Author's response to reviews

Title: Self-evaluated anxiety in the Norwegian population: Prevalence and associated factors

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Author's response to reviews:

Authors: Thank you for considering our manuscript for inclusion in the Archives of Public Health. We have addressed each of the reviewers’ and the editor’s comments (see below), and all additions to the manuscript have been made using ‘track changes’. We look forward to hearing from you again.

Reviewer #1: Abstract: Can you clarify what 34% valid means?

Authors: Clarified in the abstract, p. 2.

Reviewer #1: Should re-phrase "risk" to "odds" since odds ratios are being presented.

Authors: Changed in the abstract, p. 2.
Reviewer #1: Introduction: First paragraph: I think a sentence or two connecting mental health to education and unemployment is needed

Authors: Added in the introduction, p. 3.

Reviewer #1: Page 3, Line 29: How accurate are self-reported evaluations? How do they compare with a clinical diagnosis?

Authors: In the present study, we do not have diagnostic data. Thus, we are unable to assess the relationship between self-reported anxiety and the clinical diagnosis of an anxiety disorder. However, previous studies have assessed one-item self-report measures of depression with clinically diagnosed depression and found the one-item measure to classify correctly in 85% of cases (see study strengths and limitations section, p. 14). Anxiety and depression are subjective feelings, even though clinicians use criteria to diagnose a clinical state. Measures with more items are also primarily based on self-reports, sometimes by questionnaires, sometimes by interviews. If one should use one question to classify anxiety or depression, we consider asking whether the person suffers from anxiety or depression to be the best, and fairly reliable. Thus, we consider there is value to this method of assessing mental health problems.

Reviewer #1: Page 4, line 5: What is the prevalence of psychological symptoms among the elderly?

Authors: More information about this issue is added at the beginning of the relevant paragraph, p. 4, where we have concentrated on any disorders and anxiety disorders.

Reviewer #1: Methods: Page 5, lines 21-37: consider moving to the results section

Authors: The section is moved to the results section, as suggested, p. 9.

Reviewer #1: Page 8, line 12: It is indicated that "Initial descriptive analyses employed frequencies, percentages, means and standard deviations as appropriate." Can the authors elaborate what analyses were specifically done and to what degree?

Authors: This issue has been outlined in more detail, p. 8.
Reviewer #1: Page 8: Since there were 3 answers for anxiety I would consider conducting a polytomous logistic regression model, so that those answering the question could be included fully into the analysis.

Authors: We would argue that the whole sample is already fully included in the analysis. Of the 1684 participants, 1319 responded ‘no anxiety’. The remaining 365 participants responded ‘anxiety during the last month’ (n=111) or ‘previous anxiety, but not during the last month’ (n=254). ‘Lifetime prevalence’ was calculated as the sum of those who reported anxiety, current or previous, divided by 1684 (n=365, 21.7 %); see Table 1.

Reviewer #1: Results: Page 9, did you do a chi-square to test the difference in proportions among men and women?

Authors: Yes, and the significance values related to the Chi-Square tests have been included, p. 9-10.

Reviewer #1: I would list the scores and chi-square pvalues for scores on general self-efficacy, extraversion, and neuroticism, rather than just speaking in general terms.

Authors: Mean scores, standard deviations and p-values from the independent t-tests have been provided in the revised manuscript, p. 10.

Reviewer #1: Make sure to report results as "odds" rather than "risk"

Authors: Changed as requested throughout the manuscript.

Reviewer #1: Sensitivity analysis: I would also examine a dichotomous variable "every anxiety (yes to either question pertaining to current anxiety or past anxiety) versus none”.

Authors: The reviewer’s term ‘every anxiety’ (should perhaps be ‘ever’?) is identical with the term ‘lifetime anxiety’ used in the manuscript (see previous response). We have re-run the analysis using lifetime anxiety as outcome, producing results similar to those found in the main analysis, see p. 11 and Table 4. However, this analysis also produced significant associations with employment and general self-efficacy. These are reported towards the end of the Results section (p.11) and discussed towards the end of the Discussion section (p. 13).
Reviewer #1: I also think it might be more interesting to also stratify by certain age categories.

Authors: Our main analysis, as reported in the manuscript, showed a significant, although modest, decrease in the odds of reporting current anxiety for every ten-year increase in age. Although we agree that the reviewer’s suggestion (to re-run the analysis within each of the age groups) is interesting, we believe that further analyses for certain age categories would only provide minor details, and that it falls outside the scope of the study as presented in the study aims (p. 5).

Reviewer #1: Discussion: I think the use of a cross-sectional survey could be considered to be a large limitation of this work and should be mentioned.

Authors: This has been included in the limitations section, p. 14.

Reviewer #1: While the sample size is reasonably sized, the fact that it is considered to be representative is a more important take-home point.

Authors: This point has been emphasized in the study strengths and limitations section, p. 14.

Reviewer #1: Table 1: Only current and lifetime anxiety are listed. How many had no anxiety and how many indicated only anxiety in the past?

Authors: Table 1 has been amended, including the categories ‘no anxiety’ and ‘past anxiety.’

Reviewer #1: Table 2: Is the n (1684) accurate? Didn't you not include those who didn't have current anxiety?

Authors: The n is accurate. The outcome variable is ‘current anxiety’, meaning that the analysis shows how one-point increases in each of the independent variables increase or decrease the odds of reporting current anxiety.
Reviewer #1: Table 3: Is this n correct? - people were excluded in this model - were they just coded as having no anxiety or were they removed from the analysis?

Authors: The n is correct. No participants were excluded from this analysis, while the outcome variable was a bit more restricted (as the number of participants reporting current anxiety [n = 111] is higher than the number with current anxiety also reporting having sought help [n = 70]). In essence, the analysis shows how one-point increases in each of the independent variables increase or decrease the odds of reporting current anxiety while also having sought help for mental health problems.

Reviewer #2: My main objection to the study is the operationalization of 'anxiety'. (p.6) Please explain how anxiety was defined?

Authors: In accordance with the text introducing the participants to this section of the questionnaire, we defined anxiety as a mental health problem (see p. 6). However, the degree to which the participants’ self-reports of current or past anxiety would be related to a diagnosis is uncertain. Nonetheless, prior research has shown good correspondence between single-item self-report measures and clinical diagnosis (see study strengths and limitations section).

Reviewer #2: In the present study, anxiety was one of a list of mental health problems. What were the other categories? Could it be that the other categories had an influence on people's decision to choose 'anxiety' or not?

Authors: The other listed mental health problems were depression, sleep problems, eating problems, and psychosis. Although we cannot be certain, we do not believe that these other listed categories of mental health problems affected the participants’ inclination to respond the way they did.

Reviewer #2: On the question 'Do you have or have you had any of these problems? - Anxiety', if someone answers 'no', does that mean that this person has never been afraid in his entire life?

Authors: We believe the question should be read and understood in context of the sentence preceding it (see p. 6). Thus, the question does not indicate ‘never afraid’, but rather indicates ‘never had anxiety such that I would label it a mental health problem’.
Reviewer #2: For Self-Efficacy, Life Orientation and Personality, the authors have used standardized tests. One would expect a similar battery of questions to test for anxiety such as the Beck’s Anxiety Inventory (BAI) or the General Anxiety Disorder (GAD7). This can still be a form of self-evaluation, but it would be clear for the respondent what was meant by 'anxiety'. Please, justify.

Authors: We acknowledge the difficulties that can arise when using one-item measures, as we have done. Their correspondence with clinical diagnosis or other types of measures are not certain before this has been empirically examined, and examining this was not an option given the design of our study (we used self-report data exclusively). However, previous research has found good correspondence between single-item self-report measures and clinical diagnosis (see study strengths and limitations section). In general, people are more familiar with terms like “anxiety” and ”depression” than “optimism” or “personality”. Accordingly, the latter categories require more items.

Reviewer #2: Please also explain how respondents had to make a distinction between problematic and non-problematic anxiety (as in 'Do you have any of these problems?'). Or is anxiety anyway defined as a problem?

Authors: We refer to our previous response. We believe the question about anxiety should be read and understood in context of the sentence preceding it (see p. 6), clearly stating that the listed categories are mental health problems. Thus, we believe that ‘anxiety considered a mental health problem’ is reflected in the participants’ responses.

Reviewer #2: Moreover, the follow-up question is 'Have you sought help for your mental health problems?' Were people asked specifically to report help seeking for anxiety problems or in general for mental health problems? In the former case, 'anxiety with help-seeking' (e.g. p.12) does not necessarily mean 'anxiety with help-seeking for anxiety problems'. Please, clarify.

Authors: The reviewer is correct – ‘anxiety with help-seeking’ is not necessarily help-seeking for anxiety problems, but should be broadly understood as ‘anxiety with help-seeking for mental health problems’. A sentence in the Discussion section has been rephrased to account for this ambiguity, see p. 13.
Reviewer #2: (p.6) What was the rationale to keep 'having paid work' and 'undergoing education' in one category? First of all, as anxiety tends to decline with older age, the age difference between both categories could affect the results significantly. Secondly, respondents in the category 'undergoing education' will be significantly younger than the average population. One would expect anxiety to be much higher among this younger subpopulation compared to people with paid work. Indeed, as mentioned in the discussion, 'recent research on Norwegian students enrolled in higher education showed high levels of mental health problems (Nedregard et al., 2014)'. At the moment, there is no significant correlation between anxiety and employment ($p=0.11$). One would expect this to be the result of the fact that 'in education' is brought together with 'having paid work'. In our opinion there is reason to split up both categories.

Authors: We agree with the reviewer that working and undergoing education should be treated separately. Re-analyzing the data, we found that we actually had split up these categories when presenting the results in Table 1. That is, the 1040 participants were all working. However, a previous version of the logistic regression analyses were presented in Tables 2 and 3, and these have now been amended accordingly by removing 87 persons from the ‘employed’ category (these were undergoing education). Note that the results changed only marginally, and that exactly the same variables were significantly associated with the outcome in the revised analysis.

Reviewer #2: Furthermore, (p.5) the authors state '53% had higher education compared to 41% in the general population' and '1.3% were without work compared to 4.4% in the general population'. And further: 'in terms of work status and education level we consider our sample fairly representative for the Norwegian population'. Can this statement be supported by a statistical measure?

Authors: No, this statement reflects the authors’ judgement. We have modified the statement somewhat: “Even though there were somewhat more respondents with higher education than in the general population (53 % vs. 41 %), we consider the sample to be fairly representative of the Norwegian general population”.

Reviewer #2: (p.9) On p.5 53% of the population had higher education. On p.9 it is 54% of the population.

Authors: For the present study sample, the correct proportion is actually 54.8 % (see Table 1). The text has been amended, see p. 9. The discrepancy with the information provided on p. 5, stating 53 %, is explained by the fact that this information (53 %) was taken from a previous study from the project that analyzed all of the 1792 responders.
Reviewer #2: (p. 20) Is there any need to provide p-values as well as 95% CI in the tables?
Authors: We believe presenting p-values in these tables is commonplace, but we are naturally willing to remove this information if the Editor prefers it.

Reviewer #1: (p.8) Please clarify how missing data were addressed.
Authors: Persons with missing values on the variables employed in the study were removed from the analyses. Thus, our study sample is comprised by 1684 participants, and not 1792 participants (see Figure 1).

EDITOR-IN-CHIEF: Titles of tables and graphs should have information of place, time and study

Authors: Titles of Tables and Figures have been amended accordingly.