Author's response to reviews

Title: Belief system, meaningfulness, and psychopathology associated with suicidal behaviors among Chinese college students: a cross-sectional survey

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Title: Belief system, meaningfulness, psychopathology associate with suicidal behaviors among Chinese college students: a cross-sectional survey (Manuscript ID:1824781597647899)

Dear Mr Jimmar Dizon and Dr Ian Rockett,

We appreciate your critiques and constructive suggestions. We had fully revised our manuscript according to the reviewer's comments and suggestions. The reviewers' comment and our response is listed point-by-point in the “Response to Reviewers” file. Once again, we would like to thank you and the reviewers for your insightful comments and suggestions that help us greatly to improve our paper. We believe that the final manuscript is much tighter, more rigorous, and more informative. We look forward to receiving your feedback as to whether the revision will be suitable for publication.

Sincerely,

Jiubo Zhao

Department of Psychology, Southern Medical University
Responses to Reviewers

Reviewer: Robert Young

1) An experienced academic English writer should check the manuscript for grammar and spelling errors – e.g., ‘deviant to the majority people’.

Response: Thank you for your advice and we had the current manuscript edited by a professional editor of edanzediting.com.

2) The influence of gender on suicidal behaviour needs to be recognised. Given China has a major problem regarding suicide among young women, more attention should be given to gender differences. I would suggest a multi-group SEM model to explore gender differences.

Response: we had re-analyzed the data using a multi-group SEM solution. We had made substantive revision in results section to address the gender effect on suicidal behaviors and the other statistical issues raised by reviewers.

3) Difference between religious groups is a possibility that need discussed. For example, our own study touched on similar issues finding that Catholic adolescents were (arguably) less likely to attempt suicide or self-harm than their Protestant peers (Young, Sweeting, Ellaway, 2011).

Response: we acknowledge that differences between religious groups should be covered. We had discussed this issue at the limitation section: “Testing differences between religious groups is essential for a thorough understanding of the effect of religiosity on suicidal behaviors. For example, Young et al. [62] found that Catholic adolescents were less likely to attempt suicide or self-harm than their Protestant peers. The current sample covered only a small religious population. For example, there were only 20 Christians (1.7%), five Muslims (0.4%), and three Catholics (0.3%). Therefore, statistical power was insufficient, and it is difficult to draw any solid conclusions. Larger religious populations are needed to detect differences among religious groups related to suicidal behaviors in China.”

4) How have the authors addressed missing data? Within AMOS there is a full information maximum likelihood option, although other options to deal with missing data are available outside AMOS.

Response: we had processed missing data using SPSS before conducting subsequent analysis in AMOS. Specifically, all cases marked by missing data on any of the variables under study were
deleted from the analysis. Complete data on all variables were available from 1168 respondents (84.0%). Actually, there are few missing data in the current study due to carefully controlled survey procedures. For example, the participants were asked to re-check for missing response on every item before the collection of the completed questionnaire. (See Method-Procedure section).

5) How have the authors addressed potential clustering effects? Multilevel options are not available in Amos, but fixed effects or multi-group options could be used. At the very least, acknowledgment of the problem and a few assumption checks are required.

Response: thank you for your insightful suggestion. We acknowledge that our sample has a nested structure, and the potential clustering effects could be addressed using multilevel solution. Unfortunately, as you pointed, multilevel options are not available in the AMOS, and we have no available statistical program for this task. In addition, there is no statistical professional in our study team who was proficient in dealing with multilevel analysis. Alternatively, we had done a multi-group analysis on gender effect.

6) Ethics – The authors’ should outline the procedures followed if a student reported a suicide plan or other serious risk of suicide.

Response: we acknowledge that we have missed reporting the important ethical consideration for suicide prevention. Actually, we had done the following procedure in our research to provide help for the high-risk suicidal students: “encouraged participants to list at least one of three means of contact, including email, phone number and qq number (a popular instant messaging tool in China) so feedback on their mental health profile could be provided. If serious suicidal risk in a participant was detected (e.g., recent detailed suicidal plan) we could contact that person and provide personalized treatment advice and help-seeking resources. (See the last section of Method-Procedure).

7) Have the authors looked at the model using SCL-90 sub-scores? In other words, does the same pattern of findings hold for all psychopathology sub-scores? This would require only one additional model with all sub-scores included.

Response: yes, we have. We have built new models with all SCL-90 sub-scores included in (see Results section).

8) The authors used ULS estimation, because of non-normality in the indicators. It would be
helpful to know if this makes any substantive difference to the results. The authors should supply a set of supplementary ML results, or at least assure the reader that ML and ULS estimates were broadly similar. Bayesian methods are also available in AMOS.

**Response:** thank you for the constructive suggestion. We had compared the ULS estimates with ML, and we found that the two estimates were similar. In order to inform readers, we presented the ML instead of ULS estimates in the results.

9) The ‘degrees of freedom’ for each model is missing.

**Response:** we had added the “degrees of freedom” for each SEM model.

10) No completing models were tested. However, the initial model seems to be broadly inline with the general hypothesis. No formal test(s) between model 1 and model 2 were conducted: presumably, because the models are non-nested and do not contain the same variables. Fixing certain pathways to zero would allow a formal comparison, although the results seem clear.

**Response:** thanks a lot for your helpful suggestion. We had re-analyzed the data using multi-group SEM models instead of previous models and we had re-presented the results to address the above concerns.

11) The interaction between political and religious belief could be explored by including an appropriate dummy variable into the SEM model. Has this been attempted?

**Response:** We had included the interaction between political belief and religious belief in the multi-group SEM models (see Figures2 and Figures3). However, it is difficult to interpret the interaction effect in a SEM framework, so we presented the interaction effect of political belief by religious belief in a separate section with a graph. (See Results-the interaction between political belief and religious belief).
Fig.1 The interactive effect of political belief and religious belief on suicidal behaviors

12) Traditionally, in SEM any correlation table includes the mean and SD of each variable.

Response: thank you for reminding us to include the mean and SD of each variable in the correlation table (See table 1).

13) Both Durkheim’s and strain theories are highlighted – but the model by Joiner (2005: why people die by suicide) is also highly relevant.

Response: your suggestion had greatly helped us to enrich the theoretical background; we had added Joiner’s theory in Introduction and Discussion section: “The interpersonal psychological theory of suicidal behavior proposed by Joiner [16], which stresses the role of joint occurrence of perceived burdensomeness and failed belongingness in individuals who develop suicidal ideation, could also provide insight into the association of suicidal intent and religiosity. It illustrates why belonging to the Communist Party could serve as a protective factor against suicide.” And “Holding political belief along with religious belief contributes to a sense of higher belongingness and lower social isolation in Chinese young adults. Low belonging/social alienation is an important factor implicated in suicidal behaviors [16]. In a study of undergraduates, Van Orden et al. [59] found that the interaction between high burdensomeness and low belonging predicted concurrent suicidal ideation. According to the interpersonal psychological theory of suicidal behaviors, elevated belonging can have an independent supportive effect on suicidal individuals, and jointly impacts suicidal behaviors along with perceived burdensomeness and acquired ability to enact lethal self-injury [16].”

Minor clarifications

1) The term ‘suicidal behaviours’ is used – yet suicidal thoughts are included in the construct?

Response: we had clarified suicidal behaviors in the start of Introduction: “Key constructs should be defined before the introduction of major findings. Most experts agree that suicide is a continuum of suicidal ideation, attempt and plan, and completed suicide [5, 6]. Therefore, suicidal behaviors we discuss include suicidal ideation, non-fatal suicide attempt, plan, and completed suicide. For clarity, the word “suicide” exclusively refers to completed suicide throughout this paper.

2) What are ‘normal’ and ‘211’ universities?

Response: “normal university” is a university that trains teachers, chiefly for the elementary
grades; “Project 211 Universities” is the Chinese government’s new endeavor aimed at strengthening about 100 institutions of higher education and key disciplinary areas as a national priority for the 21st century.

3) In addition to social support and belongingness, other important variables are likely to be omitted from this study. No study can include every relevant variable, but this limitation should be acknowledged.

Response: we had added the above limitation: “Many important factors could have effects on suicidal behaviors. However, the current study focused on belief system and related variables (psychopathology and meaningfulness). Future studies should tap into other important factors (e.g., social support and belongingness).”

4) The authors stress the importance of Confucianism for political beliefs several times, yet the political beliefs question contains no mention of Confucianism! Could the authors explain this omission?

Response: thank you for reminding us to include an important note in the current manuscript, actually we did noted in the original survey and stressed by trained surveyors during the surveying process, however, the presentation of the note was omitted in the last manuscript: On the basis of the two rounds of interviews and previous literature, the final survey item was “Do you think you have the explicit political belief of socialism with Chinese characteristics?” with No = 0 and Yes = 1. (Note: Socialism with Chinese characteristics is an integration of basic Marxism principles, Confucianism-based Chinese traditional culture, and contemporary Chinese conditions. It contains Deng Xiaoping Theory, the Important Thought of Three Represents and the Scientific Outlook on Development and other major strategic thoughts.)

5) The rate of lifetime suicide ideation is particularly high. Some plausible explanation for this high rate is needed. For example, the stress associated with preparation for university entrance exams.

Response: we had discussed the reasons for the particular high lifetime suicide ideation compared to Dai’s study: “The particularly high suicidal ideation observed in the current sample could partly be explained by the study instruments used. Lifetime suicidal ideation, plan, and attempt were assessed by the first question of the SBQ: “Have you ever thought about or attempted to kill
yourself?” Selecting the response choice “It was just a brief passing thought” was considered a positive response for lifetime suicidal ideation. Choosing “I have had a plan at least once” was considered positive for lifetime suicidal plan, and choosing “I have attempted to kill myself” was considered positive for lifetime suicidal attempt. In the study by Dai et al. [38], lifetime suicidal ideation was recorded as positive through interviews producing any affirmative responses to questions such as “Have you ever thought about committing suicide?” Above and beyond the difference in study instruments, the demographic and psychosocial characteristics of the current sample were quite different from the rural young adult population studied by Dai et al. For example, our college students were more likely to experience disappointment in love and examination stress, whereas in the previous study, rural young adults were more likely to suffer from a conflicted marriage.”

6) The discussion is somewhat expansive in parts and could be condensed.
Response: we had condensed the discussion to make it tighter.

7) The authors recognise that the political belief variable is dichotomous, limited and in need of development. The religious belief variable seems similarly limited and this could be recognised in the limitations section.
Response: we had added it to the limitation section: “Political belief and religious belief variables were narrowly defined. Future studies should develop multi-dimensional instruments to assess the internal structure of belief systems as well as the strength of believers’ affiliation.”

8) The authors provide many fit statistics. Chi, CFI, RMR, RMSEA and proportion of variance explained are usually sufficient.
Response: we had made extensive revision on the presentation of model fit statistics (see Results---multi-group analysis of SEM models).

9) The description of the SBQ-R scoring is somewhat confusing and could be clearer.
Response: we had revised the description of the SBQ-R scoring to make it clearer.

Daniel T Rasic
Reviewer's report
This is a well done study examining relationships between political and religious beliefs with
suicidal behaviors. A major strength of this study is that it is done in a population in China, where the religious and political climates are considerably different from the Western nations, where the bulk of research in this area has been conducted. The theoretical rationale for the study was sound, the methods generally appropriate, and important results that have implications on our understanding the interplay of these factors. I have some comments that I believe can strengthen this study and they are provided below:

**Minor Essential Revisions:**

1) The authors often use the term ‘suicide’ interchangeably with suicidal behaviors. The authors should revise the manuscript throughout so that suicidal behavior or equivalent is used when referring to suicidal ideation or attempt and ‘suicide’ to refer to death by suicide.

Response: we had defined the key constructs including “suicidal behaviors” and “suicide” before the introduction of previous study findings (refers to the second paragraph of background).

2) The writing is generally clear, but there is awkward wording throughout that needs some attention. Some examples are “…findings are in line with existing researches,” or “existing literatures.”

Response: Thank you for your advice and we had the current manuscript edited by professional editors of edanzediting.com.

3) The authors need to make clear early on in the manuscript that Confucianism is not considered a religion. I think that some of the confusion for me was the sentence on page 4 “Confucianism, Buddhism, and Taoism had been greatly shaped Chinese society.” It is not clear to someone not very familiar with Eastern cultures, like myself, until much later in the manuscript that a distinction between religion and philosophy was being made.

Response: we had clarify if the Confucianism was considered as a religion right after the sentence “Confucianism, Buddhism, and Taoism had been greatly shaped Chinese society” as follows: “Confucianism is not considered a dominant religion in this article because compared with Western religions, contemporary Confucianism is characterized by no religious rituals, is less institutionalized, and does not involve belief in an afterlife or supreme being. It is instead a way of life in connection to society [15].”

4) The sentence at the bottom of page 4 needs revision: “modern china has been witnessing a declination and renaissance of Confucianism…” “Declination” should be changed to “decline.”
However, how can there be a decline and renaissance of Confucianism? Was there a decline and then later a resurgence? Please clarify in the text.

**Response:** yes. There was firstly a decline of Confucianism, and in the recent 20 years, a resurgence of Confucianism. We had revised the manuscript as follows: “Modern China witnessed a decline in the popularity of Confucianism, but in the past 20 years there has been a renaissance of Confucianism in its political system [20].”

5) Page 5. Please provide references for conceptualizations of belief system and political belief.

**Response:** the references for conceptualizations of belief system and political belief had been added.

6) Page 6. “psychopathology is found to be reversely…” ‘reversly’ should be ‘inversely’.

**Response:** thank you for correcting our errors and we had revised it accordingly.

7) The response rate of the survey is good. However, given the sensitive nature of the topic area and political climate, do the authors have any information on reasons for 16% nonresponse? If so, please list them.

**Response:** reasons for non-response had been listed in the manuscript as follows: “reasons for non-response included non-attendance of the survey class (207 students) and withdrawing before the questionnaire was completed (6 students)”. However, the exact reasons for non-attendance or withdrawing are not clear.

8) In developing political belief measures, how was individualism, capitalism, scepticism conceptualized by the raters? More detail, even brief example statements, would aid in understanding how political belief was measured.

**Response:** thank you for your constructive suggestion to help us clarity our concepts. Examples had given as follows: For example, one student responded: “I don’t believe in any specific political propaganda; however, I have my own personal core values, such as happiness.” That response was classified as individualism.

9) How did “what are the most important elements that have been affecting you politically and culturally?” result in socialism, communism and Confucianism as the top responses? Was there more of a procedure followed than is described? If so, please provide more detail.

**Response:** we had added details as follows: “The responses were again coded by two independent research associates based on the above classifications (i.e., socialism, communism, Confucianism, etc.).
individualism, capitalism, and skepticism) and sorted by frequency. Results showed that the most frequent responses were socialism, communism and Confucianism.”

10) Page 14. “indicating that for individuals who have political belief, being religious could be a protective factor against suicide…” This sentence implies causation, which cannot be inferred from cross sectional data. In addition, suicide was not examined. Please revise.

Response: thanks a lot for your advice. The sentence had been revised as “indicating that for individuals who had political belief, being religious was associated with decreased suicidal behaviors; for individuals who had no political belief, being religious was associated with increased suicidal behaviors.”

11) What was the sample size in the SEM models? Was there much missing data?

Response: thank you for reminding us to supplement the above information. There was no missing data, thus the sample size for all the SEM models were n=1168, and we had added this information in tables and figures.

12) Page 15. Are there other reasons for differences in suicidal behavior measures between the current study and Dai? There is a twenty five percent difference in lifetime prevalence of suicidal ideation. Were different measures used? Please provide additional reasons for the differences.

Response: thank you for your insightful suggestions. We had provided additional reasons for the difference (see the first paragraph of Discussion).

13) Page 18. The interpretation of the findings in this section seems somewhat speculative with few references to back up interpretations. While the argumentation is logical, it needs to be supported by references.

Response: the reference had been added to page 18 as follows: “individuals without political belief are presumably not as well adapted to the mainstream culture. According to interpersonal psychological theory proposed by Joiner [16], they experience low belongingness and high social alienation”

14) Could there be a social desirability bias in responses? If suicide is undesirable in the mainstream political philosophy and those who reported political belief were also less likely to report suicidal behavior, could there be a reporting bias?

Please comment.
Response: yes. There could be a social desirability bias in responses. We had added it to limitations: “Our results could have been affected by social desirability response bias because of the self-reported nature of the survey research. For example, suicide is undesirable in the mainstream political philosophy, and those who reported political belief were also less likely to report suicidal behaviors.”