**Author’s response to reviews**

**Title:** External validation of two prediction models identifying employees at risk of high sickness absence: cohort study with 1-year follow-up

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**Author’s response to reviews:** see over
Dear Editor,

We would appreciate your consideration of our paper entitled “External validation of two prediction models identifying employees at risk of high sickness absence: cohort study with 1-year follow-up” for publication in BMC Public Health.

Earlier research has shown that preventive consultations in occupational healthcare were cost-effective in reducing sickness absence in employees at high risk, but not in those with moderate or low risks of sickness absence. Recently, two prediction models were found to accurately predict the risk of high sickness absence in healthcare workers [Roelen et al. (2012) The development and validation of two prediction models to identify employees with high sickness absence. Eur J Public Health doi 10.1093/eurpub/CKS036]. It is of great importance to assess the external validity, which is the ability of prediction models to provide accurate predictions in other subjects. Therefore, the present study investigated the performance of the prediction models in a population of office workers.

The prediction model identifying employees at risk of high sickness absence days showed acceptable calibration, but poor discrimination. The prediction model identifying employees at risk of high sickness absence episodes showed acceptable calibration and fair discrimination.

This is the first study that reports on the calibration, discrimination and external validity of prediction models for high sickness absence and its findings are of importance for an international readership of public and occupational healthcare researchers and providers. To further establish its generalizability, the model predicting high sickness absence episodes needs testing in settings across countries. Furthermore, independent investigators should assess its predictive performance, because researchers other than those who developed the prediction model are unlikely to have similar idiosyncrasies in data collection and recording techniques.

All authors have substantially contributed to the manuscript and meet the requirements for authorship. CAR has designed the study, retrieved the data, and performed the statistical analysis in cooperation with MWH. CAR and MWH interpreted the data and drafted the manuscript together with UB. The paper was critically reviewed for its intellectual content by professors WvR, JJvdK and JWT. The study presents original work that has not been published elsewhere and was not accepted for publication in any other journal. The authors declare no financial or other relationships that might lead to a conflict of interest with regard to this paper. All authors have read the paper and have approved the final version for submission to BMC Public Health.

We are looking forward to your comments and feedback.

Yours sincerely,

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