Influence of working conditions on job satisfaction in anaesthetists

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Background. We studied job satisfaction, physical health, emotional well-being and working conditions in 125 Austrian and Swiss anaesthetists.

Methods. Responses to self-reporting questionnaires were evaluated. Dependent variables included job satisfaction, emotional well-being and physical health. Independent variables included age, sex, marital status, position and working conditions as assessed by the Instrument for Stress-related Job Analysis.

Results. Control over work shows a strong effect on job satisfaction in anaesthetists, for example influence on handling tasks (P = 0.001), time control (P = 0.002) and participation (P = 0.001), whereas task demands and task-related problems did not have any effect. Anaesthetists in leading positions and specialists reported lower job satisfaction (P = 0.012) than did anaesthetists in non-leading positions. Job satisfaction was associated with better physical health (P = 0.001) and better emotional well-being (P = 0.005).

Conclusions. Our results suggest that a high level of job satisfaction in anaesthetists correlates with interesting work demands and the opportunity to contribute skills and ideas. To improve job satisfaction, more attention should be paid to improving working conditions, including control over decision-making, and allowing anaesthetists to have more influence on their own work pace and work schedule.

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Job satisfaction is one of the central variables in work and organizational psychology and is seen as an important indicator of working life quality.1,2 Job satisfaction can be influenced by a variety of factors, including the quality of relationships with superiors and colleagues, the degree of fulfilment at work and prospects for promotion. Satisfied employees tend to be more productive and creative. Studies have shown a direct correlation between physician satisfaction and patient satisfaction.3

The scope of work of anaesthetists in hospital practice has expanded in the past decade. Anaesthetists work as specialists in emergency care, in intensive care medicine and in the management of acute and chronic pain. Additionally, some anaesthetists have research, teaching or administrative obligations. Conflicting demand is regarded as a risk factor for overwork.4 Kain and colleagues5 reported that many anaesthetists exhibit symptoms of chronic stress.

Task-related stressors and social stressors at work (including personal animosities, poor social climate and conflicts arising from problems in relationship with superiors and colleagues) are considered important predictors of strain.1,6 Wide-ranging resource cutbacks and personnel shortages also affect working conditions.

Job demands and job control have been reported to have several interactive effects on employee well-being and health in specific occupational groups.7,8 Karasek and colleagues9 observed that a level of high control over work is accompanied by positive health characteristics, whereas heavy burdens at work lead to increased disturbances in health.9 Although the results of research on job satisfaction are frequently inconsistent, a few factors (e.g. autonomy, pay, task demands and organizational policies) are known to have a significant effect on job satisfaction.10,11
The main objective of this study was to assess job satisfaction among Austrian and Swiss anaesthetists jointly and as two separate groups. A second objective was to determine whether job satisfaction actually reflects the quality of working conditions. Possible correlations between job satisfaction and somatic and/or emotional conditions in anaesthetists were analysed.

Methods

Questionnaires, accompanied by a letter and a return envelope, were distributed by intradepartmental mail to the anaesthesiology departments of two different hospitals: the University Department of Anaesthesiology and Critical Care Medicine, Innsbruck, Austria (UHIBK) and St Gallen Cantonal Hospital, Switzerland (KSSG).

The two centres of investigation chosen are representative of a university hospital in Austria and a hospital for tertiary care in Switzerland. One of the investigators (A.B.) has good professional contacts with the anaesthetists at both hospitals. All anaesthetists were given full information about the investigation by the principal investigator (J.F.K.) in lectures and written material several weeks before the onset of the study. As the survey was completely anonymous, there was no possibility of contacting non-responders.

Assessment of working conditions

Working conditions were investigated using the Instrument for Stress-related Job Analysis (ISTA, Version 5.1, short form)611 (see Appendix A). ISTA is based on action regulation theory and it captures quality of task demands, control over work and task-related stressors. Task demands or regulation requirements are assessed by measuring task complexity and task variability. Control over work or regulation possibilities assesses the employee’s influence on handling task conduct and time control. Task conduct comprises independent planning and organization of one’s own work, whereas time control specifies the influence on one’s own work pace and work schedule. Further indicators of regulation are communication possibilities and cooperation latitude. This characterizes the possibilities of contact and communication with others at work, including work-related communication, as well as the possibility of mutual support and choice of cooperation partners. Task-related stressors or regulation problems are measured by time pressure due to fast pace of work, high demands on concentration over long periods and interruptions by supervisors, colleagues or clients.

Assessment of general health and stress profile

Participants were also asked to respond to a general questionnaire about sociodemographic factors (sex, age, marital status, professional status, area of work, workload, duration of contract).

Physical health (17 items) and emotional well-being (seven items) were measured using the relevant variables of the German version of the Health and Stress Profile (348 items)1213 (see Appendix B). On the response scale (1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = very often) those who indicated either ‘often’ or ‘very often’ were recoded ‘often’, while those who indicated either ‘rarely’ or ‘never’ were recoded ‘rarely’.

Olson and Stewart12 have developed a seven-item measure of global job satisfaction. The variable ‘job satisfaction’ consists of the following questions. ‘How content are you with the following aspects of your job?’: ‘Interesting job’, ‘Possibility to contribute your skills and ideas on the job’, ‘Pay for work’, ‘Prospects for promotion’, ‘Relationship with superior’, ‘Time organization’, ‘Consideration of suggestions and ideas’. Respondents were asked to rate on a five-point scale that went from 1 ‘very dissatisfied’ to 5 ‘very satisfied’. Those who indicated that they were either very dissatisfied or rather dissatisfied were recoded ‘low job satisfaction’, while those who were either rather satisfied or very satisfied were recoded ‘high job satisfaction’. The higher the score, the greater were one’s feelings of job satisfaction.

For the purpose of this study, workload was operationally defined using the global question ‘How great is your workload on average?’. Workload was rated by respondents using a five-point scale that went from 1 ‘very great’ to 5 ‘very small’.

Statistical analysis

Details of the participants are summarized as frequencies and percentages. Nominal variables were analysed with the Pearson χ² test, and 2×2 tables were computed using the Yates correction. Ordinal variables were analysed with the Mann–Whitney U test (n=2) and the Kruskal–Wallis test (n>2). Metric data were tested for normality of distribution and, if given, an analysis of variance was computed. A probability level of <0.05 was used to determine statistical significance. The exact level is given in all results. Metric variables were analysed with the Pearson correlation coefficient. The SPSS, v11.0, statistical package (SPSS Inc., Chicago, IL) was used for all computations.

Results

Participants

A total of 125 anaesthetists (86 male and 49 female) participated in the study; 89 (71.2%) were from UHIBK and 36 (28.8%) were from KSSG. The response rates were 65.9% (UHIBK) and 70.6% (KSSG). The details of the participants are presented in Table 1.

Workload was assessed as high to very high by 70 (56.0%) of the respondents, as moderately high by 39 (31.2%) and as low by 16 (12.8%). No statistically significant differences in workload were found regarding gender, position and years in practice. The middle-aged group (31–40 yr) reported...
significantly higher workload than the younger (<30 yr) and older (>40 yr) age group (mean values 58.1 vs. 79.1 vs. 62.6; \( P=0.042 \)). Regarding marital status, single anaesthetists reported a higher workload than their colleagues living in partnerships with or without children (mean values 50.0 vs. 62.2 vs. 74.6; \( P=0.011 \)).

**Job satisfaction**

No statistically significant differences in job satisfaction were observed according to gender. Anaesthetists in leading positions and specialists showed statistically significant lower job satisfaction than anaesthetists in non-leading position (\( P=0.012 \)) or in training (\( P=0.021 \)). The middle-aged group was particularly affected, showing significantly less job satisfaction than either the younger or the older age group (mean values 1.93 vs. 2.45 vs. 2.30; \( P=0.019 \)).

Comparison of job satisfaction between UHIBK and KSSG anaesthetists revealed a higher degree of job satisfaction in the latter (mean values 2.01 vs. 2.34; \( P=0.03 \)) (Table 2).

Workload was seen to have no significant effect on the assessment of job satisfaction.

### Job satisfaction and health

Out of the whole sample, 67 (53.6%) respondents reported at least one or more physical complaints. Anaesthetists with at least one frequent physical (‘psychosomatic’) complaint reported significantly lower job satisfaction than those with no frequent physical complaint (mean values 2.36 vs. 1.91; \( P=0.001 \)). Although anaesthetists with satisfactory emotional well-being reported significantly higher job satisfaction than their colleagues with poor emotional well-being, the correlation is weak (correlation coefficient 0.247; \( P=0.005 \)).

Anaesthetists with good emotional well-being and physical health \( (n=48) \) reported significantly higher job satisfaction than their colleagues with poor emotional well-being and frequent physical health problems \( (n=32) \) (mean values 2.31 vs. 1.59; \( P=0.001 \)).

### Job satisfaction and working conditions

The indices of task demands (complexity of demands, variability of work) and task-related problems (concentration demands, time pressure, work interruptions) showed no significant associations with job satisfaction. However, the variables concerning control over work at the workplace (influence on handling task, time control, participation) have a significant effect on job satisfaction, indicating that strong control over work produces greater job satisfaction.

### Discussion

About half of the anaesthetists in both hospitals reported high job satisfaction. The main reasons for high job satisfaction are the interesting work of an anaesthetist and the possibility of contributing their personal skills and ideas, whereas low salary, poor prospects for promotion, and bad time organization were the main factors for dissatisfaction.

Krueger and colleagues\(^4\) defined job satisfaction as a multidimensional construct and a product of the global evaluation of one’s workplace and context. On the one hand, job satisfaction is viewed as a dependent variable that varies with the quality of working conditions and with other stressors. On the other hand, it is presumed to be an independent variable that determines a variety of consequences such as irregular work attendance and performance.\(^1\)

Overall job satisfaction differed in some ways from the findings of other studies. A Belgian study\(^15\) reported that more than 75% of anaesthetists indicated a job satisfaction score of 7 on a scale of 0–10, and a recent Canadian study\(^16\) of anaesthetists also reported a high job satisfaction of 75%. The lower degree of high overall job satisfaction in our survey may be connected with the fact that we used very strict criteria for job satisfaction. Another problem is the poor comparability of the various questionnaires used.

In this study we found no significant differences in job satisfaction between females and males, nor interestingly, in workload. However, our results indicate that job satisfaction is strongly influenced by working conditions.
The environment in which individuals work has a tremendous effect on their level of pride in themselves and the work they do. A job that is interesting and that permits them to contribute their skills and ideas is very important to anaesthetists. As long as sufficient resources are at their disposal, anaesthetists manage high task demands and task-related stressors. Furthermore, anaesthetists need to exercise a high degree of control over their work in order to obtain job satisfaction. An interesting job as the sole factor would not suffice for adequate job satisfaction. Kluger and colleagues observed a lack of work regularity and of control in the working lives of Australian specialist anaesthetists with a proven stressful work life.

If we want to improve the level of job satisfaction we must pay great attention to working conditions and particularly to resources (e.g. anaesthetists should have a strong influence on planning and organizing their own work, on their work place and work schedule and on time control, and should be able to choose cooperation partners).

Job satisfaction appears to be one of the most influential variables in work and organizational psychology. It is considered an important indicator of working life quality and exerts enormous influence on employee well-being. Ramirez and colleagues investigated the mental health of hospital consultants and observed that job satisfaction significantly protected consultants’ mental health from the effects of job stress. Job demands and job control have various effects on employee well-being and health, especially when high performance and a high level of control are demanded. This corresponds to our findings.

In our study, task demands, salary and prospects for promotion turned out to be important correlates of job satisfaction in Austrian and Swiss anaesthetists. The two areas of pay and prospects for promotion seem to be more satisfactory for the Swiss anaesthetists. Whether this is due to the difference in the economic backgrounds of the Swiss and Austrian health care systems or is correlated with the size of a university teaching hospital and a general hospital was not determined. However, the factors underlying the higher degree of dissatisfaction in anaesthetists at Innsbruck University Hospital, including pay and prospects for promotion, require critical reflection.

There are at least three major limitations to our study. First, no statement can be made on the anaesthetists who did not participate in the study. No assumptions can be made as to whether anaesthetists experiencing great stress or even burnout are the least likely or the most likely to respond to a survey of this type. The relatively low response rate (70%) can be partly ascribed to the fact that completion of the questionnaires took about 2 h. Secondly, we only used self-reporting measures to assess working conditions. However, an objective assessment of working conditions might also contain errors and is probably no more valid a priori. Thirdly, items on the questionnaire were developed for use in many occupations and were not specially designed for anaesthetists.

This survey was intended to assist decision-makers in identifying key workplace issues, as perceived by employees, in order to develop strategies to address and improve the quality of working conditions for anaesthetists in a hospital. The results of our study indicate that high job satisfaction is mostly associated with high employee efficiency and job preparedness. Therefore it is important for employers to establish working conditions that promote job satisfaction.

Supplementary data
The Appendices can be found as supplementary data in British Journal of Anaesthesia online.

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