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Cross-national comparison of job satisfaction in doctors during economic recession

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Background	Job satisfaction in doctors is related to migration, burnout, turnover and health service quality. However, little is known about their job satisfaction during economic recessions. Iceland and Norway have similar health care systems, but only Iceland was affected severely by the 2008 economic crisis.
Aims	To examine job satisfaction in Icelandic and Norwegian doctors, to compare job satisfaction with Icelandic data obtained before the current recession and to examine job satisfaction in response to cost-containment initiatives.
Methods	A survey of all doctors working in Iceland during 2010, a representative comparison sample of Norwegian doctors from 2010 and a historic sample of doctors who worked at Landspitali University Hospital in Iceland during 2003. The main outcome measure was job satisfaction, which was measured using a validated 10-item scale.
Results	Job satisfaction levels in Icelandic doctors (response rate of 61%, n = 622/1024), mean = 47.7 (SD = 10.9), were significantly lower than those of Norwegian doctors (response rate of 67%, n = 1025/1522), mean = 53.2 (SD = 8.5), after controlling for individual and work-related factors. Doctors at Landspitali University Hospital (response rate of 59%, n = 345/581) were less satisfied during the recession. Multiple regression analysis showed that cost-containment significantly affected job satisfaction ($P < 0.001$).
Conclusions	Job satisfaction in doctors was lower in Iceland than in Norway, which may have been attributable partly to the current economic recession.
Key words	Economic recession; health services; Iceland; job satisfaction; Norway; physician.

Introduction

Job satisfaction in doctors is important for patient safety and health service quality [1] and is related to burnout [2], migration [3] and turnover [4]. However, there is a lack of cross-national comparative studies of job satisfaction among doctors [5,6]. Structural changes in the health care sector have threatened the traditional roles of doctors in recent decades [7,8] and many countries have been affected by the worldwide recession [9]. Iceland was one of the first countries in Europe to be affected by the recession (October 2008) [9]. During 2008–2010, health expenditure in Iceland decreased by 5% per year as a result of general expenditure cuts [10]. In the same period, the main hospital in Iceland, Landspitali University Hospital, reduced its costs by 16% by reducing both paid overtime and the number of doctors and nurses on call and by limiting diagnostic tests as well as other expenditure [10]. The salaries of doctors increased by only 3.7% between 2008 and 2009 [11], during which time the consumer price index (CPI) increased by 27% [12]. A recent study showed that the experience of cost-containment at work and personal financial worries were related to the migration intentions of Icelandic specialist doctors [3].

Iceland and Norway are neighbouring countries with common historical roots, which means that they are

culturally and politically close. Both provide health care with equal access for all, regardless of income, gender, ethnicity or place of residence [13], and their health policy performance is among the best in Europe [14]. In both countries, health care is financed through taxation and governmental reimbursement. Hospitalization is free for patients, whereas there are moderate out-of-pocket fees for outpatient services, primary health care and private specialist practices. The doctor density is relatively high, with one doctor per 272 citizens in Iceland [12] and one per 213 in Norway in 2009 [15]. The economic recession had little impact in Norway. Studies have suggested that financial constraints are linked to reduced career satisfaction among physicians [16,17], although there is a lack of representative nationwide studies supporting this association.

Therefore, the aim of this study was to compare the job satisfaction of Icelandic doctors with that of Norwegian doctors after adjusting for age, gender, workplace and working hours, to ascertain whether there was a difference in the job satisfaction of doctors who worked at Landspitali University Hospital in 2010 compared with that in 2003 and to evaluate whether the perceived cost-containment initiatives at work affected the job satisfaction of Icelandic doctors after controlling for other work-related factors.

Methods

Between March and May 2010, all physicians working in Iceland who had registered their email address with the Icelandic Medical Association received an internet-based electronic survey and four reminders. The Norwegian data were taken from a representative sample of active doctors who participated in a 2010 postal survey conducted by the Research Institute of the Norwegian Medical Association [18]. Data on job satisfaction for all Icelandic doctors before the recession was lacking, but 2003 job satisfaction data were available for all doctors who worked at Landspitali University Hospital (a referral hospital for the whole country). Doctors working there account for at least two-thirds of all the hospital doctors in Iceland; with ~80% of all the doctors in Iceland working in hospitals. This was a postal survey conducted by the Administration of Occupational Health and Safety in Iceland. This data and our other Icelandic data were used to compare job satisfaction before and during the recent economic recession.

The Icelandic studies were reported to The Data Protection Authority and approved by the National Bioethics Committee. The Norwegian study was conducted according to the guidelines of the Ethical Committee for Medical Research with approval from the National Data Inspectorate. Job satisfaction was measured using the 10-item Job Satisfaction Scale (JSS) [19]. Each item was scored on a seven-point Likert scale, which ranged from 1 = 'very dissatisfied' to 7 = 'very satisfied', where the dependent variable in the regression analysis was the summed score. The values of Cronbach's alpha were 0.90 for the 2010 Icelandic sample and 0.87 for the Norwegian sample. This scale has been validated in several studies of physicians [5,6,20,21]. The analysis of the difference in job satisfaction before (2003) and during (2010) the economic recession among doctors working at Landspitali University Hospital used one item, i.e. 'How satisfied are you with your job?', which was measured on a 10-point Likert scale, where 10 was the highest satisfaction level.

In our comparison between countries, we controlled for age, gender, job position (e.g. working in a hospital or a general practice) [20] and working hours [22]. In our evaluation of the role of perceived cost-containment initiatives at work and their effects on job satisfaction among Icelandic doctors, we controlled for age, gender and work-related factors such as working hours [22], job position[20] and work–home interface stress [20,23]. Age was categorized as follows: ≤29 years, 30–34, 35–39, 40–44, 45–49, 50–54, 55–59, 60–64 and ≥65 years. The job positions of doctors were categorized as hospital doctors, general practitioners, semi-private specialists and others (doctors who worked for health authorities, specialized institutions, universities etc.) [20]. Semi-private specialists (who received part of their payment directly from Icelandic Health Insurance and part of their payment from patients) were used as the reference group. We also controlled for clinical speciality in our country comparison analysis and our linear regression analysis. The number of weekly working hours was estimated for Icelandic doctors as the sum of three variables: the working hours according to the employment contract in the main position, working hours in extra part-time jobs and all overtime hours. In the Norwegian sample, the number of hours was elicited directly using the question: 'How many hours do you work in a regular working week, including all part-time jobs?' We asked the Icelandic doctors to respond to the following statement: 'I find that cost-containment initiatives (e.g. limited choices of devices and equipment) influence my work'. The response alternatives were 'strongly agree', 'agree', 'neither agree nor disagree', 'disagree' and 'strongly disagree'. Work–home interface stress was measured among the Icelandic doctors and comprised three questions [20,23]: 'I am stressed by the job interfering with my family life', 'I am stressed by problems that affect the balance between the job and my private life' and 'I am stressed by the job interfering with my social life'. The response alternatives were 'not stressful', 'slightly stressful', 'stressful', 'quite stressful' and 'very stressful'. These three items had a Cronbach's alpha of 0.91.

We tested differences in means using the Student's *t*-test. Differences in the job satisfaction items between Icelandic and Norwegian doctors were tested using

Poisson regression analyses to control for age, gender, working hours and work position. We estimated the differences in satisfaction based on the effect sizes (Cohen's *d*: 0.02–0.49 = small effect; 0.50–0.79 = moderate effect; ≥0.80 = large effect) [24]. We performed a multiple regression analysis of job satisfaction among Icelandic doctors to identify significant adjusted predictors (associations). The level of significance was set at 5% ($P < 0.05$). We used PASW Statistics 20 for the statistical analyses.

Results

A total of 1024 physicians, 96% of all physicians working in Iceland, had an email address and there was a 61% response rate (622/1024). In Norway, the response rate was 67% (1025/1522) and 1004 doctors made valid responses to the questions on job satisfaction. At Landspitali University Hospital, there was a response rate of 59% (345/581) (Table 1).

Table 2 provides an overview of the study samples. Icelandic doctors reported a mean JSS level of 47.7 (SD = 10.9), with a range of 10–70, and Norwegian doctors reported a mean level of 53.2 (SD = 8.5) ($t = 10.8$, $P < 0.001$, $d = 0.56$). This difference applied to both genders and within all specialities, and age groups, except doctors aged over 60. This was maintained after controlling for age, gender, working hours and job position in an adjusted Poisson regression analysis ($F = 30.1$, $P < 0.001$).

Table 3 shows that the main differences between the two countries in terms of the individual job satisfaction items were satisfaction with the rate of pay, opportunities to use own skills and working hours, which also applied after controlling for age, gender, working hours and job position in the Poisson regression analysis ($F = 180.4$, $F = 57.2$, $F = 17.2$, $P < 0.001$). There were significant differences between all other items, except for satisfaction with variety in the job and amount of responsibility (Table 3). The adjusted Poisson regression analysis showed difference in the same items, with the exception of freedom to choose your own working methods (not significant).

In 2003, doctors who worked at Landspitali University Hospital ($n = 344$) had a mean job satisfaction of 7.2 (SD = 1.7), on a scale from 1 to 10, whereas the mean job satisfaction of doctors who worked at the hospital in 2010 ($n = 343$) was 6.7 (SD = 2.0) ($t = 3.89$, $d = 0.30$, $P < 0.001$). There were no significant differences in the numbers of doctors in each speciality at the two time points and the age distribution was similar in the two samples (25% aged 55 or over in 2010 versus 26% in 2003). About 77% of all Icelandic doctors agreed or strongly agreed that cost-containment initiatives affected their work (Table 1) and there were no differences

Table 2. Demographic and occupational characteristics of the respondents (all doctors in: Iceland, $n = 622$; Norway, $n = 1004$)

Predictor variables	Iceland (%)	Norway (%)
Age		
≤29	11	3
30–34	9	6
35–39	5	9
40–44	13	12
45–49	15	12
50–54	15	14
55–59	15	15
60–64	14	13
≥65	3	16
Women	37	38
Workplace, *n* (%)		
Hospital	391 (64)	526 (54)
Regular doctor's office	125 (21)	239 (25)
Private practice	56 (9)	69 (7)
Other workplaces	39 (6)	134 (14)
Mean number of working hours/week (SD)[a]	46.9 (9.5)[b]	43.5 (10.5)
Iceland only (regression analysis)	*n* (%)	
Cost-control influences at work		
Strongly agree	207 (34)	
Agree	260 (43)	
Neither agree nor disagree	84 (14)	
Disagree	43 (7)	
Strongly disagree	15 (2)	
Mean (SD) work–home interface stress score	8.3[c] (3.1)	

[a]Significant difference between Iceland and Norway, $t = 6.47$, $P < 0.001$.
[b]Significant difference between women (mean = 44.3, SD = 8.6) and men (mean = 48.4, SD = 9.7), $t = -5.29$, $P < 0.001$.
[c]Significant difference between women (mean = 8.8, SD = 3.1) and men (mean = 8.1, SD = 3.0), $t = 2.91$, $P < 0.01$.

Table 1. Description of the study samples

Country	Year of study	Subjects	Response rate (%)	Outcome
Iceland	2010	All doctors	61 ($n = 622/1024$)	JSS
Norway	2010	All doctors	67 ($n = 1025/1522$)	JSS
Iceland	2003	Landspitali Hospital doctors	59 ($n = 345/581$)	Job satisfaction single item
Iceland	2010	Landspitali Hospital doctors	62 ($n = 343/552$)	Job satisfaction single item

Table 3. Satisfaction with various aspects of work. Each item was scored using a Likert scale that ranged from 1 (very dissatisfied) to 7 (very satisfied)[a]

Satisfaction with:	Iceland Mean (SD)	Norway Mean (SD)	Effect size (Cohen's *d*)
1. Your rate of pay	3.40 (1.72)	5.05 (1.35)	1.08***
2. Your opportunities to use your skills	4.88 (1.51)	5.66 (1.15)	0.58***
3. Your working hours	3.88 (1.71)	4.76 (1.44)	0.56***
4. Your work environment	4.47 (1.61)	5.10 (1.36)	0.42***
5. The recognition you get for good achievements	4.45 (1.72)	5.08 (1.37)	0.41***
6. Your overall job situation	5.25 (1.34)	5.67 (1.05)	0.35***
7. The freedom to choose your own methods of working	4.95 (1.50)	5.33 (1.26)	0.27***
8. Your colleagues and fellow workers	5.49 (1.28)	5.66 (1.08)	0.14**
9. The amount of responsibility you are given	5.40 (1.37)	5.42 (1.27)	NS
10. Variety at work	5.53 (1.33)	5.54 (1.14)	NS
JSS (sum of 1–10)[b]	47.7 (10.9)	53.2 (8.5)	0.56***

[a]The same items (1–8) and JSS (sum score) remained significant after controlling for age, gender, working hours and job position in a Poisson regression analysis, except item 7 (NS, non-significant).
[b]Number of doctors who answered all 10 questions: Iceland, $n = 595$; Norway, $n = 970$.
**$P < 0.01$, ***$P < 0.001$.

between hospital doctors, general practitioners and those working in semi-private practices.

Table 4 shows the adjusted associations between the independent variables and JSS among Icelandic doctors. The significant predictors in the multiple linear regression model (also after controlling for specialty) were experience of cost-containment measures, age, job position (doctors in hospitals and general practice had lower job satisfaction than semi-private practice physicians) and work–home interface stress.

Table 4. Regression analysis of Icelandic doctors where job satisfaction (10-item JSS, mean = 47.7, SD =10.9) was the dependent variable ($n = 574$)

	Adjusted analyses	
	Beta[a]	95% CI Beta
Age	0.39*	(0.00–0.78)
Men	–1.46	(–3.24 to 0.33)
Cost-control initiatives	–1.37***	(–2.18 to –0.57)
Private practice physicians as reference:		
Hospital doctors	–6.36***	(–9.26 to –3.45)
General practitioners	–5.57***	(–8.75 to –2.38)
Other job positions	–3.20	(–7.37 to 0.96)
Working hours	0.08	(–0.01 to 0.17)
Work–home interface stress	–1.41***	(–1.69 to –1.13)

[a]Unstandardized. CI, confidence interval.
*$P < 0.05$, ***$P < 0.001$.

Discussion

The main study finding was that doctors in Iceland had lower levels of job satisfaction than those in Norway. Doctors at Landspitali University Hospital also had lower job satisfaction in 2010 when compared with levels in 2003. Finally, 77% of Icelandic doctors reported that cost-containment initiatives affected their work and this was also related to their overall job satisfaction.

Nationwide comparative studies are rare and this is the first study of doctors working in a country affected by the recent economic recession. Major strengths were our response rates (61% in the Icelandic sample and 66% in the Norwegian sample), which is relatively high for doctors [25]. All specialities were well represented in both countries. The same validated instruments were used in both countries with the exception of questions about working hours (which was a limitation). However, our data were based on self-reports and another limitation was that the cross-sectional data could not infer a causal relationship between economic recession and the job satisfaction of Icelandic doctors.

Icelandic doctors were less satisfied than Norwegian doctors with most aspects of their job. In another study, German hospital doctors scored significantly lower than Norwegian doctors on the same items (except satisfaction with colleagues) [5]. Other JSS-studies have also shown that doctors report lowest satisfaction with pay and working hours and highest satisfaction with amount of responsibility and variety at work [21,26]. An international review concluded that 'Aspects of job satisfaction concerning the content of the profession seem to increase job satisfaction and aspects concerning employment conditions seem to decrease job satisfaction' [22]. This shows that doctors around the world share some common intrinsic values as well as challenges.

We found the largest effect size between Iceland and Norway (d = 1.08) in satisfaction with the rate of pay. In Iceland, doctors' salaries increased by 3.7% between 2008 and 2009 [11], whereas the CPI increased by 27% [12]. Furthermore, doctors at Landspitali University Hospital experienced a reduction in paid overtime since the recession began [10]. More recently, only 37% of specialist doctors were not worried about their personal finances and these worries were also related to their considering moving and working abroad [3].

In addition to the economic recession, there may be other reasons for the lower job satisfaction in Icelandic doctors compared to those in Norway. There is a more stable and diverse labour market for doctors in Norway because it has 15 times the population of Iceland (population 320 000). In a number of specialities in Iceland, there is only one potential place of employment; other options are limited and may include a change in speciality or emigration if they are not satisfied with their work. In a recent study, the job satisfaction of Icelandic specialist doctors was closely related to their migration intentions [3]. These factors may partly explain the lower job satisfaction among the Icelandic doctors. The health care expenditure as a percentage of the gross domestic product is similar in the two countries (~9.5% at the time of the study) [27], but the total health expenditure per capita (adjusted by power parity) decreased in Iceland between 2008 and the time of the study and increased in Norway in the same time period [28]. This partly reflects the differing impact of the economic crisis in the two countries.

Icelandic doctors at Landspitali University Hospital had lower job satisfaction during the current economic recession (2010) compared with that before the recession (2003). This study was limited because it was not based on a prospective cohort analysis, but different specialities were equally represented and the age distributions were similar at the two time points. The total expenditure of Landspitali University Hospital increased by 1% between 2008 and 2010 [29,30], whereas the index of imported products increased by 48% in the same time period [12]. The Icelandic health care system uses many imported products. Between 2008 and 2010, the hospital also reduced its costs by 16% by reducing the number of doctors and nurses on call, economizing on pharmaceutical costs and reducing other expenditure [10].

Not surprisingly, a large proportion (77%) of Icelandic doctors reported that cost-containment initiatives affected their work, which also influenced their job satisfaction in our adjusted predictor model. Other studies have linked financial constraints on doctors to reduced career satisfaction [16,17], supporting our findings. The fact that job satisfaction is related to migration intentions among Icelandic specialist doctors [3], as well as the other potentially harmful outcomes of job dissatisfaction [1,2,4], requires consideration by employers and health authorities.

This study found that doctors' job satisfaction in Iceland was lower than in Norway, and at Landspitali University Hospital was also lower than that before the current recession. We also found that the job satisfaction of Icelandic doctors was affected by cost-containment initiatives at work. Our cross-sectional data cannot infer causality as regards economic recession and doctors' job satisfaction, so more research is required in this field.

Key points

- Job satisfaction of doctors in a country severely affected by the current economic recession was lower than that of doctors in a neighbouring country, where the effect of the recession was less pronounced. Job satisfaction was also lower than job satisfaction before the recession.
- Job satisfaction of doctors was related to cost-containment initiatives at work.
- There should be an increased focus on the effects of the current economic recession on the job satisfaction of doctors.

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Conflicts of interest

None declared.

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