Author's response to reviews

Title: Do agreements between adolescent and parent reports on family socioeconomic status vary with household economic stress? A cross-sectional analysis in Taiwan.

Authors:

Christy Pu (cypu@ym.edu.tw)
Yiing-Jenq Chou (yichou@livemail.tw)

Version: 2 Date: 4 March 2011

Author's response to reviews: see over
**Response letter**

Manuscript title: Do agreements between adolescent and parent reports on family socioeconomic status vary with household financial stress? A cross-sectional analysis in Taiwan.

Dear Dr. Rajmil and Dr. van Dijk,

Thank you very much for your comments and suggestions. Based on these comments and suggestions, we have made the following modifications:

**Dr. Luis Rajmil**

This study analyzes parent-adolescent agreement on reporting family socioeconomic status in first year high school students in Taiwan (n= 2700, mean age 13 y). The main purpose of the study was to check the hypothesis that the level of agreement would varies by household economic stress. They found higher agreement for parental education, followed by parental occupation and lower agreement for the family income. Moreover, the degree of agreement varies by socioeconomic stress reported by parents. As expected, family income level showed the higher percentage of missing values, mainly on parent responses. The objective of the study was clearly stated. Methods and presentation of results are easy to follow and it seems that the conclusions are based on the results. Nevertheless, in my opinion the study presents some major concerns that should be taken into account.

Major changes

1) The main concern refers to the principal independent variable. What does mean authors by family socioeconomic stress? What is the background and definition of this variable? Intuitively and looking at the 2 questions from this questionnaire it would be highly correlated with SES, mainly family income, and influenced by several psychosocial factors. Then it should be necessary to clearly define this variable in the introduction and to include information about its validity and reliability. Although authors mention in the discussion section something regarding this issue in my opinion it is not enough to justify the main purpose of the study.

**Response:** Thank you. As suggested, we explained more clearly why these two variables were used in the introduction with suitable reference. Self-reported financial stress has been used extensively by previous research and the method of coding is quite standard. Concerning this variable, we have added (p.3): “Financial stress has been defined by most of the previous studies has whether the household has enough money to pay for its expenses or have money left over during a period of time before the survey, and the respondents are asked to choose from a Likert scale response (for example, from more than enough to very short, or from a lot of difficulties to no difficulties, or from a lot of money left over to shortage)\(^1-4\).”

We have changed the words “economic stress” to “financial stress” to ensure consistency with previous studies in this area.

Relative standard of living has been less widely used by previous studies. We used this variable mainly because relative standard of living can measure how subjective satisfaction differ from the more absolute measure such as financial hardship. Previous research has indicated that subjective financial well-being is important for one’s health \(^5-9\). However, if this is considered inappropriate, we can take this variable out.
2) Related to the previous question: do authors discarded colinearity between household economic stress and the SES variables? This should be done as a necessary previous step in the study.

Response: Thank you for pointing this out. As advised, we added three new tables (tables 3-5) to show the relationship between parent-reported SES and financial stress. These three tables can also present the information as suggested by point #4. The Tables showed that household financial stress is closely associated with these three SES variables, which makes financial stress a good variable to use in the analysis. If financial stress is closely associated with the SES variables, then it means that financial stress is a good proxy for the SES status of the household. What makes financial stress better is that it actually has very low missing responses compared with the traditional SES variables (1.1% for financial imbalances and 1% for standard of living). This makes financial stress a good indicator of the SES situation of the household. It would be better than analyzing, for example, agreement of father’s education by different levels of father’s education, since father’s education is itself the variable of interest, and hence it would make less sense to analyze agreement of a variable by the variable itself. An external measure such as financial stress would be more appropriate, given it can reflect the “true” SES of the household, as is indicated by the new tables. Unlike regressions, the calculation of Kappa statistic is not affected by the degree of colinearity among the variables.

3) Moreover, one could guess that household economic stress would be more negatively correlated to family income level and less correlated with parental education, and probably it would be much less stable across time than a year, depending on other factors, such as employment status, feelings of economic security, etc. Problem with reliability and validity of this factor would be solved analyzing test-retest in a short period of time, carrying out cognitive interviews for content validity analysis, and comparing the answers to the specific questions with some “external” measure of similar concept for convergent validity.

Response: Thank you very much for pointing this out. We agree that a test-retest in a short period of time would be very helpful in this case, as many factors may not be held constant (such as employment status) across time. However, we are unable to do the retest at this point since the research project has already ended. However, to ensure the reader realize this possibility, we have added this point as a research limitation under Discussion.

4) A second step should be to present a table with prevalence of household economic stress by the SES variables. Then, depending on these previous results next step would be to analyze agreement stratified by the SES level variables.

Response: Thank you very much. As suggested, the distributions of the financial stress variable by the SES variables are now presented in the new tables (Tables 3-5). We have also analyzed agreement by stratified SES variables. The results are as below:
Concordance (kappa) for adolescent and parent reports of SES, by parent reported SES variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Low</th>
<th>Middle</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Father education</td>
<td>0.38</td>
<td>0.13</td>
<td>0.52</td>
</tr>
<tr>
<td>Mother education</td>
<td>0.27</td>
<td>0.18</td>
<td>0.50</td>
</tr>
<tr>
<td>Father occupation</td>
<td>0.22</td>
<td>0.22</td>
<td>0.28</td>
</tr>
<tr>
<td>Mother occupation</td>
<td>0.37</td>
<td>0.24</td>
<td>0.31</td>
</tr>
<tr>
<td>Household income</td>
<td>0.06</td>
<td>0.01</td>
<td>0.12</td>
</tr>
</tbody>
</table>

\(p<0.01\) for all cases

Definition of “Low”, “Middle” and “High” for the three SES variables are as follows:

Parental education: Low= junior high school or below; Middle= senior high school; High = university or above.

Parental occupation: Low= Low skilled, unskilled, unemployed; Middle=agricultural and military; High= managerial, professional, skilled, semi-skilled.

Family income: Low= income < NT$59,999; Middle= NT$60,000-NT$89,999; High=90,000 or above.

We did not present this table in the manuscript since there are no clear patterns by levels of SES, which may be caused by the fact that each SES variables have missing values and are subject to misreport (which justifies the reason for analyzing agreements). However, if this table is considered appropriate, we can add it in the manuscript.

5) Independently on the statistically significance of these results another question arises looking at the results on table 3: Are they “clinically” meaningful? For example: Kappa for father education changed from 0.87 to 0.78 according to the household economic stress, and for father occupation kappa ranged from 0.31 to 0.39, etc. Maybe presenting 95%CI of kappas would be more convinced.

Response: Thank you, and advised, 95%CI are now presented instead of \(p\)-values. Some variables have non-overlapping 95%CI at levels of financial stress, thus are more clinically meaningful, and some variables are not. For financial stress, non-overlapping 95%CI were observed for father’s education (between “surplus” and “not enough”), mother’s education (between “surplus” and “not enough”), father’s occupation (between surplus and balanced), and mother’s occupation (between “surplus” and “not enough”). No non-overlapping 95%CI were observed for the standard of living variable. We have adjusted our results and discussions based on these findings.

Minor changes

6) The household economic stress was collected only from parents. Why authors did not collect also this information from adolescents and analyzed the extent of agreement on this variable?

Response: Thank you for pointing this out. This indeed would provide useful information. However, this variable was not originally collected from the adolescent survey. We will try to put it in future surveys if possible.

Once again we would like to thank you for all the valuable comments and suggestions, which indeed helped us a lot in improving this manuscript. We look forward to hear from you.
Dr. van Dijk

General
The study contributes to the field of socioeconomic status, and is focused on the issue whether there is some bias in measures regarding ses (education, occupation, income). The question posed by the authors is well defined; the methods are appropriate and well described. The manuscript adheres to the relevant standards for reporting. Limitations of the work are clearly stated.

Major Compulsory Revisions

Data
It is unclear whether the sample (from 3 districts) is representative for entire Taiwan; this might affect the findings’ generalisability. Also it is not clarified why the study is performed in these 3 districts.

Response: Thank you for pointing this out. The sample is representative of Northern Taiwan, and not entire Taiwan. Northern Taiwan was chosen due to project funding reasons. However, Northern Taiwan is of the highest socioeconomic status (SES) parts of the country, and it is reasonable to hypothesize that concordance is higher for the higher SES families. Thus if the results found in this study holds for Northern Taiwan, it should also hold for other parts of the country. To ensure the readers fully understand the situation, we have added this under Discussion (p.9).

Discussion
What is lacking in the discussion is a suggestion / idea / explanation how the findings (‘We found that the degree of concordance for the three SES measures between adolescent and parent reports decreases with higher family economic stress and lower relative standard of living …’) might work.

Response: Thank you very much. As advised, we have modified our Discussion by adding possible mechanisms with suitable references (p.8).

Minor Essential Revisions

Results
Table 2. I suggest to remove ‘NT$’ from mentioning it in every line two times and to mention it just once, above the income categories.

Response: Thank you. This has been corrected.

Frequently the word research is used where study is meant.
Response: Thank you. We have replaced research with study where appropriate.

We would like to thank you for all the comments. This helped us to make the manuscript, especially the Discussion part, much more complete.
References cited in this response letter: