td>-0.53&lt;sup&gt;c&lt;/sup&gt;</td>
<td>-0.53&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Community participation</td>
<td>Not-permitted school absenteeism</td>
<td>-0.20&lt;sup&gt;d&lt;/sup&gt;</td>
<td>0.03&lt;sup&gt;d,f&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Permitted school absenteeism</td>
<td>-0.11&lt;sup&gt;d,f&lt;/sup&gt;</td>
<td>-0.04&lt;sup&gt;d,f&lt;/sup&gt;</td>
</tr>
<tr>
<td>Judicial</td>
<td>Delinquency</td>
<td>-0.41&lt;sup&gt;c&lt;/sup&gt;</td>
<td>-0.58&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>a</sup> A higher score indicates a better quality of life.
<sup>b</sup> Pearson correlation.
<sup>c</sup> Polychoric correlation.
<sup>d</sup> Polyserial correlation.
<sup>e</sup> Rank biseral correlation.
<sup>f</sup> Non-significant correlations; all other correlations were significant at p <0.05.
<sup>g</sup> A higher score indicates less mental health problems.