Author's response to reviews

Title: The effects of health worker motivation and job satisfaction on turnover intention in Ghana: a cross-sectional study

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Human Resources for Health

Re: MS 1078178499123960
The effects of health worker motivation and job satisfaction on turnover intention in Ghana: a cross-sectional study

Dear Dr Dal Poz
Dear Dr Dieleman

Thank you for your email received on 4 June 2014 and for the comments on the manuscript entitled “The effects of health worker motivation and job satisfaction on turnover intention in Ghana: a cross-sectional study”. We greatly appreciate the reviewers’ recommendations and would like to thank them for their insightful comments.

Please find below our responses to the reviewers’ comments as well as the revised version of our manuscript.

We look forward to hearing back from you on the status of our manuscript. Thank you very much for your consideration.

Yours sincerely,

Marc Bonenberger
Replies to reviewers’ comments
Reviewer 1 – Delanyo Dovlo

1. **Reviewer comment:** Health and nurse aides I think are usually locally recruited and therefore have less prospect of wanting to work elsewhere? Was this considered?

   **Our response:** Indeed, health and ward assistants are typically recruited locally and thus less frequently change their workplace compared to other cadres. Our analysis of crude odds ratios confirms this. We agree that this finding should be discussed and added the following paragraph on page 18, which also addresses comments 3 and 5:

   The results in our univariate analysis showed that being a health/ward assistant, aged older than 39 years of age, and working more than 5 years in the current health facility decreased significantly the odds for turnover intention. Health/ward assistants are typically recruited locally and it can be assumed that older health workers are often able in the course of their professional career to get posted close to their spouses, children and/or other family members. Thus, these categories of health workers are often rooted around the workplace through social and family relations and, in consequence, may have a strong rationale to keep their workplace. This was supported by the finding that the odds of having turnover intentions were much higher for health workers who lived separated from their families.

   We also made the following change to paragraph 1, page 19:

   In our multivariate analysis, however, age and the health/ward assistant category were no longer significantly associated with turnover intention. We also did not find statistical evidence for differences in turnover intention among the other surveyed categories of health workers.

2. **Reviewer comment:** It would have been useful to have an analysis of the qualifications and training of the DDHS and DHMT members to get a sense of whether their capacity was the issue in creating the retention environment.

   **Our response:** As the study focus was on motivation, job satisfaction and turnover intention of health workers, we did not collect information on characteristics of DHMT members. However, we currently carry out a complementary study on health worker turnover in the districts under review in Ghana, in which we particularly focus on how district managers handle placements and turnover. Within this study we also collect information on qualification of district managers, and anticipate that this information will be published in another forthcoming manuscript.

3. **Reviewer comment:** It seems to me from the data, that being rural districts mostly, many health workers there were newly qualified and it may be likely that youthful and recent employees have more urge to mobility?

   **Our response:** We acknowledge this comment and have addressed the observation. For details please see comment 1 above.
4. **Reviewer comment:** Again it will be useful to have some sense of economic strength of the districts – Rural, semi urban does not seem to describe enough what the context is. Absence of basic factor (safe water, electricity, schools for children, entertainment, distance from a city) may well have strong influences on willingness to be retained (as is origin of the health workers – whether urban or rural origins).

**Our response:** We agree with this observation and have added the following paragraph in the methods section on pages 6 and 7:

The study was carried out in the Eastern Region of Ghana in the Akwapim North, Upper Manya Krobo and Kwahu West districts. Akwapim North is a mostly rural district containing also some towns and is located in the proximity of Ghana’s capital Accra as well as the region’s capital Koforidua. Subsistence and commercial farming is the predominant occupation, although manufacturing, extractive industries and small-scale industries also exist [33]. In Kwahu West around 50% of the population is concentrated in the district capital Nkawkaw, a well-known commercial town. The rest of the settlements are small communities located mainly along the Accra-Kumasi highway that crosses the district. Although about 50% of the population are subsistence farmers, trade and commerce are also important occupations [34]. Upper Manya Krobo is predominantly rural and is regarded as one of the highly underdeveloped districts in the Eastern Region with poor infrastructure. The district comprises Aseewa, a small town and the capital of the district, and 198 rural communities. Around 80% of the population are subsistence farmers and fishers, the rest mainly engage in commerce and small-scale industries [35].

5. **Reviewer comment:** In some cases particularly with older respondents, perhaps the presence of a spouse or extra-mural economic activity based within the district may influence the decision to remain.

**Our response:** We acknowledge this comment and have addressed the observation. For details please see comment 1 above.

6. **Reviewer comment:** It is unclear what the scope of DDHS/DHMT managerial authority is to deal with the real issues of low pay, career structure, and how this may have influenced the retention opinions of staff. What authority do DHMTs have to respond to job satisfaction and retention? This is not much discussed.

**Our response:** We agree with this observation and have introduced the following paragraph in the discussion section on pages 19 and 20:

With regard to HRM, the decision space of district health managers is limited in Ghana, as key factors for retention, such as salary, access to further education and promotions are under the authority of the national and regional administration. However, district managers have a role to play: they recommend district staffs for study courses and promotions to their superiors, which both usually lead to higher salaries after completion. Beside recommendations, it is in the authority of district managers to decide on intra-district postings, to conduct supervision and performance appraisals, and to conduct in-service training [59-62]. Evidence compiled by the WHO [1] suggests that these
decision-spaces, if performed effectively, positively influence workplace stability through improved motivation and job satisfaction.

We also modified the sentence in paragraph 2, page 20:

Our findings, therefore, suggest that many of the identified motivational outcomes and job satisfaction determinants significantly associated with turnover intention can be influenced by DHMTs. Such factors include job satisfaction, organisational commitment, and satisfaction with management, career development, workload, tasks, and morale.

7. Reviewer comment: Small point on page 7: I believe CHPS was conceived in the late 1990s but implemented as policy in the 2000s?

Our response: According to our sources, especially Nyonator (2005), CHPS was conceived and pilot-tested in the early 1990s, and then rolled-out as national policy from 1999 onwards. We made the following change in paragraph 3, page 7:

CHPS is a primary health care programme in Ghana, which was pilot-tested in the early 1990s and then rolled-out as a national policy from the late 1990s onwards in order to increase health service accessibility of people living in rural and remote areas.

8. Reviewer comment: On Page 12 – there were useful data on the qualifications etc., some comparisons with the rest of the country will perhaps be useful. Also at the bottom – 69% with “intention to leave” – is there description of where they want to leave to? E.g., to an Urban location, home district, another rural location? Go for further qualification?

Our response: The Ministry of Health of Ghana granted us access to the Integrated Personnel and Payroll Database (IPPD), which includes basic demographic and work-related information for all public and private non-profit health workers, who worked in Ghana in 2012. However, we intent to use this data for another manuscript, and therefore decided to not include such information/comparison in the present manuscript. We did not collect information on ‘where’ health workers wanted to leave, but on “why” they wanted to leave. The most widely stated reasons where “want to study” (58%), “relocation to partner” (36%), “moving to preferred location” (31%), and “retirement” (17%). Multiple answers where possible. However, as we were particularly focussing on intention to leave with regard to motivation and job satisfaction, we decided not to include this information in the present manuscript, mainly for the sake of space, but also because we intent to use this data in a subsequent manuscript on health worker turnover, as mentioned above.

9. Reviewer comment: The limitations were well articulated and accurate and it is unsure why the study design did not tackle some of them.

Our response: We consider that the comment of the reviewer is adequately taken up in the methods section. Data collection was carried out by the first author and two field assistants, who were thoroughly trained how to avoid bias when doing interviews.
However, moderacy bias and social desirability bias cannot be ruled out in social research. As we described in the methods section of the manuscript on page 9, paragraph 4, we reduced selection bias by arranging appointments for the interviews and, if possible, by visiting health workers a second time if the first appointment failed for some reason. If the second appointment also failed, we did not arrange a third appointment and selected the following person from our list. However, we did not follow up health workers who had been on annual leave, study leave, maternity leave, or were otherwise absent from their workplace during data collection, as this would have meant to visit such persons where they were in Ghana, whether at home, training school, or elsewhere, which we deemed not feasible in terms of available financial, time and human resources.

10. **Reviewer comment:** The conclusions seem to me to be the weakest part of the paper as I feel it could have drawn much more from the analyses and findings. The link of younger, more recent appointees to intention to leave for example.

   **Our response:** The conclusion section relates the main findings to the focus of the manuscript: what district managers may do within decision spaces given to them so to improve areas of motivation, job satisfaction and retention. Although age was statistically significantly associated with turnover intention in our univariate analysis, this relationship was no longer significant in our multivariate analysis of the effects of motivation and job satisfaction on turnover intention. Therefore, in combination with motivation and job satisfaction we did not find evidence that age had an effect on turnover intention.

11. **Reviewer comment:** As there wasn’t much detailed analysis of HRM practices in the study beyond opinions of respondents, it is difficult to accept the second sentence in the conclusions.

   **Our response:** We agree with this observation and made the following change to the respective sentence on page 21:

   *Although the HR decision spaces at district level in Ghana are limited, our findings indicate that adequate HRM may have the potential to influence motivation and job satisfaction, which in turn will make health workers more likely to remain at their current position.*

12. **Reviewer comment:** The conclusion assumes certain functions of district health managers but the study did not tell us whether they had been trained/skilled in these areas enough to “act as advisors in career planning or recommend promotions of promising health workers...” Etc., an in-service training conclusion that seemed to me to have no basis generated from the findings/analysis.

   **Our response:** We have addressed this observation in comment 6 of the reviewer and have in the discussion section extended on decision-spaces of district health managers (see above). We also added in our reference list three official policy documents of the Ghana Health Service, which are on the way to be officially endorsed. These upcoming regulations focus on study leave, postings, and promotions and underline our
statements on these respective aspects of HR career paths. Our conclusions are based on these statements, i.e. HRM activities that are in the authority of district managers and that have the potential to improve motivation, job satisfaction, and retention with reference to the HRM intervention literature cited in the discussions.

13. Reviewer comment: I would have expected some advice in the conclusion on (i) the decision space in these districts; (ii) the capacity needed by district health managers and how to perhaps acquire these; (iii) the age profiles and experience of HWs and how this influences retention of motivation to leave etc.

Our response: (i) We acknowledge this observation and have addressed it in comment 6 of the reviewer. We also modified the following sentences in the conclusion on page 22:

So to increase motivation and job satisfaction of health workers, district managers should give emphasis on an enabling environment for example through listening to and acting on staff problems and priorities or fostering team building. They may also engage in assisting the career planning and paths of their subordinates.

(ii) We added the following sentences to the conclusion to address this comment on page 21:

However, district managers in Ghana have typically undergone clinical training and had only limited exposure to general and HR management. In consequence there is a need for specific trainings and capacity building measures in this area so that they can adequately cope with the requirements and daily tasks of the position they hold.

(iii) As stated above, age was not significantly associated with turnover intention in our multivariate model. However, we added a paragraph on age in the discussion section as described in our response to comment 1 of the reviewer.

Reviewer 2 – Prisca AC Zwanikken

1. Is the question posed by the authors new and well defined?

Reviewer comment: In itself the question is reasonably defined. However in the abstract at the beginning performance is mentioned, to be improved by motivation and job satisfaction. In the objective nor in the results performance doesn't come back

Our response: We agree that our wording in the background section of the abstract evoked the expectation that performance was studied. We therefore changed the respective sentence as follows on page 2:

The study explored the effects of motivation and job satisfaction on turnover intention and how motivation and satisfaction can be improved by district health managers in order to increase retention of health workers.
Reviewer comment: In the introduction it is stated that retention builds up competencies, optimises team relations etc. However retention in itself doesn’t improve that, a motivated retained health worker will. Retention is not the same as motivation.

Our response: We agree that the definition of retention is different from that of motivation, although both concepts are related, as problems with motivation may lead to increased turnover, or turnover intention as we showed in this study. Paragraph 1 in the background section specifically introduces retention as being essential for good quality of care, although we agree that many of our statements also hold for motivation. We believe that our statements can be made for retention, as in districts that have problems with retention and thus face increased attrition of health staffs, team relations may be weakened when team members frequently change and competencies may also get lost, especially when these districts also have difficulties to attract experienced health workers or health workers from certain categories.

Reviewer comment: Page 5 “set of psychological..” – it seems a word is missing, psychological what?

Our response: The uploaded version of the manuscript had a formatting error. We apologise for that. The sentence should read: “Motivation has been described as a set of psychological and transactional processes”. We will make sure that this mistake does not re-emerge in the final version.

2. Are the methods appropriate and well described, and are sufficient details provided to replicate the work?

Our response: Most of the comments from the reviewer with respect to the methods section had been addressed in previous drafts of the manuscript, but where then removed so to remain in line with instructions for authors of the journal. Before writing up the manuscript, we wrote a detailed study report and made it available to different stakeholders, including the Ghana Health Service. This document includes a more detailed description of the methods and we are happy to share this report with the reviewer on request.

Reviewer comment: The instrument was translated from French. Was it backtranslated to check for consistencies? Did all the health workers in those 3 districts speak sufficient English to understand and answer the questionnaire? It seemed that the questionnaires were validated in different countries, not in Ghana itself.

Our response: We contracted a professional translation agency in Accra, Ghana, for the translation, which was done by a French native speaker. We checked this translation for accuracy, but did not backtranslate it into English. The respondents spoke sufficient English so to understand the questions adequately. The few respondents who had difficulties to understand the questions where interviewed by one of our Ghanaian field assistants, who read the questions in English and then clarified in Twi, a lingua franca in Ghana. We have validated the questionnaire for the use in Ghana by assessing total-
item correlation, convergence validity, face validity, discriminant validity, and reliability of the sub-scales, which were revealed being acceptable (reliability) respectively good (all other criteria). For the sake of space, however, we decided not to include the results of this analysis in the manuscript.

**Reviewer comment:** The authors state that job satisfaction is a motivational outcome. They also set out to measure both concepts separately. However these concepts, as they themselves state, are related, and also sometimes a bit overlapping (i.e. work environment/management and organizational commitment). It is not clarified how they see the overlap between the 2 concepts and their constructs. I.e the authors write:” For the “job satisfaction” construct we used the overall job satisfaction score instead of the original questions of the motivation instrument” – the reason for this is not clarified, and both concepts now seem to become blurred: using 2 different instruments but not what was left out/ nor clarifying the choices.

**Our response:** Because we see job satisfaction as one of the outcomes of motivation, we decided to use our overall job satisfaction score instead of the 3 items Mbindyo et al. (2009) described to form the job satisfaction construct of their motivation instrument. By doing this we applied the conceptual framework of Kanfer (1999) and Franco et al. (2002) and acknowledged the relationship between motivation and job satisfaction in our motivation construct, where job satisfaction is an outcome. In consequence we introduced the following modification in paragraph 2, pages 8f:

> For the “job satisfaction” construct we used the overall job satisfaction score instead of the original items of the motivation instrument as described by Mbindyo et al. [42]. This was done so to decorticate the relationship between motivation and job satisfaction in our motivation construct, where job satisfaction is an outcome.

**Reviewer comment:** It is not clear whether the pretest led to any changes in the instruments.

**Our response:** Only minor changes were necessary after the pretest. We made the following changes to paragraph 2, page 9:

> The questionnaire was reviewed after the pre-test, mainly to localise some of the demographic and work-related questions to the Ghanaian context.

**Reviewer comment:** Who interviewed the health workers? Are those the writers of the article, or were there research assistants involved and were they trained? How was consistency ensured amongst interviewers?

**Our response:** The data was collected by the lead author and two field assistants, who were trained during the pre-test of the questionnaire in the Regional Hospital Koforidua. During training and the first round of interviews in the field, the lead author also
supervised interview sessions so to ensure consistency. In paragraph 2 on page 9 we added the following sentence:

*In order to ensure consistency across interviewers the pre-test was also used to train field assistants on interview techniques.*

In paragraph 2 on page 10 we made the following change:

*Data collection was carried out between September and November 2012 by the lead author and two field assistants.*

**Reviewer comment:** It is not clear why the admin and support workforce were not included – are there no problems in retention and performance amongst these cadres?

**Our response:** During study preparation we carefully looked into staff categories. Based on available evidence, we concluded that the clinical workforce had much higher turnover rates than administrative and support workers. Thus we considered a focus on clinical staff categories as more relevant. With regard to the administrative workforce the decision was also based on statistical reasons, as the number of administrative workers is small in the 3 study districts so that statistical power would not have been sufficient. For the reasons stated above we decided to not include these cadres in our present study, but agree that this would be an interesting topic for further studies.

**Reviewer comment:** N=28 due to retirement were left out: is this retirement because of age or because of other reasons? In some countries retirement is also a way of expressing the intention to leave for greener pastures, this is not clear from the description and might cause a bias.

**Our response:** In our sample intention to leave due to retirement was solely because of age, as all respondents who stated retirement as a reason where in the >50 age-group, with retirement in Ghana being at 60 years of age. We, therefore, did not find evidence that health workers may have used retirement as a way of expressing intention to leave for greener pastures, but we did not directly ask for this. Some health workers in the Ghana Health Service continue to work after retirement on contractual basis. These health workers were not eligible for participation in the study, as their contracts are temporary.

**Reviewer comment:** If the first author is from Basel, why was there no ethical clearance asked in the based institute?

**Our response:** The PERFORM research project covers three countries (Ghana, Uganda, and Tanzania) and is coordinated by the Liverpool School of Tropical Medicine (LSTM). In consequence ethical clearance for the project was obtained by the ethics committee of LSTM. For the present study we obtained additional ethical clearance from the Ghana Health Service Ethical Review Committee. In Basel, we obtained clearance from the
research commission of the Swiss Tropical and Public Health Institute (Swiss TPH). We made the following changes to the ethics section on page 12:

As PERFORM is coordinated by the Liverpool School of Tropical Medicine (LSTM), ethical clearance for the whole study was obtained from the Research Ethics Committee of LSTM (ID No.: 12.09). For the present study we obtained additional ethical clearance from the Ghana Health Service Ethical Review Committee (ID No.: GHS-ERC: 13/05/12).

Reviewer comment: How the factors “career development” and “supervision” were established or inferred is not described.

Our response: The results of the two factor analyses can be found in the additional files 1 and 2, which we submitted along the original manuscript. We agree with the reviewer that this information should be included in the manuscript and added the following information in paragraph 1, page 11:

(see additional files 1 and 2 for the results of the factor analyses)

3. Are the data sound and well controlled?

Reviewer comment: The characteristics of the interviewed population is described, but not related to the overall population, to check for representativeness.

Our response: In our opinion we ensured representativeness of the sample with respect to the overall population by applying a systematic sampling strategy as described on page 9, paragraph 4. In order to ensure that our sampling method was appropriate, we sought statistical advise from the statistics department of the Swiss TPH during the preparation phase of the study.

Reviewer comment: On page 13 it is stated “the district” was significantly associated. What is meant by “the district” – place of work, seems like it, see page 17, but would be better to clarify?

Our response: We agreed with the author that “district” needs clarification and changed the sentence in paragraph 1, page 19 as follows:

We did find, however, evidence for the association between turnover intention and district as the place of work.

Reviewer comment: On page 15 it is stated that all adjusted odds ratios were lower than 1. However some of them were not statistically significant, and reaching higher than 1, the statement therefore needs to be read with caution.
Our response: We appreciate this comment and changed the sentence in paragraph 2, page 15 to the following:

Odds ratios with significance below 1 indicated an increase in motivation and job satisfaction and simultaneously a lower likelihood for intention to leave.

5. Are the discussion and conclusions well balanced and adequately supported by the data?

Reviewer comment: In the discussion in-service training and supervision are stated as important to reduce turnover intention, however in table 2 and 5 the mean and adjusted odds ratio they were not found to be statistically significant. So the discussion of these results and the literature needs to be clarified.

Our response: Satisfaction with in-service training and supervision did not reveal to be significant. Moreover, in our opinion it is valid to use both as an example, as we discussed the effects of in-service training and supervision on job satisfaction and motivation and not the activities themselves.

Reviewer comment: The findings in the adjusted odds ratio are a bit strange given the factor analysis that supervision is a factor?

Our response: Our finding does not refer to supervision per se, but to satisfaction with supervision. We changed the following sentence in paragraph 2, page 15 to indicate that the studied dimensions of job satisfaction refer to satisfaction with these dimensions:

Concerning the dimensions of job satisfaction significantly associated with turnover intention, satisfaction with tasks (OR = 0.34, 95% CI: 0.17–0.65) and morale (OR = 0.40, 95%: 0.20–0.83) had the lowest odds ratios, while satisfaction with career development (OR = 0.56, 95% CI: 0.36–0.86) and workload (OR = 0.58, 95% CI: 0.34–0.99) had the highest odds ratios.

In Table 2 and 5 we added the following information:

**all sub-scales refer to satisfaction with the dimensions under review**

In additional file 2 we added the following information to the table:

`all constructs refer to satisfaction with the dimensions of job satisfaction under review`

`all items refer to satisfaction with these items`

Reviewer comment: In the discussion it is stated that the District managers lack management capacity – however only the perception of health workers have been surveyed, and these perceptions were not triangulated, therefor that statement cannot be made.
Our response: In our understanding authors have the freedom to add general observation and contextual knowledge in the discussions, and it is, therefore, not necessary to stick strictly to the results.

Reviewer comment: In the conclusion it is stated that listening to health workers and team building is important, however those aspects have not been studied. Again the comments on in-service training and supervision need to be more carefully worded.

Our response: This comment refers to the discussion section. As stated above, to our understanding it is possible to extend the discussion section beyond the results thereby also adding contextual knowledge.

6. Do the title and abstract accurately convey what has been found?

Reviewer comment: As for the title yes. However see 1: performance mentioned in the introduction of the abstract but nothing is being said about it in the findings, nor the conclusion.

Our response: We acknowledge this comment and have addressed it in comment 1 of the reviewer.