PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	The Relationship between Suicidal Ideation and Symptoms of Depression in Japanese Workers: A Cross sectional Study
AUTHORS	Takeuchi, Takeaki; Nakao, Mutsuhiro

VERSION 1 - REVIEW

REVIEWER	Arup Dhar Baker IDI Heart & Diabetes Institute Australia I have received travel support from Servier pharmaceutical company to attend investigator meetings.
REVIEW RETURNED	19-Sep-2013

GENERAL COMMENTS	(Qu1) Suggest title of paper includes the term 'Japanese workers' as opposed to simply 'Japan', as the title in its current format is misleading. (Qu12) Address limitations further eg why standardised interviews were not used eg Mini International Neuropsychiatry Interview. Was there was any inter rater reliability training sessions carried out?

REVIEWER	Toffol, Elena National Institute for Health and Welfare
REVIEW RETURNED	19-Sep-2013

GENERAL COMMENTS	This paper reports the prevalence of MDD and suicidal ideation in a sample of 1266 Japanese workers; additionally, it describes the association between suicidal ideation and specific depressive symptoms in the above-mentioned population. Even though the work is overall well-built, I think some limitations need to be addressed. My major comment concerns the overall aim of the study. I understand the authors' position that suicidal ideation is a taboo in many cultures, and that it may be difficult to assess on a general screening level. However, I would not spread the message that investigating depressive symptoms may be an alternative to assessing suicidal ideation. I would rather claim that assessing specific depressive symptoms, known to be related to suicidal ideation, is an important addition, possibly a preliminary step in the more specific and direct evaluation of suicidal ideation. Also, the authors found significant associations between suicidal ideation and some specific depressive symptoms (depressive mood, worthlessness and concentration loss): is this really a novel finding? In other words, how much these associations are rather expression of all being part of the same diagnostic group? The idea of detecting possible predictors and indirect signs of suicidal ideation is interesting, but I think a more robust design (e.g. a longitudinal one) would be needed. I would at least address these points in the

	limitations. Also, the authors state that Japanese workers may be reluctant to report suicidal ideation: thus, is it possible that those who are classified as non-ideators in this study, in fact have themselves suicidal ideation? Could this have biased the results? Other minor considerations are reported below: 1. in general: a language revision is needed. Some sentences were not very clear to me. E.g.: introduction, page 4, line 15 “however, outcome has yet been observed clearly”; discussion, page 9, line 48 “completed suicides are likely to have a background of suicidal ideation”. 2. abstract: what does “the prevalence and potential for suicidal ideation ….” mean? In the abstract the authors mention a previous study of theirs: the readers may not be familiar with this study, I would add some more information here (psychiatric patients? any patients?; also, I would suggest reporting the prevalence rate: e.g. “…although a previous study reported a XXX prevalence rate of suicide in XXX”). 3. introduction, page 4, line 18: what are the “collaborative care models”? I would briefly mention what a collaborative care model consists of. 4. introduction, page 4, beginning of paragraph 3: I would reformulate this first sentence. Again I would be careful in claiming that instead of investigating depression, we could simply investigate suicidal ideation (besides, this is somehow contradictory with the general aim of study). I would rather say that “in addition to…”. Similarly, I would reformulate the sentence at page 5, lines 20-22: “Therefore, instead of identifying suicidal ideation….” This should also be pointed out in the discussion. 5. Introduction, page 49-51: the authors refer to a previous study of theirs. I would suggest reporting here the prevalence rate of suicidal ideation found in the study; also, in which kind of clinics was the study conduct? Psychiatric clinics? Any clinics? 6. Introduction, page 5, line 25: the authors state that “more than 30000 people have committed suicide each year for the past 10 years”. Suicidal rates would be more informative. 7. Methods: one concern is about the representativeness of the study population. Participants were over 1000 office-worker in an enterprise in Tokyo. I would say that this is a quite selected population. How about workers in other sectors (e.g. physically demanding jobs) or in other areas (e.g. rural areas)? Also, though a big number, I would assume that 1000 people is a rather small proportion of the Japanese population. I would acknowledge this more in detail in the limitations. Also, I am wondering about the gender disproportion in the sample (13% women): could this have influenced the results? Women are known to be more likely to suffer from depression, and suicidal ideation is one of the diagnostic criteria for MDD. 8. Methods, Assessment of major depressive disorder including suicidal ideation: which clinical interview was used to assess MDD? And how was suicidal ideation evaluated? Is suicidal ideation a “diagnosis”? 9. Methods, Assessment of lifestyle factors: how were sleep disturbances evaluated? 10. Methods, Statistical analyses: the authors state that “logistic regression analyses were used to evaluate the association between suicidal ideation and MDD”: is this correct? Or did they study the associations with each MDD symptom? 11. Results: the results reported in the first paragraph are not completely clear: the authors say that “those with suicidal ideation were more likely to be women”, but in fact 21.6% only are women. I

	assume the authors refer to the comparison with individuals without suicidal ideation (women 21.6% vs. 12.9%), but as it is reported now, is somehow confusing. 12. Results and Table 1: the authors report that, compared with non ideators, those with suicidal ideation were more likely to be in the age group 40-49 years. Also those in the age group 20-29 were more likely to report suicidal ideation. 13. Table 1: in the methods the authors mention the assessment of sleep disturbances and anxiety, but then they do not report any results about sleep disturbances and anxiety. These results should be reported at least in the table (otherwise, please remove the description from the methods section). 14. Table 2 would be clearer if the significant items and ORs were somehow highlighted; I would also like to see the p-values in the Table.

VERSION 1 – AUTHOR RESPONSE

Reviewer: Arup Dhar
(Qu1) Suggest title of paper includes the term 'Japanese workers' as opposed to simply 'Japan', as the title in its current format is misleading.
General response to Mr. Arup Dhar: We really appreciate you being engaged in our paper's revising process.
Response: Thank you for your comment. We have changed the title to "The Relationship between Suicidal Ideation and Symptoms of Depression in Japanese Workers: A Cross sectional Study" in order not to be misleading.

(Qu2) Address limitations further eg why standardised interviews were not used eg Mini International Neuropsychiatry Interview. Was there was any inter rater reliability training sessions carried out?
Response: Thanks for your valuable comment. As we mentioned in the introduction section, the question of suicide in Japanese workers is a kind of taboo, so it was difficult to use MINI for asking about suicide (six questions). Instead, we limited our question to suicidal ideation.
Interviewers' diagnoses were sufficiently consistent. Two physicians, who specialize in both psychiatry and psychosomatic medicine, checked the consistency of their diagnoses for 20 cases according to the axis I classification of disorders, including MDD (the 20 cases were presented by a professor not related to this study). Out of the 20 cases, 14 were diagnosed similarly by the two physicians (the kappa statistics was 0.94).

Reviewer: Toffol, Elena
This paper reports the prevalence of MDD and suicidal ideation in a sample of 1266 Japanese workers; additionally, it describes the association between suicidal ideation and specific depressive symptoms in the above-mentioned population. Even though the work is overall well-built, I think some limitations need to be addressed.
General response to Ms. Toffol Elena: We really appreciate you being engaged in our paper's revising process.

My major comment concerns the overall aim of the study. I understand the authors' position that suicidal ideation is a taboo in many cultures, and that it may be difficult to assess on a general screening level. However, I would not spread the message that investigating depressive symptoms may be an alternative to assessing suicidal ideation. I would rather claim that assessing specific depressive symptoms, known to be related to suicidal ideation, is an important addition, possibly a preliminary step in the more specific and direct evaluation of suicidal ideation. Also, the authors found significant associations between suicidal ideation and some specific depressive symptoms (depressive mood, worthlessness and concentration loss): is this really a novel finding? In other

words, how much these associations are rather expression of all being part of the same diagnostic group?
Response: Thanks for your kind and concrete comments. We would like to say that assessing specific depressive symptoms in occupational fields is an important addition. Our research was based on the occupational field, not the clinical field. That is the main novelty of our paper. Clinically, the relationship between suicide and depression has been researched by many previous studies. However, studies which have mentioned this relationship in the occupational field has been few. Our investigation therefore is important as an occupational field study. To clarify our study's originality, we have changed the title to "The Relationship between Suicidal Ideation and Symptoms of Depression in Japanese Workers: A Cross sectional Study" in order not to be misleading.

The idea of detecting possible predictors and indirect signs of suicidal ideation is interesting, but I think a more robust design (e.g. a longitudinal one) would be needed. I would at least address these points in the limitations.
Response: Following the reviewers comments, we added the following sentence in the limitation section, "To confirm the results, a more robust study such as prospective cohort study would be needed"(Page 10, lines 4-5).

Also, the authors state that Japanese workers may be reluctant to report suicidal ideation: thus, is it possible that those who are classified as non-ideators in this study, in fact have themselves suicidal ideation? Could this have biased the results?
Response: There is a possibility that reluctance in Japanese respondents may cause bias, this however tends to produce estimates of the effect that are diluted, or closer to the null or no-effect value than the actual effect. Therefore, the result itself is plausible.

Other minor considerations are reported below:
1. in general: a language revision is needed. Some sentences were not very clear to me. E.g.: introduction, page 4, line 15 "however, outcome has yet been observed clearly"; discussion, page 9, line 48 "completed suicides are likely to have a background of suicidal ideation".
Response: To make the meaning more clearly, we change the sentence to "however the suicide rate in Japan has not decreased (page 4, lines 5-6)" and "completed suicides have a background of suicidal ideation (page 9, line 18-19)."

2. abstract: what does "the prevalence and potential for suicidal ideation …." mean? In the abstract the authors mention a previous study of theirs: the readers may not be familiar with this study, I would add some more information here (psychiatric patients? any patients?; also, I would suggest reporting the prevalence rate: e.g. "…although a previous study reported a XXX prevalence rate of suicide in XXX").
Response: Following the reviewer's comments, we changed the sentence in abstract to "The prevalence of suicidal ideation and predictors for suicidal ideation among Japanese workers is unknown, although a previous study reported a 30 % prevalence rate of suicide in a psychosomatic clinical setting."

3. introduction, page 4, line 18: what are the "collaborative care models"? I would briefly mention what a collaborative care model consists of.
Response: We added the following words, "collaborative care, that is, structured care involving a greater role of nonmedical specialists for treating depression……"(page 4, Lines7-8)

4. introduction, page 4, beginning of paragraph 3: I would reformulate this first sentence. Again I would be careful in claiming that instead of investigating depression, we could simply investigate suicidal ideation (besides, this is somehow contradictory with the general aim of study). I would rather

say that “in addition to…”. Similarly, I would reformulate the sentence at page 5, lines 20-22: “Therefore, instead of identifying suicidal ideation….” This should also be pointed out in the discussion.
Response: Following the reviewer’s comments, we changed the sentence “In addition to investigating……(page 4 line 14)”,“we try to identify both suicidal ideation and the symptoms closely related to suicidal ideation in determining an individual’s risk of suicide”(page 5 lines 8-9).

5. Introduction, page 49-51: the authors refer to a previous study of theirs. I would suggest reporting here the prevalence rate of suicidal ideation found in the study; also, in which kind of clinics was the study conduct? Psychiatric clinics? Any clinics?
Response: Same as the abstract part, we added the following sentence in the introduction, “Our previous study reported the prevalence of suicidal ideation (30%) in a psychosomatic clinical setting7” (page 4, line 21).

6. Introduction, page 5, line 25: the authors state that “more than 30000 people have committed suicide each year for the past 10 years”. Suicidal rates would be more informative.
Response: We have added “25 per 100,000 people” after the 30000 people (page 5 Line 10)

7. Methods: one concern is about the representativeness of the study population. Participants were over 1000 office-worker in an enterprise in Tokyo. I would say that this is a quite selected population. How about workers in other sectors (e.g. physically demanding jobs) or in other areas (e.g. rural areas)? Also, though a big number, I would assume that 1000 people is a rather small proportion of the Japanese population. I would acknowledge this more in detail in the limitations. Also, I am wondering about the gender disproportion in the sample (13% women): could this have influenced the results? Women are known to be more likely to suffer from depression, and suicidal ideation is one of the diagnostic criteria for MDD.
Response: Thank you for your comments. As we mentioned in the limitation, our data can only apply to the working population in urban working places. We have mentioned this in the discussion section as follows. “The study is only applicable to a working population in an urban area in Japan.” (page 10, lines 6–7).
As the reviewer has mentioned, our sample size was relatively small. However, a small sample size does not mean that the correlation is unsure. If we observe a statistically significant difference in a small sample, it actually implies that the result is robust, because it would be easier to achieve statistical significance with a large number of subjects. However, there is definitely a possibility that our sample does not represent the general population. We have thus added the before mentioned sentence in the limitation section.
The fact that low number of women reflects Japanese women's low participation in the workplace. Now, a national project to enhance the entrance of women into the workforce is undergoing. Statistically no significant differences were observed in the results of the analysis before and after the adjustment by sex in table 2, therefore sex difference does not have a significant influence on the results.

8. Methods, Assessment of major depressive disorder including suicidal ideation: which clinical interview was used to assess MDD? And how was suicidal ideation evaluated? Is suicidal ideation a “diagnosis”?
Response: We evaluated MDD and suicidal ideation independently. To diagnose MDD, the semi-structured clinical interview (Structured Clinical Interview for DSM-IV for axis I disorders: SCID-CV) was used. To diagnose suicidal ideation, Y/N questions about suicidal ideation were used in the following interview of SCID. Suicidal ideation was a kind of diagnosis on Y/N questions. No discrepancy was observed between suicide question of MDD and Y/N suicidal questions.

9. Methods, Assessment of lifestyle factors: how were sleep disturbances evaluated?

Response: Three types of insomnia symptoms from the previous month were assessed using the following questions: “Do you have difficulty falling asleep at night?” (difficulty in initiating sleep), “Do you wake up during the night after you have gone to sleep?” (difficulty in maintaining sleep), and “Do you wake up too early in the morning and have difficulty getting back to sleep?” (early morning awakening). These questions were adopted from our previous studies (Nomura K, Yamaoka K, Nakao M, Yano E. 2005. Sleep. Nomura K, Nakao M, Takeuchi T, Yano E. 2009. Sleep Med), and the answers were confirmed by 2 male physicians specializing in psychiatry according to the DSM-IV-TR definition of insomnia. However these results had not included the results. We deleted these parts totally in the method section. Thanks again.

10. Methods, Statistical analyses: the authors state that “logistic regression analyses were used to evaluate the association between suicidal ideation and MDD”: is this correct? Or did they study the associations with each MDD symptom?
Response: Thank you for finding our mistake. That was a typo. We changed the phrase to “suicidal ideation and each MDD symptom”(page 7, line 11).

11. Results: the results reported in the first paragraph are not completely clear: the authors say that “those with suicidal ideation were more likely to be women”, but in fact 21.6% only are women. I assume the authors refer to the comparison with individuals without suicidal ideation (women 21.6% vs. 12.9%), but as it is reported now, is somehow confusing.
Response: Yes. That was confusing. We deleted the sex difference sentences in both results and discussion.

12. Results and Table 1: the authors report that, compared with non ideators, those with suicidal ideation were more likely to be in the age group 40-49 years. Also those in the age group 20-29 were more likely to report suicidal ideation.
Response: That might be true. However 95%CI of age 20 to 29 included 1.0, it means it was not statistically significant. Therefore, we did not include that age group.

13. Table 1: in the methods the authors mention the assessment of sleep disturbances and anxiety, but then they do not report any results about sleep disturbances and anxiety. These results should be reported at least in the table (otherwise, please remove the description from the methods section).
Response: Thanks for your check. We totally deleted assessment of sleep disturbance and anxiety in the method.

14. Table 2 would be clearer if the significant items and ORs were somehow highlighted; I would also like to see the p-values in the Table.
Response: We highlighted (bolded) significant items and ORs with p-values in table2.

VERSION 2 – REVIEW

REVIEWER	Elena Toffol National Institute for Health and Welfare, Finland
REVIEW RETURNED	22-Oct-2013

GENERAL COMMENTS	An order to make the study duplicable by other authors and in other settings, I would suggest mentioning in the method section the SCID-CV. Even if the standard of written English is acceptable for publication, I would recommend a language revision. The article has been revised and improved a lot.

	There are still a few minor considerations: 1. in the abstract the authors refer to a study of theirs and report a 30% prevalence rate of suicide, while in the introduction, page 4, they refer (presumably) to the same study and report a 30% prevalence rate of suicidal ideation: which one is correct? Suicide or suicide ideation? 2. introduction, page 5, end of paragraph 2: would "we try to identify both suicidal ideation and the symptoms closely related to suicidal ideation, and their role in determining an individual's risk of suicide" be clearer? 3. introduction, end of final paragraph: the specific aim of the study could be emphasized even more, e.g. saying that the symptoms of MDD could serve as predictors of suicidal ideation even in a non-clinical setting. 4. in order to make the study duplicable by other authors and in other settings, I would suggest mentioning in the method section the SCID-CV. 5. results, page 8: in fact, as it is in the Table 2, psychomotor agitation was not significant after adjustment. 6. again, in discussion, page 9, paragraph 2: I would suggest emphasizing that the previous findings (reference 16 and 17) are mostly applicable to clinical populations, opposite to the current findings.

VERSION 2 – AUTHOR RESPONSE

Reviewer: Ms. Toffol, Elena
Please state any competing interests or state 'None declared': None declared
Response: Thanks for your comments. We have not noted competing interests. We have written it before the reference.

The article has been revised and improved a lot.
Response: We really appreciate your general comments. We think the quality of our paper has improved because of the reviewers' advice.

There are still a few minor considerations:
1. in the abstract the authors refer to a study of theirs and report a 30% prevalence rate of suicide, while in the introduction, page 4, they refer (presumably) to the same study and report a 30% prevalence rate of suicidal ideation: which one is correct? Suicide or suicide ideation?
Response: That was not crystal clear. "Suicidal ideation" is the accurate expression. We changed "suicide" to "suicidal ideation" in the abstract.

2. introduction, page 5, end of paragraph 2: would "we try to identify both suicidal ideation and the symptoms closely related to suicidal ideation, and their role in determining an individual's risk of suicide" be clearer?
Response: Following the reviewer's advice, we added that words in the introduction.
"Therefore, we try to identify both suicidal ideation and the symptoms closely related to suicidal ideation, and their role in determining an individual's risk of suicide."

3. introduction, end of final paragraph: the specific aim of the study could be emphasized even more, e.g. saying that the symptoms of MDD could serve as predictors of suicidal ideation even in a non-clinical setting.

Response: Following the reviewer's advice, we used the expression in the introduction. "Second, we examined the symptoms of major depressive disorder (MDD) which could serve as predictors of suicidal ideation even in a non-clinical setting, hypothesizing that some of these symptoms would be strongly related to suicidal ideation."

4. in order to make the study duplicable by other authors and in other settings, I would suggest mentioning in the method section the SCID-CV.
Response: Thank you for your comments. We mentioned the SCID-CV in the method section. "To ascertain whether each participant met the Diagnostic Statistical Manual of Mental Disorders Fourth Edition, Text Revision (DSM-IV) 14criteria for MDD, clinical interviews for DSM-IV axis I disorders (Structured Clinical Interview for DSM-IV for axis I disorders: SCID-CV) were conducted by two study physicians specializing in both psychiatry and psychosomatic medicine, assisted by a researcher trained in psychology."

5. results, page 8: in fact, as it is in the Table 2, psychomotor agitation was not significant after adjustment.
Response: No. It was not significant after adjustment. We rounded the exact number. That is why, the odds ratios between 0.95 to 1.04 has been rounded to 1.0. We changed OR of psychomotor agitation 1.0 to 0.9, in order not to mislead readers. We also changed ORs and p-values in insomnia and fatigue. The results have not changed at all. Thank you for your comments.

6. again, in discussion, page 9, paragraph 2: I would suggest emphasizing that the previous findings (reference 16 and 17) are mostly applicable to clinical populations, opposite to the current findings.
Response: We emphasized that our findings are focused on working population by using the following phrases in the discussion, "Because the findings of previous studies applied to clinical patients, our study generalized those symptoms as a predictor of suicidal ideation to the working population."
Thank you again for all of your efforts.