PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	Which work-related characteristics are most strongly associated with common mental disorders?: A cross-sectional study
AUTHORS	Riviere, Mathieu; Leroyer, Ariane; Ferreira Carreira, Lionel; Blanchon, Thierry; Plancke, Laurent; Melchior, Maria; Younès, Nadia

VERSION 1 – REVIEW

REVIEWER	Severin Hennemann Department of Clinical Psychology, Psychotherapy and Experimental Psychopathology, Institute of Psychology, University of Mainz, Germany
REVIEW RETURNED	07-Dec-2017

GENERAL COMMENTS	General --- The present review deals with manuscript #bmjopen-2017-020770 entitled "Which work-related characteristics are most strongly associated with common mental disorders?: A cross-sectional study". The study reports a sufficiently large sample size and data from a cross-sectional survey conducted in 2014 on primary care patients diagnosed with three common mental disorders by their GPs. The study investigates a complex set of work-related, as well as patient and GP-related characteristics as potential risk factors for these mental disorders. The present study adds a complex predictor set and a relevant target group (primary care patients) to the growing body of evidence on work-related risk factors for mental health problems. However, I have some major concerns with the studies construct of interest/concept and methods which are outlined below. --- Abstract --- 1. Objectives: You may consider replacing the term “workplace” with "work-related” to allow for consistency of constructs. --- Introduction --- 1. Work demands and work stress and their influence on mental health and mental disorders have been studied extensively, including comprehensive reviews and meta-analytic evidence (e.g. Campos-Serna et al. 2013; Daniels & Jones, 2006; Nyberg et al., 2013; Roesler, Kusserow & Rau, 2014; Siegrist, 2008; Stansfeld &

	Candy, 2006). Although the authors include suitable references, I suggest approaching a more comprehensive overview of evidence through additional (meta-analytic) and systematic evidence including the following research areas: (A) differentiation of stress and strain-related factors that may cause mental disorders, (B) information on emerging job demands of work/industry 4.0, as these may be applicable to the mostly blue/pink collar sample studied here. 2. Construct of interest/Objectives: The authors should emphasize the innovative character of their study beyond existing meta-analytic, theory-based evidence and elaborate on the study's innovative approach. Additionally, previous research on the described work-related risk factors may allow for at least some specific hypotheses, which could be added in the introduction. Beyond that, the exploratory character of the study should be emphasized and discussed critically. 3. Can you elaborate on the criteria for "common mental disorders" (CMD)? Is the concept of CMD based on epidemiological data or defined elsewhere? In this regard, what does "work-related CMD" (p. 4, L. 11) mean? I suggest differentiating work-related diseases in terms of the type of work (blue collar vs. white collar) or job demands (mentally, physically). To allow for a country-specific estimation of the association with work sickness absence and long-term work incapacity, I suggest adding an epidemiological reference from a French population. ---------- Method ---------- Design and Study population: 4. Although the main study is described elsewhere, the authors may consider adding brief information on inclusion criteria and sampling process. 5. How was the planned sample size of N = 2000 or the number of included patients per GP (n=24) estimated? How was randomization of patients executed? In this regard, what were indicative criteria for performing the MINI on regular GP patients (e.g. screening, clinical impression)? If patients had prior CMD, did you assess previous or current treatments, as these influence work-related risk factors? 6. Research ethics: The authors provide information on data security and framework of the present study within a larger trial/network. However, information on ethical approval or informed consent should be added. 7. Although the MINI uses the term "psychiatric" disorders, I find this term somewhat problematic: Psychiatric may either refer to an institutional context (e.g. psychiatric treatment facilities) or certain mental disorders (e.g. schizophrenia, bipolar disorder etc.), that would not be considered CMD in clinical practice. You may consider using the term "mental health" or "mental disorders" instead. Statistical Analyses: 8. A serious methodological concern of this study is the missing information on the psychometric quality of the instruments. The

	authors should definitely provide subsequent data, both from previous studies (in case of original items) as well as the reliabilities in your sample. For estimation of reliability in 2-item-scales please see doi: 10.1007/s00038-012-0416-3. 9. Please add a reference to your statement on an overestimation of RR in logistic regression (e.g. doi: 10.1503/cmaj.101715). Also, was this the reason for choosing OR instead of RR? Otherwise, a homogeneous parameter across outcomes would be appropriate. 10. Please state the rating categories of categorical covariates (e.g. education level) and how continuous (e.g. age) and categorical covariates were divided into consequent categories in table 1. 11. Considering the sufficient sample size, please clarify, why you did not perform a simultaneous analysis strategy, e.g. a path analysis with moderators/mediators or hierarchical regression? In a similar vein, the authors may consider adding an appendix with intercorrelations of constructs to allow for assessment and discussion of convergent validity/ multicollinearity. Data collection: 12. Were the GPs trained in conducting standardized interviews with the MINI beforehand? 13. Another methodological lack of clarity is, whether the items described in section 2.2.2 were original items from the above-stated questionnaires or self-constructed. The authors should clarify the source of the items (including item number in the original questionnaire) for transparency. If the items are self-constructed, a description of the theoretical and/or empirical framework would be necessary. Covariates: 14. Do you mean age/gender of the GP? Please clarify (both variables appear above as risk factors for CMD). 15. What does “easiness” mean? I find the self-rating of this construct rather problematic, since it does not allow for a verification of training and/or knowledge of mental disorders (also see above for critic on training in diagnostic interviewing). 16. Geographical area could be included as a variable here, as it was a level 2 variable in the regression. ---------- Results ---------- 17. Explained variance for outcome variables should be reported in the multivariate model. 18. Please explain the rationale for collapsing MDD and GAD into one outcome in the analysis section and if necessary provide statistical information or references for your decision (e.g. high intercorrelation of constructs).

	---------- Discussion ---------- 19. The discussion falls rather short regarding the interpretation of the role of work characteristics, including a necessary differentiation of their role on specific mental disorders (MDD vs. GAD vs. substance abuse). How do you explain the different patterns of predictors of the adjusted solution for the three mental disorders? Sensitivity and coping with work stress may be distinctive between the assessed mental disorders, e.g. due to different mechanisms of psychopathology. Again, I find the merge of MDD and GAD suboptimal. 20. Please add a critical discussion of the low response rate of GPs (19%), perhaps in comparison to response rates in other surveys (I suppose, response rates of surveys in GPs are generally lowered, but references would be important to verify this). 21. Individuals consulting GPs may differ from other employees regarding the level of health (and consequently mental health, see 20% consulting rate for psychological reasons, table1). This may account for a selection bias that should be discussed. 22. If the items were predominantly self-constructed (see comment #13), the use of validated scales that would have allowed for a methodically more rigorous analysis, should be discussed. ---------- Minors ---------- P4, L5: Please add a comparison to the statement (e.g. unemployed). P4,L11: Please add “somatic chronic conditions” to differentiate from psychiatric conditions. In the same line: Please discard “…” and use “etc.” or conclude the enumeration. P4,L27: “higher risk of depression”: Is this argument based on longitudinal data? If not, the term “risk of” implies causality that may be avoided (better “associated with higher rates of…”). P4,L32: The models you describe have mental health as a primary outcome. P4,L44: Please add outcome of studies (e.g. “…on mental health”). P4,L50: Please clarify the term “emergent” factors. Study design: For clarification, the information that work characteristics were assessed with self-reports, could be included. ---------- Language: ---------- The manuscript would benefit from a thorough language editing, including punctuation, diction and sentence structure. Here are just some ad-hoc corrections: 1. Page 4, line 27. Add hyphen (socio-economic) 2. P4, L46: Consider rephrasing to "higher risk when..." or "risk is elevated when..." 3. P4, L48: Correct into “other” 4. P4, L52: Consider rephrasing to "also seem to have..." 5. P4, L52: Correct to past term “used” 6. P7: The term “Work’s factors” (2.2.2) may be corrected into “work characteristics”.

	7. P8, L18: Correct into “Reason for…” 8. P8, L52: missing comma. 9. P13, L7: missing comma, sentence structure could be rephrased. 10. In the discussion, the use of past and present tense should be carefully revised.

REVIEWER	Dirk Richter University Bern Psychiatric Services, Center for Psychiatric Rehabilitation
REVIEW RETURNED	21-Dec-2017

GENERAL COMMENTS	This study is addressing a very important issue in the field of psychiatric epidemiology, namely the association of work conditions with mental illness. It does so by assessing common mental disorders in a sample of primary care patients and the authors claim to be the first to have conducted such a study with primary care patients. The study itself is methodologically and statistically without major problems (apart from the missing information on the ethical approval and the psychometrically not unproblematic selection of single questions from standard questionnaires). The results are, however, not very surprising as this study confirms the widely known associations between working conditions and CMD. My main concern is the primary care sample. The authors do not justify why the research is not done with current workers from industrial settings but rather with a sample from the health care system. From an epidemiological point of view one cannot assume that a primary care sample is identical to a working population. E.g., it is known that males visit their GPs less often than they should. The authors claim that it is important to analyze work-related issues in primary care patients but they do not present relevant research to support this claim. Furthermore, they do not inform the reader what a GP should do with such information. In short, I cannot understand the rationale for using this sample to address the research question.

REVIEWER	Andrea Gragnano Université du Québec à Montréal, UQAM. Canada.
REVIEW RETURNED	08-Jan-2018

GENERAL COMMENTS	Dear author, I have had the glad opportunity to read your work. I believe the topics of your research as well as the data you have are relevant and potentially important for the scientific community. Nevertheless, I have many concerns and in my opinion, the manuscript needs some relevant improvements. For these reasons, I asked for a major revision. Moreover, I recommend carefully inspecting the words spelling because I detected many errors. Introduction I think the introduction need some changes to be more insightful and persuasive about the usefulness of the present research. I suggest to better define three aspects: 1) Explain why the work-related factor are so important that you focus on them and not on the other you

	cited 2) Explain why is important to measure all the work related factors together 3) Explain why is useful and what are the advantages compared to other procedure of recruiting patients through GPs P4L7. Please, add a reference for this statement (negative effect of work) P4L9. Could be useful to define work-related diseases to not confound them with occupational diseases. P4L13-17 I do not understand the utility of this sentence in the rationale of the introduction. P4L25. Please, use i.e. or e.g. within parenthesis and not "…" P4L38. "They lack some dimensions". Please, be more specific. This will make easier to introduce organizational justice. P4L41-42. Please better explain the Elovainio's model. This sentence is not clear for readers not familiar with the model. P4L44. Please, better detail the sentence "…impact of work [characteristic/coditions?] [on *what*] using these theoretical models" P4L48-50. Please, better explain this sentence. P4L52 I suggest to state here the importance of combining all psychosocial work factors (and justify why this is important) and that this has not been done before to your knowledge. P5L10-16 I suggest using these arguments before in the introduction to persuade the reader about the usefulness of recruiting patients through GPs. P5L17-20. This sentence is not clear to me. How it is that the prevalence among GPs makes important to elucidate work related factors? Please, explain better. Design and study population Please, clarify which GPs has been contacted (all of the region? A random sample of N?) and if the GPs can refuse to participate. Please also say the GPs were trained (which is evident only watching Fig.1) and specify for what they have been trained. How did you obtained the informed consensus from participants and GPs? Your reported useful information about recruitment in the Strengths and Limitation section (P20L26-37). I suggest to report that information here and in the discussion just refer to these information. Data Collection Please, describe a little more accurately the MINI. This instrument is of crucial importance in your study because it determined your

	dependent variables (structure, reliability and validity). Are you sure that MDD is measured during the preceding 2 weeks and GAD during the preceding six months? Is it not the opposite? Please provide data about reliability and validity of the French questionnaire measuring work factors. P7L46. Please, provide the value given to the steps in the Likert scale. Statistical Analyses Could you please explain somewhere in the text (introduction or here) why you considered GAD and MDD in the same category? I have some concerns about your decision to adopt a Poission regression instead of a logistic regression. You justify this decision because given the high prevalence of GAD/MDD you said logistic regression overestimate relative risk. This is the case only if you interpret the OR from the logistic regression as a RR. This (common) practice is wrong but for rare events. If you interpret the OR from the logistic regression as OR (and not RR) you will not have overestimation. I am aware of the difficulties in the interpretation of OR but this is a problem of interpretation and not of estimation. Moreover, there are ways to make the OR more interpretable (ex. Liberman, 2005) so you should better justify why you choose Poisson regression. Poisson regression is usually suggested when the outcome is a count of episodes of an illness occurring over time (Barros & Hirakata, 2003) or when analyzing *rare events* where subjects are followed for a variable length of time (Zou, 2004). Instead, you justify the adoption of Poisson because the event is common, not rare. This is strange. I believe your reason to use Poisson is to directly estimate RR but this should be clearly stated and with references. Moreover, when you use Poisson regression to estimate relative risk directly with dichotomous outcomes, the CI of the RR will be wider and authors suggest ways to overcome this problem (ex. Zou, 2004; Barros & Hirakata, 2003) but for what I know none suggest to use the normal Poisson regression without adaptations. It can be too much conservative. How did you handled this issue? Finally, I think it is a little confusing to adopt two different types of regression for the two outcomes when you can use the same for both. I suggest choosing your regression type, better justifying your decision and using that regression type for both the outcomes. Liberman AM. How Much More Likely? The Implications of Odds Ratios for Probabilities. *Am J Eval*. 2005;26(2):253-266. doi:10.1177/1098214005275825. Barros A & Hirakata VM, (2003). Alternatives for logistic regression in cross-sectional studies: an empirical comparison of models that directly estimate the prevalence ratio. *BMC Medical Research Methodology 3*(21).

	Zou G (2004). A modified Poisson regression approach to prospective studies with binary data. *American journal of epidemiology, 159*(7). P9L12. "…covariate that were associated with GAD/MDD…" at what level of *p*? P9L18. Please, provide citations for R and lme4 package. Results P.10-L. 2. Reading the sentence as it is now I expect to see in table 1 information regarding the dissemination of GPs throughout the Nord-Pas-de-Calais, which is not the case. P10-L5-6. Justify this sentence. You recruited the 18% of the contacted GPs and these were not randomly chosen. This makes difficult to assume they are representative. Bivariate analysis Please refers to table 2 at the beginning of the paragraph to show results of the test of the association between outcomes and covariates. Tabe 2. Please report at least the chi-square and the df beside the p value. To understand which cells significantly contribute to the chi-square it would be useful to report also the standardized residuals. Multivariate analysis Please state at the beginning of the paragraph to see table 3 for the results of multivariate analysis. In Table 3 it is not clear if the unadjusted model is a multivariate model with only all occupational factors or if they are many bivariate models with just one occupational factor at the time. In the section Statistical Analyses this is not specified. Please specify this, there or in the table. Please, insert in table 3 also the result for the control variables. Even if they are not the topic of interest of this article, other researchers may be interested in their role. Discussion I think you can improve the discussion highlighting more the contribution of this paper to the advancement of the knowledge in the research field and the strength of this research. I think you highlighted well the limits but not the strengths of the research. Reading the discussion it seems just that you confirmed things that were already well known and nothing more. Instead, you have something to say. For example, you can elaborate more about the theories (Karasek, Siegrist, Elovainio) you cited in the introduction in light of your results and discuss about the consequences of measuring all the work-related factors together. Some are significant and some are not, what does this means? Is this saying something

	about the investigated diseases? The significant work factor are not the same for the two diseases… P18L37. “employees with high stress in social support from…” what does it means? P19L5. Please, elaborate more about this counterintuitive result. P20L42-47. Please, reformulate this sentence. You can write that it would be informative to control also for individual variables (which one and justify why they are important). Conclusion P21L14-16. Please, reformulate the last sentence because it is not clear.

VERSION 1 – AUTHOR RESPONSE

Reviewer(s)' Comments to Author:
Editorial Requirements:
- Please present absolute risks in addition to relative risks in both your abstract and results.
Answer: As suggested absolute risk for exposed population was implemented in the abstract and results for each work factors presented.
Reviewer: 1
Reviewer Name
Severin Hennemann
Institution and Country
Department of Clinical Psychology, Psychotherapy and Experimental Psychopathology, Institute of Psychology, University of Mainz, Germany
Please state any competing interests or state ‘None declared’:
None declared.
Please leave your comments for the authors below

General

The present review deals with manuscript #bmjopen-2017-020770 entitled "Which work-related characteristics are most strongly associated with common mental disorders?: A cross-sectional study".
The study reports a sufficiently large sample size and data from a cross-sectional survey conducted in 2014 on primary care patients diagnosed with three common mental disorders by their GPs. The study investigates a complex set of work-related, as well as patient and GP-related characteristics as potential risk factors for these mental disorders.
The present study adds a complex predictor set and a relevant target group (primary care patients) to the growing body of evidence on work-related risk factors for mental health problems. However, I have some major concerns with the studies construct of interest/concept and methods which are outlined below.

Abstract
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1. Objectives: You may consider replacing the term “workplace” with "work-related” to allow for

consistency of constructs.
Answer: Thank you for this remark, it have been changed in the abstract
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Introduction
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1. Work demands and work stress and their influence on mental health and mental disorders have been studied extensively, including comprehensive reviews and meta-analytic evidence (e.g. Campos-Serna et al. 2013; Daniels & Jones, 2006; Nyberg et al., 2013; Roesler, Kusserow & Rau, 2014; Siegrist, 2008; Stansfeld & Candy, 2006). Although the authors include suitable references, I suggest approaching a more comprehensive overview of evidence through additional (meta-analytic) and systematic evidence including the following research areas: (A) differentiation of stress and strain-related factors that may cause mental disorders, (B) information on emerging job demands of work/industry 4.0, as these may be applicable to the mostly blue/pink collar sample studied here.

Answer: Thank you for your comment, as suggested we insisted more on recent comprehensive reviews and meta-analytic evidence. We included the recent meta-review (Harvey, 2017 DOI:10.1136/oemed-2016-104015) which include 12 reviews and meta-analysis (including some of the example you cited) from 2005 to 2015 which studies work-related risk factors for common mental health problems. We developed on stress and strain-related factors that may cause mental disorders (p5 l8-15) : “An important systematic meta-review identified three overlapping categories of work-placed risk factors that may contribute to the development of common mental health problems (considering depression and/or anxiety), combining emergent and classical factors and identified with reasonable levels of evidence: imbalanced job design (high job demands, low job control, low social support in work-place, effort-reward imbalance), occupational uncertainty (low job control, low procedural justice, job insecurity, temporary employment status, low social support in work-place) and lack of value and respect in workplace (effort-reward imbalance, procedural justice, temporary employment status, low social support in work-place).7”. Moreover we added information on changes of psychosocial work factors over time (p5 l18-23): “Moreover, those factors changes over time with modification of the labour market (increased globalization, competition, new forms of work organization, etc). A French study assessed changes in psychosocial work factors between 2006 and 2011 and showed that some psychosocial work factors deteriorated (decision latitude, social support, reward, role conflict and work life imbalance) between 2006 and 2011. It also found that these changes varied according to age, occupation, sector activity and type of contract.26”
Harvey SB, Modini M, Joyce S, et al. Can work make you mentally ill? A systematic meta-review of work-related risk factors for common mental health problems. Occup Environ Med 2017;74(4):301-10. doi: 10.1136/oemed-2016-104015 [published Online First: 2017/01/22]
Malard L, Chastang JF, Niedhammer I. Changes in psychosocial work factors in the French working population between 2006 and 2010. Int Arch Occup Environ Health 2015;88(2):235-46. doi: 10.1007/s00420-014-0953-6 [published Online First: 2014/06/26]
2. Construct of interest/Objectives: The authors should emphasize the innovative character of their study beyond existing meta-analytic, theory-based evidence and elaborate on the study’s innovative approach. Additionally, previous research on the described work-related risk factors may allow for at least some specific hypotheses, which could be added in the introduction. Beyond that, the exploratory character of the study should be emphasized and discussed critically.
Answer: Thank you for your comment, as suggested we emphasize on the innovative character of our study that is the primary care sample. Even if our study have certain limits highlighted in meta-analysis on this subject (causal inference due to longitudinal studies, self-reported questionnaire to examine psychosocial work characteristics) the exploratory character of this study in a primary care setting confirms some factors found in other population. We developed this in the introduction (p5 l23): “The objective of this study is to assess the association between GAD, MDD and alcohol abuse in a primary care setting, using validated diagnostic interviews and combining most psychosocial

work-related risk factors in a population of individuals consulting their general practitioner (GP). Combining emergent and classical factors is important in order to identify which are most strongly related to workers' mental health, this was outlined in the meta-review by Harvey et al.7 We considered that this population is important to explore as people with CMD are frequently treated by GP either initially or throughout treatment.27 28… It constitutes a major clinical issue: GPs often have difficulties managing work-related mental health problems, as they often lack negotiation strategies regarding sick leave, communication skills and cooperation with occupational physicians.32 GPs encounter every type of workers and not only big industrial settings with occupational services. A better understanding of work related factors of mental health is important in order to help GPs to consider specific actions."

We elaborate on the exploratory character of our study in the discussion (p23 l20): "Moreover the exploratory character of our study confirm the increased risk of anxiety/depression for work intensity, social support and emotional demands and the link between autonomy and alcohol abuse in a primary care setting. This study also shows a negative effect of social support at work for alcohol abuse.7 21 25 58"

3. Can you elaborate on the criteria for "common mental disorders" (CMD)? Is the concept of CMD based on epidemiological data or defined elsewhere? In this regard, what does "work-related CMD" (p. 4, L. 11) mean? I suggest differentiating work-related diseases in terms of the type of work (blue collar vs. white collar) or job demands (mentally, physically). To allow for a country-specific estimation of the association with work sickness absence and long-term work incapacity, I suggest adding an epidemiological reference from a French population.

Answer: As you suggest, the concept of Common mental disorder is based on epidemiological data as the introduction of operationalized diagnostic criteria for mental disorders in the late 1970s that allow to provide estimates of prevalence. As conclusion of systematic review and meta-analysis of this literature, CMD include a combination of disorders across the mood, anxiety and substance use disorder spectrum (Steel Z, Marnane C, Iranpour C, Chey T, Jackson JW, Patel V, Silove D. The global prevalence of common mental disorders: a systematic review and meta-analysis 1980-2013. Int J Epidemiol. 2014 Apr;43(2):476-93. doi: 10.1093/ije/dyu038). We add this reference in the manuscript

The term work related CMD was maybe not very clear and it was removed from the manuscript. In order to be more comprehensive, we made changes in the manuscript (p4 l3): "A study with trained general practitioners (GP) in occupational medicine found that mental health issues are the most frequent disorders attributed to work, after musculoskeletal disorders.3"

As suggested, data on sickness absence in France was implemented in the manuscript (p4l6): "In France, data from the national health insurance shows that 20% of sickness absence are caused by mental disorders with an increased proportion for long term sickness absence.5"

NHI. Description des populations du régime général en arrêt de travail de 2 à 4 mois 2004 [Available from:http://fulltext.bdsp.ehesp.fr/Cnamts/Etudes/2004/DESCRIPTION_ARRETS_TRAVAIL_2_4_MOIS_2004.pdf.

Method

Design and Study population:

4. Although the main study is described elsewhere, the authors may consider adding brief information on inclusion criteria and sampling process.

Answer: Thank you for this comment, indeed it seems helpful to add this information. We add more details to the Design and Study population section (p7 l7): "Participating GPs who gave an oral consent to participate, were asked to include randomly a maximum of 24 patients who met the following criteria: being actively employed and aged 18 to 65 years, regardless of the reason of their medical appointment. GPs were selected to be representative of the distribution of GPs in 15 areas of

the Nord-Pas-de-Calais region that we studied. GPs had to include the two first patients who met the inclusion criteria in each previously defined time slot."

5. How was the planned sample size of N = 2000 or the number of included patients per GP (n=24) estimated? How was randomization of patients executed? In this regard, what were indicative criteria for performing the MINI on regular GP patients (e.g. screening, clinical impression)? If patients had prior CMD, did you assess previous or current treatments, as these influence work-related risk factors?

Answer: The sample size was calculated based on an expected prevalence of 20% of work-related common mental disorders identified in a pilot study. Based on this hypothesis, we calculated that 2,000 patients needed to be included to yield a precision of 10%. The number of patients to be included was estimated so that GPs could include on average 2 patients per week during the study period. This number was estimated to represent a reasonable workload for participating GPs. We added information on this topic (p7 l6): "Briefly, with an estimated prevalence of 20% and to have a precision of 10%, we aimed to include 2,000 patients via their GP."
The MINI questionnaire was used for screening purposes, as specified in the manuscript (p8 l7). Prior to administering the MINI, GPs gave information on whether or not the patient had previously been diagnosed with a CMD. Statistical analyses were adjusted for past psychiatric problems.

6. Research ethics: The authors provide information on data security and framework of the present study within a larger trial/network. However, information on ethical approval or informed consent should be added.
Answer: Thank you for your remark, this was added in the manuscript (p7 l6): "Participating GPs who gave an oral consent to participate, were asked …" (p7l15) "Before the appointment the GP gave written information to their patients to inform them about the study and asked them to sign an informed consent." Moreover as explained in the manuscript this study had an authorization from the French independent administrative authority protecting privacy and personal data (CNIL).
7. Although the MINI uses the term "psychiatric" disorders, I find this term somewhat problematic: Psychiatric may either refer to an institutional context (e.g. psychiatric treatment facilities) or certain mental disorders (e.g. schizophrenia, bipolar disorder etc.), that would not be considered CMD in clinical practice. You may consider using the term "mental health" or "mental disorders" instead.

Answer: Thank you for your remark, this has been changed in the manuscript by "mental disorders".

Statistical Analyses:

8. A serious methodological concern of this study is the missing information on the psychometric quality of the instruments. The authors should definitely provide subsequent data, both from previous studies (in case of original items) as well as the reliabilities in your sample. For estimation of reliability in 2-item-scales please see doi: 10.1007/s00038-012-0416-3.
Answer: Indeed, our study lacks information on this topic. We added information on the psychometric qualities of the test we used (p8 l13): "Depending on the mental disorders studied, the sensibility of the MINI varied between 83 to 94% (MDD: 94%; GAD: 88%; Alcohol: 83%), the specificity between 72 to 97% (MDD: 79%; GAD: 72%; Alcohol: 97%) and the Kappa concordance coefficient between 0.36 to 0.82 (MDD: 0.73; GAD: 0.36; Alcohol: 0.82). The inter-rater and test-retest reliability measured by Kappa coefficient were good, respectively 0.88 to 1 and 0.76 to 0.93.36"
Lecrubier Y, Sheehan DV, Weiller E, et al. The Mini International Neuropsychiatric Interview (MINI). A short diagnostic structured interview: reliability and validity according to the CIDI. European Psychiatry 1997;12(5):224-31.
For the work characteristics questionnaire, reliability was assessed by computing an alpha Cronbach coefficient for each of the six axis. Information were implemented in the methods section (p9l15):

“Reliability of the questionnaire was assessed by computing an alpha Cronbach coefficient. This coefficient varied between 0.34 to 0.68. The reliability was lower for ethical conflicts (α=0.34), emotional demands (α=0.44) and higher for work intensity (α=0.48), insecurity of work (α=0.48), autonomy (α=0.65) and social work relations (α=0.68).”

9. Please add a reference to your statement on an overestimation of RR in logistic regression (e.g. doi: 10.1503/cmaj.101715). Also, was this the reason for choosing OR instead of RR? Otherwise, a homogeneous parameter across outcomes would be appropriate.
Answer: Thank you for this remark, the proposed citation has been added to the manuscript (p11 l12). For alcohol outcome, we used ORs instead of RRs because the prevalence rates were low and thus the logistic regression is suitable. However, as suggested in order to have homogeneous parameter across outcomes we used a Poisson regression to estimate RR for all the outcomes.

10. Please state the rating categories of categorical covariates (e.g. education level) and how continuous (e.g. age) and categorical covariates were divided into consequent categories in table 1.
Answer: As suggested, some details regarding covariates were added to the manuscript in the statistical analyses section (p10 l16): “Some of the covariates were recoded to use fewer categories. For family status, participants living alone or living with parents were grouped into one category. For family income, participants were grouped in two categories: [0-3,000 euros (which corresponds to approximately two times the minimum wage in France) and >=3,000 euros. For educational level, we created two categories: less than a high school degree (no degree, degree below high school) or a degree higher or equal to a high school degree. For age, our continuous variable was studied in three categories based on the distribution 18-35; 36-50; 51-65.”

11. Considering the sufficient sample size, please clarify, why you did not perform a simultaneous analysis strategy, e.g. a path analysis with moderators/mediators or hierarchical regression? In a similar vein, the authors may consider adding an appendix with intercorrelations of constructs to allow for assessment and discussion of convergent validity/ multicollinearity.
Answer: Thank you for your comment, however we didn’t perform a simultaneous analysis strategy (hierarchical regression or structural equation) because it didn’t necessarily answer to the question of links between different factors and mental health, especially since mental health measures are binary.
However, as suggested we add an appendix with a correlation matrix of the different work characteristics.

Data collection:

12. Were the GPs trained in conducting standardized interviews with the MINI beforehand?
Answer: Participating GPs received a 15 minute phone training before the beginning of the study. In this training GPs were trained to use the MINI. This is now specified in the manuscript in the data collection section (p8 l2): “Participating GPs received a 15 minute phone training on the use of the questionnaire before the beginning of the study.”

13. Another methodological lack of clarity is, whether the items described in section 2.2.2 were original items from the above-stated questionnaires or self-constructed. The authors should clarify the source of the items (including item number in the original questionnaire) for transparency. If the items are self-constructed, a description of the theoretical and/or empirical framework would be necessary.

Answer: The items described in section 2.2.2 come from a questionnaire proposed by a French expert in the field of psychosocial work conditions (M. Gollac). These items were selected from different international studies which based their questions on the other questionnaires cited in the manuscript (Seigrist’s and Karasek’s models; Moorman’s questionnaire; General Nordic Questionnaire for

Psychological and Social Factors at Work; WOrking Conditions and Control Questionnaire).

Covariates:

14. Do you mean age/gender of the GP? Please clarify (both variables appear above as risk factors for CMD).
Answer: In the section “primary care characteristics”, age/gender referred to the GP. For more clarity this is now specified in the manuscript (p10 l5)

15. What does “easiness” mean? I find the self-rating of this construct rather problematic, since it does not allow for a verification of training and/or knowledge of mental disorders (also see above for critic on training in diagnostic interviewing).
Answer: Thank you for your remark, maybe the term “easiness” was wrong so it was replaced by “comfort” as it was used in the article by Fleury MJ (doi: 10.1186/1471-2296-13-19) from which this question was elaborated.

16. Geographical area could be included as a variable here, as it was a level 2 variable in the regression.
Answer: Thank you for your comment, indeed we added this variable to this section (p10 l13): “Geographical area: 15 proximity area defined by the regional health agency of the Nord – Pas-de-Calais region”

Results
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17. Explained variance for outcome variables should be reported in the multivariate model.
Answer: Explained variance has been added to the multivariate models as table footnotes.
18. Please explain the rationale for collapsing MDD and GAD into one outcome in the analysis section and if necessary provide statistical information or references for your decision (e.g. high intercorrelation of constructs).
Answer: At first, statistical analyses were conducted separately, but the results and factors associated with both MDD and GAD were very close. For more statistical power we decided to merge MDD and GAD into one outcome.

Discussion
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19. The discussion falls rather short regarding the interpretation of the role of work characteristics, including a necessary differentiation of their role on specific mental disorders (MDD vs. GAD vs. substance abuse). How do you explain the different patterns of predictors of the adjusted solution for the three mental disorders? Sensitivity and coping with work stress may be distinctive between the assessed mental disorders, e.g. due to different mechanisms of psychopathology. Again, I find the merge of MDD and GAD suboptimal.
Answer: Indeed this is true, however mechanisms of psychopathology are not very clear even if it is known that stress have an impact on CMD which is not specific (stress could induce different CMD). However literature shows that stress is often associated with anxiety and depression. In our study by looking the stress models we found that work intensity and emotional demand are stress factors for GAD/MDD and that social relations at work have a positive effect. For alcohol, autonomy is a stress factor and social relations at work seems to be induced by another mechanism described above in the discussion. We implemented the discussion (p21 l22): “Based on stress models, our study shows that

work intensity and emotional demand are stress factors for GAD/MDD and that social relations at work have a positive effect. For alcohol, autonomy is a stress factor and social relations at work seems to be induced by another mechanism described above."
For the merge of MDD and GAD, as we said in comment just above the results and factors associated with both MDD and GAD were very close moreover the recent meta-review of Harvey SB in 2017 deal with depression and anxiety by merging them.

20. Please add a critical discussion of the low response rate of GPs (19%), perhaps in comparison to response rates in other surveys (I suppose, response rates of surveys in GPs are generally lowered, but references would be important to verify this).
Answer: Thank you for your remark, more information about this matter has been added to the discussion section (p22 l17): "However, response rate are similar to previous studies28 62 and GPs were selected to be representative of the Nord - Pas-de-Calais GPs in term of geographical localization, thereby limiting possible bias. In general practice, GPs' response rate is known to be low 63, and in order to favour an optimal response rate, we tested the questionnaire to make it parsimonious, GPs were paid for their participation, and GPs who were asked to participate were individually called."

21. Individuals consulting GPs may differ from other employees regarding the level of health (and consequently mental health, see 20% consulting rate for psychological reasons, table1). This may account for a selection bias that should be discussed.
Answer: Indeed, individuals included in our primary care study differ regarding the level of health that other employees that didn't consult their GP. This has been specified in the discussion section (p23 l1) : "However it is important to note that compared to studies in work environment settings, it is possible that patients included in this primary care setting have a different level of health than other employees who do not consult their GPs."

22. If the items were predominantly self-constructed (see comment #13), the use of validated scales that would have allowed for a methodically more rigorous analysis, should be discussed.
Answer: Questions used to assess psychosocial work factors were not self-constructed but they were based on a French expert report that was not published in an international peer reviewed journal but based on international literature. Indeed, the use of validated scales could have been a better choice. A discussion about this point has been added (p23 l4): "The measurement of psychosocial work factors was based on an unpublished work of experts in this field who based their work on international literature, measurement of reliability in our sample was rather low for some axis (α=0.34 for ethical conflict). The use of a validated questionnaire could have allowed for a better comparison with the existing literature and better psychometric quality."

Minors

P4, L5: Please add a comparison to the statement (e.g. unemployed).
Answer: Thank you for your comment, a comparison has been added (p4l2): "Individuals who are part of the labour force are generally in better health than the unemployed"

P4,L11: Please add "somatic chronic conditions" to differentiate from psychiatric conditions. In the same line: Please discard "…" and use "etc." or conclude the enumeration.
Answer: Thank you for your comment, changes have been made (p4l15): "Genetic factors13 and personal or family history of somatic chronic disease or psychiatric disease are also well described in literature.14 Environmental factors (e.g. social and material deprivation, etc.)"

P4,L27: "higher risk of depression": Is this argument based on longitudinal data? If not, the term "risk of" implies causality that may be avoided (better "associated with higher rates of…").

Answer: Indeed, those were cross sectional studies, modifications have been proposed (p4l13): “were described and show that low socio-economic status was associated with higher rates of depression.10 11”
P4,L32: The models you describe have mental health as a primary outcome.
Answer: Thank you for your remark, it has been specified in the manuscript (p4l20): “Three main theoretical models have been proposed to explain relations between work characteristics and mental health”

P4,L44: Please add outcome of studies (e.g. “…on mental health”).
Answer: Thank you, they have been added (p5 l2): “Several studies evaluate the impact of work on mental health using these theoretical models.7 18 19”
P4,L50: Please clarify the term “emergent” factors.
Answer: More details were added (p5 l5): “As work organization is evolving, other psychosocial factors described as “emergent factors” (e.g. insecurity at work, conflict of values, etc.) appear in the recent studies20-23”
Study design: For clarification, the information that work characteristics were assessed with self-reports, could be included.
Answer: It was added in the manuscript (p8l19): “Work characteristics were self-reported by the patient to their GP.”

Language:

The manuscript would benefit from a thorough language editing, including punctuation, diction and sentence structure. Here are just some ad-hoc corrections:

1. Page 4, line 27. Add hyphen (socio-economic)
Answer: This change has been implemented.

2. P4, L46: Consider rephrasing to "higher risk when..." or "risk is elevated when..."
Answer: This change has been implemented.

3. P4, L48: Correct into “other”
Answer: This change has been implemented.

4. P4, L52: Consider rephrasing to "also seem to have..."
Answer: This change has been implemented.

5. P4, L52: Correct to past term “used”
Answer: This change has been implemented.

6. P7: The term “Work’s factors” (2.2.2) may be corrected into “work characteristics”.
Answer: This change has been implemented.

7. P8, L18: Correct into “Reason for…”
Answer: This change has been implemented.

8. P8, L52: missing comma.
Answer: This change has been implemented: “in order to be able to compare each dimension, a Z-score was calculated”
9. P13, L7: missing comma, sentence structure could be rephrased.
Answer: This sentence have been rephrased (p15 l4) “In bivariate analyses, sex was significantly associated with the two outcomes: high levels of GAD and MDD in women and high levels of alcohol

abuse in men."

10. In the discussion, the use of past and present tense should be carefully revised.
Answer: Thank you for your comment, tense have been revised

Reviewer: 2
Reviewer Name
Dirk Richter
Institution and Country
University Bern Psychiatric Services, Center for Psychiatric Rehabilitation
Please state any competing interests or state 'None declared':
None declared

Please leave your comments for the authors below
This study is addressing a very important issue in the field of psychiatric epidemiology, namely the association of work conditions with mental illness. It does so by assessing common mental disorders in a sample of primary care patients and the authors claim to be the first to have conducted such a study with primary care patients.
The study itself is methodologically and statistically without major problems (apart from the missing information on the ethical approval and the psychometrically not unproblematic selection of single questions from standard questionnaires). The results are, however, not very surprising as this study confirms the widely known associations between working conditions and CMD.
My main concern is the primary care sample. The authors do not justify why the research is not done with current workers from industrial settings but rather with a sample from the health care system. From an epidemiological point of view one cannot assume that a primary care sample is identical to a working population. E.g., it is known that males visit their GPs less often than they should. The authors claim that it is important to analyze work-related issues in primary care patients but they do not present relevant research to support this claim. Furthermore, they do not inform the reader what a GP should do with such information. In short, I cannot understand the rationale for using this sample to address the research question.
Answer: Thank you for your comment, for the method concern we add information for the point you mentioned:
- Ethical approval (p7 l7): "Participating GPs who gave an oral consent to participate, were asked …" (p7 l15) ". Before the appointment the GP gave written information to their patients to inform them about the study and asked them to sign an informed consent." Moreover as explained in the manuscript this study had an authorization from the French independent administrative authority protecting privacy and personal data (CNIL)
- Psychosocial factors questionnaire: Questions used to assess psychosocial work factors were based on a French expert report that was not published in an international peer reviewed journal but based on international literature. Indeed, the use of validated scales could have been a better choice. A discussion about this point has been added (p23 l4): "The measurement of psychosocial work factors was based on an unpublished work of experts in this field who based their work on international literature, measurement of reliability in our sample was rather low for some axis (α=0.34 for ethical conflict). The use of a validated questionnaire could have allowed for a better comparison with the existing literature and better psychometric quality."
About the use of primary care sample, indeed you are right, we didn't elaborate enough on this. More details were implemented in the introduction (p5 l28): "We considered that this population is important to explore as people with CMD are frequently treated by GP either initially or throughout treatment.27

28 In primary care, the prevalence levels of CMD are high, ranging from 3%21 to 25% for anxiety disorders,12 27-30 6%12 to 25% for depression10 27-30 and 2%28 to 11% for alcohol abuse.27 28 Two studies conducted in the United Kingdom show that a third of patients seeing a GP for work-related reasons had a mental health issue.3 31 It constitutes a major clinical issue: GPs often have difficulties managing work-related mental health problems, as they often lack negotiation strategies regarding sick leave, communication skills and cooperation with occupational physicians.32 GPs encounter every type of workers and not only big industrial settings with occupational services. A better understanding of work related factors of mental health is important in order to help GPs to consider specific actions." Moreover we add some more items in the discussion (p24 l15): "The primary care sample used allows the inclusion of a representative panel of workers in the labour force including independent workers, workers in small companies or workers who don't have an occupational physician which is not the case in most of studies in occupational setting. Indeed, an international study including 49 countries shows that the average occupational health services coverage of workers was 24.8% with a larger gap among workers in small-scale enterprises, the self-employed, agriculture, and the informal sector.64"
Rantanen J, Lehtinen S, Valenti A, et al. A global survey on occupational health services in selected international commission on occupational health (ICOH) member countries. BMC Public Health 2017;17(787) doi: doi:10.1186/s12889-017-4800-z.

Reviewer: 3
Reviewer Name
Andrea Gragnano
Institution and Country
Université du Québec à Montréal, UQAM. Canada.
Please state any competing interests or state 'None declared':
None declared
Please leave your comments for the authors below
Dear authors,
I have had the glad opportunity to read your work. I believe the topics of your research as well as the data you have are relevant and potentially important for the scientific community. Nevertheless, I have many concerns and in my opinion, the manuscript needs some relevant improvements. For these reasons, I asked for a major revision. Moreover, I recommend carefully inspecting the words spelling because I detected many errors.

Introduction

I think the introduction need some changes to be more insightful and persuasive about the usefulness of the present research. I suggest to better define three aspects: 1) Explain why the work-related factor are so important that you focus on them and not on the other you cited 2) Explain why is important to measure all the work related factors together 3) Explain why is useful and what are the advantages compared to other procedure of recruiting patients through GPs

Answer: Indeed, you are right as it was also mentioned by the other reviewers, we did not insisted enough about the usefulness of the present research. We implemented details in the manuscript.
1) Introduction (p4 l19): "Psychosocial factors related to the work environment are of particular interest because they may be more easily prevented than those which results from life events, which are often unavoidable."
2) Introduction (p5 l26): "Combining emergent and classical factors is important in order to identify which are most strongly related to workers' mental health, this was outlined in the meta-review by Harvey et al.7"
Harvey SB, Modini M, Joyce S, et al. Can work make you mentally ill? A systematic meta-review of work-related risk factors for common mental health problems. Occup Environ Med 2017;74(4):301-10.

doi: 10.1136/oemed-2016-104015 [published Online First: 2017/01/22]

3) Introduction : (p5 l28): “We considered that this population is important to explore as people with CMD are frequently treated by GP either initially or throughout treatment.27 28 In primary care, the prevalence levels of CMD are high, ranging from 3%21 to 25% for anxiety disorders,12 27-30 6%12 to 25% for depression 10 27-30 and 2%28 to 11% for alcohol abuse.27 28 Two studies conducted in the United Kingdom show that a third of patients seeing a GP for work-related reasons had a mental health issue.3 31 It constitutes a major clinical issue: GPs often have difficulties managing work-related mental health problems, as they often lack negotiation strategies regarding sick leave, communication skills and cooperation with occupational physicians.32 GPs encounter every type of workers and not only big industrial settings with occupational services. A better understanding of work related factors of mental health is important in order to help GPs to consider specific actions”
Discussion (p24 l15): “The primary care sample used allows the inclusion of a representative panel of workers in the labour force including independent workers, workers in small companies or workers who don’t have an occupational physician which is not the case in most of studies in occupational setting. Indeed, an international study including 49 countries shows that the average occupational health services coverage of workers was 24.8% with a larger gap among workers in small-scale enterprises, the self-employed, agriculture, and the informal sector.64”

Rantanen J, Lehtinen S, Valenti A, et al. A global survey on occupational health services in selected international commission on occupational health (ICOH) member countries. BMC Public Health 2017;17(787) doi: doi:10.1186/s12889-017-4800-z.

P4L7. Please, add a reference for this statement (negative effect of work)

Answer: Thank you for your comment. The following reference has been added to the manuscript (p4 l2):

McLellan RK. Work, Health, And Worker Well-Being: Roles And Opportunities For Employers. Health Aff (Millwood) 2017;36(2):206-13. doi: 10.1377/hlthaff.2016.1150 [published Online First: 2017/02/09]

P4L9. Could be useful to define work-related diseases to not confound them with occupational diseases.
Answer: As suggested by another reviewer this term was removed because it was a little confusing. The sentence was replaced in the manuscript (p4 l3): “A study with trained general practitioners (GP) in occupational medicine found that mental health issues are the most frequent disorders attributed to work, after musculoskeletal disorders.3”

However work-related disease definition defined by the WHO is :Work-related diseases, defined as multi-factorial diseases, which are partly caused by work, and/or aggravated, accelerated or exacerbated by occupational exposures, and/or the cause of impaired work capacity”

P4L13-17 I do not understand the utility of this sentence in the rationale of the introduction.

Answer: The purpose of this sentence was to show that even if work is a risk factor of CMD, it is also possible that the presence of a CMD deteriorates the job situation and it is important to account for the bidirectional nature of this relationship.

P4L25. Please, use i.e. or e.g. within parenthesis and not “…”

Answer: Thank you for your comment, this has been changed (p4 l17): “Environmental factors (e.g.

social and material deprivation, etc.)

P4L38. “They lack some dimensions”. Please, be more specific. This will make easier to introduce organizational justice.

Answer: Thank you, more precision has been added (p4 l25): “but they lack some dimensions to well describe the psychosocial environment at work at the individual level and more precisely dimension about procedural justice in the company”

P4L41-42. Please better explain the Elovainio’s model. This sentence is not clear for readers not familiar with the model.

Answer: Thank you, indeed it may be not clear for readers not familiar with the model. More details have been supplemented (p4 l27): “organizational justice developed by Elovainio included interpersonal comparison, that is to say comparison of the response of the company in the same situation for different employees.17”

P4L44. Please, better detail the sentence “…impact of work [characteristic/coditions?] [on what] using these theoretical models”

Answer: Thank you for your comment, this sentence was supplemented with details (p5 l2): “Several studies evaluate the impact of work on mental health using these theoretical models”

P4L48-50. Please, better explain this sentence.

Answer: Thank you, in order to be more precise, some examples were added (p5 l5): “As work organization is evolving, other psychosocial factors described as “emergent factors” (e.g. insecurity at work, conflict of values, etc.) appear in the recent studies20-23: Workers experiencing high job insecurity or role conflict also seem to have a higher levels of CMD.20 21”

P4L52 I suggest to state here the importance of combining all psychosocial work factors (and justify why this is important) and that this has not been done before to your knowledge.

Answer: As suggested, we added this statement to the manuscript (p5 l26): “Combining emergent and classical factors is important in order to identify which are most strongly related to workers’ mental health, this was outlined in the meta-review by Harvey et al.7”

P5L10-16 I suggest using these arguments before in the introduction to persuade the reader about the usefulness of recruiting patients through GPs.

Answer : Thank you for your comment, indeed this is true we didn’t insisted enough on the usefulness of recruiting patient through GPs. This paragraph have been changed (p5 l23): “The objective of this study is to assess the association between GAD, MDD and alcohol abuse in a primary care setting, using validated diagnostic interviews and combining most psychosocial work-related risk factors in a population of individuals consulting their general practitioner (GP). Combining emergent and classical factors is important in order to identify which are most strongly related to workers’ mental health, this was outlined in the meta-review of Harvey et al. We considered that this population is important to explore as people with CMD are frequently treated by GP either initially or throughout treatment.27 28 In primary care, the prevalence levels of CMD are high, ranging from 3%21 to 25% for anxiety disorders,12 27-30 6%12 to 25% for depression 10 27-30 and 2%28 to 11% for alcohol abuse.27 28 Two studies conducted in the United Kingdom show that a third of patients seeing a GP for work-related reasons had a mental health issue.3 31 It constitutes a major clinical issue: GPs often have

difficulties managing work-related mental health problems, as they often lack negotiation strategies regarding sick leave, communication skills and cooperation with occupational physicians.32 GPs encounter every type of workers and not only big industrial settings with occupational services. A better understanding of work related factors of mental health is important in order to help GPs to consider specific actions."

P5L17-20. This sentence is not clear to me. How it is that the prevalence among GPs makes important to elucidate work related factors? Please, explain better.

Answer: Indeed this sentence may not be very clear, we changed it (p5 l28): "We considered that this population is important to explore as people with CMD are frequently treated by GP either initially or throughout treatment.27 28"

Design and study population

Please, clarify which GPs has been contacted (all of the region? A random sample of N?) and if the GPs can refuse to participate. Please also say the GPs were trained (which is evident only watching Fig.1) and specify for what they have been trained. How did you obtained the informed consensus from participants and GPs?

Answer: Thank you for this comment, additional information has been implemented to the manuscript (p7 l7) : "Participating GPs who gave an oral consent to participate, were asked to include randomly a maximum of 24 patients who met the following criteria: being actively employed and aged 18 to 65 years, regardless of the reason of their medical appointment. GPs were selected to be representative of the distribution of GPs in 15 areas of the Nord-Pas-de-Calais region that we studied. GPs had to include the two first patients who met the inclusion criteria in each previously defined time slot. Approximately ¼ of the GPs of the region were contacted to participate, they were selected in a way that was proportional to the distribution of GPs in 15 areas of Nord – Pas-de-Calais region that were studied. GP's had to include the two first patient who met the inclusion criteria in each time slot defined previously with GPs according to their working schedule. Before the appointment the GP gave written information to their patients to inform them about the study and asked them to sign an informed consent". For GPs training, a sentence was added in date collection part (p8 l2): "Participating GPs received a 15 minute phone training on the use of the questionnaire before the beginning of the study."

Your reported useful information about recruitment in the Strengths and Limitation section (P20L26-37). I suggest to report that information here and in the discussion just refer to these information.

Answer: As suggested, additional information regarding the design and study population (see question above) has been added

Data Collection

Please, describe a little more accurately the MINI. This instrument is of crucial importance in your study because it determined your dependent variables (structure, reliability and validity).
Answer: Indeed, the manuscript lack information on this topic. We added information on the psychometric qualities of the test we used (p8 l13): "Depending on the mental disorders studied, the sensibility of the MINI varied between 83 to 94% (MDD: 94%; GAD: 88%; Alcohol: 83%), the specificity between 72 to 97% (MDD: 79%; GAD: 72%; Alcohol: 97%) and the Kappa concordance coefficient between 0.36 to 0.82 (MDD: 0.73; GAD: 0.36; Alcohol: 0.82). The inter-rater and test-retest reliability measured by Kappa coefficient were good, respectively 0.88 to 1 and 0.76 to 0.93.36"

Lecrubier Y, Sheehan DV, Weiller E, et al. The Mini International Neuropsychiatric Interview (MINI). A short diagnostic structured interview: reliability and validity according to the CIDI. European Psychiatry 1997;12(5):224-31.

Are you sure that MDD is measured during the preceding 2 weeks and GAD during the preceding six months? Is it not the opposite?

Answer: Thank you for this remark but the MINI measures MDD during the preceding 2 weeks and GAD during the preceding six months and not the opposite.

Please provide data about reliability and validity of the French questionnaire measuring work factors.

Answer: The French questionnaire measuring work factors is based on scientific literature. In order to have information of reliability in our sample we computed an alpha Cronbach coefficient for each of the six axis. Information were implemented in the methods section (p9 l15): “Reliability of the questionnaire was assessed by computing an alpha Cronbach coefficient. This coefficient varied between 0.34 to 0.68. The reliability was lower for ethical conflicts (α=0.34), emotional demands (α=0.44) and higher for work intensity (α=0.48), insecurity of work (α=0.48), autonomy (α=0.65) and social work relations (α=0.68).”

P7L46. Please, provide the value given to the steps in the Likert scale.

Answer: Thank you, this information was added (p9 l14) : “the response was either “yes” or “no” and for the other factors the responses were “always”/”often”/”sometimes”/”never” numbered from 1 to 4”

Statistical Analyses

Could you please explain somewhere in the text (introduction or here) why you considered GAD and MDD in the same category?

Answer: At first, statistical analyses were conducted separately, but the results and factors associated with both MDD and GAD were very close. For more statistical power we decided to merge MDD and GAD into one outcome. Information were implemented in the analysis section (p7 l11): “GAD and MDD were merged into the same variable because of intercorrelation”

I have some concerns about your decision to adopt a Poission regression instead of a logistic regression. You justify this decision because given the high prevalence of GAD/MDD you said logistic regression overestimate relative risk. This is the case only if you interpret the OR from the logistic regression as a RR. This (common) practice is wrong but for rare events. If you interpret the OR from the logistic regression as OR (and not RR) you will not have overestimation. I am aware of the difficulties in the interpretation of OR but this is a problem of interpretation and not of estimation. Moreover, there are ways to make the OR more interpretable (ex. Liberman, 2005) so you should better justify why you choose Poisson regression. Poisson regression is usually suggested when the outcome is a count of episodes of an illness occurring over time (Barros & Hirakata, 2003) or when analyzing rare events where subjects are followed for a variable length of time (Zou, 2004). Instead, you justify the adoption of Poisson because the event is common, not rare. This is strange. I believe your reason to use Poisson is to directly estimate RR but this should be clearly stated and with references. Moreover, when you use Poisson regression to estimate relative risk directly with dichotomous outcomes, the CI of the RR will be wider and authors suggest ways to overcome this problem (ex. Zou, 2004; Barros & Hirakata, 2003) but for what I know none suggest to use the normal Poisson regression without adaptations. It can be too much conservative. How did you handled this issue?

Answer: Thank you for your comment. When an event is common (>10%) the OR can no longer approximate the risk ratio (Zhang & YU, 1999), which many people do not know. For that reason, for most prospective studies, the relative risk is preferred over the OR (Zou, 2004). In our study, where the prevalence of GAD/MDD is higher than 10%, we chose to use Poisson regression with robust error variance (sandwich estimation) to estimate RRs and confidence interval as described by Zou. In order to be more precise, we added some details regarding this method to the statistical analysis section (p11 l8) : "To study the association between occupational factors and GAD/MDD and alcohol we used multilevel Poisson regression models using a robust error variance procedure (sandwich estimation)46 with patient as level one and geographical area as level two. Given the high prevalence of these problems, Poisson regression was preferred to logistic regression to avoid overestimating the risk ratios.47"

Zhang J, Yu KF. What's the relative risk? A method of correcting the odds ratio in cohort studies of common outcomes. JAMA 1998;280(19):1690-1. [published Online First: 1998/12/01]
Zou G. A modified poisson regression approach to prospective studies with binary data. Am J Epidemiol 2004;159(7):702-6. [published Online First: 2004/03/23]

Finally, I think it is a little confusing to adopt two different types of regression for the two outcomes when you can use the same for both. I suggest choosing your regression type, better justifying your decision and using that regression type for both the outcomes.

Answer: As you suggested we decided to use the same type of regression (Poisson) for the two outcomes. Changes have been implemented in the analysis section of the manuscript (p11 l8) : "To study the association between occupational factors and GAD/MDD and alcohol we used multilevel Poisson regression models using a robust error variance procedure (sandwich estimation)46 with patient as level one and geographical area as level two."

Liberman AM. How Much More Likely? The Implications of Odds Ratios for Probabilities. Am J Eval. 2005;26(2):253-266. doi:10.1177/1098214005275825.

Barros A & Hirakata VM, (2003). Alternatives for logistic regression in cross-sectional studies: an empirical comparison of models that directly estimate the prevalence ratio. BMC Medical Research Methodology 3(21).

Zou G (2004). A modified Poisson regression approach to prospective studies with binary data. American journal of epidemiology, 159(7).

P9L12. "…covariate that were associated with GAD/MDD…" at what level of p?

Answer: The level of statistical significance was $p < 0.05$. This was added in the manuscript

P9L18. Please, provide citations for R and lme4 package.

Answer : Thank you for your comment, citations for R and lme4 package were added

Team RDC. R: A language and environment for statistical computing Vienna, Austria: R Foundation for Statistical Computing; 2008 [Available from: http://www.R-project.org.
Bates D, Maechler M, Bolker B, et al. Fitting Linear Mixed-Effects Models Using lme4. Journal of Statistical Software 2015;67(1):1--48. doi: 10.18637/jss.v067.i01

Results

P.10-L. 2. Reading the sentence as it is now I expect to see in table 1 information regarding the dissemination of GPs throughout the Nord-Pas-de-Calais, which is not the case.

Answer : This data was implemented in table 1

P10-L5-6. Justify this sentence. You recruited the 18% of the contacted GPs and these were not randomly chosen. This makes difficult to assume they are representative.

Answer: Thank you for your remark, more information about this matter has been added to the discussion section (p22 l17): “However, response rate are similar to previous studies28 62 and GPs were selected to be representative of the Nord - Pas-de-Calais GPs in term of geographical localization, thereby limiting possible bias. In general practice, GPs’ response rate is known to be low 63, and in order to favour an optimal response rate, we tested the questionnaire to make it parsimonious, GPs were paid for their participation, and GPs who were asked to participate were individually called.”

Bivariate analysis

Please refers to table 2 at the beginning of the paragraph to show results of the test of the association between outcomes and covariates.

Answer: Thank you for your comment, a reference to table 2 was added

Tabe 2. Please report at least the chi-square and the df beside the p value. To understand which cells significantly contribute to the chi-square it would be useful to report also the standardized residuals.

Answer: As suggested, chi square and df were added to table 2

Multivariate analysis

Please state at the beginning of the paragraph to see table 3 for the results of multivariate analysis. In Table 3 it is not clear if the unadjusted model is a multivariate model with only all occupational factors or if they are many bivariate models with just one occupational factor at the time. In the section Statistical Analyses this is not specified. Please specify this, there or in the table.

Answer : Thank you for your comment, a reference to table 3 was added. In table 3 we added a footnote to have more details about the unadjusted model: “1 No adjustment: each occupational factor are studied one at the time”

Please, insert in table 3 also the result for the control variables. Even if they are not the topic of interest of this article, other researchers may be interested in their role.

Answer : Thank you for your comment. A new table was implemented as an appendix with results for the controls variables.

Discussion

I think you can improve the discussion highlighting more the contribution of this paper to the advancement of the knowledge in the research field and the strength of this research. I think you highlighted well the limits but not the strengths of the research. Reading the discussion it seems just

that you confirmed things that were already well known and nothing more. Instead, you have something to say. For example, you can elaborate more about the theories (Karasek, Siegrist, Elovainio) you cited in the introduction in light of your results and discuss about the consequences of measuring all the work-related factors together. Some are significant and some are not, what does this means? Is this saying something about the investigated diseases? The significant work factor are not the same for the two diseases…

Answer : Thank you for your comment, we add more elements in the strengths of this study in the discussion (p21 l22): “Based on stress models, our study shows that work intensity and emotional demand are stress factors for GAD/MDD and that social relations at work have a positive effect. For alcohol, autonomy is a stress factor and social relations at work seems to be induced by another mechanism described above.”
(P23 l15) : “The primary care sample used allows the inclusion of a representative panel of workers in the labour force including independent workers, workers in small companies or workers who don’t have an occupational physician which is not the case in most of studies in occupational setting. Indeed, an international study including 49 countries shows that the average occupational health services coverage of workers was 24.8% with a larger gap among workers in small-scale enterprises, the self-employed, agriculture, and the informal sector.64 Moreover the exploratory character of our study confirm the increased risk of anxiety/depression for work intensity, social support and emotional demands and the link between autonomy and alcohol abuse in a primary care setting. This study also shows a negative effect of social support at work for alcohol abuse.7 21 25 58”

P18L37. “employees with high stress in social support from…” what does it means?

Answer: Indeed this was not very clear, the sentence was reformulated (p20 l15) : “employees with poor social support from superior or co-workers had higher…”

P19L5. Please, elaborate more about this counterintuitive result.
Answer: Thank you for your comment, at first we found this result as you said counterintuitive but we did a subgroup analysis by occupational group to explore this subject and found that white collar were more exposed and that may be caused by drinking with colleagues (afterworks…). We added details in the discussion (p21 l1): “We perform a subgroup analysis by occupational group to explore this result and we found that white collar were the most exposed group to alcohol abuse with high social relationship at work (RR=1.89 [1.21 – 2.9]). Others studies have approached this subject by pointing out afterwork with colleagues.57”

P20L42-47. Please, reformulate this sentence. You can write that it would be informative to control also for individual variables (which one and justify why they are important).

Answer: As suggested, the sentence was reformulated (p23 l8): “We were able to take into account many covariates (characterizing individuals, GPs and patients’ context), but nevertheless we missed some other important variables. Indeed, it would have been informative to control for individual characteristics such as prior history of mental health problems, social support outside of work or life events that are known to be associated with CMD, thus they could have an effect on the relationship between CMD and work related factors.”

Conclusion

P21L14-16. Please, reformulate the last sentence because it is not clear.
Answer: As suggested, this sentence was reformulated (p24 l6): “These results could be a starting point for the GPs to apprehend these factors with the patient and to communicate with the occupational physician in order to prevent the onset of CMD.

VERSION 2 – REVIEW

REVIEWER	Severin Hennemann Department of Clinical Psychology, Psychotherapy and Experimental Psychopathology, Institute of Psychology, University of Mainz, Germany
REVIEW RETURNED	27-Mar-2018

GENERAL COMMENTS	The authors have thoroughly revised and improved the manuscript #bmjopen-2017-020770 entitled "Which work-related characteristics are most strongly associated with common mental disorders?: A cross-sectional study". However, I suggest the following further minor revisions: ---------- Introduction ---------- 1. Although the authors understandably reference a systematic-review on the prevalence of mental disorders to substantiate the concept of CMD (Steel et al., 2014), I suggest discussing the certain vagueness of this concept in terms of varying prevalence rates. In this regard, the authors may add references for European prevalence estimates (e.g. 10.1016/j.euroneuro.2011.07.018), which would be more suitable to the research focus and population of this study. 2. I suggest reframing/shortening the following sentence into: „A recent systematic meta-review identified three overlapping categories of work-related risk factors that may contribute to the development of common mental health problems (considering depression and/or anxiety): imbalanced job design, occupational uncertainty and a lack of value and respect in the workplace. 3. I suggest reframing the following sentence into: “Moreover, these risk factors are also influenced through societal and changes in work environment (globalization, demographic change, job specialization, communication load, new forms of work organization, etc). 4. In this regard you may add the term “work/industry 4.0” and include a reference to substantiate the influence of digitalization and subsequent process change on the work environment. 5. Please clarify, if work-related risk factors deteriorated or increased in the following sentence: “A French study assessed changes in psychosocial work factors between 2006 and 2011 and showed that some psychosocial work factors deteriorated (decision latitude, social support, reward, role conflict and work life imbalance) between 2006 and 2011.” 6. I suggest reframing the following sentence into: “These changes have been shown to vary with age, occupation, sector activity and type of contract.” 7. I suggest reframing the following sentence (p. 6, line 1) into: “Since GPs usually are the first contact point for employees in the health care process, the evaluation of primary care patients is of paramount importance.”

	8. I suggest reframing the following sentence (p. 6, line 8) into: “GPs encounter a variety of type of workers with systematic, unsystematic or non-existing occupational health services at their workplace.” 9. I suggest adding the term “exploratory” in the following sentence (p. 7, line 3): “Heracles is a cross-sectional exploratory study conducted between April and August 2014 among working individuals consulting a primary care physician in the Nord-Pas-de-Calais region in the North of France.” ---------- Methods ---------- 1. Please clarify, how GPs selected patients for your study (e.g. clinical impression, random numbers etc.) as you stated these were included randomly (p. 6, line 8). 2. The authors state that statistical analyses were adjusted for past psychiatric problems. Please add this information in your manuscript. In this regard, it would be advisable to use the term “previous mental health problems/disorders” or to specify previous mental health treatments. ---------- Results ---------- 1. The reliabilities of the scales of work characteristics questionnaire used in this study are persistently low (< .70), which represents a serious methodological limitation. As this is not only the case for the already mentioned scale “ethical conflicts”, the authors should elaborate on this limitation more rigorously in the discussion section. 2. Please include your approach on collapsing MDD and GAD in the manuscript: “At first, statistical analyses were conducted separately, but the results and factors associated with both MDD and GAD were very close. For more statistical power we decided to merge MDD and GAD into one outcome.” ---------- Discussion ---------- 1. I suggest reframing the following sentences (p. 23, line 22): “Moreover, the present study confirms the increased risk for anxiety and depression through work intensity, social support and emotional demands as well as the association between reduced autonomy and alcohol abuse in a primary care setting. Furthermore, we could demonstrate a negative association of social support at work for alcohol abuse.” With regard to the latter, caution is advised when interpreting cross-sectional results with the term “effect of”. ---------- Language ---------- The manuscript would benefit from further, considerate language editing.

REVIEWER	Andrea Gragnano

	Université du Québec à Montréal, Canada
REVIEW RETURNED	05-Apr-2018

GENERAL COMMENTS	Dear authors, I really appreciate your effort to answer reviewers' concerns. However, I still detect some major problems that in my opinion prevent the article to be published in the BMJ Open. My very first concern is about the psychometric characteristics of the instrument used to measure work-related psychosocial factors. I have read the scientific report from which the instrument derives and I really appreciated the work made. However, no psychometric validation is presented there and a review of the literature is just a starting point to create a new instrument. As requested by the reviewers, to overcome this limit you presented the Cronbach's alphas. However, the values you showed are very low. Only Autonomy and Social work relations have a barely sufficient alpha. The use of an unreliable instrument is a serious problem for the validity of the research results. You have to find a way to demonstrate the goodness of your instrument. For example, I see some of your response scales are just yes/no. It is not suggested to use Cronbach's alpha with this type of response scales. You should consider the idea of not using these items and so to calculate the alphas without them. You can also find other solutions to this problem. Make sure you have reversed the items with an opposite direction compared to their own scale before computing the Cronbach's alpha. Moreover, I am aware of the limits and restrictions of Cronbach's alpha so you can propose alternative indexes that better fit the structure of your data. You can also perform factorial analyses. Another major doubt I have is about the declared representativeness of your sample. The representativeness of GPs is clear but the one of workers is not. For example, in the abstract you wrote: "We use data from a representative study of working individuals". It is not clear of what the sample is representative. Not of the working population of the region, as you wrote in the Limits. Please better specify this aspect. There are some typographical errors due to the modifications to the text. For example, in the Method section you still stated that you performed logistic regression for occupational factors and alcohol. Please check all the text for this type of errors. Finally, I suggest explaining why you merged GAD and MDD as you made in the reviewers' answers because what is presented now on page 11 line 9 in my opinion is not clear enough.

VERSION 2 – AUTHOR RESPONSE

Reviewer(s)' Comments to Author:

Reviewer: 1

Reviewer Name
Severin Hennemann

Institution and Country
Department of Clinical Psychology, Psychotherapy and Experimental Psychopathology, Institute of Psychology, University of Mainz, Germany

Please state any competing interests or state ‘None declared’:
None declared

Please leave your comments for the authors below
The authors have thoroughly revised and improved the manuscript #bmjopen-2017-020770 entitled "Which work-related characteristics are most strongly associated with common mental disorders?: A cross-sectional study". However, I suggest the following further *minor* revisions:

Introduction
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1. Although the authors understandably reference a systematic-review on the prevalence of mental disorders to substantiate the concept of CMD (Steel et al., 2014), I suggest discussing the certain vagueness of this concept in terms of varying prevalence rates.
In this regard, the authors may add references for European prevalence estimates (e.g. 10.1016/j.euroneuro.2011.07.018), which would be more suitable to the research focus and population of this study.
Answer: Thank you for your comment, we added this reference to the manuscript (p4 l10): “A systematic review of the literature in European countries shows that there is great diversity in the ascertainment of mental disorders and thus the prevalence estimates vary between countries. The authors suggest that the study of a larger range of diagnoses and the standardization of methods can help the comparability across countries.7”

2. I suggest reframing/shortening the following sentence into:
„A recent systematic meta-review identified three overlapping categories of work-related risk factors that may contribute to the development of common mental health problems (considering depression and/or anxiety): imbalanced job design, occupational uncertainty and a lack of value and respect in the workplace.
Answer: Thank you for your comment, as suggested changes have been implemented in the manuscript (p5 l8): “A recent systematic meta-review identified three overlapping categories of work-related risk factors that may contribute to the development of common mental health problems: imbalanced job design, occupational uncertainty and a lack of values and respect in the workplace.”

3. I suggest reframing the following sentence into:
“Moreover, these risk factors are also influenced through societal and changes in work environment (globalization, demographic change, job specialization, communication load, new forms of work organization, etc).
Answer: Thank you for your comment, as suggested changes have been implemented in the manuscript (p5 l14): “Work-related risk factors are also influenced by changes in society and work environments (globalization, demographic change, job specialization, communication load, new forms of work organization, industry 4.027, etc).”

4. In this regard you may add the term “work/industry 4.0” and include a reference to substantiate the influence of digitalization and subsequent process change on the work environment.
Answer: As suggested, we introduced the term industry 4.0 and implemented a reference which mentions changes in the work environment (p5l16).
Gentner S. Industry 4.0: Reality, Future or just Science Fiction? How to Convince Today's

Management to Invest in Tomorrow's Future! Successful Strategies for Industry 4.0 and Manufacturing IT. Chimia 2016;70(9):628-33. doi: 10.2533/chimia.2016.628 [published Online First: 2016/09/21]

5. Please clarify, if work-related risk factors deteriorated or increased in the following sentence:
“A French study assessed changes in psychosocial work factors between 2006 and 2011 and showed that some psychosocial work factors deteriorated (decision latitude, social support, reward, role conflict and work life imbalance) between 2006 and 2011.”
Answer: The study we cite shows that exposure to work related risk factors has increased over time, thus work conditions have deteriorated. The text was changed to make it clearer (p5l16): “A French study assessed changes in psychosocial work factors between 2006 and 2011 and reported that some worsened …”

6. I suggest reframing the following sentence into:
“These changes have been shown to vary with age, occupation, sector activity and type of contract.”
Answer: As suggested, the sentence was changed (p5l18): “These changes have been shown to vary with age, occupation, sector activity and type of contract”

7. I suggest reframing the following sentence (p. 6, line 1) into: “Since GPs usually are the first contact point for employees in the health care process, the evaluation of primary care patients is of paramount importance.”
Answer: As suggested, the sentence was changed (p5l23): “Since GPs usually are the first contact point for employees in the health care process, the evaluation of primary care patients is of paramount importance”

8. I suggest reframing the following sentence (p. 6, line 8) into: “GPs encounter a variety of type of workers with systematic, unsystematic or non-existing occupational health services at their workplace.”
Answer: As you suggested, the sentence was changed (p6l2): “GPs encounter a variety of workers with systematic, unsystematic or non-existing occupational health services at their workplace.”

9. I suggest adding the term “exploratory” in the following sentence (p. 7, line 3): “Heracles is a cross-sectional exploratory study conducted between April and August 2014 among working individuals consulting a primary care physician in the Nord-Pas-de-Calais region in the North of France.”
Answer: As suggested, the term “exploratory” was implemented (p7l3)

Methods
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1. Please clarify, how GPs selected patients for your study (e.g. clinical impression, random numbers etc.) as you stated these were included randomly (p. 6, line 8).
Answer: Thank you for your comment, indeed we did not sufficiently explain the patient selection procedure. GPs were asked to include the two first patients during a particular time slot which had previously been defined (for instance, Monday morning, Tuesday afternoon, …). This was added to the manuscript. In order to be more clear we added this sentence (p6l9): “GPs were asked to include the first two patients who met study inclusion criteria in each randomly selected time slot which had previously been defined with the GP.” This was also stated in the discussion section (p22l24): “GPs were asked to include patients following an inclusion schedule that was provided at the start of the study. This allowed us to include patients in different time slots of the week.”
2. The authors state that statistical analyses were adjusted for past psychiatric problems. Please add this information in your manuscript. In this regard, it would be advisable to use the term “previous

mental health problems/disorders" or to specify previous mental health treatments.
Answer: Thank you for your comment, we added this information to the manuscript (p11l6): "Statistical models were adjusted for each exposure variable and for other covariates that were associated with GAD/MDD (previous mental health problems/disorders, alcohol abuse, material deprivation and GP's gender) or alcohol abuse (family status, company size, previous mental health problems/disorders, job instability, education level, past unemployment, GAD and MDD) ($p<0.05$) in a multivariable Poisson regression model excluding occupational factors". Moreover, as suggested we changed the term "past psychiatric problems" by "previous mental health problems/disorders".

Results

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1. The reliabilities of the scales of work characteristics questionnaire used in this study are persistently low (< .70), which represents a serious methodological limitation. As this is not only the case for the already mentioned scale "ethical conflicts", the authors should elaborate on this limitation more rigorously in the discussion section.
Answer: Thank you for your comment. As suggested by another reviewer, we replaced the estimates of reliabilities presented in the paper by the omega coefficient which seems more appropriate*. This is now presented in the manuscript (p9l7): "The reliability of questions pertaining to work characteristics was assessed by computing an omega coefficient43. This coefficient varied between 0.35 to 0.79. The reliability was higher for social relations at work (ω =0.72), emotional demands (ω =0.75) and work intensity (ω =0.79) than for autonomy (ω =0.66), job insecurity (ω =0.50), or conflicts in values (ω=0.35)."
Moreover as suggested, more information was added in the discussion section (p22l27): "measurement of reliability in our sample was rather low for some axis (ω=0.35 for conflict in values, 0.50 for job insecurity and 0.66 for autonomy). These dimensions are only composed of 2 items, this can explain partly the rather low reliability."
* Dunn TJ, Baguley T, Brunsden V. From alpha to omega: a practical solution to the pervasive problem of internal consistency estimation. British journal of psychology (London, England : 1953) 2014;105(3):399-412. doi: 10.1111/bjop.12046 [published Online First: 2014/05/23]

2. Please include your approach on collapsing MDD and GAD in the manuscript: "At first, statistical analyses were conducted separately, but the results and factors associated with both MDD and GAD were very close. For more statistical power we decided to merge MDD and GAD into one outcome."
Answer: Thank you for your comment, as suggested we added a sentence in the manuscript (p10l25): "At first, statistical analyses were conducted separately for each outcome, but factors associated with MDD and GAD were very similar, therefore to gain statistical power we merged these two disorders into one outcome."

Discussion

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1. I suggest reframing the following sentences (p. 23, line 22): "Moreover, the present study confirms the increased risk for anxiety and depression through work intensity, social support and emotional demands as well as the association between reduced autonomy and alcohol abuse in a primary care setting. Furthermore, we could demonstrate a negative association of social support at work for alcohol abuse."
With regard to the latter, caution is advised when interpreting cross-sectional results with the term "effect of".
Answer: Thank you for your comment, as suggested we changed this sentence in the manuscript (p23l14): "Moreover, the present study confirms the increased risk of anxiety and depression associated with work intensity, social relations at work and emotional demands as well as the

association between reduced autonomy and alcohol abuse in a primary care setting. Furthermore, we could demonstrate a negative association between social relations at work and alcohol abuse."

Language

The manuscript would benefit from further, considerate language editing.

Reviewer: 3

Reviewer Name
Andrea Gragnano

Institution and Country
Université du Québec à Montréal, Canada

Please state any competing interests or state 'None declared':
none declared

Please leave your comments for the authors below
Dear authors,

I really appreciate your effort to answer reviewers' concerns. However, I still detect some major problems that in my opinion prevent the article to be published in the BMJ Open.

My very first concern is about the psychometric characteristics of the instrument used to measure work-related psychosocial factors. I have read the scientific report from which the instrument derives and I really appreciated the work made. However, no psychometric validation is presented there and a review of the literature is just a starting point to create a new instrument. As requested by the reviewers, to overcome this limit you presented the Cronbach's alphas. However, the values you showed are very low. Only Autonomy and Social work relations have a barely sufficient alpha.
The use of an unreliable instrument is a serious problem for the validity of the research results.
You have to find a way to demonstrate the goodness of your instrument. For example, I see some of your response scales are just yes/no. It is not suggested to use Cronbach's alpha with this type of response scales. You should consider the idea of not using these items and so to calculate the alphas without them. You can also find other solutions to this problem. Make sure you have reversed the items with an opposite direction compared to their own scale before computing the Cronbach's alpha. Moreover, I am aware of the limits and restrictions of Cronbach's alpha so you can propose alternative indexes that better fit the structure of your data. You can also perform factorial analyses.
Answer: Thank you for your comment, which raises an important concern. As suggested, we tried to compute Cronbach alphas without the yes/no questions and the internal reliability coefficients of the scales we studied were substantially higher than reported in the previous version of our manuscript (for example α was 0.76 for work intensity and 0.70 for emotional demands). However using alpha coefficient without the yes/no questions implied using dimensions with only one item and therefore the use of alpha coefficient was not applicable. We decided to use the Mc Donald's omega coefficient that have been shown to be a more sensible index for internal consistency*. We change the values in the manuscript (p9l7): "The reliability of questions pertaining to work characteristics was assessed by computing an omega coefficient43. This coefficient varied between 0.35 to 0.79. The reliability was higher for social relations at work (ω =0.72), emotional demands (ω =0.75) and work intensity (ω =0.79) than for autonomy (ω =0.66), job insecurity (ω =0.50), or conflicts in values (ω=0.35)."

Moreover, more information was added in the discussion section (p22l27): “measurement of reliability in our sample was rather low for some axis (ω=0.35 for conflict in values, 0.50 for job insecurity and 0.66 for autonomy). These dimensions are only composed of 2 items, this can explain partly the rather low reliability.”
* Dunn TJ, Baguley T, Brunsden V. From alpha to omega: a practical solution to the pervasive problem of internal consistency estimation. British journal of psychology (London, England : 1953) 2014;105(3):399-412. doi: 10.1111/bjop.12046 [published Online First: 2014/05/23]

Another major doubt I have is about the declared representativeness of your sample. The representativeness of GPs is clear but the one of workers is not. For example, in the abstract you wrote: “We use data from a representative study of working individuals”. It is not clear of what the sample is representative. Not of the working population of the region, as you wrote in the Limits. Please better specify this aspect.
Answer: Indeed you are right, our sample was not representative of the working population of the region because our recruitment aimed to constitute a random sample of active individual consulting a GP. However, thereafter we compared our study sample with the working population in the region and it was representative in term of sex. We also compared with the non-respondent and it was representative in term of age and sex. In order to clarify, we deleted the term “representative” from the abstract.

There are some typographical errors due to the modifications to the text. For example, in the Method section you still stated that you performed logistic regression for occupational factors and alcohol. Please check all the text for this type of errors.
Answer: Thank you for your awareness, we have checked the manuscript for this type of errors.

Finally, I suggest explaining why you merged GAD and MDD as you made in the reviewers’ answers because what is presented now on page 11 line 9 in my opinion is not clear enough.
Answer: Thank you for this comment, this was also asked by another reviewer and we added more information in the manuscript (p10l25): “At first, statistical analyses were conducted separately for each outcome, but factors associated with MDD and GAD were very similar, therefore to gain statistical power we merged these two disorders into one outcome.”

VERSION 3 – REVIEW

REVIEWER	Andrea Gragnano Université du Québec à Montréal, Canada
REVIEW RETURNED	07-Jun-2018

GENERAL COMMENTS	Dear authors, Thanks for your efforts. You have answered all my concerns. In my opinion, the manuscript is ready to be published in BMJ Open.