PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	Poor self-rated health and its associations with somatisation in two Australian national surveys
AUTHORS	Mewton, Louise; Andrews, Gavin

VERSION 1 - REVIEW

REVIEWER	Kurt Svärdsudd Emeritus professor of family medicine Uppsala University Sweden No competing interests
REVIEW RETURNED	23-Apr-2013

GENERAL COMMENTS	This is an interesting manuscript on possible relationships between self-rated health and psychiatric and psychological outcomes. However, I have a few comments. 1. Page 9, paragraph 2, line 1-2: 'The respondent was first asked whether they had …' should perhaps be 'The respondents were …'. 2. Page 13, paragraph 1, 3-7: The sentence 'To investigate the independent … neuroticism' appears to be incomplete. 'was performed' might be inserted after 'neuroticism'. 3. The Results text is somewhat difficult to read. I suggest restructuring of the text so that the first paragraph contains the first sentence of the present first paragraph and the first paragraph in page 14. The rest of the present first paragraph starting with 'In both samples…' should be moved to the text in the present paragraph 2 in page 14. Moreover, since Table 2 contains result from univariate as well as multiple (I presume they are multiple rather than multivariate) logistic regression analyses I suggest that the reference to Table 2 regarding univariate results is changed to 'Table 2, columns 3 and 7', and the reference regarding 'multivariate' analyses is changed to 'Table 2, columns 4 and 8'. 4. The legend of Table 1 might be more informative if it says that the analyses were univariate. Similarly, the legend of Table 2 might include 'univariate and multivariate analyses'. That would improve legibility.

REVIEWER	Kerry Sargent-Cox Research Fellow Centre for Research in Ageing Health and Wellbeing Centre of Excellence for Population Ageing Research Australian National University

	I confirm that I have no competing interests regarding this manuscript.
REVIEW RETURNED	24-Apr-2013

THE STUDY	Research question - whilst it is clear that the study aims to examine the relationship between somatization (specifically neurasthenia and health anxiety) and SRH - it is not clear why the authors expect there to be this association, nor how this relates to the SRH - morbidity / mortaltiy assocation.
RESULTS & CONCLUSIONS	My main concern regarding the results and their credibility lie in the confused focus of this manuscript. The manuscript begins by outlining the SRH / mortality relationship – and the need to explore this. The research questions and hypotheses, however, focus on the potential relationship between somatisation and SRH. The results cover a variety of questions, including extra questions that are not discussed in the introduction – i.e. multivariate relationships between a multitude of psychiatric disorders physical conditions and SRH as examples. I understand if these variables are included as covariates (though if this is the case – their inclusion needs to be more strongly argued and justified) – however the authors report these variables as outcomes in the results section. Finally, a vast majority of the Discussion section is devoted to discussion of high rates of service use amongst those who have somatisation / hypochondriasis. My feeling after reading this manuscript is that the authors are trying to cover too many issues, without a clear focus or cohesive framework or context. I also do not consider the findings so strongly point to the relationship between negative self-rated health and neurasthenia / health anxiety as the authors contend. In particular, I find the argument on page 17-18 “The robust associations identified in the current study suggest that negative self-rated health may be a mild or prodromal symptom of disorders related to health anxiety’ is not supported by the results. What the regression models do indicate is that those with high neurasthenia symptoms or health anxieties are more likely to be in the negative self-rated health group. However, the % within the negative SRH groups remain low overall (i.e. 5.4% of negative SRH group have neurasthenia and 14.8% health anxiety), and the confidence intervals of the ORs are reasonably broad. Therefore negative SRH itself may not be a good predictor of a health anxiety disorder.
GENERAL COMMENTS	Some minor points - Not clear why authors are adjusting for all of these variables (see Table 2) – the relationship between these variables and SRH / health anxiety / neurasthenia need to be more explicit. This many statistical comparisons increases the risk of a familywise error – and as such a correction method should be considered. Table 1 refers to Illness anxiety disorder – whereas this is referred in text as health anxiety Table 2 – univariate OR for physical disorder in 2007- is this missing a p-value significant flag?

VERSION 1 – AUTHOR RESPONSE

Reviewer: Kurt Svärdsudd
Emeritus professor of family medicine
Uppsala University
Sweden
No competing interests

This is an interesting manuscript on possible relationships between self-rated health and psychiatric and psychological outcomes. However, I have a few comments.

1. Page 9, paragraph 2, line 1-2: 'The respondent was first asked whether they had …' should perhaps be 'The respondents were …'.

This has been changed.

2. Page 13, paragraph 1, 3-7: The sentence 'To investigate the independent … neuroticism' appears to be incomplete. 'was performed' might be inserted after 'neuroticism'.

Given Reviewer 2's concerns, we longer include neuroticism in the study.

3. The Results text is somewhat difficult to read. I suggest restructuring of the text so that the first paragraph contains the first sentence of the present first paragraph and the first paragraph in page 14. The rest of the present first paragraph starting with 'In both samples…' should be moved to the text in the present paragraph 2 in page 14. Moreover, since Table 2 contains result from univariate as well as multiple (I presume they are multiple rather than multivariate) logistic regression analyses I suggest that the reference to Table 2 regarding univariate results is changed to 'Table 2, columns 3 and 7', and the reference regarding 'multivariate' analyses is changed to 'Table 2, columns 4 and 8'.

The results section has been streamlined which improves legibility. The tables, and their headings and titles have also been changed.

4. The legend of Table 1 might be more informative if it says that the analyses were univariate. Similarly, the legend of Table 2 might include 'univariate and multivariate analyses'. That would improve legibility.

This has been done.

Reviewer: Kerry Sargent-Cox
Research Fellow
Centre for Research in Ageing Health and Wellbeing Centre of Excellence for Population Ageing Research Australian National University

I confirm that I have no competing interests regarding this manuscript.

Research question - whilst it is clear that the study aims to examine the relationship between somatization (specifically neurasthenia and health anxiety) and SRH - it is not clear why the authors expect there to be this association, nor how this relates to the SRH - morbidity / mortaltiy assocation.

We outlined the reason why we would expect this relationship in the original manuscript and this remains unchanged in the revised manuscript (please see 1st paragraph revised manuscript, pg. 4 introduction):

“Self-ratings of overall health are only modestly correlated with clinical assessments of medical status, but appear more closely related to psychiatric illness, and aspects of personality such as neuroticism (1-3). These findings are surprising given the evidence that suggests that respondents mainly have physical health problems in mind when asked to rate their global health status (4). Thus, whilst the decision to rate global health positively or negatively is driven by psychological factors, it appears that respondents mainly consider physical health problems when rating their global health status. These findings suggest that a dysfunctional preoccupation with physical health and disease related concerns (termed “somatisation” for ease of reading) may be particularly salient in the interpretation of global ratings of health status. Consistent with this hypothesis, hypochondriasis, somatisation and limitations in activities of daily living explain much of the variance in patient reports of overall health status (3).”

My main concern regarding the results and their credibility lie in the confused focus of this manuscript. The manuscript begins by outlining the SRH / mortality relationship – and the need to explore this. The research questions and hypotheses, however, focus on the potential relationship between somatisation and SRH. The results cover a variety of questions, including extra questions that are not discussed in the introduction – i.e. multivariate relationships between a multitude of psychiatric disorders physical conditions and SRH as examples. I understand if these variables are included as covariates (though if this is the case – their inclusion needs to be more strongly argued and justified) – however the authors report these variables as outcomes in the results section. Finally, a vast majority of the Discussion section is devoted to discussion of high rates of service use amongst those who have somatisation / hypochondriasis. My feeling after reading this manuscript is that the authors are trying to cover too many issues, without a clear focus or cohesive framework or context.

In response to Reviewer 2’s comments, we have streamlined the manuscript considerably. The introduction no longer focuses on the relationship between SRH and mortality, and the focus is instead on the specific research questions (i.e., the relationship between self-rated health and somatisation and the extent to which this manifests itself in high rates of service use). The results now only focus on those results relevant to these two research questions, as does the discussion. In the original manuscript, the additional variables were included as covariates, and we understand that this inclusion was not properly justified. We now only examine those variables that were shown to be related to health anxiety using the 2007 NSMHWB in a recent paper published by our research group (Sunderland et al., 2012) and this has been clarified in the methods section (please see 1st paragraph of revised manuscript, page 6 methods section, also pasted below). The number of variables investigated has therefore been reduced considerably. We also include physical disorders as covariates to ensure that ensure that any relationships identified were not simply a reflection of actual health status (also clarified in the 1st paragraph of the revised manuscript, page 6 methods section). In our initial analyses for the revised manuscript, we first examine whether the remaining covariates are also related to self-rated health, and those that are were then entered into the multivariate analyses as covariates. Tables 1 and 2 now present the univariate analyses of the covariates, whilst Table 3 reports the results from the multivariate analyses. First paragraph pg. 6, methods section:

“The dependent variable in the current study was self-rated health, whilst the main independent variables were neurasthenia, health anxiety and service use (including medication use). In order to investigate the independence of the relationships between self-rated health and somatisation, several possible covariates were also examined. These included demographics and psychiatric disorders which have been shown to be related to health anxiety in a previous study of the 2007 NSMHWB (5), as well as physical disorders to ensure that any relationships identified were not simply a reflection of actual health status.”

I also do not consider the findings so strongly point to the relationship between negative self-rated health and neurasthenia / health anxiety as the authors contend. In particular, I find the argument on page 17-18 “The robust associations identified in the current study suggest that negative self-rated

health may be a mild or prodromal symptom of disorders related to health anxiety' is not supported by the results. What the regression models do indicate is that those with high neurasthenia symptoms or health anxieties are more likely to be in the negative self-rated health group. However, the % within the negative SRH groups remain low overall (i.e. 5.4% of negative SRH group have neurasthenia and 14.8% health anxiety), and the confidence intervals of the ORs are reasonably broad. Therefore negative SRH itself may not be a good predictor of a health anxiety disorder.

Our conclusions are now more consistent with the results, and the specific sentence referred to by Reviewer 2 has been removed from the revised manuscript.

Some minor points -
Not clear why authors are adjusting for all of these variables (see Table 2) – the relationship between these variables and SRH / health anxiety / neurasthenia need to be more explicit.

Please see response above.

This many statistical comparisons increases the risk of a familywise error – and as such a correction method should be considered.

We use a p-value of 0.05 when investigating the covariates and p-value of 0.01 for the multivariate analyses. Our decisions have been justified on pg. 10 of the revised manuscript, methods section:

"In this initial phase, a comparatively liberal unadjusted p-value of 0.05 was selected despite multiple comparisons, because the aim was to adjust for all possible covariates that may explain the relationships between self-rated health, somatization and service use in the multivariate analysis. Those covariates that were significantly related to self-rated health were included in multivariate models investigating the relationships between self-rated health, somatisation and service use. To control for multiple comparisons, a more conservative p-value of 0.01 was selected for use in the multivariate analyses."

Table 1 refers to Illness anxiety disorder – whereas this is referred in text as health anxiety

This has been changed

Table 2 – univariate OR for physical disorder in 2007- is this missing a p-value significant flag?

This has been added.

Sunderland M, Newby JM, Andrews G. Health anxiety in Australia: prevalence, comorbidity, disability and service use. The British Journal of Psychiatry. 2012.