

PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	The correlation of impulsivity with self-harm and suicide attempt: a community study of adolescents in Taiwan
AUTHORS	Huang, Yu-Hsin; Liu, Hui-Ching; Tsai, Fang-Ju; Sun, Fang-Ju; Huang, Kuo-Yang; Chiu, Yu-Ching; Huang, Yen-Hsun; Huang, Yo-Ping; Liu, Shen-Ing

VERSION 1 – REVIEW

REVIEWER	Elaine McMahon PhD National Suicide Research Foundation Ireland
REVIEW RETURNED	15-Jun-2017

GENERAL COMMENTS	<p>This is a well written manuscript aims to identify mental health, lifestyle and socio-demographic factors associated with self-harm and suicide attempt among a community sample of adolescents recruited in schools in Taiwan. I have some minor comments (below) which should be addressed in order for the manuscript to be suitable for publication.</p> <p>Title I would suggest removing the word “online” from the title, as this may give the impression that recruitment was carried out online, rather than in a school setting.</p> <p>Abstract Outcome measures: history of self-harm is not mentioned here. Results: I suggest moving the first line of the Result section to the Data and participants section of the abstract. Results: Please clarify what is meant by the following sentence “The agreement between the online questionnaires and interviews was moderate”, by specifying that this was in terms of ascertaining cases of history of suicide attempt. Results: Please re-phrase the last sentence to read “Social support was a protective factor against SA among females”</p> <p>Introduction Second sentence: I am not sure that this statement accurately reflects the findings of the review cited. Definition of DSH: Please give a more full definition of DSH in the Introduction, e.g. what behaviours are considered DSH, with explicit reference to previous studies.</p>
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	<p>Methods: Please describe how the participating schools were selected. The Subjects section contain information on the questionnaires administered, please move this to the later section.</p> <p>Assessment of history of suicide attempt and DSH: Were the questionnaire items drawn from an established scale or designed by the study investigators?</p> <p>Results: The overall response rate is given but please give more information including the reasons for non-participation. Please explain the procedures used to recruit participants for the face-to-face interviews and the response rate.</p> <p>Univariate analyses of associations between socio-demographic, mental health and lifestyle factors and DSH and SA: If omitting non-significant findings from Table 2 please mention these in the text.</p> <p>Results and Discussion: Please give the names of the BIS-11 subscales/ factors in the text when discussing them and also include the names of the factors in Table 5 to give more information.</p> <p>Discussion: The following sentence is unclear, please re-phrase: "Low ranking schools therefore need more counseling services and support from mental health professionals."</p>
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REVIEWER	Chiang-Shan R. Li, Associate Professor of Psychiatry and Euroscience Yale University, New Haven, CT, USA No Competing Interest
REVIEW RETURNED	19-Jun-2017

GENERAL COMMENTS	<p>Authors examined the role of impulsivity and other clinical variables on self harm and suicide attempt in a large sample of adolescents. Participants undergo online survey and (in a smaller cohort) clinical interview. Univariate logistic and hierarachical regressions are employed to identify risk factors. The results provided limited support for a role of impulsivity in self harm and suicide attempt. Overall, the methods are sound and the results support the conclusions. I have a few suggestions authors may wish to consider in a revision:</p> <ol style="list-style-type: none"> 1. Are the demographics and clinical characteristics indistinguishable among the participants who took online survey and those who undergo interview? 2. The study should be better motivated in terms of the etiology of self harm and suicide attempt. For instance, what do we know about the neurobiology of these self injurious behaviors? 3. Impulsivity is assessed by BIS-11. BIS-11 may capture only aspects of impulsivity. Emotional impulsivity is likely more relevant to self harm and suicide risk and needs to be assessed in future work. 4. Many studies have reported sex differences in impulsivity and the role of impulsivity in maladaptive health behavior, including substance misuse and authors may elaborate on the discussion along this direction: https://www.ncbi.nlm.nih.gov/pubmed/28413777 https://www.ncbi.nlm.nih.gov/pubmed/27857686 https://www.ncbi.nlm.nih.gov/pubmed/26079873 https://www.ncbi.nlm.nih.gov/pubmed/19701485
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REVIEWER	For-Wey Lung Professor, Graduate Institute of Medical Science, National Defense
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	Medical Center, Taipei, Taiwan Calo Psychiatric Center, Pingtung County, Taiwan
REVIEW RETURNED	19-Jun-2017

GENERAL COMMENTS	<p>Authors have conducted an interesting study to investigate the differences and similarities in risk factors for deliberate self-harm (DSH) and suicide attempt (SA), and the role of impulsivity among a group of community adolescents. This manuscript presented organized, concise and logical ordering of ideas. I believed authors do hard work in this study. However, authors still require major revision in statistical analysis and discussion for this manuscript.</p> <p>1. In the current study, the demographic data in DSH and SA was similar, but it had significantly difference in the personality trait in DSH and SA. Authors found factor 3 of the BIS-II (novelty seeking) was correlated with DSH in both boys and girls, whereas factor 2 (lack of self-control) was related to SA in boys. However, authors did not describe and discuss these findings very clear. Authors should provide more descriptions and discussions about these important findings in the text.</p> <p>2. In the present study, the univariate logistic regression analysis and hierarchical multiple regression strategies were used to determine the risk factors for DSH/SA and to assess whether impulsivity played any role. However, the mediator and moderator effects also need to consider in here. Hence, other path analysis, such as the structural equation model techniques (SEM) may be also consider to further analyze the possible recursive and non-recursive pathways. It may have different or interesting findings in the current study.</p> <p>3. There is too much tables in this manuscript, please delete two or more. In fact, tables need to present the results very clear for readers. However, the data of tables in this study presented unclear, and readers need to refer the descriptions of text. Authors should decrease the descriptions of text, and improve the understanding of tables for readers.</p>
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#Reply to Reviewer 1:

We thank Dr. McMahon for all of the constructive comments.

1. Title: We have changed the title to “The correlation of impulsivity with self-harm and suicide attempt: a community study of adolescents in Taiwan”.

2. Abstract:

(1) We have added history of deliberate self-harm (DSH) and suicide attempt (SA) into the outcome measures of the abstract.

(2) We have moved the first line of the results section to the “Data and participants” section.

(3) We have re-written the sentence to “The agreement of SA between the online questionnaires and interviews was moderate (concordance rate 82.76%; kappa value 0.59).”

(4) We have re-written last sentence of the results section as “Social support was a protective factor against SA among female adolescents”.

3. Introduction

(1) In the second sentence, we quoted Owens’s paper in which he refers to self-harm, which is equivalent to our definition of DSH, i.e. self-harm regardless of intention to die.

(2) We have added some examples of DSH in first paragraph of the introduction section as per your suggestion. (p.6)

4. Methods

(1) These schools were selected by purposive sampling. We have described this in the paragraph as per your suggestion. (p.9)

(2) We have moved the assessment questionnaires from subject section to online assessment section as per your suggestion. (p.9)

(3) The questionnaires regarding suicidality were designed by the study investigators.

5. Results

(1) We have addressed the reason for non-response more clearly as per your suggestion. Students in Taiwan have heavy study stress and that may hinder their motivation to participate. (p.17)

(2) We have added a description in the methods section. “After 12 months of the initial assessment, the students completed the same questionnaires. All of the students with new occurrences of self-harm in the past year (i.e., the students who did not report self-harm at entry but did the next year) were enrolled for face-to-face interviews. The students who did not report any occurrences of self-harm at both years were randomly selected on a 1:1 ratio, frequency matched by class and gender. For the students who reported occurrences of self-harm in both years, one in two received face-to-face interviews. The response rate was 94.8%.” (p.14-15)

We have also modified the description in the statistical analysis section for clarity. “We also examined the agreement (i.e. reliability) between the computer questionnaire assessments and face-to-face interviews (n = 272) with regards to lifetime SA assessed at the second year. This agreement was assessed by concordance rate and kappa statistics.” (p.16)

(3) We have merged Table 1 and 2 into new Table 1. The statistically significant and non-significant variables were all included. We had to make a small revision in that the students in schools located in suburban areas compared to those located in urban areas had a higher risk of DSH. (p.19)

6. Results and Discussion: We have given the names of the BIS-11 subscales in the text and Tables 1 and 5 as per your suggestion.

7. Discussion: We have re-phrased the sentence as per your suggestion: "Mental health and education policy makers may need to provide low ranking schools with more counseling services and support from mental health professionals." (p.29)

#Reply to reviewer 2

We thank Professor Li for the helpful comments.

1. We have added a description in the methods section: "After 12 months of the initial assessment, the students completed the same questionnaires. All of the students with new occurrences of self-harm in the past year (i.e., the students who did not report self-harm at entry but did the next year) were enrolled for face-to-face interviews. The students who did not report any occurrences of self-harm at both years were randomly selected on a 1:1 ratio, frequency matched by class and gender. For the students who reported occurrences of self-harm in both years, one in two received face-to-face interviews. The response rate was 94.8%." (p.14-15)

Because there was a higher rate of DSH in the interview group, the interview group were more depressive, more impulsive, and used more alcohol and tobacco.

2. We have added a paragraph to the introduction as per your suggestion: "There is a bio-psychosocial model for self-harm. In brief, higher levels of endogenous opioids have been found in self-harming people. Interactions between environmental and genetic factors may also contribute to self-harm. There is also a stress-diathesis or a psychobiological model for SA. Deficits in serotonergic neurotransmission, low CSF 5-hydroxyindoleacetic acid (5-HIAA) levels, low platelet 5-hydroxytryptamine and a decreased number of binding sites in platelets have been found in people with SA. A potential link between low plasma 5-HIAA levels and impulsivity/severity of the SA has also been postulated. Different etiologies may differentiate between DSH and SA; we were also interested in the the role of impulsivity in these two groups." (p.7)

3. We have added these sentences into the limitations section as per your suggestion: "Third, BIS-11 did not assess emotional impulsivity. However one meta-analysis found negative urgency, a form of emotional impulsivity, was significantly related to a composite of suicidality, and the effect size for negative urgency was larger than those reported for other forms of impulsivity. Emotional-relevant impulsivity needs to be assessed in future work." (p.34)

4. We have added these sentences into the Discussion section (common risk factors): When we analyzed the data according to gender, we found that tobacco smoking and alcohol use were especially important risk factors for DSH/SA in girls (Table 2 and 3). Compared to boys, the prevalence of smoking and alcohol use are relatively low in Taiwanese girls (OR = 5.5 and 5.8 respectively, girls as the reference group). Female smokers or alcohol users may be more pathological and have a lower threshold for DSH/SA. (p.28-29)

We have also added these sentences into the Discussion section (impulsivity): A study using neuropsychological tests and brain imaging found that prepotent motor responses are more easily evoked in men, which is a tendency that could predispose them to impulse control disorders (Li CS, 2009). In addition, suicidal male adolescents are more likely to exhibit an impulsive presentation than suicidal females (Rice TR, 2015). (p.31)

We have cited one of the papers you suggested to elaborate the discussion.

#Reply to reviewer 3

We thank Professor Lung for the advice and opinions.

1. We have revised this paragraph in the Discussion section (impulsivity) as per your suggestion: A study using neuropsychological test and brain imaging found that prepotent motor responses are more easily evoked in men, which is a tendency that could predispose them to impulse control disorders (Li CS, 2009). In addition, suicidal male adolescents are more likely to exhibit an impulsive presentation than suicidal females (Rice TR, 2015). Since BIS-11 factor 2 is considered to reflect long-standing behavioral patterns, it is plausible that boys with a lack of self-control and low self-esteem may be prone to suicidal behavior (Moeller FG, 2001). Gender modulated the association between impulsivity and SA, and this may explain why BIS factor 2 score was significant in boys only. (p.31-32)

We have also revised a sentence in the next paragraph in same section: Impulsive boys under stress such as those with depression or substance use may be less tolerant of complex thinking and lack flexibility, and hence are predisposed to having a lower threshold for SA without contemplating the possible consequences (Wu CS, 2009). (p.32)

2. For moderator analyses, we choose gender as a possible moderator. We have revised the paragraph in the statistic analysis: We then examined the interaction between gender and BIS-11 among logistic regression analyses to see whether the relationship between impulsivity and DSH/SA was moderated by gender (model 5) (Baron RM, 1986). Logistic regression was used to analyze the role of impulsivity and all other sociodemographic, clinical and personality trait variables with DSH/SA between genders (model 6) (p.16)

We have added these sentences to the results: When we added the interaction term of BIS-11 and gender in model 5, we found that they were significant in both Tables 2 and 3. This meant that gender modulated the association between impulsivity and DSH/SA. Other risk factors besides gender remained significance in both Tables 2 and 3. (p.23)

We have also discussed the moderating effects in the discussion section: When we focused on the moderating effects of gender, we found that impulsivity (OR = 1.03) was correlated with DSH only in boys (model 6 of Table 2). The odds ratio was slightly higher compared to impulsivity among all students (OR = 1.02, model 5 of Table 2). Previous studies in Ireland also found that impulsivity was a risk factor for DSH only in boys (O'Connor RC, 2014; Moeller FG, 2001). Gender also modulated the association between impulsivity and SA (model 5 of Table 3). However, impulsivity lost its significance in model 6 in both genders. We postulate that the moderating effect was weak..... Since BIS-11 factor 2 is considered to reflect long-standing behavioral patterns, it is plausible that boys with a lack of self-control and low self-esteem may be prone to suicidal behavior. Gender modulated the association between impulsivity and SA, and this may explain why BIS factor 2 score was significant in boys only. (p.30-31)

We also choose PHQ-9 score as a moderator to run the analyses. However, that would require 2 more tables to express the results and thus we could not put them into this manuscript. We thank you for the good idea, and perhaps we can write another article to discuss this.

In this article, we focused on the results of hierarchical logistic regression analyses and then discussed the differences and similarities of the risk factors of DSH and SA. We also analyzed the subscales of impulsivity. We thank you for your professional opinions, and we tested whether gender had any moderating effects. Because the article is quite complicated and lengthy after including all of aforementioned results, we did not analyze mediators in this manuscript. However, we think it is a good idea and will consider a second article to survey this issue.

3. We merged Table 1 and 2 into a new Table 1 as per your suggestion. The author guidelines state at most 5 tables per manuscript, and the revised article follows this guideline. We have made some revisions to improve the clarity of the tables.

VERSION 2 – REVIEW

REVIEWER	Elaine McMahon PhD National Suicide Research Foundation Ireland
REVIEW RETURNED	13-Sep-2017

GENERAL COMMENTS	<p>This is an important and well-written manuscript examining associations between psychological factors and self-harm and suicide attempts. My previous comments have been well addressed by the authors. I still have a few very minor amendments which I recommend before publication. These are as follows:</p> <p>Abstract: Please re-phrase the following sentence: "The agreement of lifetime SA between the online questionnaires and interviews was moderate (concordance rate 82.76%; kappa value 0.59)." It would read better as "The concordance between the online questionnaires and interviews in terms of ascertaining cases of suicide attempt was moderate...."</p> <p>The following sentence is misleading: "Impulsive boys tended to have DSH or SA" Please re-phrase to something like "Associations between impulsivity and DSH and SA were particularly strong among boys.</p> <p>Method: Please move discussion of the reasons for non-response to the Limitations section and discuss more fully.</p>
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REVIEWER	Chiang-Shan R. Li, Associate Professor of Psychiatry and Neuroscience Yale University, New Haven, CT, USA
REVIEW RETURNED	31-Aug-2017

GENERAL COMMENTS	Authors have addressed the suggestions raised in earlier review. The study represents a useful addition to the clinical literature of self injurious behavior.
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VERSION 2 – AUTHOR RESPONSE

We've revised the manuscript according to reviewer 1. The revised sentences were marked in red color.

In abstract, we revised the sentence as "The concordance between the online questionnaires and interviews in terms of ascertaining cases of suicide attempt was moderate (concordance rate 82.76%; kappa value 0.59)". Another sentence was revised as "Associations between impulsivity and DSH and SA were particularly strong among boys."

In section of Hierarchical regression of lifetime DSH and lifetime SA, we re-phrased the sentence as "The association between impulsivity and DSH was particularly strong among boys, whereas total impulsivity scores were not associated with SA in either gender."

In section of strengths and limitations, we added a paragraph as "First, the overall response rate was only 60.61%. Students in Taiwan have heavy study stress and that may hinder their motivation to participate. We worked together with school staff but we do not force students to participate the study. Adolescents often are not interested in activities arranged by adults and that maybe one of the reasons that our response rate was not very high. We mentioned on the inform consents that we would select some students (less than 10%) for diagnostic interview; maybe some students feel it's too time-consuming."

In conclusion section, we re-phrased the sentence as "Gender modulated the relationship between impulsivity and DSH; associations between impulsivity and DSH were particularly strong among boys."