

Health Service Research

# Work motivation, task delegation and job satisfaction of general practice staff: a cross-sectional study

Helle Riisgaard<sup>a,\*</sup>, Jens Søndergaard<sup>a</sup>, Maria Munch<sup>a</sup>, Jette V Le<sup>a</sup>,  
Loni Ledderer<sup>b</sup>, Line B Pedersen<sup>a,c</sup> and Jørgen Nexø<sup>a</sup>

<sup>a</sup>Research Unit of General Practice, Department of Public Health, University of Southern Denmark, Odense, Denmark, <sup>b</sup>Section of Health Promotion and Health Services, Department of Public Health, Aarhus University, Aarhus, Denmark and <sup>c</sup>Department of Business and Economics, COHERE – Centre of Health Economics Research, University of Southern Denmark, Odense, Denmark

\*Correspondence to Helle Riisgaard, Department of Public Health, University of Southern Denmark, Research Unit of General Practice, J.B. Winsløvs Vej 9A, 5000 Odense C, Denmark; E-mail: [hriisgaard@health.sdu.dk](mailto:hriisgaard@health.sdu.dk)

## Abstract

**Background.** Recent research has shown that a high degree of task delegation is associated with the practise staff's overall job satisfaction, and this association is important to explore since job satisfaction is related to medical as well as patient-perceived quality of care.

**Objectives.** This study aimed: (1) to investigate associations between degrees of task delegation in the management of chronic disease in general practice, with chronic obstructive pulmonary disease (COPD) as a case and the staff's work motivation, (2) to investigate associations between the work motivation of the staff and their job satisfaction.

**Methods.** The study was based on a questionnaire to which 621 members of the practice staff responded. The questionnaire consisted of a part concerning degree of task delegation in the management of COPD in their respective practice and another part being about their job satisfaction and motivation to work.

**Results.** In the first analysis, we found that 'maximal degree' of task delegation was significantly associated with the staff perceiving themselves to have a large degree of variation in tasks, odds ratio (OR) = 4.26, confidence interval (CI) = 1.09, 16.62. In the second analysis, we found that this perceived large degree of variation in tasks was significantly associated with their overall job satisfaction, OR = 2.81, confidence interval = 1.71, 4.61.

**Conclusion.** The results suggest that general practitioners could delegate highly complex tasks in the management of COPD to their staff without influencing the staff's work motivation, and thereby their job satisfaction, negatively, as long as they ensure sufficient variation in the tasks.

**Key words:** Cross-sectional study, delivery of health care, general practice, job satisfaction, motivation, personnel delegation.

## Introduction

In order to respond to the changes in demography and the pattern of disease in the western world these years, general practitioners (GPs) are often advised to delegate more medical tasks to their staff. In this context, task delegation is defined as an intentional transfer of

clinical tasks from the GP to an employed health care professional or to another employee with clinical training.

Research has shown that, regarding specific tasks, nurses can substitute GPs in primary health care with a medical quality of care equal to the one provided by the GPs (1). Also the patient-perceived

quality of care has shown to be as high or higher with nurse-led care. Additionally, there is evidence that nurses can play an important role in the management of chronic diseases and complex conditions (2). Furthermore, extending the roles of other health care professionals may also lead to improved quality of care for the patients, such as clinical outcomes following treatment by health care assistants (3).

Nurses' work motivation has shown to be important for their intent to work (4) and for their job satisfaction in different health care settings (5–7). It has also been suggested that nurses' work motivation influences the patient care outcomes (8), and that there is an association between job satisfaction and the quality of care (9,10). Thus, in order to ensure the quality of care in general practice, work motivation and job satisfaction of the staff should be taken into consideration.

The relation between task delegation and job satisfaction of the practice staff (11–13) seems to be consistent with the basic idea in Hackman and Oldham's job characteristics model of work motivation (14). The model comprises five core job dimensions leading to three critical psychological states each of them contributing to desired personal and work-related outcomes, including job satisfaction. These five core job dimensions are skill variety, task identity, task significance, autonomy and feedback. In the model reframed by Dag Ingvar and Jan Thorsvik (15), task delegation is a structural feature of an organization characterized by the core job dimension autonomy leading to a critical psychological state of experienced responsibility for outcomes of the work. According to this, task delegation and job satisfaction seem to be interrelated. Autonomy is defined as: 'the degree to which the job provides substantial freedom, independence, and discretion to the individual in scheduling the work and in determining the procedures to be used in carrying it out' (14).

The model by Hackman and Oldman is based on research conducted among employees in seven various business organizations (14). What motivates in this setting is not necessarily the same as what motivates in general practice. Hence, inspired by the model, we aimed to explore whether relevant motivator factors are able to explain the relation between task delegation and job satisfaction of the staff in the setting of general practice.

The management of chronic diseases is increasingly delegated to the staff in general practice (11). Therefore, we chose the management of a chronic disease to be the focus of our study. We used chronic obstructive pulmonary disease (COPD) as our case since it is a highly prevalent disease, and there is a pronounced variation in the care provided to these patients (16). Moreover, the majority of Danish patients receive their health care, or most of it, in general practice (17), and so general practice is highly influential on quality of care.

The objectives of this study were: (1) to investigate associations between the degree of task delegation in the management of a chronic disease, with COPD as our case, in general practice and the staff's work motivation, and (2) to investigate associations between the work motivation of the staff and their job satisfaction.

## Methods

General practice in Denmark encompasses ~3600 GPs distributed in 2200 clinics. GPs are self-employed working on a contract with the public funder, and most of them are established in partnership practices. The majority employs ancillary staff, who are most frequently practice nurses and medical secretaries (17).

We conducted a national cross-sectional survey involving practice staff in Danish general practice comprising nurses, medical

laboratory technicians, health care workers, secretaries and other types of staff with clinical tasks in relation to the management of COPD. The survey was distributed in practices in which at least one GP had participated in a survey a few months before. According to statements from these GPs about the number of staff members undertaking tasks regarding COPD, the staff in their practices received a corresponding number of invitations for the staff survey. The staff questionnaire consisted of two parts, one part concerning degree of task delegation in the management of COPD in their practice and another part being about the general job satisfaction and motivation to work.

In order to identify tasks in the management of COPD which could be delegated from the GP to the staff and to qualify the content of the questions, semi-structured qualitative interviews were conducted with four GPs and four nurses purposively selected from four practices.

The identified tasks were listed in the staff questionnaire, and the staff was asked to state which health care professionals or other employees were typically undertaking each clinical task in the clinic. For an overview of tasks identified through interviews and included in the questionnaire, see Supplementary Tables. Response categories were: 'GP, including GP trainee', 'nurse', 'medical laboratory technician' and 'secretary or other employee'. On the basis of the answers in the questionnaire, the task delegation, as it was perceived by the staff, was identified.

The questions concerning overall job satisfaction and motivation to work were selected from or inspired by The Copenhagen Psychosocial Questionnaire (COPSOQ) (18) according to themes identified in the preceding interviews. These themes were 'variation in tasks', 'responsibility for own work', 'influence on own work' and 'personal growth'. Only the question concerning responsibility for own work was solely based on the interviews. The domains and items regarding work motivation and job satisfaction are explained in Supplementary Tables.

The questionnaire was tested in four steps. First, we assessed the comprehensibility of the questionnaire in a pre-pilot study which involved 17 persons who were not part of the target population. These persons encompassed academics with different professional profiles, such as medical doctor, master of public health, master of public management and economist. Second, after revising the questionnaires according to the pre-pilot study, we performed a pilot study that included 13 nurses who tested relevance, acceptability and feasibility as well as comprehensibility and completeness. Third, a qualitative pilot test inspired by 'The three step test interview' was performed involving five nurses. Fourth, as we aimed to further qualify the questionnaire and reach a consensus on the content, we conducted a focus group interview discussing the questionnaire. The group consisted of four persons, including both health care professionals and health care researchers. The questionnaire was distributed after minor revisions according to the results of the entire testing process, but key questions remained the same.

All GPs registered with an e-mail address at the Organization of GPs in Denmark ( $n = 3440$ ) were invited to participate in the GP survey conducted prior to the staff survey. This corresponds to approximately 96% of the total number of the entire GP population, and they were asked to state how many employees in their clinic were managing patients with COPD. Thereafter, the staff received a postal invitation to participate in the staff survey which contained a number of personal codes according to the number of employees stated by the GPs (see flow chart on the process of identifying the study population in Figure 1). In case of disagreement between GPs

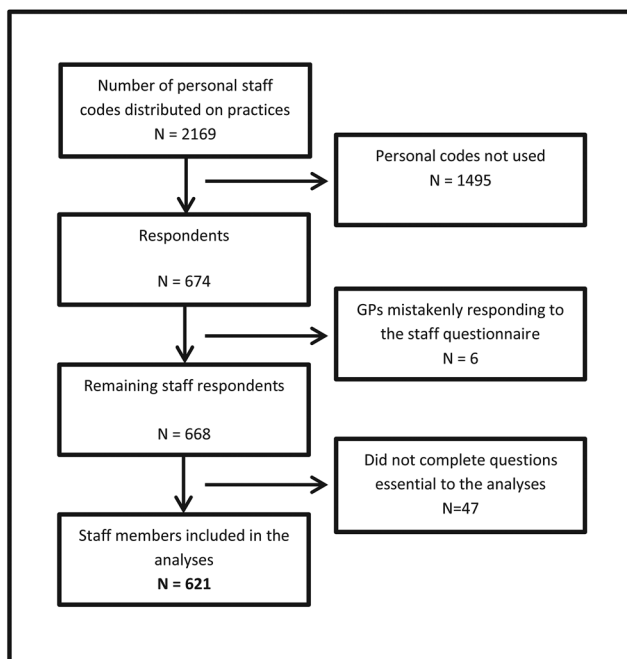


Figure 1. Flowchart of the process of identifying the final study population.

within the same practice, the highest number stated was sent out. A consequence of this method was that it was not possible to calculate a reliable response rate.

The GP survey reached a response rate at 46.4%. Of them, 90.9% reported to have staff managing patients with COPD corresponding to 1437 GPs from 969 practices. The invitation for the GPs was distributed on 4th December 2013, and one reminder was sent out on 7th January 2014. The invitation for the staff was distributed on 27th March 2014, and the reminder followed on 22nd May 2014. The survey was closed on 27th October 2014.

## Measures

In the first analysis, the outcome variable was the staff's motivation to work measured on an individual level by four items (see, domains and variables in Supplementary Tables). The explanatory variable was degrees of task delegation. In the second analysis, the outcome variable was overall job satisfaction, and the explanatory variable was motivation to work measured on the same four items as the outcome variable in the first analysis. Both the motivation variables and the job satisfaction variable encompassed ordered categories and were used as such in the statistical analyses. In order to investigate the effect of various degrees of task delegation on the staff's motivation, we needed to construct a delegation variable based on who undertook the various clinical tasks. We unsuccessfully searched the literature to find an existing categorization of degrees of tasks delegation. Therefore, a unique delegation variable based on interviews was developed for the purpose of this study.

We conducted interviews with three GPs, two nurses and one health care worker asking them to assess what characterises simple and complex tasks regarding delegation of tasks in the management of COPD. On the basis of these interviews, we identified two overall themes: 'level of independence' and 'level of responsibility', with regard to assessment and decision-making in management of the patients. These themes defined the degrees of task delegation, which were divided into the following three categories according

the complexity of the tasks: 'minimal degree', 'medium degree' and 'maximal degree'. For a definition of the three degrees of task delegation, see Supplementary Tables.

## Data analysis

In the analysis of associations between degrees of task delegation and motivation to work, we used 'medium degree' as our reference group. This decision was based on the interviews with GPs and their staff as we hypothesized that 'medium degree' of delegation would be the most common way of working in general practice, and that the work motivation would decrease with 'minimal degree' and increase with 'maximal degree' as the two extremities.

In the analysis of associations between motivation to work and job satisfaction, we used the category just above average as our reference group. We aimed to have an average response category as our reference, but since not all of the questions included in the analysis had such a category, we chose the category closest to the middle with the most respondents since very small categories are difficult to use as a reference. See the distribution of respondents on each category in Supplementary Tables.

There was a pronounced ceiling effect in the questionnaire since the majority of the respondents generally were very positive in their assessments. Therefore, in order to avoid leaving out important information in both analyses, we used a mixed-effect ordered logit model clustered at the practice level. Results with  $P \leq 0.05$  were considered statistically significant. We adjusted for practice type, age, occupation and time pressure in both analyses.

## Results

A total of 668 staff members distributed on 430 practices responded to the questionnaire corresponding to 44.4% of the practices reporting to have staff members managing patients with COPD. Of these, 621 respondents from 409 practices completed the questions in the questionnaire which were essential for the analyses. See Figure 1 for a flow chart on the process of identifying the final study population and Table 1 for distribution of staff members on characteristics of the study population adjusted for in the analyses.

In the first analysis, we found that both 'minimal degree' and 'maximal degree' of task delegation were significantly associated with the staff perceiving themselves to have a large degree of variation in tasks, odds ratio (OR) = 3.39, confidence interval (CI) = 1.24; 9.27 and OR = 4.26, CI = 1.09, 16.62, respectively. We also found an association between 'minimal degree' of task delegation and perceived influence on own work, OR = 3.99, CI = 1.27, 12.56. We did not find any associations between the degree of task delegation and the opportunity to develop abilities or responsibility in work. Table 2 shows associations between the degrees of task delegation and the presence of motivator factors in the practice as perceived by the staff.

In the second analysis, we found that overall job satisfaction was significantly associated with the staff perceiving themselves to have a very large degree of variation in tasks, OR = 2.81, CI = 1.71, 4.61, a large degree of influence on own work, OR = 2.84, CI = 1.70, 4.76, and a large degree of opportunity to develop abilities, OR = 4.96, CI = 2.74, 8.99. With regard to responsibility in work, having too little responsibility was negatively associated with overall job satisfaction, OR = 0.29, CI = 0.09, 0.90, and there was a tendency that having too much responsibility was negatively associated with overall job satisfaction as well, OR = 0.38, CI = 0.13, 1.14. Table 3 displays associations between the presence of motivator factors in the practice as perceived by the staff and their overall job satisfaction,

and Figure 2 shows a model of associations between task delegation and practise staff's job satisfaction in general practice.

## Discussion

Both minimal and maximal degree of task delegation were positively associated with the perceptions of 'variation in tasks', and 'minimal degree' was associated with the perceptions of 'influence on own work'. Furthermore, we found that perceived 'influence on own work' and perceived 'variation in tasks' were positively associated with job satisfaction. This suggests that the two motivator factors, 'influence on own work' and 'variation in tasks', may explain the relation between task delegation and job satisfaction.

The finding that 'minimal degree' of task delegation is associated with the perception of 'influence on own work' might reflect the structure of work in general practice. The tasks undertaken in a certain type of practice are characterized by routine without elements of assessment and/or decision-making, such as measuring blood pressure or drawing blood samples. This way of working does not require GP supervision, and thus it might be the reason why the staff

**Table 1.** Number of staff members distributed on characteristics of the study population adjusted for in the analyses

Characteristics of the study population	Number of staff members in the study population N (%)
Practice type	
Single-handed	90 (14.5)
Partnership	531 (85.5)
Age	
≤34	25 (4.0)
35–44	183 (29.5)
45–54	257 (41.4)
55–64	152 (24.5)
≥65	4 (0.6)
Time pressure	
Not so often	97 (15.6)
Sometimes	349 (56.2)
Often	146 (23.5)
Very often	29 (4.7)
Occupation	
Nurse	441 (71.0)
Medical laboratory technician	29 (4.7)
Health care worker	23 (3.7)
Secretary	104 (16.7)
Other	24 (3.9)
Total	621 (100)

Gender was not included in the questionnaire since nurses, who are the predominant part of the staff, comprise only 3% males on a national level, and the other occupations are female-dominated as well.

**Table 2.** Associations between the degrees of task delegation and the staff's perception of presence of motivator factors in their job

Task delegation	Influence on own work OR adj (95 % CI)	Opportunity for developing abilities OR adj (95 % CI)	Variation in tasks OR adj (95 % CI)	Responsibility OR adj (95 % CI)
Minimal	3.99 (1.27, 12.56)**	0.99 (0.65, 1.52)	3.39 (1.24, 9.27)**	1.57 (0.78, 3.19)
Medium	1	1	1	1
Maximum	2.77 (0.64, 11.94)	1.37 (0.80, 2.35)	4.26 (1.09, 16.62)**	1.32 (0.55, 3.17)

Adjusted for practice type, age, time pressure and occupation.

\*\* $P \leq 0.05$ .

members perceive themselves to have a large degree of influence on their own work. Another possibility is that they experience having 'influence on own work' because they have decided themselves not to undertake highly complex clinical tasks.

Both minimal and maximal degrees of delegation were found to be associated with large 'variation in tasks'. The relation between 'maximal degree' and large variation seems reasonable since the staff in a practice with 'maximal degree' of delegation will be undertaking complex as well as more simple tasks according to the definition of the three degrees of task delegation (see Supplementary Tables). The staff's perception of a large degree of variation in practices with 'minimal degree' of delegation might be explained by the many simple tasks, including short consultations with various patients. The reason why the staff perceives 'medium degree' of delegation as being the least varied could be that it is characterized by a high amount of long repetitive consultations, e.g. counselling with regard to smoking cessation and counselling with regard to diet and exercise. However, we have not been able to find studies in the existing literature supporting these speculations, and therefore, we are not able to draw any final conclusions.

We were surprised to find that there was no association between 'maximal degree' of task delegation and 'influence on own work' as indicated by previous qualitative research (11–13) and results from studies in other health care settings (19–22). To the best of our knowledge, no studies test the conceptual framework of the model by Hackman and Oldham the same way we do. However, they test their own model on the basis of data from respondents in seven various business organizations and find that autonomy (the freedom of scheduling and performing one's own work) is associated with job satisfaction of the staff (14). Hence, our results of the second analysis regarding 'influence on own work' support their findings, but the results of our first analysis do not support the edition of the model by Jacobsen and Thorsvik suggesting a unique link between autonomy and delegation (15). However, this link has never been tested empirically, and therefore, our findings do not disprove previous research concerning this extended version of the model. Instead we have provided new knowledge on a relation between task delegation and job satisfaction in the setting of general practice.

Hence, we found that the four motivator factors investigated in our study were all significantly associated with job satisfaction, which is also in accordance with results in previous studies (23,24), even though 'variation in tasks' was the only one displaying an association with task delegation (see Figure 2). Therefore, in the setting of general practice, task delegation seems to be associated with job satisfaction and mediated by the motivator factor 'variation in tasks'.

## Implications

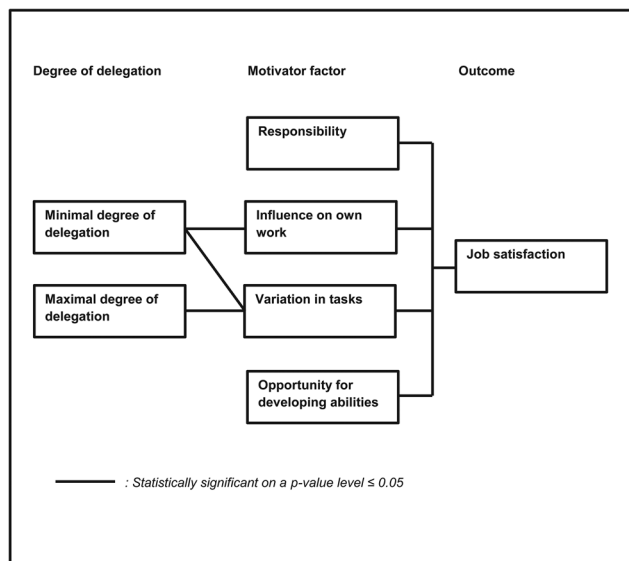
The results suggest that GPs should focus on variation when delegating highly complex tasks to their staff since this motivator factor was found to be significantly associated with both a high degree of

**Table 3.** Associations between the staff's perception of the presence of motivator factors in their job and their overall job satisfaction

Motivator factor	Overall job satisfaction
	OR adj (95% CI)
<b>Influence on own work</b>	
Hardly at all/not at all	0.13 (0.01, 2.00)
To a minor extent	0.98 (0.43, 2.24)
To some extent	1
To a very large extent	2.84 (1.70, 4.76)**
<b>Opportunity to develop abilities</b>	
Hardly at all/not at all	0.05 (0.00, 0.99)**
To a minor extent	0.30 (0.12, 0.75)**
To some extent	1
To a very large extent	4.96 (2.74, 8.99)**
<b>Variation in tasks</b>	
To a very small extent	
To a small extent	5.59 (0.19, 165.53)
Somewhat	0.82 (0.37, 1.85)
To a large extent	1
To a very large extent	2.81 (1.71, 4.61)**
<b>Responsibility in work</b>	
There is too little	0.29 (0.09, 0.90)**
It is appropriate	1
There is too much	0.38 (0.13, 1.14)*

Adjusted for practice type, age, time pressure and occupation.

\* $P \leq 0.10$ , \*\* $P \leq 0.05$ .



**Figure 2.** Model of associations between task delegation and staff's job satisfaction in general practice.

task delegation and the staff's overall job satisfaction. 'Influence on own work', 'opportunity to develop abilities' and 'responsibility in work' were not associated with task delegation, and therefore, these factors should not be the focus of attention when delegating work from GPs to their staff. Hence, the reason for their association with job satisfaction should be found elsewhere than in task delegation.

Since job satisfaction is found to be associated with the provision of health care in general practice (9) and with patients' perceptions of it (25), future research could explore relations between degrees

of task delegation and medical as well as patient-perceived quality of care.

### Strengths and limitations

A strength of our study is that the results support previous qualitative research on a large scale. We were able to invite GPs and their staff from nearly all Danish practices in which one or more GPs were registered at the time with an e-mail address at the Organization of General Practitioners in Denmark (3440 GPs = 96%). A total of 57.3% of the practices participated in the GP survey, and out of these, 44.4% of the practices were represented in the staff survey, which is a fairly good response rate in these types of investigations influencing the reliability and the generalizability of the results positively.

At the individual level, it was not possible to establish a reliable response rate of the staff because of the sampling method used implying the risk of distributing too many personal codes to 'non-existing' staff members in the participating practices. Hence, the response rate at 30.8% is most likely higher, but we are not able to document it. This sampling procedure is also the reason why it was not possible to investigate the representativity of the respondents since we did not have any information on the background population on relevant variables. Additionally, it is a possibility that the responding staff members were more positive towards the survey than the non-responders, and that it may have influenced their answers. However, the relatively high proportion of practices participating in the study combined with the consistency of our findings with results of previous studies reduces this risk considerably.

Another strength of our study is that it is the first study in the setting of general practice which explores associations between variables on all levels of the model by Hackman and Oldham comprising task delegation, motivation and job satisfaction (see Figure 2).

It may be argued that the wide CIs in some of the significant results, for instance the association between 'maximal degree' of delegation and a high degree of 'variation in tasks' (OR = 4.26, CI = 1.09, 16.62), reflect uncertainty of the estimates. However, this uncertainty does not change the overall finding that the estimates are significantly different from 1 at a 5% significance level.

Moreover, we were not able to find an existing categorization of degrees of delegation, and therefore we had to develop one ourselves. The thresholds for classifying the subjects were arbitrary, especially when classifying into either minimal or maximal degree of delegation, and therefore, it is still open for discussion whether selection bias is present.

### Conclusions

The results suggest that GPs could delegate highly complex tasks in the management of COPD to their staff without influencing the staff's work motivation, and thereby their job satisfaction, negatively, as long as they ensure a sufficient variation in the tasks. With the current trend towards more delegation in general practice, this finding is important in future delegation processes within the clinics. However, studies into management of other diseases in general practice should be conducted in order to generalize the results.

### Supplementary material

Supplementary data are available at *Family Practice* online.

## Acknowledgements

The authors would like to thank the practice staff who took the time to fill in the questionnaire thereby providing us with valuable information for our study.

## Declaration

Funding: The Committee for Quality Improvement and Continuing Medical Education in Region of Southern Denmark (12/24121).

Ethical Approval: The study received approval from the Danish Data Protection Agency (2012-41-0223). No approval from the Regional Scientific Ethical Committees for Southern Denmark was needed according to Danish legislation. Participation in the study was recommended by the Danish College of General Practice (Committee of Multipractice Studies). Moreover, answering the questionnaire was anonymous to everyone but the research group.

Conflict of interest: none.

## References

- Laurant M, Reeves D, Hermens R *et al*. Substitution of doctors by nurses in primary care. *Cochrane Database Syst Rev* 2005; 2: Cd001271.
- Finlayson MP, Raymont A. Teamwork - general practitioners and practice nurses working together in New Zealand. *J Prim Health Care* 2012; 4: 150–5.
- Laurant M, Harmsen M, Wollersheim H *et al*. The impact of nonphysician clinicians: do they improve the quality and cost-effectiveness of health care services? *Med Care Res Rev* 2009; 66(6 suppl): 365–89S.
- Brewer CS, Kovner CT, Greene W, Cheng Y. Predictors of RNs' intent to work and work decisions 1 year later in a U.S. national sample. *Int J Nurs Stud* 2009; 46: 940–56.
- Freeman T, O'Brien-Pallas LL. Factors influencing job satisfaction on specialty nursing units. *Can J Nurs Adm* 1998; 11: 25–51.
- DeLoach R, Monroe J. Job satisfaction among hospice workers: what managers need to know. *Health Care Manag (Frederick)* 2004; 23: 209–19.
- Blegen MA. Nurses' job satisfaction: a meta-analysis of related variables. *Nurs Res* 1993; 42: 36–41.
- Moody RC, Pesut DJ. The motivation to care: application and extension of motivation theory to professional nursing work. *J Health Organ Manag* 2006; 20: 15–48.
- Grol R, Mokkink H, Smits A *et al*. Work satisfaction of general practitioners and the quality of patient care. *Fam Pract* 1985; 2: 128–35.
- Mohr DC, Young GJ, Meterko M, Stolzmann KL, White B. Job satisfaction of primary care team members and quality of care. *Am J Med Qual* 2011; 26: 18–25.
- Maisey S, Steel N, Marsh R *et al*. Effects of payment for performance in primary care: qualitative interview study. *J Health Serv Res Policy* 2008; 13: 133–9.
- Hegney DG, Patterson E, Eley DS, Mahomed R, Young J. The feasibility, acceptability and sustainability of nurse-led chronic disease management in Australian general practice: the perspectives of key stakeholders. *Int J Nurs Pract* 2013; 19: 54–9.
- Cousins R, Donnell C. Nurse prescribing in general practice: a qualitative study of job satisfaction and work-related stress. *Fam Pract* 2012; 29: 223–7.
- Hackman JR, Oldham GR. Motivation through the design of work: test of a theory. *Organ Behav Hum Perform* 1976; 16: 250–79.
- Jacobsen DI, Thorsvik J. *Hvordan organisationer fungerer: en indføring i organisation og ledelse [How organisations function: an introduction to organisation and management]*. Copenhagen: Hans Reitzels Forlag, 2008.
- Koefoed MM, Søndergaard J, Christensen Rd, Jarbøl DE. General practice variation in spirometry testing among patients receiving first-time prescriptions for medication targeting obstructive lung disease in Denmark: a population-based observational study. *BMC Fam Pract* 2013; 14: 113.
- Pedersen KM, Andersen JS, Søndergaard J. General practice and primary health care in Denmark. *J Am Board Fam Med* 2012; 25 (suppl 1): S34–8.
- Kristensen TS, Hannerz H, Høgh A, Borg V. The Copenhagen Psychosocial Questionnaire—a tool for the assessment and improvement of the psychosocial work environment. *Scand J Work Environ Health* 2005; 31: 438–49.
- Lynch SA. Job satisfaction of home health nurses. *Home Healthc Nurse* 1994; 12: 21–8.
- Bucknall T, Thomas S. Critical care nurse satisfaction with levels of involvement in clinical decisions. *J Adv Nurs* 1996; 23: 571–7.
- Ferguson-Paré ML. Registered nurses' perception of their autonomy and the factors that influence their autonomy in rehabilitation and long-term care settings. *Can J Nurs Adm* 1996; 9: 95–108.
- Maurits EE, de Veer AJ, van der Hoek LS, Francke AL. Factors associated with the self-perceived ability of nursing staff to remain working until retirement: a questionnaire survey. *BMC Health Serv Res* 2015; 15: 356.
- Goetz K, Campbell S, Broge B *et al*. Job satisfaction of practice assistants in general practice in Germany: an observational study. *Fam Pract* 2013; 30: 411–7.
- Goetz K, Campbell SM, Steinhäuser J *et al*. Evaluation of job satisfaction of practice staff and general practitioners: an exploratory study. *BMC Fam Pract* 2011; 12: 137.
- Kvist T, Voutilainen A, Mäntynen R, Vehviläinen-Julkunen K. The relationship between patients' perceptions of care quality and three factors: nursing staff job satisfaction, organizational characteristics and patient age. *BMC Health Serv Res* 2014; 14: 466.