PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	The temporal association of excessive health expenditure with suicidal ideation among primary income earners: cross-sectional design using Korean Welfare Panel Survey (KoWePS)
AUTHORS	Park, Eun-Cheol; Shin, Jaeyong; Choi, Jae-Woo; Jang, Sung-In; Choi, Young; Lee, Sang Gyu; Ihm, Tae Hwan

VERSION 1 - REVIEW

REVIEWER	Fiona Shand University of New South Wales, Australia
REVIEW RETURNED	20-Feb-2015

GENERAL COMMENTS	The authors have written a relatively clear paper about a well-designed study. This paper is possible more interesting from a policy perspective than a clinical perspective, given it's findings about the impact of excessive health expenditures on suicidal ideation. I do have some concerns about some of the detail within the manuscript, outlined below. Overall the language is fairly clear but there are a few places where it could use some editing. ABSTRACT Page 3, line 47: The definition of heads of household is not clear, and doesn't seem to be defined anywhere in the manuscript. How is this determined? It may not be a term that is clearly understood in all cultures. Do you mean the primary income earner? If so, perhaps its better to use that term. Page 3, Line 63: I'm not sure what the last sentence means. In what ways should CHEs be considered in order to reduce their impact on suicidal ideation and mental health? INTRODUCTION The introduction is clearly laid out. I would suggest moving some of the argument and literature from the conclusion to the introduction. I would also like to see a definition of a CHE/EHE in the introduction rather than waiting until we get to the methods section. Page 5, line 84: Should 'excessive health expenditures' be abbreviated to EHEs? Later on you use the term 'catastrophic health expenditures' - is that a CHE? Page 5, line 96: Do you mean that a decrease in government expenditure, not an increase, resulted in an increase in out-of-pocket expenses? Page 6, line 118: there may be other reasons that those under 40

	are more vulnerable to death by suicide. Perhaps better to state that financial stress may be one factor. Page 6, line 119 - I'd like to see the aims of the paper more clearly defined here. METHODS Some headings (e.g. participants; procedure, statistical analysis) would help make this section clearer. Some of the description of the analysis currently in the results section needs to be moved into the methods section. Page 7, line 132: I know this is secondary analysis, but I think you still need to describe the ethics approval for the original data collection. Page 7, line 138: You need a rationale for why you think heads of household would be the most vulnerable to an economic crisis. Did you consider doing a comparison of the impact on other family members? Page 8, line 148: is this expenses and income per annum? Page 8, line 158: Could you include the full name of the CESD-11 in the first instance? Page 8, line 162: Averaging across the items seems an unusual way to calculate a score. Do you mean you totalled the items? Page 8, line 162: Given that suicidal ideation is your primary outcome, it is important to state which measure you used or what the question was. There are many ways to assess suicidal ideation. Page 8, line 166-167: what p-value did you use to determine significance? Also it seems that you did some post-hoc analyses. How did you correct for this? RESULTS Page 10, line 174: This paragraph and the next contain quite a lot of detail about what was tested and how, which probably should go into the methods section. Also, given that you have the p-values in the tables, you probably don't need to restate them here. Page 11, line 203: I found this sentence a little confusing. Is there a clearer way of describing the relationship between the level of CHE, the year, depression, and suicidal ideation? DISCUSSION Page 12, line 213: Did they report more episodes, or were they just more likely to have suicidal ideation? I think your outcome was binary? Page 12, line 226: The sentence starting 'However, because national reimbursement...' could be combined with the next one and be much clearer, i.e. national reimbursement was low so out of pocket expenses were high. This paragraph could probably be summarised, since it's really restating what is already in the introduction.

	Page 13, line 243: I think the point of this paragraph needs to be much clearer, and some of the detail removed. It's not clear what the authors are arguing here - that better health coverage for low income families leads to better mental and physical health outcomes and reduces out of pocket expenses? Page 13, line 257: The amount of detail about the study could be reduced. Summarise the most interesting bits and leave out the rest. I also think that this and the previous study you described (Medicaid) could be worked into your introduction to make an argument for why your study is important. Page 14, line 282: saying that there is a rough association between suicidal ideation and attempts might be too broad. Perhaps better to say that a proportion of people who have suicidal ideation will go on to make an attempt would be more accurate, as there is also a large proportion of people who don't go on to make an attempt. There is also accumulating evidence that there are important differences between those who progress from ideation to attempt (see work by Thomas Joiner, Rory O'Connor and Matthew Nock), so you need to be a little careful about how your describe this. Page 15: The discussion seems to finish a little suddenly. I'd like to see a paragraph drawing some conclusions and discussing the policy and clinical implications of your findings.

REVIEWER	Bridianne O'Dea Brain & Mind Research Institute, University of Sydney, Sydney, Australia.
REVIEW RETURNED	22-Feb-2015

GENERAL COMMENTS	Thank you for inviting me to review this paper. From my reading, this paper attempts to outline the cross-sectional relationship between excessive health expenditure and suicidal ideation in the head of households in Korea. This paper is an important topic, in both the context of national and international research in this area. I have a number of suggestions for revisions for the authors before this paper can be accepted for publication. Title: * Title would benefit from including the study design or nature of exploration i.e. cross-sectional Introduction: * The rationale for the study could be made clearer, in particular, the outcomes you have chosen to measure. There was little to no mention of past literature exploration the relationship between CHE's and mental health outcomes, nor any particular reference to CHE's and suicide. Has this been explored before in Korea or anywhere else? A brief mention of past research would allow the hypotheses to be formed. * A defintion of CHE's should be included in the introduction. It is currently included in the method. On this note, I am confused as to why you calculated CHE's using 10% and 20% cutt-offs when the WHO defines CHE as 40%. This is a significant difference and has not been sufficiently justified. It seems inappropriate to reduce the % by this much. Findings may be more relevant if CHE remain defined at 40%.

	* The study aim needs to be clearer and would benefit from including the study design. * The rationale for only assessing heads of household should be made in the introduction, not the method. A definition of what this term means would help to clarify the study. * The sentence "Our results suggest that CHE's have an adverse effect...." should be omitted from the introduction as results should be saved for latter sections. Method: * Please include the overall N of Korean households who complete the population survey (or an average) This can clarify how generaliseable the large survey is. * Please provide details of the University Ethics Application or clarify why Ethics was not sought from your university, despite the data being publically available. * More specific detail is needed on how the covariates were measured/categorised. Was this done by researchers or were they survey answer options for participants? * Please define the cut-off scales for Depression and what this means. * Please include the wording of the suicide question. Was this part of the CESD? If so, how highly does it correlate with the overall depression score? Is multicolinearity an issue? * Please include a subheading 'Analysis' in your method and outline specifically your analysis approach. What was the modelling for the regression? How did you control for depression severity? You state that you completed a sub-group analysis, however, I am wondering why you did not enter depression score into the overall regression model to control for it this way? In addition, you could have created a heirarchical model to account for the variance between each step. I am not convinced that your 10% vs 20% CHE is the most sophisticated approach to answering your research question. I would advise re-running the analysis using a more defined level of CHE and controlling for depression severity and gender. A subgroup analysis may be more appropriate for those who had attempted suicide. Results: * Please include a section that describes your sample: e.g. gender, age, income, depression, nature of health care costs, history of suicide attempts etc, i.e. any information you can report that will help us to better understand the sample characteristics. * Please avoid using the terms "impact" as this implies longitudinal associations and predictive power. In this paper, I would advise that it is more appropriate to use the terms "stronger association" etc. * Different findings may be reported when re-running of analysis has occured. * In Table 1, not all rows are necessary. When using dichotomous variables it is easier to just report the first category. * In your methods, please define "senior person" "disabled person" "economically active". Discussion: * It is not surprising that those with depression are experiencing higher levels of suicide ideation. Furthermore, in Australia alone, approximately 4% of the population at any given time, experience thoughts that their life is not worth living. I believe that there needs to be a greater level of discussion in the introduction and discussion around what your findings mean for preventing suicide. Linking

	healthcare costs needs to examine whether or not these health care costs were associated with their mental health, or some other issue, such as physical health or chronic pain. This will provide further development in understanding who is at risk of experiencing suicide ideation. * I also feel that by selecting only one CHE cut-off, would provide clearer results and targets for future research.

VERSION 1 – AUTHOR RESPONSE

Reviewer Name Fiona Shand
Institution and Country University of New South Wales, Australia
Please state any competing interests or state 'None declared': None declared

"The authors have written a relatively clear paper about a well-designed study. This paper is possible more interesting from a policy perspective than a clinical perspective, given it's findings about the impact of excessive health expenditures on suicidal ideation. I do have some concerns about some of the detail within the manuscript, outlined below. Overall the language is fairly clear but there are a few places where it could use some editing. "
First of all, we appreciate for your evaluation on this manuscript. As your recommendations and comments, we have revised some of details within this manuscript and finished another brief English proof-reading.

ABSTRACT
"Page 3, line 47: The definition of heads of household is not clear, and doesn't seem to be defined anywhere in the manuscript. How is this determined? It may not be a term that is clearly understood in all cultures. Do you mean the primary income earner? If so, perhaps its better to use that term."
Thank you for your comment at first. According to user guidebook of this data, household heads are defined as 'practical and financial representatives of households'. In this sense, it would be more accurate to use the terminology 'the primary income earner in household' as you recommended. We added up the concrete information in abstract and used the newly defined terminology in the other sections. [Page 3, line 48]

"Page 3, Line 63: I'm not sure what the last sentence means. In what ways should CHEs be considered in order to reduce their impact on suicidal ideation and mental health?"
Thank you for your comment. We have revised somewhat unclear expression as follow; [Page 3, line 60]
◊"In conclusion, we suggest that recent household EHE might be considered as an important factor to prevent suicidal ideation and to improve the mental health of individuals." Through this paper, it seems that the recently occurred EHE could be regarded as an important factor to have suicidal ideation. Thus if we control and manage this unexpected financial burden from health, it is believed that it would be helpful to reduce mental stress from EHE.

INTRODUCTION
"The introduction is clearly laid out. I would suggest moving some of the argument and literature from the conclusion to the introduction."
Thank you for your recommendation. We moved some paragraphs regarding previous studies for EHE to introduction. Through this revision, the argument became stronger and easy to understand. The new paragraphs in introduction are as follow; [Page 6, line 121/ Page 7 line 130]
⟨ In 2008, the state of Oregon in the United States initiated a limited expansion of its Medicaid program for low-income adults19. Five years after its initiation, researchers found no significant effect of Medicaid coverage on the prevalence or diagnosis of hypertension or high cholesterol levels or on

the use of medication for these conditions. However, Medicaid coverage decreased the probability of a positive screening for depression interestingly (-9.15 percentage points; 95% confidence interval, -16.70 to -1.60; p=0.02), increased the use of many preventive services, and nearly eliminated excessive out-of-pocket medical expenditures. This study showed that the mental health could be improved by reducing the financial burden for health.
Another study that observed the association between CHEs and depression was performed in India20. According to this cross-sectional study in Goa, India, 138 women, whose households were spending medical cost more than 10% of their disposable income as EHE, were more likely to report economic difficulties, such as having gone hungry in the past 3 months because of a lack of money (OR 1.99, CI 1.1–3.6, p=0.02). In addition, depressive disorder was associated with significantly higher healthcare costs, lost time costs, and risk of EHEs. There was a linear association between psychological morbidity scores and the risk of EHEs. From this study, it could be suggested that economic arguments due to health problems were considered a key driver of mental health policy.

“I would also like to see a definition of a CHE/EHE in the introduction rather than waiting until we get to the methods section.”
Thank you for your comment. We also considered that re-positioning the definitions of CHE/EHE were important to readers familiar to new terminology. Thus, we pasted the paragraph mentioning the definition of CHE/EHE in method section to the introduction section. If there is still some problem in contextual, we are willing to changing this sentence again. [Page 5, line87]

“Page 5, line 84: Should 'excessive health expenditures' be abbreviated to EHEs? Later on you use the term 'catastrophic health expenditures' - is that a CHE?”
Thank you for your comment. Even though we preferred to use ‘catastrophic health expenditure (CHE)’ rather than ‘excessive health expenditure (EHE)’, we decided EHE to avoid the debate on a cut-off value for CHE. As your recommendation, we unified all terminology into ‘excessive health expenditure (EHE)’. Thank you for your comment.

“Page 5, line 96: Do you mean that a decrease in government expenditure, not an increase, resulted in an increase in out-of-pocket expenses?”
Thank you for your question. Despite total expenditure on health is increasing, the subsidies from government is not increased. To pay the increased gap between governmental spending and total health expenditure, insurer and/or insured have to bear these expenses. Especially in Korea, the public insurer, which is the only health insurance cooperation, is unable cover all this expenses alone. Therefore, we have interpreted that a decrease in government expenditure under the expansion of total health expenditure could result an increase in out-of-pocket expenses without mediation from the national insurer in Korea.

“Page 6, line 118: there may be other reasons that those under 40 are more vulnerable to death by suicide. Perhaps better to state that financial stress may be one factor.”
Thank you for your accurate comment. As there might be some bazaar expression in sentence, we changed it as follow; [Page 6, line 120]
\ Since the financial stress might be important factor especially in Korea, we have to put concern on the financially vulnerable groups.

“Page 6, line 119 - I'd like to see the aims of the paper more clearly defined here.”
Thank you for your comment. As this sentence is not enough to show the aims of the paper, we revised the sentence as follow; [Page 7, line 143]
\ Then we are going to focusing on the analysis for the temporal association between EHEs and suicidal ideation among the primary income earners in household. In other words, we would like to verify the hypothesis that the recently occurred EHEs have greater relation to suicidal ideation rather than remote occurred EHEs.

METHODS

“Some headings (e.g. participants; procedure, statistical analysis) would help make this section clearer.”

Thank you for your accurate comment. We divided some paragraphs in methods into sub-section using heading as your recommendation as follow;

\ Participants, the characteristics of individuals as primary income earners, the characteristics of households, measuring depressive symptoms and suicidal ideation, and statistical analysis.

“Some of the description of the analysis currently in the results section needs to be moved into the methods section.”

Thank you for your accurate comment. We agreed that we need to move some explanation in results to methods section. Thus we revised and add some sentence into methods.

“Page 7, line 132: I know this is secondary analysis, but I think you still need to describe the ethics approval for the original data collection.”

Thank you for your comment. As you already mentioned, this is national opened data in Korea. However, we got the approval of this study from Institutional Review Board (IRB) approval from Graduate School of Public Health in Yonsei University. The approval number is as follow: IRB approval No. ‘2-1040939-AB-N-01-2015-202’. [Page 8, line 168]

“Page 7, line 138: You need a rationale for why you think heads of household would be the most vulnerable to an economic crisis. Did you consider doing a comparison of the impact on other family members?”

Thank you for your comment. In Asian culture, household heads mainly men enjoyed a considerable degree of prestige and power, together with sole financial responsibility to support the family, the loss of occupational status and reduced income severely affected their self-image, often resulting in depression. Social scientists commonly referred this to “status deprivation (Koh, 2003)”. In fact, during the economic crisis in 1997 in Korea, many household heads with family members of disabled or dementia killed their whole family members and committed suicide. Therefore, we hypothesized that the financial role of household heads as primary income earners made they more stressful due to the increase in health expenditures for diseases. In addition, since some of other family members under the age nineteen did not respond to depressive scale of CESD-11, it is not able to adjust the depressive symptoms as a dependent variable.

To put all things together, we decided to the suicidal ideation of household heads among the subjects as primary income earners.

Kho HC. Cultural Perspectives on Korean American Cancer Control. Korean Korean Am Stud Bull. 2003; 13(1/2): 16–39.

“Page 8, line 148: is this expenses and income per annum?”

Thank you for your accurate comment. As you mentioned, the disposable income per annum is definition for CHE. Thus we add the ‘per annum’ in sentence.

“Page 8, line 158: Could you include the full name of the CESD-11 in the first instance?”

Thank you for your accurate comment. As you mentioned, we used the full name of CESD-11 as Center for Epidemiologic Studies Depression Scale (CES-D).

“Page 8, line 162: Averaging across the items seems an unusual way to calculate a score. Do you mean you totalled the items?”

Thank you for your accurate comment. We apologize for the incorrect description on CESD-11. We changed the term from averaging to totaling as your recommendation.

“Page 8, line 162: Given that suicidal ideation is your primary outcome, it is important to state which measure you used or what the question was. There are many ways to assess suicidal ideation.”

Thank you for this important comment. We needed more concrete description to increase the validity of this manuscript. We know that there are many kinds of index for measuring suicidal ideation such as suicidal ideation questionnaire (SIQ), which was developed by Reynolds in 1987. However, in this panel survey, the serious suicidal ideation was measured as follow; [Page 9, line 219]
⑊ “Have you ever had once suicidal ideation seriously during the last one year based on the date of today?”
This question is the same as National Health and Nutrition Examination Survey in the United States. As your recommendation, we mandated this question in the method section to provide concrete information for the dependent variable.

“Page 8, line 166-167: what p-value did you use to determine significance? Also it seems that you did some post-hoc analyses. How did you correct for this?”
Thank you for your accurate comment. As your recommendation, we revised the paragraph as follow; [Page 10, line 239]
◊ To examine the increased relationship between EHE and suicidal ideation, we performed another analysis using various cut-off values for EHEs. When p-value was less than 0.05, we defined the statistical result as significance. We used the SAS 9.3 statistical package (Cary, NC, USA) for statistical analysis.

RESULTS
Page 10, line 174: This paragraph and the next contain quite a lot of detail about what was tested and how, which probably should go into the methods section. Also, given that you have the p-values in the tables, you probably don't need to restate them here.
Thank you for your accurate comment. As your recommendation, we moved this paragraph to methods section and deleted concrete p-value of each variable. Moreover, we re-positioned the paragraphs associated with methods section and described again about the demographic characteristics among subjects and targeted households.

Page 11, line 203: I found this sentence a little confusing. Is there a clearer way of describing the relationship between the level of CHE, the year, depression, and suicidal ideation?
Thank you for your accurate comment. We tried to clarify this sentence as your recommendation as follow; [Page 13, line 279]
⑊ Because the heads of households with moderate to severe depressive symptoms were more vulnerable to the high threshold of EHEs in various threshold settings, a subgroup analysis was performed for heads of households whose sum of CESD-11 score were sixteen or more (Table 4)

DISCUSSION
Page 12, line 213: Did they report more episodes, or were they just more likely to have suicidal ideation? I think your outcome was binary?
Thank you for your comment. As you mentioned, the presence of suicidal ideation as the dependent variable was binary. Thus we need to revise paragraph as your recommendation and did not use the term of ‘episode’.

Page 12, line 226: The sentence starting 'However, because national reimbursement...' could be combined with the next one and be much clearer, i.e. national reimbursement was low so out of pocket expenses were high. This paragraph could probably be summarised, since it's really restating what is already in the introduction.

Thank you for your comment. We are willing to summarizing this paragraph as follow to avoid the repetition; [Page 14, line 306]
⑊ Although this problem was improving slowly, a global economic crisis in 2008 hindered the ability of patients to visit clinics due to high out-of-pocket expenses and low incomes, especially for the low

SES class with chronic and severe diseases due to the tremendous medical expenses.

Page 13, line 243: I think the point of this paragraph needs to be much clearer, and some of the detail removed. It's not clear what the authors are arguing here - that better health coverage for low income families leads to better mental and physical health outcomes and reduces out of pocket expenses?
Page 13, line 257: The amount of detail about the study could be reduced. Summarise the most interesting bits and leave out the rest. I also think that this and the previous study you described (Medicaid) could be worked into your introduction to make an argument for why your study is important.
First of all, thank you for your comment. As your recommendation, we revised these two paragraphs and moved them to the introduction to make stronger aims to the study. We hope that this could enhance the necessity of the study regarding the excessive health expenditure and suicidal ideation among primary income earner in households.

Page 14, line 282: saying that there is a rough association between suicidal ideation and attempts might be too broad. Perhaps better to say that a proportion of people who have suicidal ideation will go on to make an attempt would be more accurate, as there is also a large proportion of people who don't go on to make an attempt. There is also accumulating evidence that there are important differences between those who progress from ideation to attempt (see work by Thomas Joiner, Rory O'Connor and Matthew Nock), so you need to be a little careful about how your describe this.
Thank you for your comment. As your recommendation, it would be better to describe the association between suicidal ideation and suicide attempt carefully. Through several previous studies, we understood that a small portion of suicidal ideation progressed into suicide attempt. Thus we have to revise previous paragraph and citied some key references including the work by Thomas Joiner, Roy O' Connor and Matthew nock. The revised paragraph is as follow; [Page 15, Line 323]
\ Second, we used the suicidal ideation as a dependent variable, not suicidal attempt. Because the number of suicide attempts observed during the study period was too small to continue the analysis, we used suicidal ideation. Although a small portion of general population with suicidal ideation eventually tried suicide attempts, suicidal ideation is still one of the powerful indicators to predict suicide attempt. According to one study in Korea, 84% of subjects with suicide attempt had previous suicidal ideation during the last two year. Moreover, 'someone talking or writing about death, dying, or suicide' is well established consensus warning sign for suicide. Thus, even suicidal ideation is regarded as important dependent variable for preventing the progress to suicidal attempts or suicide.

Page 15: The discussion seems to finish a little suddenly. I'd like to see a paragraph drawing some conclusions and discussing the policy and clinical implications of your findings.
Thank you for your comment. Since we agreed with the reviewer's comment, we added more concrete implication from the results in discussion. [Page 16, Line 354]]
\ Despite these limitations, we believed that this study still deserve to be published in several reasons. First, this study used national opened data representing the Republic of Korea. Through this well-designed panel survey, this study had high external validity and is able to be expanded in the future. Second, we first studied the relationship between EHE and suicidal ideation in Korea up to our knowledge. Thus it could encourage other researchers and policy makers to pay an attention to the economic burden for health as an attributable factor to suicidal ideation. Third, it is able to minimize the health disparity in society through the subsidies to EHE. Because EHE hinders the access to healthcare system, solving this problem could improve the basic human right for health and overall quality of public health.

Reviewer Name Bridianne O'Dea
Institution and Country Brain & Mind Research Institute, University of Sydney, Sydney, Australia.
Please state any competing interests or state 'None declared': None declared.

Please leave your comments for the authors below Thank you for inviting me to review this paper. From my reading, this paper attempts to outline the cross-sectional relationship between excessive health expenditure and suicidal ideation in the head of households in Korea. This paper is an important topic, in both the context of national and international research in this area. I have a number of suggestions for revisions for the authors before this paper can be accepted for publication.
First of all, thank you for your effort to improve this manuscript. As your mention, we are willing to revising some paragraphs in this paper. The details are as below;

"Title: Title would benefit from including the study design or nature of exploration i.e. cross-sectional"
Thank you for your comments at first. As your recommendation, all authors agreed to change the title as follow; [Page 1, line 3]
\ "The temporal association of excessive health expenditures with suicidal ideation in primary income earners: cross-sectional design using Korean Welfare Panel Survey (KoWePS)

Introduction:
"The rationale for the study could be made clearer, in particular, the outcomes you have chosen to measure. "
"There was little to no mention of past literature exploration the relationship between CHE's and mental health outcomes, nor any particular reference to CHE's and suicide. Has this been explored before in Korea or anywhere else? A brief mention of past research would allow the hypotheses to be formed."
Thank you for your comment. As your and another reviewer's recommendation, it would be better to establish clear rationale for study and to mention some background why we start to study the temporal association between EHE and suicide. Thus, we brought two articles in discussion section to introduction as follow; [Page 6, line 121]
\ In 2008, the state of Oregon in the United States initiated a limited expansion of its Medicaid program for low-income adults19. Five years after its initiation, researchers found no significant effect of Medicaid coverage on the prevalence or diagnosis of hypertension or high cholesterol levels or on the use of medication for these conditions. However, Medicaid coverage decreased the probability of a positive screening for depression interestingly (-9.15 percentage points; 95% confidence interval, -16.70 to -1.60; p=0.02), increased the use of many preventive services, and nearly eliminated excessive out-of-pocket medical expenditures. This study showed that the mental health could be improved by reducing the financial burden for health.
Another study that observed the association between CHEs and depression was performed in India20. According to this cross-sectional study in Goa, India, 138 women, whose households were spending medical cost more than 10% of their disposable income as EHE, were more likely to report economic difficulties, such as having gone hungry in the past 3 months because of a lack of money (OR 1.99, CI 1.1–3.6, p=0.02). In addition, depressive disorder was associated with significantly higher healthcare costs, lost time costs, and risk of EHEs. There was a linear association between psychological morbidity scores and the risk of EHEs. From this study, it could be suggested that economic arguments due to health problems were considered a key driver of mental health policy. Although some studies on excessive health expenditures in Korea were performed, there were only little for the relationship between excessive health expenditures and mental health.

" A defintion of CHE's should be included in the introduction. It is currently included in the method. On this note, I am confused as to why you calculated CHE's using 10% and 20% cutt-offs when the WHO defines CHE as 40%. This is a significant difference and has not been sufficiently justified. It seems inappropriate to reduce the % by this much. Findings may be more relevant if CHE remain defined at

40%."
"In addition, you could have created a heirarchical model to account for the variance between each step. I am not convinced that your 10% vs 20% CHE is the most sophisticated approach to answering your research question. I would advise re-running the analysis using a more defined level of CHE and controlling for depression severity and gender."
Thank you for your comment. We regard that your comment is very important that many readers might have same question on the thresholds of EHE. Thus we also performed supplementary analysis using 40% as threshold to fit this study to the global standard. However, according to the WHO guideline for CHE, they recommended that the threshold of EHE could be altered appropriately for each country (WHO, 2010). In fact, the Ministry of Korea set the standard of CHE as above ten percent in disposable income. Thus we also took the ten percent as the official cut-off value.
Moreover, as your recommendation, we analyzed both the continuous sum of CESD-11score and gender as dependent variables to adjust the odds ratios for suicidal ideation. We mentioned this in tables.
Regarding the hierarchical model of your comment, from the start of study design, we dismissed other family members and used only household heads. It means that there is only one individual for each household. Thus we did not apply hierarchical modeling such as GLIMMIX in SAS procedure.
However, it would be better to clarify the statistical results by each step as your recommendation. For this reason, we first performed logistic regression analysis (Model 1) adjusting only individual variables such as sex, age, educational level, presence of spouse, perceived health status, and depressive mood status. Then we put all the other variables including household characteristics together to analyze logistic regression model (model 2). To compare the fitness of models, we described -2logL scales in the table 3.
We appreciate for your comments again.

"The study aim needs to be clearer and would benefit from including the study design."
Thank you for your comment. As your recommendation, we carefully describe the aim again. The revised paragraph in introduction section is as follow; [Page 7, line 142]
⑊ "In this study, the compositions of health expenditures between households with and without EHEs were compared at first. Then we are going to focusing on the analysis for the temporal association between EHEs and suicidal ideation among the primary income earners in household"

Moreover, we needed more concrete description to increase the validity of this manuscript. Although we know that there are many kinds of index for measuring suicidal ideation such as suicidal ideation questionnaire (SIQ), which was developed by Reynolds in 1987. However, in this panel survey, the serious suicidal ideation was measured as follow; [Page 10, line 217]
◊ "Have you ever had once suicidal ideation seriously during the last one year based on the date of today?"
And this question is the same as National Health and Nutrition Examination Survey in the United States. As your recommendation, we mandated this question in the method section to provide concrete information for the dependent variable.

"The rationale for only assessing heads of household should be made in the introduction, not the method. A definition of what this term means would help to clarify the study."
Thank you for your comment. As your recommendation, we described more concrete information on household heads. In addition, we substituted this term to 'primary income earner' in household to clarify the meaning. We re-arranged the paragraphs not also in introduction and but also in discussion to strengthen justification for this study design. The revision is as follow; [Page 7, line 145/ Page 16, line 340]
⑊ [Introduction]
After the financial crisis of Korea in 1997, the primary income earners in households had great burden and financial responsibility to keep providing for family. For this reason, we would like to verify the

hypothesis that the recently occurred EHE have greater relation to suicidal ideation rather than remote occurred EHE among those primary income earners and their responsibility for providing family in Asian culture [Discussion]
“We excluded other family member except for the primary income earners in household. This panel survey tried to include all family members as much as possible; household heads answered mainly as practical and economic representatives of household. In addition, since family members whose age were under nineteen years old did not answer the CESD-11 scale, we could not adjust the depressive symptoms, one of the most important factors to suicidal ideation. Finally, we only included the primary income earners as study population.”

“The sentence "Our results suggest that CHE's have an adverse effect...." should be omitted from the introduction as results should be saved for latter sections.”
Thank you for your comment. As your recommendation, we dismissed this sentence in introduction.

Method:
“Please include the overall N of Korean households who complete the population survey (or an average) this can clarify how generalizable the large survey is.”
Thank you for your comment. As your recommendation, we described the all number of household in Korea from National Statistics Korea, 2014. A total number of 17,339,422 households were enrolled in governmental system in 2010. We mentioned this total number in new manuscript [page 9 line 174].
This national study dedicated to recruit representative sample in Korea as follow. The target population of KoWePS concerns all households living across the country. The KoWePS-led survey population represents 90% of the census conducted in 2005. The sampling frame of this survey amounts to 230,000enumeration districts (EDs) representing 90% of the national Census in 2005. Statisticians determined final panel households by applying ‘Stratified Double Sampling’ model. They selected 517 EDs of 24,711 households from the primary survey to identify family income before extracting 446 EDs as the final sample.
In conclusion, we added the total number of households in Korea based on the national census in 2010 and briefly introduced the sampling methods of KoWePS to increase the understanding the representative nature of this survey as follow; [Page 8, line 156]
“The KoWePS-led survey population represents 90% of the census conducted in 2005. Statisticians of this survey determined final panel households by applying ‘Stratified Double Sampling’ model.”

“ Please provide details of the University Ethics Application or clarify why Ethics was not sought from your university, despite the data being publically available.”
Thank you for your comment. As you already mentioned, this is national opened data in Korea. However, we got the approval of this study from Institutional Review Board (IRB) approval from Graduate School of Public Health in Yonsei University. The approval number is as follow: IRB approval No. ‘2-1040939-AB-N-01-2015-202’. [Page 8, line 168]

“More specific detail is needed on how the covariates were measured/categorized. Was this done by researchers or were they survey answer options for participants?”
Thank you for your comment. As you mentioned, we described more concrete information for the covariates in the methods section of new manuscript. All of them are survey answer options for participants, not by researchers.

“ Please define the cut-off scales for Depression and what this means.”
“How did you control for depression severity? You state that you completed a sub-group analysis, however, I am wondering why you did not enter depression score into the overall regression model to control for it this way?”
Thank you for your question. Since this is very important question, first we answered your question and then explain how we changed the analysis.

At first, we categorized the sum of CES-D scores into quartiles from the lowest (1Q) to the highest (4Q). Through this incremental categorization, it would be able to adjust the amount for depressive symptoms of individuals.
However, we changed to use the exact cut-off value as sixteen from the total sum of CESD scores, which is a threshold that need to, get further evaluation for potential major depressive disorders (MDD) from psychiatrists. We performed statistical analysis using this value again, and reported this result in Table 4 of new manuscript.
Furthermore, we followed your recommendation that we put the continuous the sum of CESD scores in multiple regression analysis. All of the tables were revised based on this continuous one.

“Please include the wording of the suicide question. Was this part of the CESD? If so, how highly does it correlate with the overall depression score? Is multicolinearity an issue?”
Thank you for your comment. As your mention, we agreed that we need to describe more specific on the dependent variable. The question for suicidal ideation is independent from the CESD questionnaire. In addition, since the CESD was used as independent variable while suicidal ideation as dependent variable, we considered that there was little chance to be multi-colinearilty issue. Although we know that there are many kinds of index for measuring suicidal ideation such as suicidal ideation questionnaire (SIQ), which was developed by Reynolds in 1987, the serious suicidal ideation was measured as follow in this panel survey; “Have you ever had once suicidal ideation seriously during the last one year based on the date of today?” As your recommendation, we mandated this question in the method section to provide concrete information for the dependent variable.[Page 10, line 219]

“ Please include a subheading 'Analysis' in your method and outline specifically your analysis approach. What was the modelling for the regression?
Thank you for your comment. As your recommendation, we included subheadings in methods section. In addition, we clearly re-described the modelling as multiple logistic regression analysis.

“A subgroup analysis may be more appropriate for those who had attempted suicide.”
Thank you for your comment. We agreed with your opinion that it would be better to perform subgroup analysis including suicidal attempt. However, among all 4,247 households, only five subjects attempted suicide. Thus, it was not able to perform statistical analysis due to the limitation of cases. We mentioned this lack of point in discussion.

Results:
“Please include a section that describes your sample: e.g. gender, age, income, depression, nature of health care costs, history of suicide attempts etc, i.e. any information you can report that will help us to better understand the sample characteristics.”
Thank you for your comment. As your recommendation, we described more concrete information of the co-variates those we included in statistical analysis.

“ Please avoid using the terms "impact" as this implies longitudinal associations and predictive power. In this paper, I would advise that it is more appropriate to use the terms "stronger association" etc.”
Thank you for your comment. As your recommendation, we deleted the term of “impact” and used “association”. As you know this study design is not only a randomized control trial, but also a longitudinal observational study, it is more appropriate to substitute the terminology.

* Different findings may be reported when re-running of analysis has occured.
“ I also feel that by selecting only one CHE cut-off, would provide clearer results and targets for future research.”
Thank you for your comment. As your recommendation, we used one cut-off value of EHE as 10

percent, which is the threshold of EHE from the Ministry of Health and Welfare in Korea. Using this threshold, Korean government started to provide subsidies for the treatment of cancer, cerebrovascular, cardiovascular, and incurable rare diseases from 2013. Thus we revised some tables here and unified the cut-off values as ten percent. In addition, we described the results using forty percent as threshold in supplementary table 1, which is the recommended value of WHO.

" In Table 1, not all rows are necessary. When using dichotomous variables it is easier to just report the first category."
Thank you for your comment. As your recommendation, we revised all dichotomous variables except for gender to make understanding easier. The revised table 1 included in new manuscript.

" In your methods, please define "senior person" "disabled person" "economically active"."
Thank you for your comment. As your recommendation, we described more concretely for the variables above. Disabled person means persons, who are officially qualified by doctors using the standard of national guideline for disabled. The subjects with disabled were all enrolled in national health statistics system and they are supported by government regularly.
"Senior person "was defined as whose age over 65, because it is generally accepted cut-off values for the aged. "Economically active family members" is defined as someone who worked regularly and got salary during last one year. If the job is not full time but included in the category of regular labor, then it is regarded as economically active position.

Discussion:
" It is not surprising that those with depression are experiencing higher levels of suicide ideation. Furthermore, in Australia alone, approximately 4% of the population at any given time, experience thoughts that their life is not worth living. I believe that there needs to be a greater level of discussion in the introduction and discussion around what your findings mean for preventing suicide."
Thank you for your comment. As your recommendation, we discussed further how the findings mean for preventing suicide. Through this study, we recognized the relationship between EHE and suicidal ideation in Korea at first. Although suicidal ideation is not trigger to suicidal attempt or suicide, it is still one of the most important predictors to suicide. Thus it could encourage other researchers and policy makers to pay an attention to the recently occurred heavy economic burden for health as an attributable factor to suicidal ideation.
Moreover, Korea already started to public subsidies for EHEs last year, further studies would be possible to figure out the decrease after the support for EHE in the near future. This will attribute to reduce health disparities in society through the subsidies to EHE. Because EHE hinders the access to healthcare system, solving this problem could improve the basic human right for health and overall quality of public health.
We mentioned this discussion as follow in new manuscript; [Page 16, line 354]
◊ "Despite these limitation, we believed that this study still deserve to be published in several reasons. First, this study used national opened data representing the Republic of Korea. Through this well-designed panel survey, this study had high external validity and is able to be expanded in the future. Furthermore, this national data could be compared to one of other countries such as Japan and Scandinavian countries, which used to be with high suicidal mortality rates.
Second, through this study, we recognized the relationship between EHE and suicidal ideation in Korea at first. Although suicidal ideation is not trigger to suicidal attempt or suicide, it is still one of the most important predictors to suicide. Thus it could encourage other researchers and policy makers to pay an attention to the recently occurred heavy economic burden for health as an attributable factor to suicidal ideation.
Third, it is able to minimize the health disparity in society through the subsidies to EHE. Because EHE hinders the access to healthcare system, solving this problem could improve the basic human right for health and overall quality of public health. Korea already started to public subsidies for EHEs last year, further studies would be possible to figure out the effect of the support for EHE in the near

future.
To put all things together, we still need to perform further investigation. As we are going to accumulating this Korean Data and following the trend of policy implication, we will report the effect of the policy for EHE.

"Linking healthcare costs needs to examine whether or not these health care costs were associated with their mental health, or some other issue, such as physical health or chronic pain. This will provide further development in understanding who is at risk of experiencing suicide ideation."
Thank you for your comment. Your comment is very important that only few researchers had much interest which diseases category were most associated with EHE in Korea. However, according to the globally previous studies, we are able to assume that the chronic diseases and disability would be the most candidates to EHE.
Kronenberg and Barros identified the determinants of the catastrophic medical payment in National Health System of Portugal. They figured out that chronic diseases and disabilities had more chance to be suffered from EHE.
Another two studies from Korea showed the relationship between other medical conditions and EHE. Choi et al. analyzed Korean Health Panel Study and figured out that cancer patients with unstable economic status were more vulnerable to EHE than the others with stable economic conditions. In addition, Park et al studied that family members with chronic diseases or disabilities were powerful attributable factors to EHE on household. However, none of them tried to figure out what kinds of disease categories are the most important. In this sense, another further study is needed to investigate the disease specific targeted to policy on EHE. We newly mentioned this as follow in discussion; [Page 16, line 345]
\ Fifth, we did not know what kinds of diagnosis categories, including mental and physical illness, were most powerful to the occurrence of EHE. Although few researchers studied the attributable medical conditions, the range of them were so wide, defined as chronic diseases or disabled. For example, Choi et al. analyzed Korean Health Panel Study and figured out that cancer patients with unstable economic status were more vulnerable to EHE than the others with stable economic conditions. In addition, Park et al studied that family members with chronic diseases or disabilities were powerful attributable factors to EHE on household. However, none of them tried to figure out what kinds of disease categories are the most important. In this sense, another further study is needed to investigate the disease specific targeted to policy on EHE.

VERSION 2 – REVIEW

REVIEWER	Fiona Shand Black Dog Institute, University of New South Wales, Australia
REVIEW RETURNED	10-Apr-2015

GENERAL COMMENTS	Overall comments: This paper describes an interesting study and it seems to be quite methodologically sound, but it lacks clarity, both in its structure and language. I found it difficult to review it properly because of this. Abstract: Results: It's probably enough to state that depression was associated with increased suicidal ideation (OR….) without mentioning which measure was used. That kind of detail can go in the manuscript – methods section. Introduction: Would it be enough to define what a CHE is here (i.e. 40% of disposable income per annum but defined differently in different studies)? Then put the detail of your own definition in the methods

	section. The introduction could be more concise. For example, the findings from the studies in Oregon and Goa could be summarized in a few sentences – probably not necessary to include so much detail. Would it be possible to have the language in the manuscript reviewed/edited? The language is correct but there are places where it needs to be much clearer. E.g. 'Although a few studies on EHE in Korea were published15 16, there were only little for the relationship between excessive health expenditures and mental health.' Do the authors mean that the study was small, or that the relationship between EHE and mental health was small? I would turn the last paragraph in the intro into aims, e.g. the aims of this study were to (1) compare health expenditures between households with and without EHEs (2) examine the temporal association between EHEs and suicidal ideation among the primary income earners in household, (3) test whether recent EHEs have a greater impact on suicidal ideation than more remote EHEs… Methods: The design and methodology are very thoroughly described, but I think the word count could be substantially reduced, e.g. instead of 'presence of a spouse' you could say marital status (married/not married), which saves you from having to describe this later in the paragraph. It might be clearer if you have a sub-heading called 'covariates' where you list all of the covariates in your analysis. At the moment they seem to be described under two or three different sub-headings. The translation of the suicidal ideation question is unclear. Results: Table 1: Could you please include the % in the total column, not just the N? Better subheadings might be 'primary income earner characteristics' and 'household characteristics'. Para 2: You've said that there is greater suicidal ideation in those who've had a 40% EHE compared with a 10% EHE but I can't see that statistical test for this. You probably don't need to mention the difference in depression scores for those with and without suicidal ideation in the first para, as you mention it again when you describe the regression results. Discussion: I think the discussion is okay, but the language really needs editing. Supplementary Table 1: the heading is confusing. Is the EHE threshold 10% or 40%?

REVIEWER	Bridianne O'Dea Black Dog Institute, The University of New South Wales, Sydney, Australia
REVIEW RETURNED	17-Apr-2015

GENERAL COMMENTS	When I begin reading your paper, based on the title and the content of the introduction (more on EHE) I assume the methodology is going to be selecting those from the survey who have an EHE, and then further analysis to see how many of those experiencing EHE, also experience suicidal ideation, and what factors predict someone from having an EHE+suicidal ideation vs. those with EHE only. However, when you read the methods & results, it is different. You first reduce the sample to those with suicidal ideation (rather than EHE) and then look at how much of suicidal ideation is predicted by EHE. This is perfectly acceptable, however, I think that the introduction would benefit from framing it this way, for example discussing suicidal ideation briefly, in the context of Korea, and then introducing how EHE has been linked to suicidal ideation in the past. This is easily fixed, and avoids you from changing the title and re-running slightly different analyses. The results section would need slightly different structuring, to avoid looking at the same relationship but from two different directions (as I described above). Throughout the manuscript, you refer to CHE's, and EHE's. I am confused as to whether a CHE = 40% and EHE = 10% +. Please clarify your use of CHE and EHE throughout the manuscript more clearly. If you could define how you operationalised EHE in your methods section specifically, that would be helpful. It would be worthwhile stating in your results the significant differences between males and females and their rates of suicidal ideation, and even report and odds ratio this. I feel that the discussion focuses too heavily on the limitations of the study. Instead please discuss the implications of the study - what this could possibly mean from a policy or intervention level? Can you make any meaningful comparisons with other data? Has anything been done to address this? Based on these findings what would you recommend? Reduce your limitations to one paragraph and combine with recommendations for future research to satisfy these limitations. I believe the conclusion could be restructured to highlight the strenghts of the study rather than what is currently stated. Overall, there are a number of examples where the english language needs to be addressed. E.g. the statements "...the fiscal stability in households is too heavy for many Koreans not to kill themselves.." Please omit statemetnts like this. It would also be advised to reduce your use of the pronouns "we" and be more factual. There are some spelling and grammatical errors that also need to be addressed.

VERSION 2 – AUTHOR RESPONSE

Answer to the first reviewer, Dr. Fiiona Shand:
Per your suggestion, we made an effort to enhance clarity of paper, especially for structure and language.

Abstract:
Results: It's probably enough to state that depression was associated with increased suicidal ideation (OR….) without mentioning which measure was used. That kind of detail can go in the manuscript – methods section.
- Thank you for your comment. Per your recommendation, we deleted the term 'CESD-11' in results.

Thank you.

Introduction:
Would it be enough to define what a CHE is here (i.e. 40% of disposable income per annum but defined differently in different studies)? Then put the detail of your own definition in the methods section.
- Thank you for your comment. Per your recommendation, we decided to delete unnecessary paragraphs regarding CHE and EHE from the introduction.

The introduction could be more concise. For example, the findings from the studies in Oregon and Goa could be summarized in a few sentences – probably not necessary to include so much detail.
- Thank you for your comment. Following your recommendation, we made more condensed paragraphs regarding previous studies. Through this process, introduction was made much more concise than before.

Would it be possible to have the language in the manuscript reviewed/edited? The language is correct but there are places where it needs to be much clearer. E.g. 'Although a few studies on EHE in Korea were published15 16, there were only little for the relationship between excessive health expenditures and mental health.' Do the authors mean that the study was small, or that the relationship between EHE and mental health was small?
- Thank you for your comment. Per your recommendation, we've had the manuscript undergo professional English revision. As for your question above, there are no appropriate studies to examine the association between mental health and EHE among the few studies conducted in Korea.

I would turn the last paragraph in the intro into aims, e.g. the aims of this study were to (1) compare health expenditures between households with and without EHEs (2) examine the temporal association between EHEs and suicidal ideation among the primary income earners in household, (3) test whether recent EHEs have a greater impact on suicidal ideation than more remote EHEs…
- Thank you for your comment. All authors agreed to revise the last paragraph according to your recommendation. We updated it into the new manuscript. Once again, thank you for your comment

Methods:
The design and methodology are very thoroughly described, but I think the word count could be substantially reduced, e.g. instead of 'presence of a spouse' you could say marital status (married/not married), which saves you from having to describe this later in the paragraph.
- Thank you for your comment. We revised to reduce the word count thorough some appropriate replacements. Once again, thank you.

It might be clearer if you have a sub-heading called 'covariates' where you list all of the covariates in your analysis. At the moment they seem to be described under two or three different sub-headings.
- Thank you for your comment. Per your recommendation, we unified the two paragraphs of covariates into one. In addition, we have rearranged the section on dependent variables to make it more clear. Once again thank you.

The translation of the suicidal ideation question is unclear.
- Thank you for your comment. Per your recommendation, we described more concretely and clearly on the suicidal ideation question as follow; ""Have you seriously considered suicide at any time in the past year?".

Results:

Table 1: Could you please include the % in the total column, not just the N? Better subheadings might be ‘primary income earner characteristics’ and ‘household characteristics’.
- Thank you for your comment. In accordance with your recommendation, we replaced these subheadings. In addition, we included the % in total column with the N. Once again, thank you for your comment.

Para 2: You’ve said that there is greater suicidal ideation in those who’ve had a 40% EHE compared with a 10% EHE but I can’t see that statistical test for this.
- Thank you for your comment. In fact, we did not compare the 40% and 10% of EHE. Instead, we compared the chance of suicidal ideation when someone has 10% or 40% of EHEs, compared to the others without EHEs. Since it seemed that it might lead to misunderstanding, we revised the paragraph as you recommended. Once again, thank you.
You probably don’t need to mention the difference in depression scores for those with and without suicidal ideation in the first para, as you mention it again when you describe the regression results.
\ Thank you for your comment. Per your recommendation, we deleted the concrete description for the CESD score in the first paragraph to avoid repetition.

Discussion:
I think the discussion is okay, but the language really needs editing.
- Thank you for your comments. Following your recommendation, we’ve finished the second English revision with professional editing. Thank you.

Supplementary Table 1: the heading is confusing. Is the EHE threshold 10% or 40%?
- Thank you for your comments. Per your recommendation, we clearly mentioned that EHE threshold in the supplementary table is forty percent of total household expenditure.

Answer to the first reviewer, Dr. Bridianne O'Dea;

Please leave your comments for the authors below Dear authors, I feel that this paper has been significantly improved, however I feel that there are a number improvements that still need to be made.
- Before addressing your comments for the second revision, we want to express our appreciation for your kindness and efforts to improve the manuscript. Through this improvement, we hope that this paper is able to be published and be read by many health policy makers and professionals for mental health. Thus, the second comments are unusually broad; we did our best regarding all you mentioned. Once again, thank you.

When I begin reading your paper, based on the title and the content of the introduction (more on EHE) I assume the methodology is going to be selecting those from the survey who have an EHE, and then further analysis to see how many of those experiencing EHE, also experience suicidal ideation, and what factors predict someone from having an EHE+suicidal ideation vs. those with EHE only. However, when you read the methods & results, it is different. You first reduce the sample to those with suicidal ideation (rather than EHE) and then look at how much of suicidal ideation is predicted by EHE. This is perfectly acceptable; however, I think that the introduction would benefit from framing it this way, for example discussing suicidal ideation briefly, in the context of Korea, and then introducing how EHE has been linked to suicidal ideation in the past. This is easily fixed, and avoids you from changing the title and re-running slightly different analyses. The results section would need slightly different structuring, to avoid looking at the same relationship but from two different directions (as I described above).
- Thank you for the comment. Per your recommendation, we re-arranged the paragraphs in introduction and believed that it would be more logical than before. Once again, we appreciate for your comment.

Throughout the manuscript, you refer to CHE's, and EHE's. I am confused as to whether a CHE = 40% and EHE = 10% +. Please clarify your use of CHE and EHE throughout the manuscript more clearly. If you could define how you operationalised EHE in your methods section specifically, that would be helpful.
- Thank you for your comment. As you understood, we refer CHE as health expenditure more than 40% of total household expenditure, while EHE as 10% to 40 %. We described more concretely about EHE in the methods section, using a separate paragraph. Once again, thank you.

It would be worthwhile stating in your results the significant differences between males and females and their rates of suicidal ideation, and even report and odds ratio this.
- Thank you for your comment. Per your recommendation, we performed an additional statistical analysis by sex and we reported this in the Supplementary Table 2 and results. As you mentioned, women were especially vulnerable to EHEs, while men were not. Once again, thank you for your comment.

I feel that the discussion focuses too heavily on the limitations of the study. Instead please discuss the implications of the study - what this could possibly mean from a policy or intervention level? Can you make any meaningful comparisons with other data? Has anything been done to address this? Based on these findings what would you recommend? Reduce your limitations to one paragraph and combine with recommendations for future research to satisfy these limitations. I believe the conclusion could be restructured to highlight the strenghts of the study rather than what is currently stated.
- Thank you for your comment. Following your recommendation, we reduced the limitations and described more concrete on implication of the study. In particular, the Korean government initiated a financial support program for EHEs in Korea in 2014. Thus the results could be an evidence for acute intervention for households with recently occurring EHE. We added this content in discussion section more. Furthermore, we re-structured conclusion according to your advice. Once again, thank you.

Overall, there are a number of examples where the english language needs to be addressed. E.g. the statements "...the fiscal stability in households is too heavy for many Koreans not to kill themselves.." Please omit statemetnts like this. It would also be advised to reduce your use of the pronouns "we" and be more factual. There are some spelling and grammatical errors that also need to be addressed.
- Thank you for your comments. Following your recommendation, we've finished the second English revision with professional editing. Thank you.