Author's response to reviews

Title: Team climate, intention to leave and turnover among hospital employees: prospective cohort study

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Author's response to reviews:

August 27, 2007 (Second revision)

Dear Editor,

Many thanks for the comments on our manuscript. We feel that most of them dealt with very important issues and therefore we have revised the manuscript in accordance (the second revision). A list of amendments and responses to each point raised by the referees is as follows:

RESPONSE TO DR BONNIE SHIBBALD:

Major Compulsory Revisions:

None.

Minor Essential Revisions:

As suggested, we have replace the term "propensity" by "intention".

Discretionary Revisions:

We agree with this point and have revised the Abstract in accordance. Thus, we note that "... The likelihood of actually quitting the job was higher for those with poor self-reported team climate at baseline. This association disappeared after adjustment for intention to leave at baseline suggesting that such intentions may explain the greater turnover rate among employees with low self-reported team climate."
RESPONSE TO DR PATRICIA W. STONE:

Major Compulsory Revisions:

In the revised version, we have clarified the difference between the two cohorts (see our response Discretionary Revisions) to and we now explicitly inform that the cohorts were not mutually exclusive on p. 4.

Although categorical variables with more than two categories cannot be analysed with a correlation analysis, such analysis is relevant with binary variables. In the correlation matrix and elsewhere, type of employment is treated as a binary variable. This is now clarified on page 6: "We measured type of employment (0=permanent, 1=temporary) as a covariate".

Minor Essential Revisions:

We have corrected these two typos. In the original sentence of "A recent literature suggests..." the word "review" was missing and for this reason the sentence did not make sense. It now reads as follows "A recent literature review suggests that much of the turnover research is characterized by small samples sizes and cross-sectional data.[4]"

Discretionary Revisions:

Instead of adding a new figure, we have clarified the description of the respondents and the two cohorts as follows:

"Between 2000 and 2002, a postal questionnaire on team climate and intention to leave was sent to all of the personnel employed by 21 Finnish hospitals, a total of 3,577 men and 18,361 women. Of these, 70% responded (1,941 men, 13,405 women). Respondents who were still working in the hospitals 2 to 4 years later (1,546 men, 10,430 women) were sent a follow up questionnaire in 2004. A total of 1,134 men and 8,711 women (82%) responded to this survey.

The present study focused on two cohorts. The first cohort was set up to examine poor team climate as a predictor of actual leaving the organization. Thus, we selected those 6,441 respondents (785 men, 5,656 women) who had a permanent job contract, responded to baseline survey, reported no intention to give up working completely at baseline, and were younger than 55 at follow-up (called the permanent employees cohort). This age range was chosen to exclude employees from the study who will retire due to age. Non-permanent employees were excluded as their job contract may have expired in spite of their willingness to stay. Second, to examine team climate as a predictor of intention to leave at follow-up, we selected those 5,098 (555 men, 4,543 women) participants who did not leave their workplace by follow-up. They are called the non-leavers. All other inclusion criteria were the same for this group as those in the permanent employees cohort except that response to follow-up survey was required."
Moreover, we included both permanent and temporary employees in the non-leavers. The two cohorts were not mutually exclusive." Pp. 4-5.

We have changed the variable "sex" to "gender", as suggested.

RESPONSE TO DR AFZAL M. RAHIM:

REVIEWER'S COMMENT: "The authors generally ingored my recommendation to reanalyze the data which would involve factor analyses on questionnaire data and running hierarchical regression analyais."

OUR RESPONSE: This statement is confusing. We have not ignored the comments made by this Reviewer.

Major Compulsory Revisions:

REVIEWER'S POINT: Please follow my recommendation 1(A through F) to reanalyze the data.

REVIEWER'S POINT A: The Team Climate Inventory had four factors which should be entered in the regression analysis as four independent variables. Why did you use the short form which had 14 items? You need to compute a factor analysis on the items of TCI to test the dimensionality of the instrument. This will help you to construct subscales for the measure.

OUR RESPONSE: We used the short-form Team Climate Inventory corresponding to many previous studies on team climate (see p. 5). Also in these previous studies the short version is used as a one-dimensional measure rather than a four-component measure.

However, in the revised version we have additionally provided the subscale analysis suggested by the reviewer. The findings are reported as follows:

"No strong evidence was found that the associations of team climate with intention to leave and actual leaving the job would be attributable to some specific sub-component of team climate. We repeated the analysis in table 4 by replacing self-reported team climate score with four subscale scores. The odds ratios for all four subscales were smaller than that for the total scale, i.e., 1.06 (95% CI 0.89 to 1.25) for vision, 1.14 (95% CI 0.99 to 1.32) for participatory safety, 1.07 (95% CI 0.91 to 1.25) for task orientation, and 1.18 (95% CI 1.04 to 1.34) for support for innovation compared with 1.80 (95% CI 1.36 to 2.39) for total team climate. This was also the case for actual leaving the job (analyses in table 5), with the corresponding odds ratios being 1.05 (95% CI 0.91 to 1.21) for vision, 1.12 (95% CI 0.99 to 1.27) for participatory safety, 1.00 (95% CI 0.87 to 1.16) for task orientation, and 1.03 (95% CI 0.92 to 1.16) for support for innovation versus 1.23 (95% CI 1.08 to 1.40) for total team climate." Pp. 9-10.
Confirmatory factor analysis on the subcomponents has been provided by Elovainio and Kivimäki in 1999. As the associations between team climate, intention to leave and actual leaving the job seem not to be attributable to any specific sub-component, we prefer not to expand the present paper by repeating these analyses here.

REVIEWER'S POINT B: "Single-item measures, such as propensity to leave a job is generally unreliable. Do you have any evidence of the psychometric properties of this scale?"

OUR RESPONSE: We have shown in Table 5 that our measure of intention to leave is indeed a strong and robust predictor of subsequent actual leaving the job. This indicates good criterion validity.

REVIEWER'S POINT C: "Data should be aggregated at the team level before computing correlations and regression analysis."

OUR RESPONSE: This is what we have done. We report co-worker assessment for team climate in the correlation analysis and regression analyses in tables 3 to 5. We have described the construction of this variable as follows: "..To construct the co-worker assessed team climate measure, the work unit of each respondent was identified from the employers¿ records. Co-worker team climate was calculated as the mean of all co-workers¿ team climate scores in the respondent¿s work unit and this mean score was then assigned to the respondent."

We also take into account this clustered structure of our data in the statistical analysis as described on pp. 7-8. Furthermore, we have discussed the use of such data in Discussion as follows:

"... In addition to self reports, we used co-worker assessment of team climate, a measure based on aggregated work unit data. A high perceptual agreement provided a justification for the use of this group-level indicator in multilevel analysis that took into account the hierarchical structure of these data. The finding that both self-reported and co-worker assessed team climate were associated with intention to leave is important from conceptual, methodological, and practical point of views. First, the result demonstrates that the effects of team climate reflect influences related to shared perceptions of organizational members about the work environment -- not only the impacts of individual¿s subjective perceptions. Second, we were able to reduce bias arising from differences in response styles, because co-worker assessed team climate is an inferred measure independent of participant¿s own perceptions. The possibility that observed associations were inflated by common-method variance problems was also reduced. Third, the independent effects of self-reported and coworker-assessed team climate imply that interventions at individual and group levels might be useful in improving team climate and reducing intentions to leave." P. 11.
REVIEWER'S POINT D: "You need to keep the continuous measures of team and propensity to leave a job. You are throwing away data by converting continuous scales to categorical scales!"

OUR RESPONSE: TCI has been used as a continuous variable. Intention to leave is a categorical variable which, in our opinion, cannot be treated as a continuous variable, because the categories do not form a continuum. We describe the categories on pp. 5-6: "1 = "I would continue working in this organization"; 2 = "I would switch to another organization in the same occupational field"; 3 = "I would switch to another occupational field", and 4 = "I would give up working completely". We used the item as a dichotomous variable: the two groups were (1) those respondents who reported that they would continue working in the same job (response option 1) and (2) those respondents who would choose to leave (options 2 and 3). Those responding that they would give up working completely (option 4) were excluded from the study (1,239 individuals from the 7,680 permanent employees and 1,782 individuals from the 6,880 non-leavers).

All covariates are assessed with validated measures and used as in previous studies. We do not agree that converting continuous scales to categorical variables automatically means throwing away information. Sometimes it means reducing noise.

REVIEWER'S POINT E: "Compute Pearson correlations for all variables and report it in a Table with covariates and independent variables from Time 1 and propensity to leave a job in Time 2."

OUR RESPONSE: These results are shown in Table 3.

REVIEWER'S POINT F: "There is no need for logistic regression analysis. You should compute a Hierarchical Regression Analysis with age, sex, tenure, occupation, GHQ as covariates, i.e. enter them in Step 1. In Step 2, enter the dimensions of TCI."

OUR RESPONSE: We have used hierarchical logistic regression analysis with covariates included sequentially. We have labelled these steps as Model A, B, and C. We have used logistic regression analysis instead of linear regression analysis because our outcome is dichotomous and use of linear regression analysis for such an outcome would not be appropriate.

REVIEWER'S POINT: "You need to report Cronbach alpha reliabilities of the dependent and independent variables"

OUR RESPONSE: Cronbach alpha reliabilities are reported for scales in the Method section. For team climate measure, we note that "The internal consistency of the scale was highly satisfactory (Cronbach alpha reliability
coefficient 0.90)” (p. 5). For GHQ-12, we report Cronbach alpha 0.89 on p. 6. As described in Methods, other variables were single-item measures. Reliability coefficient is not possible to calculate for such variables.

Minor Essential Revisions:

REVIEWER’S POINT: "You need to report mean, SD, and reliability coefficients in Table 3."

OUR RESPONSE: We have reported means and SDs in Table 2 (Characteristics of employees) and believe that it is not reasonable to report these figures again in Table 3. If means and SDs were dropped from Table 2, only figures for N would remain and they would not adequately describe sample characteristics.

We report reliability coefficients in the Method section when describing the scales. For this reason, we would prefer not reporting these figures again in Table 3. For single-item measures, reliability coefficient is not possible to calculate.

Discretionary Revisions:

None.

Sincerely,

Mika Kivimäki and Anna Vanhala