PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	Expectations and illness perceptions as predictors of benefit recipiency among workers with common mental disorders: secondary analysis from a randomized controlled trial
AUTHORS	Løvvik, Camilla; Shaw, William; Øverland, Simon; Reme, Silje

VERSION 1 - REVIEW

REVIEWER	Lindsay Blank University of Sheffield UK
REVIEW RETURNED	07-Nov-2013

- The reviewer completed the checklist but made no further comments

REVIEWER	Malin Lohela Karlsson Karolinska Institutet, Sweden
REVIEW RETURNED	23-Nov-2013

GENERAL COMMENTS	1.The objective is a bit difficult to follow as you include people that are both sick-listed and at risk of going on sick leave in the study population. I think it would be better to separate the groups in the objective and specify the aim for the groups differently. For example keep the objective as it is for the group on sick leave or on benefits and rewrite the objective for the people at risk of sick leave. Are benefits the same as having disability pension? 4. What was included in CMD in the study? Only patients with anxiety and/or depression? Where there any exclusion criterias? 6. How was working at 6 month follow up defined? Working full-time? Part-time? How did you deal with those that were not on sick-leave before? Were they classified as being on sick-leave if they were sick-listed full-time or was part time enough to be a "case". If you used full-time or part-time to define cases, how could the other option affect your results? 10. This is related to the problem with the objective as described above. I have problem following the presentation and interpretation of the results maily due to that you are talking about non-return to work in a population that are not at sick leave at start. Table 1 is difficult to read when divided into continuous and categorial variables. Design it as one table only and put all background characteristics and health factors next to each other. Some basic information about the groups are lacking, for example days of sick leave the past 6 (3?) months, average length on sick leave for those away from work. Table 2 would be easier to read if significant results were highlighted, for example in bold. Table 3 lacks information about the number of cases that did not return to work after 6 months/became sick-listed after 6 months. If

	very few persons did succeed this is relevant for the interpretation of the results. For example, the wide range of the confidence interval in the negative RTW-experience variable in the group on long-term benefits indicate that this could be due to few cases. If that is the case, it might affect the conclusion that is presented on page 22, row 39-46. The paper investigates a topic that has been little studied, especially in relation to this health problem (CMD). However, I have several comments on the paper, both minor and major, that needs to be concidered to further improve this paper. Page 1, row 40-42. This affilliation is not attached to any of the authors (missing). Page 3, row 46. This "conclusion" are not based on the results in this study since it was not studied. Page 4-6. The introduction does not guide the reader to the importance of this topic. Please tell the reader more sharply why this topic is neccessary to study. As it is written now you could read it "between the lines" and you need to read it several times to actually grasp it. Why do you divide the group into subgroups? Is there a reason to belive that the result might differ between them? If yes, include this in the introduction. Page 3, row 25. Which are the other public health challenges? Page 3, row 28-30. /.../ for a large proportion of all-long term sick leave. Are you refereing to in general? This study that you cite was conducted in UK. Is the case similar in Europe? In the world? Page 3, row 47. What does MHP stand for? Page 6, objectives. Why do you have aims at the same time as you specify your hypotheses? Is there a reason for why you chose not to have the hypotheses? Page 7, statisticals analysis. Move this part to the end of the method section. The description of the predictors and the outcomes should preferable be presented before the analysis part. Page 8, confounders. Previous studies that have investigated return to work in different individuals with different health conditions have found that there is a differens in RTW among people with more/less than 30 days of sickness absence. This variable was not mentioned as a confounder. It might be possible that it is relevant as a confounder even in this study. Have you considered this? If no, why not? Page 17, main findings. This summary of the results is very long and equals about half of the results section. It is not neccessary to repeat this much. I suggest that you make it shorter. Page 18, row 4-6. I this association does not maintain when controlled for confounders, could you then say that your findings concur with the results in previous studies? Page 18, row 13-22. Have you checked for multicolliniarity beteen RTW expectations and illness perceptions in this study? Other options; could either illness preceptions or RTW-exp be a mediating factor? Page 19, row 37-41. Could your suggestion be interpreted as that it is enough to modify the negative RTW-expectations for this group of patients, i.e. secondary prevention directed towards CMD-problems is not neccessary?

REVIEWER	Karen Nieuwenhuijsen Coronel Institute of Occupational Health/Academic Medical Center
REVIEW RETURNED	10-Dec-2013

zGENERAL COMMENTS	Elaboration of items scored "no" 2. The abstract is hard to follow due to the use of RTW for a group of workers that or not on sick leave. One has to read the introduction section in order to grasp that. 4. The analysis part of the methods section does not go into much detail, it is not clear how the specific hypotheses were tested. 7. see items 4. 10. The tables and much of the text is clear, but the readers would be better able to comprehend if the structure of the results clearly follows the aims (or hypotheses). 13. I have not seen the supplementary reporting. The use of the term RTW for workers who are not absent from work is confusing. Why not use the term "predictors of work status"?? It is really confusing to name the outcome something it can by definition not be. In the introduction,a rationale for specifically looking at illness perceptions and RTW expectations is lacking. The specific aims combined with the hypotheses seems a bit much, I would advise to choose either aims or hypotheses. Discussion: page 19: line 18. Symptom severity has been found to be a predictor of RTW despite the inclusion of RTW expectations (see ref 32). Ref 38 also deals with the relation of symptoms and expectations. Conclusion: I would advise a much shorter conclusion, as it is the conclusion is a continuation of the discussion without the focus one would expect in a conclusion section.

VERSION 1 – AUTHOR RESPONSE

Reviewer #1

Reviewers' comments:
The objective is a bit difficult to follow as you include people that are both sick-listed and at risk of going on sick leave in the study population. I think it would be better to separate the groups in the objective and specify the aim for the groups differently. For example keep the objective as it is for the group on sick leave or on benefits and rewrite the objective for the people at risk of sick leave. Are benefits the same as having disability pension?

Author's reply:
We agree this was a weakness and unclear in the previous version. In the current version, we use the more precise term "benefit recipiency" to describe the exact outcome measured at 6 months follow-up

for all study participants. Thus, the outcome is now similar for all three groups and we have therefore chosen not to separate the groups in the objective. The term “benefit recipiency” includes recipience of any health related benefit including disability pension (described in the section below) as well as those receiving sickness benefit (sick leave).

In this study the sub-group “on long-term benefits” includes those who receive health related benefits such as disability pension (permanent benefit awarded for reduced work ability beyond 50% of full capacity, with no or poor prognosis for rehabilitation) and also recipients of work assessment allowance or unemployment benefits.

Reviewers’ comments:
What was included in CMD in the study? Only patients with anxiety and/or depression? Where there any exclusion criterias?

Author’s reply:
The current study applies data from a randomized controlled trial evaluating the effect of work-focused CBT and individual job support on work participation in CMDs, the AWaC trial (Trial registration - http://www.clinicaltrials.gov, NCT01146730)). In the study, the main inclusion criterion was presence of a CMD that threatened or hindered the persons work participation. All participants were subjected to a brief screening procedure (30 minutes) prior to inclusion. During this procedure, experienced clinicians screened potential participants to make sure included participants satisfied the chief inclusion criteria, which was presenting mild to moderate symptoms of a CMD, such as anxiety and depression. However, due to study regulations, the clinicians responsible for screening and inclusion could not specify a formal diagnosis. This had to do with the study being funded and placed within the regulations of the Norwegian Labour and Welfare Administration where appointing diagnoses would set the intervention outside the range of interventions under their jurisdiction.

To clarify, we have added a paragraph describing the formal inclusion criteria for enrollment in the AWaC trial to the revised manuscript: “Additional inclusion criteria were; adults aged 18 to 60 years with no known severe psychiatric illness, no risk of suicide or ongoing substance abuse and not receiving individual psychotherapy elsewhere. An explicit willingness to either maintain work participation or return-to-work was also required” (page 8, lines 13-16).

Reviewers’ comments:
How was working at 6 month follow up defined? Working full-time? Part-time? How did you deal with those that were not on sick-leave before?
Were they classified as being on sick-leave if they were sick-listed full-time or was part time enough to be a "case". If you used full-time or part-time to define cases, how could the other option affect your results?

Author’s reply:
To achieve a status as “working” at the 6 month follow up, we required that the participant did not receive any form of sick-leave certification or long-term benefits at that time. A participant could work part time or full time and be categorized as “working”, but any sick leave, either from a full time or part time job would classify that person as “not working”. This classification is rather strict, but was employed to make use of the objective data on benefits and use them as accurately as possible. It is certainly possible that a more nuanced operationalization of the outcome would yield different results, perhaps particularly since we had a 6 month follow-up period that might be too short for a full return to work for many in a welfare system that allow and encourage graded sickness absences. We have added a comment on this as a possible limitation of the study.

Reviewers’ comments:

This is related to the problem with the objective as described above. I have problem following the presentation and interpretation of the results maily due to that you are talking about non-return to work in a population that are not at sick leave at start.

Table 1 is difficult to read when divided into continuous and categorial variables. Design it as one table only and put all background characteristics and health factors next to each other. Some basic information about the groups are lacking, for example days of sick leave the past 6 (3?) months, average length on sick leave for those away from work.

Author's reply:
We thank the reviewer for pointing out the problems arising from the using the non-RTW term to describe outcome for those at risk of sick leave. The current version of our manuscript now uses the term "benefit recipiency", and specifies that for those at risk of sick leave benefit recipiency at 6 months follow-up denotes a transition onto sick leave or long-term benefits.

Table 1 is now designed as one table only, and lists the demographic or background variables first, followed by the health factors. A footnote explaining that all data are presented as mean (SD) unless otherwise stated, has been included to further facilitate the reader's interpretation of this table.

A recent report in Norwegian, presenting data from the AWaC trial shows that of those on full sick leave at inclusion, 50% were either fully or partially working five months earlier. The paper presenting more detailed analyses and results from the AWaC trial is currently in submission.

Unfortunately, the information on days of sick leave the past 6 or 3 months or on average length on sick leave for those away from work was not available as a part of this study. Based on the information available in these secondary analyses, we can only state that participants on sick leave at baseline have been so for a period of time most likely ranging from 3 to 52 weeks. We have chosen to show the mean duration of CMDs as an attempt to provide a substitute for past sick leave history. Also, we can with some certainty say that a majority of those on long-term benefits have been on sick leave for more than a year. Still, we believe more and detailed information on the study participants' sick leave episodes prior to inclusion would have been very helpful. If more information on prior sick leave episodes is needed, we will try to obtain such information and add to Table 1.

Reviewers' comments:
Table 2 would be easier to read if significant results were highlighted, for example in bold.

Author's reply:
Table 2 has been changed according to the reviewer's comments and significant results in the unadjusted and adjusted models are now highlighted in bold.

Reviewers' comments:
Table 3 lacks information about the number of cases that did not return to work after 6 months/became sick-listed after 6 months. If very few persons did succeed this is relevant for the interpretation of the results. For example, the wide range of the confidence interval in the negative RTW-experience variable in the group on long-term benefits indicate that this could be due to few cases. If that is the case, it might affect the conclusion that is presented on page 22, row 39-46.

Author's reply:
Table 3 now has information about the number of cases in each sub-group that did not return to work/were on sick leave or long-term benefits at 6 months follow-up. As these numbers show, very few of those in the sub group on long-term benefits had managed to RTW at follow-up. I thank the

reviewer for commenting on this matter. The conclusion has been rewritten in its entirety, and the sentence commented on is no longer included.

Reply to Reviewer's comments
Reviewer 2

Reviewer's comments:
The paper investigates a topic that has been little studied, especially in relation to this health problem (CMD). However, I have several comments on the paper, both minor and major, that needs to be concidered to further improve this paper.

Reviewer's comments:
Page 1, row 40-42. This affilliation is not attached to any of the authors (missing).

Author's reply:
Thank you for notifying us on this matter. The affiliation is now attached to the correct co-author.

Reviewer's comments:
Page 3, row 46. This "conclusion" are not based on the results in this study since it was not studied.

Author's reply:
The "summary section" consisting of bullet points has been rewritten and the conclusion commented on has been removed. This bullet-point now reads: "In this study, RTW-expectations were measured by one single item. Applying more refined and extensive measures could have provided different results regarding the predictive value of RTW-expectations"(page 4, lines 4-6).

Reviewer's comments:
Page 4-6. The introduction does not guide the reader to the importance of this topic. Please tell the reader more sharply why this topic is neccessary to study. As it is written now you could read it "between the lines" and you need to read it several times to actually grasp it. Why do you divide the group into subgroups? Is there a reason to belive that the result might differ between them? If yes, include this in the introduction.

Author's reply:
Thank you for your comments. The introduction has been rewritten and we hope it now is much more precise and clear why this topic is important.

Furthermore, a statement on why the study population in this study is divided in three groups, including our reasoning for our belief that the results would turn out differently for the three groups, is now included in the introduction through the following: "People struggling with work participation due to CMDs may be facing barriers dependent on situational factors, such as the availability of employment. It is likely that workers at risk of sick leave find themselves in a situation where work participation is more available to them than to a person who is on sick leave or on long-term benefits, The process of transitioning between work participation and benefit recipiency, such as sick leave or long-term benefits, is likely to involve decisions influenced by a persons' current situation. Thus, a person at risk of sick leave will have to decide to maintain work status, while a person on sick leave will have to decide to initiate the RTW-process. A person on long-term benefits may face other important barriers, such as seeking new employment in addition to being motivated for the RTW-process. Because of these different situational barriers it is possible that RTW-expectations and illness perception act differently as predictors of benefit recipiency." (page 7, lines 10-23)

Reviewer's comments:

Page 3, row 25. Which are the other public health challenges?

Author's reply:
In the revised version of the manuscript we have chosen not to highlight the public health challenge posed by CMDs and rather focus on the challenge they represent to occupational health and work participation. We hope this has contributed to the a more precise and sharp presentation of why we find this topic important to study (see previous comment).

Reviewer's comments:
Page 3, row 28-30. /.../ for a large proportion of all-long term sick leave. Are you refereing to in general? This study that you cite was conducted in UK. Is the case similar in Europe? In the world?

Author's reply:
This section is revised to make it clear that the study cited is from the UK. We have rewritten the introduction so that the status in Norway concerning sick leave and disability follow directly and this section now reads: "In the UK, CMDs has been found to account for a large proportion of all long-term sick leave[4] and in Norway CMDs account for approximately 20% of sick leave episodes and about one third of all disability pensions[5]"(page 5, lines 8-9).

Reviewer's comments:
Page 3, row 47. What does MHP stand for?

Author's reply:
We apologize for the term MHPs (mental health problems) appearing in this sentence. The correct term would be CMDs. This has now been corrected in the revised version of the manuscript.

Reviewer's comments:
Page 6, objectives. Why do you have aims at the same time as you specify your hypotheses? Is there a reason for why you chose not to have the hypotheses?

Author's reply:
Based on a previous cross-sectional study conducted within the same study population, we had developed a pre-specified hypothesis. However, the overall aims of the current study also went beyond this single hypothesis. As the STROBE checklist for observational studies states that aims/objectives including any pre-specified hypothesis should be presented we chose to include both. In the current version of the manuscript we have moved our pre-specified hypothesis so that this is now stated before the specific study aims (page 8, lines 13-15).

Reviewer's comments:
Page 7, statisticals analysis. Move this part to the end of the method section. The description of the predictors and the outcomes should preferable be presented before the analysis part.

Author's reply:
This has been taken care of in the revised version of the manuscript and the part describing the statistical analysis now follows the sections on predictors and outcomes.

Reviewer's comments:
Page 8, confounders. Previous studies that have investigated return to work in different individuals with different health conditions have found that there is a differens in RTW among people with more/less than 30 days of sickness absence. This variable was not mentioned as a confounder. It

might be possible that it is relevant as a confounder even in this study. Have you considered this? If no, why not?

Author's reply:
This is indeed a very important point. Unfortunately, for the purpose of this study we only had the opportunity to separate between those receiving or not receiving health related benefits in more crude manners. The registry based data we used can only show us if a participant is on sick leave or on long-term benefits. What more is that those registered as on sick leave will most likely have been so for 16 days. This is because the first 16 days of sick leave is financially covered by the employer. It is only when the first 16 days of sick leave have passed that a person becomes registered as "on sick leave" in the national registries.

Reviewer's comments:
Page 17, main findings. This summary of the results is very long and equals about half of the results section. It is not neccessary to repeat this much. I suggest that you make it shorter.

Author's reply:
This section has been shortened in the revised version of the manuscript.

Reviewer's comments:
Page 18, row 4-6. I this association does not maintain when controlled for confounders, could you then say that your findings concur with the results in previous studies?

Author's reply:
This is a very good point, and we have toned this statement down so that it now hopefully is more accurate. This sentence now reads: "Our findings seem to show some similarities with previous studies. However, in the current study the associations were not maintained in the fully adjusted models."

Reviewer's comments:
Page 18, row 13-22. Have you checked for multicolliniarity beteen RTW expectations and illness perceptions in this study? Other options; could either illness preceptions or RTW-exp be a mediating factor?

Author's reply:
Multicollinearity between RTW-expectations and illness perceptions was checked for before analyzing the variables as individual predictors of work status.

It is a highly relevant point that either RTW-expectations or illness perceptions could be mediating factors. However, we were not able to investigate any such assumptions thoroughly in this study as we only have measurement of RTW-expectations and illness perceptions at the same point in time. It could be possible to draw some assumptions on whether RTW-expectations or illness perceptions are mediators based on changes in predictive value for any of these variables in the adjusted models. However, a much more sound way to approach this question would be to conduct new studies and apply other statistical approaches such as structural equation modelling. Hopefully, new studies will be designed that enable proper investigation of this interesting point.

Reviewer's comments:
Page 19, row 37-41. Could your suggestion be interpreted as that it is enough to modify the negative RTW-expectations for this group of patients, i.e. secondary prevention directed towards CMD-problems is not neccessary?

Author's reply:
Thank you for highlighting this point. I can see that it is possible to interpret the statement in this direction. Even though we do believe that some patients struggling with CMDs would gain quality of life and improve their health and well-being through work participation, also at times when symptoms of anxiety and depression are present, we do not believe that targeting RTW-expectations is sufficient. In the revised version of the manuscript we have added comments to clarify that targeting and amending RTW-expectations should be part of RTW-interventions alongside a focus on mental health improvement.

Reply to Reviewer's comments
Reviewer#3

Reviewer's comments:
Is the abstract accurate, balanced and complete?. The abstract is hard to follow due to the use of RTW for a group of workers that or not on sick leave. One has to read the introduction section in order to grasp that.

Author's response:
A more precise description of the study population and the term RTW in relation to those at risk of sick leave is now included in the abstract as well as throughout the manuscript. Furthermore, a paragraph clarifying the understanding of how the non-RTW relates to the study participants has been added to the methods section of the abstract.

Reviewer's comments:
Are the methods described sufficiently to allow the study to be repeated? The analysis part of the methods section does not go into much detail, it is not clear how the specific hypotheses were tested.

Author's response:
We have in the revision of this manuscript aimed at describing the statistics and procedures used to analyze data more carefully. As a result, the section on statistical analysis hopefully has become more informative and clear, which will help peers to evaluate the approach we chose for our analysis. New and other statistical approaches might yield new or more refined results. However, we believe that as a very first investigation of the psychological constructs illness perceptions and RTW-expectations as predictors of work status in CMDs, the parsimonious approach chosen here is appropriate. Still, we look forward to studies investigating these findings more carefully applying other statistical approaches.

Reviewer's comments:
If statistics are used are they appropriate and described fully?. see items 4.

Author's response:
See previous comment for Author's response.

Reviewer's comments:
Are they [the results] presented clearly? The tables and much of the text is clear, but the readers would be better able to comprehend if the structure of the results clearly follows the aims (or hypotheses).

Author's response:
We have chosen to change the headings in the results section in order for the reader to more easily follow presentation of the results. However, we have chosen to present the results for RTW-

expectations and illness perceptions as individual (unadjusted) predictors and relative to each other (adjusted) under the headings of each sub-group.

Reviewer's comments:
Is the supplementary reporting complete (e.g. trial registration; funding details; CONSORT, STROBE or PRISMA checklist)? I have not seen the supplementary reporting.

Author's response:
In this study, we applied data collected during a randomized controlled trial, The "At Work and Coping" trial (AWaC) (Trial registration - http://www.clinicaltrials.gov, NCT01146730) and present secondary analysis only. However, even though this particular study was not originally designed as a cohort study, it has many of the characteristics associated with such study designs. Therefore, a STROBE checklist for cohort studies is now included as supplementary reporting for this submission.

Reviewer's comments:
The use of the term RTW for workers who are not absent from work is confusing. Why not use the term "predictors of work status"?? It is really confusing to name the outcome something it can by definition not be.

Author's response:
We thank the reviewer for commenting on this matter. In the revised version of the manuscript we have taken several measures to clarify and explain more carefully the outcome we predict in this study and how this outcome relates to the three sub-groups. The term "work status" is a very useful term and we now use this term to describe both the baseline and 6 months' work-related situations of our participants at several points in the revised manuscript. However, concerning the outcome we have in the current version of the manuscript chosen the term "benefit recipiency" to denote outcome for all participants. This is the exact and objective outcome that we measure at 6 months follow-up in our registry based data. We hope this will contribute to clarity and transparency of our work. We have also tried to thoroughly explain that for those at risk of sick leave, the outcome we predict at 6 months follow up is a result of the participant transitioning from work onto sick leave or long-term benefits. We sincerely hope that this helps to minimize any further confusion arising from the heterogeneity of work statuses in our study population.

Reviewer's comments:
In the introduction, a rationale for specifically looking at illness perceptions and RTW expectations is lacking.

Author's response:
Thank you for highlighting this very important point. The current study partly draws upon a previous cross-sectional study examining the association between RTW-expectations and illness perceptions[1]. In that study we found that there were strong associations between maladaptive illness perceptions and uncertain- and negative RTW-expectations. In the introduction of this revised version we have elaborated on why we in particular wanted to study illness perceptions and RTW-expectations as predictors of RTW in CMDs.

Reviewer's comments:
The specific aims combined with the hypotheses seems a bit much, I would advise to choose either aims or hypotheses.

Author's response:
Alternatively:
Based on findings from a previous, cross sectional study within the same study population [1], we had

developed specific hypotheses we wanted to investigate in a longitudinal design. As the STROBE checklist for cohort studies clearly states that both specific objectives and any prespecified hypotheses should be included, we have chosen to keep our hypothesis that perceiving illness to have more and severe consequences and having negative RTW-expectations would predict work status (non-RTW or sick leave/long-term benefits) at 6 months follow up. However, this hypothesis has been moved and is now stated before the specific study aims (page 8, lines 13-15).

Reviewer's comments:
Discussion: page 19: line 18. Symptom severity has been found to be a predictor of RTW despite the inclusion of RTW expectations (see ref 32). Ref 38 also deals with the relation of symptoms and expectations.

Author's response:
We have taken action to reinterpret our findings in the light of your comment and this section of the discussion now reads: "This finding is in contrast to one previous study where symptom severity was found to be an important predictor of RTW in a study population resembling the one studied here[2]. This may be due to the simple fact that this previous study did not include RTW-expectations. However, other studies have found symptom severity to predict RTW also when including RTW-expectations [3]. The findings from our study might be due to study population characteristics such as an expressed desire to work or the heterogeneous work status. We therefore suggest that future studies on RTW in CMDs include systematic evaluation of participants' RTW-expectations"

Reviewer's comments:
Conclusion: I would advise a much shorter conclusion, as it is the conclusion is a continuation of the discussion without the focus one would expect in a conclusion section.

Author's response:
Thank you for pointing this out. The conclusion has been rewritten, and we believe the current, shorter version is more focused. It is our sincere opinion that this has contributed to a significant improvement of the manuscript.

1. Løvvik C, Øverland S, Hysing M, Broadbent E, Reme SE. Association Between Illness Perceptions and Return-to-Work Expectations in Workers with Common Mental Health Symptoms Journal of Occupational Rehabilitation 2013.
2. Brouwers EP, Terluin B, Tiemens BG, Verhaak PF. Predicting return to work in employees sick-listed due to minor mental disorders Journal of Occupational Rehabilitation 2009;19:323-332.
3. Nieuwenhuijsen K, Verbeek JH, de Boer AG, Blonk RW, van Dijk FJ. Predicting the duration of sickness absence for patients with common mental disorders in occupational health care Scandinavian Journal of Work Environment & Health 2006;32:67-74.