Author's response to reviews

Title: Physicians' perceptions of quality of care, professional autonomy, and job satisfaction in Canada, Norway, and the United States

Authors:

Reidar Tyssen Prof (reidar.tyssen@medisin.uio.no)
Karen Palmer Prof (kpalmer@sfu.ca)
Ingunn B Solberg phd (i.b.solberg@studmed.uio.no)
Edgar Voltmer Dr (edgar.voltmer@thh-friedensau.de)
Erica Frank Prof (erica.frank@ubc.ca)

Version: 4 Date: 16 July 2013

Author's response to reviews: see over
Thank you for the important and valuable comments from the reviewers. We have now revised the paper according to their queries per below.

Reviewer I

Major Compulsory Revisions

Introduction

1) In the introduction, the authors need to present a brief critical review of the literature on the role of age, gender, medical specialty, hours in direct patient care, etc in shaping physicians’ job satisfaction, autonomy, and quality of care. The selection of certain predictor variables (and the exclusion of others, such as practice size) should be justified.

We have now included a more thorough review of this literature and accounted in detail for the selected predictor variables. This major revision resulted in several more references and it focuses clearer the two research question at the end (pages 3 to 5). The reference list was totally revised and some minor adjustments and corrections were made (e.g. original ref. 15 was updated to one more appropriate from the same authors, new ref. 30. In the same vein, original ref. 14 was substituted with new ref. 28).

2) The authors should provide a set of specific research hypotheses together with the rationale for each hypothesis.

This is the first cross-national study of all physician and we cannot provide clear hypotheses; the study is in its nature explorative. Though, based on previous studies of primary care physicians we have included a hypothesis about lower levels of job satisfaction in US doctors (end of page 4).

Methods

3) The authors state that different methods of data collection were used between the three countries (e.g., postal survey, computer-assisted telephone interviews). The impact of this factor on outcome variables (e.g., job satisfaction reported) should be presented in the Discussion section.

We have now included a paragraph in the discussion on the possibility of “social desirability” in the interview-sampled US data (page 11 second paragraph), and we also refer to this under Limitations (page 13). In all, we believe this effect to be modest in our well-educated physician samples.

4) Details regarding validity of key measures should be reported. For example, regarding item “I have the freedom to make clinical decisions that meet my patients’ needs”, the authors should present other studies that have established construct validity of such single-item measures of physicians’ professional autonomy.
In both the Introduction (page 4 second paragraph) and the Methods chapters (Measures page 6 end of first paragraph), we have referred to other studies (ref 21, 23, 24) that support the construct validity of these single items.

Results

5) In the Results section, in order for a multivariate model (e.g., multiple regression model) to be appropriate, it is important for the authors to confirm that the assumptions of normality, linearity and homogeneity of variance are met. Moreover, locating outliers and identifying unusual observations is important, since such cases may have a significant impact on the slope of the regression line and on the results of analysis.

We tested for normality, linearity and homogeneity of variance (UNIANOVA) and found that only “age” and “hours in direct patient care” did not meet these assumptions. We therefore displayed the estimated marginal means of these variables in Fig.1. We also explained that table 3 should be interpreted with these figures in mind. (Statistics page 7, Results pages 8 bottom and 9 top, Discussion page 11 top, Figure 1 pages 26-27)

Regarding collinearity diagnostics for regression analyses, the authors should examine presenting indicators such as the tolerance of the variables and the variance inflation factor (VIF), for each regression analysis performed. Multicollinearity may result in quite unreliable coefficients that may differ markedly from sample to sample, while the signs of the coefficients may be counterintuitive, and the variances of the estimates may be inflated. Thus, the authors should report results on possible violation of assumptions.

Regarding collinearity diagnostics, the variance inflation factor (VIF) for each regression analysis was only around 1.0 and that should not affect our results.

6) Regarding Table 3, the authors should justify the presentation of both univariate and multivariate results (and not only the latter)

We have now included only the multivariate results which makes the table much clearer and readable.

7) In Table 3, 95% CIs are presented. These intervals refer to unstandardized regression coefficients (B), provided by SPSS-15, and not to standardized ones (betas). Thus, the authors should consider presenting Bs as well, together with their SE.

We regretabley overlooked this excellent point, and have now presented the unstandardized Bs in table 3 and also amended this in the result chapter (page 9). We have also changed into unstd. Bs with confidence intervals in table 4. Since we have included 95% confidence intervals for all regression coefficients we believe that reporting their standard errors is superfluous in these large tables.

8) Regarding Table 3, predictors were entered in a hierarchical fashion (blocks), where three steps were conducted: the demographic variables (age, gender) were entered in the first step, “hours in direct patient care” was entered afterwards, while physicians’ country of origin was entered in the third step. In this way, the authors could identify the significant predictors of “freedom of clinical decisions” (or quality of care/ adequate time) by controlling for the effects of demographic and other variables on the dependent variable. However, “country of origin” should precede “hours in direct
patient care”, if authors were interested in examining the association between direct patient care and freedom for decisions, after controlling for the effects of country of origin (and not vice versa). The order of entering independent variables in hierarchical multiple regression models does matter (except for the limiting case where all correlations among the independent variables are zero), affecting the amount of variation attributed to each block of variables, as well as the statistical significance of the related F-test (obtained from ANOVA). Thus I suggest that authors re-run their analysis with country of origin being entered in Block 1, and direct patient care in Block 3. Analogous attention should be paid to results presented in Table 4, where the order of entering predictors into the equations (Blocks 2-4) is of great importance.

The use of blocks was only done in the exploratory stages of the analysis. We ended up with only the final multiple regression in both tables, but the tables are misleading as there is no sequence of blocks in the analyses. We have deleted every sign of “blocks” and “adj.cum $R^2$” in the tables, but still refers more arbitrarily to the explained variance of the independent variable blocks in the last paragraphs pages 8 and 9.

Reviewer 2
The authors’ question is well defined, but there are methodological and data problems, as listed below. Limitations are not clearly stated, at least not the limitations of which I am most concerned. Citations are appropriate and the abstract is fine, but the data and methodological limitations undermine all else.

Introduction
The author(s) state there are three important reasons for their study. The first two are well documented and they use some citations; however, even in a globalized workforce, physicians might be the least likely to cross international boundaries in search of work. Without a citation, this assertion should not be made.

We have now included new citations that physicians may cross borders for academic and financial reasons (references 8-10 end of second paragraph page 3)

Methods
Three survey databases are used. The US data is three or four years older than the Norwegian and Canadian data. This is a substantial temporal gap and undermines the argument that the differences across countries are from public versus private health care systems.

The study builds on the best available data, since such comparison studies are very rare and difficult to conduct. Besides, there were few changes in the U.S. health system over the actual years (2004-2008). Our study does not capture the effect of the recent U.S. health reform (Obama care). (Limitations, end of page 13)

Results
Table 2 is incredibly awkward. I would strongly recommend Z-scores or averages being presented rather than tallies of responses.

Z-scores of the job satisfaction variable cannot be compared across the different samples. We therefore keep the percentages in table 2 of the responses to give a visual impression of the scorings,
but we have included “percentages in each category” in the heading of the table in order to make it clearer.

Table 3 is barely addressed. Why present three different dependent variables but not discuss them individually?
We have now addressed table 3 and figure 1 in more detail under results (page 9 top) and in the discussion (end of page 10). Still, we think the discussion is very much focused on findings from table 3 both with respect to longer waits in Norway and Canada (page 12 paragraphs 2 and 3) and the gender finding (end of page 12 and top of page 13). In addition, of course, to the role of different health care systems (public versus private) that may explain lower perceptions of clinical freedom and quality of care in Norway and Canada (page 11 second last paragraph).

Then, in Table 4, analyses are done differently by country instead of simply recoding job satisfaction into a comparable measure across countries.
This is not a good idea, since the job satisfaction variables have country-specific numbers of categories, and they cannot therefore be put into the same regression (we have emphasized this under Methods top page 7).

As a reader, I am not convinced of the time order. Doctors who are more satisfied provide higher quality of care – or doctors who are able to provide high quality of care are more satisfied in their jobs? The same could be said for each of these dependent variables.
This is a limitation that hampers all cross-sectional data. We have now made this clearer under limitations in the discussion (page 13 beginning of second paragraph).

Discussion
The author(s) cite several articles on burnout and satisfaction, but then follow it up with assertions without citations (page 10, first full paragraph).
We have excluded one of the burnout/satisfaction references (original ref 23) and included citations on each of the mentioned problems facing U.S. health care (references 40-44, now page 12 first paragraph).

We now very much hope that this manuscript can be accepted for publication in your Journal.
On behalf of all authors.
Yours sincerely

Reidar Tyssen
Corresponding author.