Author's response to reviews

Title: Chinese version of the Global Youth Tobacco Survey: Cross-cultural instrument adaptation

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Author's response to reviews: see over
Response to Reviewers’ Comments

This response letter refers to our revised manuscript (1492635061163476), “Chinese version of the Global Youth Tobacco Survey: Cross-cultural instrument adaptation.”

Dear Editor,

Thanks for your consolidated review and recommendations regarding our manuscript, as referenced above. The reviewers’ comments and guidance were very helpful in revising the paper. We appreciate the efforts expended on this paper.

We carefully read the comments of all referees and have followed their guidance in revising our paper. Although referee 2, Dr. Wen, raises some good points, we think he missed the major intent of this paper. The purpose of our study was not to create a new Chinese adolescent tobacco questionnaire but to develop a Chinese version of the English core GYTS that would yield reliable responses, which is crucial to the international character of the GYTS. To reach our objective, we used a cross-cultural adaptation process that includes forward translation, expert committee review, focus group discussion, backward translation, and a field test to quantify the results. Our results make an important contribution to any country considering using the Chinese version of the GYTS as well as anyone translating the English GYTS.

The concerns of the editor and referees were addressed point by point, as outlined below.

Editor’s comments:

1. It is important for the questionnaire to be made available with the manuscript.
   Response: A copy of the Chinese-version questionnaire has been included as an additional file with our revised manuscript.

2. Copyediting - We recommend that you ask a native English-speaking colleague to help you copyedit the paper.
   Response: Thank you for understanding that English is not our native language. The
revised manuscript has been edited by a native English-speaking professional editor.

3. Ethics - Experimental research that is reported in the manuscript must have been performed with the approval of an appropriate ethics committee. Research carried out on humans must be in compliance with the Helsinki Declaration (http://www.wma.net/e/policy/b3.htm), and any experimental research on animals must follow internationally recognized guidelines. A statement to this effect must appear in the Methods section of the manuscript, including the name of the body which gave approval, with a reference number where appropriate.

Response:
We understand the importance of ethical issues. However, surveys of behaviors conducted in Taiwan by anonymous questionnaire before July, 2007 were not required to be approved by an ethics panel or Institutional Review Board. Since the data collected in this study were not invasive (or sensitive) and all the questionnaires were anonymous, we did not obtain IRB approval. However, the researchers explained the purpose of the study to all participants and informed them that they could refuse to participate. We have added a paragraph regarding ethical considerations on page 8.

Ethical Considerations:
Before the focus group, all student and teacher participants signed consent forms. The confidentiality of their verbatim-transcribed statements was ensured by using code numbers for each participant. For the field test, formal invitation letters were mailed to principals of all participating schools, and they gave verbal consent. Passive consent was obtained from every student by delivering parent-notification letters to their parents before data collection. Student respondents’ anonymity was ensured by anonymous self-administration of questionnaires.

4. Competing interests - Please include a ‘Competing interests' section between the Conclusions and Authors' contributions.

Response: The statement below has been added in red on page 14.

Competing interests:
The authors declare that they have no competing interests.

5. Authors' contributions.

Response: The information below has been added in red on page 14.

Authors' contributions:
PLC participated in designing and administering the study, helped perform statistical analyses, and drafted the manuscript. HYC conceived the study and participated in its design. YHC participated in and supervised the design, administered the study, and performed statistical analyses. All authors read and approved the final manuscript.
REFEREE'S COMMENTS:

Referee #1:

1. The availability of validated instruments is useful for monitoring and applications of tobacco control policies.
   Response: Thank you.

2. Include an attachment with the Chinese version of the GYTS questionnaire.
   Response: A copy of the Chinese-version questionnaire had been included as an additional file with our revised manuscript.

3. The Authors should specify the approval of local ethics committee
   Response: See response #3 to the Editor and page 8 of the revised manuscript.

4. Was the focus group conducted by an operator with proven experience?
   Response: The focus group was led by the first author who was trained in both nursing and epidemiology and has experience in leading focus group for other published studies. A statement was added to the focus group method to indicate that the group was led by the first author (page 6).

5. They had to specify the modalities of enrollment and other variables such as mean age (and range), their gender and smoking status.
   Response: A more detailed description of the focus group participants has been added in red on pages 6-7.

   The survey of smoking behavior among Taiwanese teenagers covers junior and senior high school students; therefore, 8 students (2 male and 2 female students from 2 junior highs, 2 male and 2 female students from 2 senior high (vocational) schools) were recruited for the focus group. To facilitate the students giving their opinion without stress, the researchers did not ask them to state whether they were smokers. The Chinese-version GYTS was distributed, and participants (teachers and students) were asked to take 20 minutes to review and answer the questionnaire. They were then asked to give their opinions about the clarity of survey items and whether these items reflect the current situation of teenagers regarding the prevalence of cigarette and other tobacco use, perceptions and attitudes about tobacco, access to and availability of tobacco products, exposure to secondhand smoke, school curricula, media and advertising, and smoking cessation.
6. Similarly the same variables had to be defined for both the 382 students who compiled the GYTS questionnaire and the 89 ones who answered for test-retest reliability. What was the response rate of these samples of subjects?

Response: The information below was added in red on page 8.

The sample size of the field test was 412 students, from whom 382 usable questionnaires were collected, for a response rate of 92.7%. The field test sample (n=382) included 44.8% male and 55.2% female respondents from age 12 to 17 years, seventh to eleventh graders. The field test results showed that 36.13% of participants had tried smoking even 1 or 2 puffs, and 11.78% were current smokers.

The test-retest reliability of the third Chinese-version GYTS was evaluated by administering the same questionnaire 2 weeks after the field test to 2 classes at 2 randomly selected schools (i.e., 20% of the total sample). The participants in this second field test included 50 tenth graders and 40 eighth graders. From these 90 students, 89 usable questionnaires were collected, for a response rate of 98.9%.

7. Text should be reviewed for English language (including references and their international abbreviations). Mainly, some phrases could be usefully shortened improving their comprehensiveness.

1) Page 4, line 7. “In order to address this deficiency, the Taiwan Bureau of Health…..”
2) Page 12, last line. “First, there is no bioassay measurement available to directly validate self report of smoking….”
3) Page 13, last line of first paragraph “………. from city and rural area was not found in another pilot study (data not shown).”

Response: Thank you for your understanding that English is not our native language. The revised manuscript has been edited by a native English-speaking professional editor.

Referee #2:

1. Although expert review and focus group were employed, no results or details of such activities were provided. In an open-ended meeting with free exchange of information, one would expect a good deal of information, both positive and negative, to be recorded or analyzed. In the absence of such information, one wonders as to the usefulness of such perfunctory functions. Correlation conducted remains a black box for most readers, even though the results were favorable as interpreted by the authors.

Response: As described in our responses to Reviewer #1 (comments 4 & 5) and Reviewer #3 (comment 2), we added more detailed information regarding the focus group methodology (pages 6-7) and how the cultural differences noted contributed to changes in the Chinese-version GYTS (pages 9-10).
2. The ‘culture’ and ‘Chinese’ emphasized in this study should provide more information as to how that was accomplished. Smoking attempts, attitudes, and behaviors were mentioned, but not described in specific terms. For example, parental smoking, particularly by the father, or male dominating smoking, has been reported to be unique to Asians, and should be incorporated into the GYTS questionnaire design. The reaction towards ‘Point-of-sale’ advertisement or ‘Price of cigarette relative to allowances’ also deserves mentioning as any item that would have policy implications should be addressed.

Response:
As stated by the reviewer, smoking rates are significantly different between males and females in Asia. Therefore, the smoking behavior of fathers and exposure to secondhand smoke at home are associated with teenagers’ perceptions of and attitudes toward smoking. The objective of the study was to develop the Chinese version of the GYTS. Questions regarding fathers’ smoking behavior and secondhand smoke at home were already included in the English version. However, no significant difference was found regarding behavior questions in the Chinese and English versions. “Point-of-sale” advertisement or “price of cigarettes relative to allowances” is indeed highly related to consumer behaviors. Although the questions in the Chinese and English versions are similar, the response categories in the Chinese version well reflect the local situation in Taiwan. The above information had been added in the results section (page 9-10).

3. Translation is both a science and an art. Translation is a translation, but the quality could vary from A+ to C-. In this case, a validation from an objective, internationally recognized agency will be highly desirable, such as UN translation services.

Response:
Both the cultural appropriateness and the equivalence of the translated and original versions of the GYTS are crucial components of the cross-cultural adaptation process. Therefore, we used forward translation, expert committee review, focus group discussion, back translation, and a field test, as recommended by Guillemin et al [9]. After the field test, the final Chinese-version GYTS was back translated to English and mailed to the US CDC for approval of the original authors. This last sentence has been added on page 8.

4. As the authors are from Taiwan, the version translated may not be culturally relevant in China. The version would have to be tested in different parts of China to become a true ‘Chinese’ version. The authors did not attempt to see the extent of acceptability of this version or difficulty encountered by anyone other than authors themselves.

Response:
Many questionnaires in different languages are first developed and tested in one specific population and are then used or modified for other populations sharing a similar
linguistic background. The Chinese-version GYTS described in this paper was developed to target teenagers in Taiwan. This Chinese-version GYTS has been used every year since 2005 to study the smoking behavior of Taiwanese teenagers by alternatively targeting students in junior high and senior/vocational high schools. The results of these surveys are being used as the foundation of tobacco control in Taiwan. In the future, our Chinese-version GYTS can serve as a reference for other Chinese communities such as in China, Hong Kong, and Macao to plan surveillance and tobacco control programs for teenage smoking behavior. The information in the last sentence has been added on page 14.

5. An effective Chinese version not only would be able to make international comparison, but also would address the culture-specific problems and would collect data accordingly to solve these problems. To what extent the Chinese version was able to address the smoking issue in China or in Chinese speaking locations, both the core items universal to all regions and specific ones unique to Chinese, remains the criteria to judge on the value of the new product.

Response:
Please see our response to the previous comment.

6. The field test was not only limited in scope, but also a self-perpetuating process. The target group was limited to a small group in Taiwan. No diversity was attempted.

Response: The sampling process, sample characteristics, and second field test for test-retest comparison have been described in more detail (pages 7-8). The sample characteristics and test-retest are described above in the response to Referee #1 (comment 6). The sampling process is described below.

Representative students were sampled for the field test using a multi-stage cluster sample design. First, one county was randomly selected from the northern, central, southern, and eastern areas of Taiwan. Second, one junior and one senior high school were randomly chosen from each selected county. Because the junior and senior high schools selected in the southern area were all-girl schools, another junior and another senior high school were randomly selected from that area. Third, one class was randomly selected from each selected school. Because twelfth-grade students were preparing for the national college entrance examination at the time of sampling, this group of students was excluded in the sampling frame. All students in the selected classes were invited to participate in the field test.

7. There was no alternative process proposed to validate the results, a critical process in validating the value of a product.

Response:
To ensure the cultural appropriateness and equivalence of the Chinese and English
versions of the GYTS, we used a cross-cultural adaptation process recommended by Guillemin et al. [9]; this process includes forward translation, expert committee review, focus group discussion, back translation, and a field test.

8. The information contained in the tables did not help readers in understanding what has been included or what has been attempted, particularly among those with cultural implications. High degree of ‘Agreement’ did not say much of the validity or creativity.  
Response:  
The table titles, column headings, and content have been revised to clarify their relationship to the cross-cultural adaptation process. “Agreement” has been clarified as consistency of responses to item 1 and related items (pages 10-11).

Referee #3:

1. Translation and cultural barriers were mentioned, but the only discussion of these is the terms used to describe people who smoke such as ‘loser’. Were there any others?  
Response:  
More examples have been added in red on page 10.

2. More detail is needed on the focus group methods. Were the students and teachers in the same group? If so, how did power dynamics affect the group process? It seems like the students might have been intimidated by the teachers. This should be discussed as a possible limitation. Also were the students male or female, or both? Given the large discrepancy in smoking prevalence by gender, how might the gender composition of the group have affected results? Were participants, both teachers and students, recruited from just one school? How was this school similar or different from other schools in Taiwan, and what are the implications of these differences (could discuss more in discussion). I also like to read about some more detailed examples of what was changed or clarified as a result of this data collection activity (in results). How was the focus group data analyzed? Was it tape-recorded, transcribed and coded, or was a more informal approach used?  
Response: As described in our responses to Reviewer #1 (comments 4 & 5) and Reviewer #2 (comment 1), we added more detailed information regarding the focus group methodology (pages 6-7)

   To recruit students and teachers from different grades to the focus group, the researchers accounted for school types and gender distribution. Teachers/staff in Taiwan schools, especially those teaching health education, are predominantly female. Focus groups are intentionally small to optimize interaction among participants in the discussion [cite ref, e.g., Krueger & Casey, 2000]. Therefore, focus group participants were drawn from schools in one area, Taipei. This design limits the focus group data as
urban teachers and students may not reflect the diversity of rural teachers and students. This limitation has been added to the end of the Discussion (page 13). Another limitation (see page 13) is that the health-education teachers/staff and students taking part in the focus group had a friendlier relationship than the traditional teacher-student relationship. We did not know whether this difference would help or hinder students from stating their opinions about tobacco behaviors.

3. More detail is also needed on the field test. Where were the 10 cities located? Were there differences by geography or socioeconomic status from the rest of the country? If so, these should be discussed in the discussion. Also, were two classes selected per school? This is not clear as currently written. What was the age/grade of the students’ and gender? How are schools organized in Taiwan which grades are together in one school?

Response: The sampling process, sample characteristics, and second field test for test-retest comparison have been described in more detail (pages 7-8). The sampling process is described above in response to Referee #2 (comment 6), and the sample characteristics and test-retest are described above in response to Referee #1 (comment 6).

4. The authors state they used t-tests to compare the means from the test-retest procedure. Given this isn’t the standard approach to calculating test-retest reliability, the authors should provide a reference for their methods, or at least talk about the implications of this approach.

Response: As the reviewer mentioned, t-test isn’t the standard approach to calculating test-retest reliability. We did not use correlation coefficients to demonstrate test-retest reliability because the GYTS surveys were completed anonymously, preventing us from linking individual data between the test and retest. Therefore, differences in the overall distribution of subscale scores were compared by t-test. This approach has been explained in the data analysis section (page 9) and was noted as a study limitation (page 13).

5. What is the planned use of the Chinese version of GYTS? The authors focus on Taiwan, but mention China as a whole. Are there any plans to use the survey inside or outside of Taiwan?

Response: As noted in the response to Referee #2 (comment 4), the Chinese-version GYTS has been used every year since 2005 to study the smoking behavior of Taiwanese teenagers. The results are used as a foundation for tobacco control in Taiwan. In the future, the Chinese-version GYTS can serve as a reference for other Chinese communities such as in China, Hong Kong, and Macao to plan surveillance and tobacco
control programs for teenage smoking behavior. The information in the last sentence has been added on page 14.

6. The results section would be easier to read if there were subheadings or a more logical conceptual link to the domains from the GYTS and the tables.
   
   **Response:**
   Subheadings have been added to the Results sections.

7. A concern with Table 2 is that there seems to be an assumption that if a student ever tried smoking cessation questions are relevant. For example, if they tried smoking a year ago, but haven’t smoked since, why would you ask them if they want to stop smoking now. The table suggests there is a logical connection, but it is hard for a reader to see the connection. Perhaps the text could explain a few of these links. It would also be helpful to label the items by construct. For example, several of the items in Table 2 fall under the Cessation/Dependency domain.
   
   **Response:** The purpose of Table 2 was to demonstrate the consistency of responses, or percent agreement between responses to item 1 and to related items of the Chinese-version GYTS. To clarify this purpose, the text and example below have been added in red (pages 10-11).

   To ensure anonymity of students’ smoking status, a “no-skip” design was used in the GYTS. Every item includes the response option, “I have never smoked cigarettes,” thus ensuring that every student, regardless of smoking status, answers each item and takes the same time to complete the questionnaire. This “no-skip” design also provided an excellent opportunity to assess the consistency of responses about tobacco-use behavior by comparing the answer to item 1 (Have you ever tried cigarette smoking, even 1 or 2 puffs?) with answers to comparable items (items 2, 35, 36, 37, 38, 39, and 40). For example, if the response to item 1 was “no,” but the response to item 2 (How old were you when you first tried a cigarette?) was other than “I have never smoked cigarettes,” the response was treated as inconsistent.

8. The labels seem off in Table 4. The items labeled smoking attempt appear to be susceptibility, the items labeled smoking related human relations seem to be attitudes toward smoking (if this is a sub-domain this should be described clearly). Also, I’d like to see the response options for the media messages items to be certain that conducting a Cronbach’s alpha makes sense (they look like they might be counts of exposure on days).
   
   **Response:**
   “Smoking attempt” has been changed to “smoking susceptibility,” and “smoking-related human relations” has been changed to “attitude toward smoking” in both Tables 4 and 5. The response options for items on the media-messages subscale
were “a lot,” “sometimes,” and “never,” which were treated as Likert-scale responses when calculating Cronbach’s alpha for items on the media-messages subscale.

9. The conclusion says that 15 items were modified slightly. I’d like to know which these were and how cultural differences contributed to these changes.

Response: The Results section (pages 9-10) has been revised to include the following information.

As recommended by the experts and focus group participants, GYTS items regarding tobacco price, monthly tobacco expenditures, and monthly allowance were modified to fit consumer spending in Taiwan. Options for cigarette brands were also modified since brand preference is associated with the local culture and marketing strategies used in Taiwan. Survey items related to other forms of tobacco were revised to include only chewing tobacco, cigars and pipe, thus reflecting that Taiwanese smokers mainly consume cigarettes. The response category related to cigarette-vending machines was deleted from items related to tobacco access since Taiwan does not have these machines.

Cultural barriers were found between the original and translated versions of the GYTS. For example, Taiwanese teenagers had difficulty distinguishing between the semantics of the response categories, “social events” and “public places.” Therefore, the term “social events” was replaced by “gatherings with friends.” Culture-specific items about attitudes toward tobacco were also modified. For example, the item “What would you think of a man when you see him smoking?” has 4 positive response options (“successful,” “intelligent,” “macho,” and “dashing”) and 4 negative response options (“lacks confidence,” “stupid,” “careless,” and “loser”). These response options were modified by replacing “macho” with “elegant.” The above modifications were primarily made to reflect that Taiwanese teenagers are affected by culture and habits of tobacco use.

10. Who conducted the two-day GYTS workshop, was it CDC, WHO?

Response: The 2-day GYTS workshop was conducted by the US CDC (see page 6).

11. Six epidemiologists participated in the expert meeting. Where were these experts from Taiwan or elsewhere? Were these government employees, university faculty or from some other type of organization?

Response: This information has been added in red on page 6. Besides the 3 researchers, the expert panel included 6 epidemiologists with expertise in risk-behavior surveillance and tobacco control. These epidemiologists were 5 university professors from 4 medical universities and 1 government employee from the Taiwan Bureau of Health Promotion.
12. Table 1 is ok, but the response options should be a footnote so the reader knows what a 4 or 5 means.

   **Response:**
   *A footnote has been added to Table 1 to explain the response options.*

13. In Tables 2-4, the authors include Item numbers in the titles. This isn’t necessary and makes the titles harder to read. I also add a separate column for Item Number (if that is important across various versions of the survey), the table is hard to read as currently constructed. These tables are essentially logic checks.

   **Response:**
   *All table titles have been edited for word economy and separate columns have been added to Tables 2-4 for item numbers.*

14. The last sentence in the first paragraph of discussion section needs a reference

   **Response:**
   *The last sentence of the first paragraph in the Discussion section (page 12) has been revised as follows: “Although the GYTS has been established in many countries and translated into several languages such as Spanish, French, and Arabic, no version has been developed by a cross-cultural adaptation process.”*

15. The authors discuss validity here and in a few other spots. The point needs to be clear that only face validity was checked.

   **Response:** *We have specified in the Data Analysis (page 9) and Discussion (page 12) that content and face validity were checked.*

   “The content validity and face validity of the Chinese-version GYTS were evaluated by the cross-cultural adaptation process and by qualitative analyses of participants’ comments in the expert committee and focus group” (page 9).

   “Thus, the content validity and face validity of the Chinese-version GYTS were ensured by an expert committee and focus group discussion” (page 12).

16. Consider adding a table showing more about the respondents, including some basic smoking behavior. That would help the reader know if this population represents the study as a whole. For example, how many were regular smokers or experimenting with cigarettes?

   **Response:** *Rather than adding a table, we have added details of the sample characteristics with the description of the field test (page 8). Please see also the above response to Referee #1 (comment 6).*

17. It would be useful to add a column for number of items in the tables that list Cronbach’s alpha.

   **Response:**
   *A column of item numbers has been added to Table 4.*