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Brief report

Job Satisfaction and the Work Situation of Physicians: a survey at a German University hospital

Wilfried Laubach, Sabine Fischbeck

Abteilung für Medizinische Psychologie und Medizinische Soziologie, Johannes Gutenberg-Universität Mainz

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Summary

Objective: Job demands and workload of hospital physicians are increasing. The object of this survey was to examine the factors that constitute job satisfaction and to analyse physicians' work situation in the area of in-patient care.
Methodology: 447 physicians at a German University Hospital received questionnaires with regard to work situation, job satisfaction and personal health. Data were analysed by MANOVA and multiple regression models.
Results: A first regression model explained 53 % of the variance in satisfaction with "work and profession". Among the explanatory variables "superiors and hierarchy" showed the highest beta-weight (β = –0.49). "Personal health" also determined job satisfaction, for female physicians stronger (β = –0.31) than for male physicians (β = –0.11). In a second regression model on satisfaction with "Financial situation" only 18 % of the variance was explained, whereby "work condition on the ward", "personal health" and "collaboration between occupational groups" showed the highest beta-weights.
Discussion: Among resident physicians, work conditions, superiors, hierarchy, transparency and participation in decisions are very important variables for job satisfaction. Improvements in these aspects may improve job satisfaction and help to reduce physician shortage in hospitals.

Keywords: Job satisfaction – Work conditions – Hierarchy – Physicians – Gender.

The job demands and workload of physicians in the area of in-patient care have greatly increased in recent years. This is due to a decrease in the duration of patients' stay, more complex therapeutic procedures, and increased administrative and quality management procedures (Blum & Müller 2003). One probable consequence of this development is that nearly 4 800 positions for physicians at German hospitals are currently unoccupied (Rieser 2003). A survey of 222 physicians, who resigned from their jobs at the hospital (Deutsches Ärzteblatt online 2003) points to the reasons for this: 26 % of the doctors migrated to the pharmaceutical industry, and another 42 % to other areas of the public health sector. 79 % of the physicians surveyed stated dissatisfaction with working conditions and 77 % dissatisfaction with working hours as the primary reason for their decision to resign.

Based on the assessments of physicians at the University Hospital Mainz, this paper examines the factors that constitute job satisfaction in the area of in-patient care. Commissioned by the board of directors, data was collected in a survey of all employees at the university hospital. At the University Hospital Mainz, all clinical specialities are represented; the facility has 26 clinical departments with 1 500 beds in 100 wards, including 88 ICU-beds and 95 IMC-beds. The objective of the survey was to analyse job satisfaction and the work situation of the departments' staff.

Methodology

The survey of the physicians was based on three sources:

Questionnaire on general and specific satisfaction in life *(Fragebogen zur allgemeinen und bereichsspezifischen Lebenszufriedenheit FLZ* (Fahrenberg et al. 2000)), from which the scales "work and profession" and "financial situation" were taken. The rating scale consists of seven ranks (1 = very dissatisfied to 7 = very satisfied).

Questionnaire on the work situation of physicians *(Fragebogen zur Arbeitssituation von Ärzten* (FAÄ) (Fischbeck & Laubach 2005)), which comprised four scales: "superiors and hierarchy", "team ability in coping with conflicts", "work

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conditions in the ward", and "collaboration between occupational groups". These scales correspond with components for describing work situations found in US-American surveys (Bergus et al. 2001; Kirby et al. 2003). The rating scale of the items is bipolar, with six tiers and verbal markings of the poles.

A survey of specialists for internal diseases, surgeons, and anaesthesists of the University Hospital in Leipzig (Weigel 2000), from which we drew the following workload scales: "cooperation in and organisation of the ward", "patient demands", "frame conditions" (e.g. time pressure, administration demands, coordination) and "performance demands". The rating scale encompasses five tiers from "not at all" to "very strong".

Between October and November 2001, all physicians at the university hospital received the above-mentioned questionnaire distributed through official channels. The questionnaires were returned by January 2002. At the time of the survey, 950 physicians and 100 non-medical academic professionals were employed at the hospital. We were forced to forego a survey of the physicians' professional status in order to retain the anonymity in small clinical departments. 447 (42.3 %) of the 1 050 questionnaires were returned. In 20 cases, insufficient or missing data in regard to the clinical department or socio-demographic variables were noted.

To test group differences concerning gender, age, and clinical speciality, we conducted a multi-factorial analysis of variance. In a step-wise multiple regression analysis, we defined satisfaction with "work and profession" and "financial situation" as dependent variables, and the four workload scales of the FAÄ, as well as age, personal health, and clinical speciality as predictor variables. Statistical data was analysed with SPSS 11.5.

Results

Socio-demographic characteristics

In 2001, 651 of the hospital's 950 physicians were male (68.7 %) and 296 (31.3 %) were female. Socio-demographic data were not available for non-medical academic coworkers. Compared to the 61.6 % (N = 270) of males in the survey, the female quota of 38.4 % (N = 168) exceeds the average of all employees. In fact, at 37.0 %, the quota of female physicians in Germany in 2000 was comparatively higher than at the University Hospital Mainz (Statistisches Bundesamt 2002).

In our survey, we therefore found a greater proportion of <30-year-old female physicians than male physicians (13.0 % as opposed to 23.2 %), and more male physicians over the age of fifty (10.0 % as opposed to 5.4 % female). In the latter case, male physicians in this age bracket have more job experience (M = 11.0; SD = 8.6) than their female colleagues (M = 9.3; SD = 7.9). We also found differences regarding the marital status: male physicians are more likely to be married with children than female physicians are. In regard to subjectively evaluated personal health, there were differences. However, 70 (15.9 %) of the interviewees estimated their health conditions as moderate or poor. With respect to the clinical speciality categorized in non-surgical/conservative (N = 220), surgical (N = 149), and clinical-theoretical (N = 52), the quota of non-surgical physicians in our sample was higher (52.3 %), and the quota of surgical physicians lower (35.4 %, as opposed to 44.2 %) than that of the target population (41.4 %). For clinical-theoretical specialities, only a small difference was noted (12.4 % in our sample as opposed to 14.5 %).

General satisfaction and the work situation according to gender and age

Based on a 2-factorial analysis of variance, the effects of gender and age-related differences were analysed. The clinical speciality was included as a covariate (Table 1).

Depending on the covariate clinical speciality, we found significant differences in the evaluation of the scales "team ability in coping with conflicts" and "workload strain due to frame conditions": non-surgical specialities assessed the highest degree of team ability in coping with conflicts (M = 2.76;SD = 0.84), while the workload strain resulting from frame conditions was rated lowest by the clinical-theoretical specialities (M = 2.46;SD = 0.72). The 2-factorial analysis of variance did not indicate any significant gender differences. Satisfaction with the financial situation increases with age. Also, collaboration between occupational groups has been rated more positively in the group with a higher age bracket. The workload strain caused by cooperation and organisation increases with age up to the 40–50 year-old age bracket (2.12 to 2.34), while >50 year-olds had the lowest degree of workload strain (M = 2.00;SD = 0.60).

Significant interaction between gender and age were found in the categories job satisfaction and "superiors and hierarchy": the values of female doctors from the "work and profession" scale decreased with age. The oldest females, however, had the highest values (M = 5.33;SD = 0.75). The male physicians' results were variable depending on their age, but the oldest age group ranked lowest (M = 4.83;SD = 1.23).

The value of the scale "superiors and hierarchy" fluctuated unsystematically; female physicians aged 40 to 50 did, however, have the worst rating (M = 3.37;SD = 1.36), whereas male physicians of the same age group had the best rating (M = 2.61;SD = 0.80).

Table 1 Multivariate analysis of variance of the scales by gender, age and clinical speciality (covariate)

Scale:	Gender			Age-groups					Interaction	Covariate [d]
	Females N = 131–168 M (SD)	Males N = 246–271 M (SD)	F-value	<30 Y. N = 66–74 M (SD)	30–40 Y. N = 207–244 M (SD)	40–50 Y. N = 78–86 M (SD)	>50 J. N = 27–36 M (SD)	F-value	Gender x Age F-value	F-value
Work and profession [a] (FLZ-A)	4.73 (0.99)	4.73 (1.10)	0.03	4.87 (0.92)	4.60 (1.06)	4.84 (1.13)	5.05 (1.07)	2.38	6.05***	0.02
Financial situation [a]) (FLZ-F)	4.59 (1.05)	4.46 (1.12)	0.15	4.24 (1.00)	4.43 (1.11)	4.73 (1.10)	5.13 (0.89)	4.24**	0.46	0.06
Superiors and hierarchy [b] (FAÄ-V)	3.15 (0.99)	2.98 (1,.2)	1.45	3.07 (0.92)	3.11 (0.98)	2.89 (1.12)	2.94 (1.11)	2.10	4.04**	1.97
Team ability in coping with conflicts [b] (FAÄ-K)	2.87 (0.92)	2.83 (0.94)	0.43	2.75 (0.90)	2.91 (0.90)	2.77 (0.98)	2.71 (1.06)	1.17	1.93	6.45 *
Work conditions [b] (FAÄ-A)	4.46 (0.93)	4.62 (0.77)	0.48	4.43 (0.92)	4.61 (0.81)	4.60 (0.82)	4.32 (0.86)	1.06	2.21	0.14
Collaboration between occupational groups [b] (FAÄ-Z)	3.07 (0.82)	2.92 (0.82)	0.22	3.05 (0.76)	3.04 (0.82)	2.93 (0.85)	2.45 (0.71)	2.74 *	0.94	0.39
Workload cooperation in/ organisation of the ward [b]	2.23 (0.71)	2.25 (0.67)	2.61	2.12 (0.68)	2.92 (0.69)	2.32 (0.68)	2.00 (0.60)	3.56 *	1.94	0.36
Patients demands [c]	2.31 (0.81)	2.21 (0.76)	0.31	2.33 (0.86)	2.25 (0.73)	2.15 (0.80)	2.16 (0.85)	0.53	0.67	0.00
Workload frame conditions [c]	2.87 (0.81)	3.17 (0.75)	0.24	3.02 (0.91)	3.15 (0.73)	2.96 (0.73)	2.83 (0.92)	1.42	1.79	8.10 **
Performance demands [c]	1.93 (0.56)	1.81 (0.53)	2.88	1.99 (0.64)	1.86 (0.54)	1.74 (0.50)	1.75 (0.49)	1.54	0.63	0.05

a) Scale value: 1 = very dissatisfied, 7 = very satisfied; b) Scale value: 1 = good, 6 = bad; c) Scale value: 1 = low, 5 = high;
d) non-surgical/conservative, surgical, clinical-theoretical; * p < 0,05; ** p < 0,01; *** p < 0,001

Analysis of the predictor variables for job and financial satisfaction

In Table 2, the results of the multiple regression analysis for the scales "work and profession" and "financial situation" of physicians are represented according to gender. Job satisfaction yields a relatively high determination coefficient of $R^2_{adj.} = 0.53$. Over half of the dependent satisfaction variance is explained by the chosen predictor combination. The scales "superiors and hierarchy" (β = –0.49), "personal health" (β = –0.19), "team ability in coping with conflicts" (β = –0.13), and workload strain attributed to "cooperation and organisation" (β = –0.13) had the largest shares. The "clinical speciality" has a rather inferior predictive meaning.

A gender difference is conspicuous here: compared to male doctors, the scale "superiors and hierarchy" has a clearly inferior beta weight for female physicians, while it is higher on the "personal health" scale. The "team ability in coping with conflicts" shows a high weight with the female physicians, but this is not verifiable for their male colleagues. The workload strain of "cooperation and organisation" has no significant weight with the women in contrast to the men.

Personal satisfaction with the financial situation is clearly less affected by the selected predictors ($R^2_{adj.} = 0.18$). Also, a gender difference is noticeable here: personal health, work conditions, and the workload strain from cooperation and organisation have the highest beta weights in the male group. For women, the "work conditions" and, somewhat less significant but still high, clinical speciality affect satisfaction with the personal financial situation.

Discussion

Despite strict regard to data protection and anonymous questionnaires, with a response rate of 42.3 %, participation of the physicians and their academic co-workers in the survey was dissatisfactory. Yet a possible selection-effect, i. e. higher participation of unsatisfied physicians, could be ruled out. The comparison of questionnaires received early on in the survey with those that came in late showed that the late respondents seemed more dissatisfied with "superiors and hierarchy", "team ability in coping with conflicts", and "work conditions". In regard to the clinical speciality in our sample, surgical physicians are insignificantly represented. It is possible

Table 2 Predictors of satisfaction with „work and profession" and „financial situation" of physicians at a University hospital (Results of stepwise multiple regression analysis, listed were significant beta-weights)

Predictors:	Satisfaction with "Work and profession" (FLZ-A)			Satisfaction with "Financial situation" (FLZ-F)		
	Gesamt	♂	♀	Gesamt	♂	♀
Superiors and hierarchy (FAÄ-V)	–0,49	–0,58	–0,39			
Team ability in coping with conflicts (FAÄ-K)	–0,13		–0,23			
Work conditions (FAÄ-A)				–0,29	–0,22	–0,32
Collaboration between occupational groups (FAÄ-Z)				–0,14		
Workload cooperation in / organisation of the ward	–0,13	–0,13			–0,19	
Patient demands						
Workload frame conditions						
Performance demands		–0,09				
Personal health	–0,19	–0,11	–0,31	–0,22	–0,26	
Age						
Clinical speciality	0,08					0,19
Multiple R^2	0,53	0,55	0,49	0,19	0,23	0,13
Multiple R^2 (adjusted)	0,52	0,54	0,48	0,18	0,22	0,12
df (Regress./Residual)	5/326	4/213	3/110	3/346	3/219	2/120
F	73,6	65,8	35,7	26,9	21,5	9,1
p of F	<0,001	<0,001	<0,001	<0,001	<0,001	<0,001

that the surgeons who generally have the highest workload were least motivated to participate in our survey.

The observed age differences in the scales might have an effect on the age-related professional status: the financial reward generally increases with age and a better position in the clinic hierarchy. Contingent on age, the more experience and the higher the job status one has, the less collaboration and organisation with other occupational groups is considered a burden. The significant interaction between gender and age in the scales "work and profession" and "superiors and hierarchy" can be interpreted with differences in the professional status as well as in the professional functions.

For the physicians in our study, "superiors and hierarchy" and "personal health" proved the most significant predictors for their satisfaction with "work and profession". Changes in the behaviour of top-level staff, hierarchical structures, and an improvement in co-decision potential could have an effect on the job satisfaction of medical co-workers. A study in 1997 (Arnetz 1997) showed that 51 % of surveyed physicians would like to have more influence on their job tasks. In the same sense, Jurkat et al. (2003) point out that burdens can be reduced by increasing the possibilities of determining one's own job activities.

The subjective evaluation of health is also relevant for job satisfaction: the worse one's health is, the more "work and profession" related satisfaction decreases. This has also been shown in an examination of Canadian physicians (Bergman et al. 2001). In addition, the gender-specific differences in the predictors for "work and profession" are notable. Apart from "superiors and hierarchy" and "personal health", the workload related to "cooperation and organisation" was highest for male physicians, whereas female physicians rated higher on the "team ability in coping with conflicts" scale. This points to job-specific differences between men and women during intern training as described by Abele (2001): women generally see few prospects of promotion for themselves. Confrontation with superiors therefore has less relevance for them. In addition, women have a lower degree of professional self-confidence, which affects the team's ability to cope with conflicts. At a university clinic, the demand for academic qualification and the competition in which this ultimately results are of great relevance. Under these conditions, the team's ability to handle conflicts obviously plays a comparatively inferior role for male physicians. For the satisfaction with the personal financial situation, the regression-model shows a clearly lower determination coefficient of 18 %. The working conditions of the doctors surveyed makes this very clear: if they are acceptable, satisfaction with the financial compensation increases.

Furthermore, the pattern of predictors are gender-specific: for

men, personal health, working conditions, and the workload strain of cooperation and organisation are strong predictors, while for women, in addition to the work conditions, collaboration between the occupational groups is essential to their personal financial satisfaction.

As shown in a Swedish survey (Arnezt 2001), transparency and participation in decisions are crucial for the improvement of doctors' working conditions in in-patient care, as well as optimal human resource management by the head physicians.

Zusammenfassung

Arbeitssituation und berufliche Zufriedenheit der Ärzte eines Universitätsklinikums

Fragestellung: Angesichts der hohen Belastungen für Ärzte in der stationären Versorgung stellt sich die Frage, welche Aspekte der ärztlichen Tätigkeit wesentlichen Einfluss auf die berufliche Zufriedenheit von Ärzten haben.

Methoden: Befragt wurden 447 Ärzte eines Universitätsklinikums mittels des FAÄ und FLZ zu ihrer Arbeitssituation, zur Zufriedenheit mit Arbeit und Beruf und der finanziellen Lage sowie zur subjektiven Gesundheit.

Ergebnisse: In Regressionsanalysen wird die Zufriedenheit mit „Arbeit und Beruf" ($R^2_{adj.} = 0.53$) vor allem durch die Skalen des FAÄ erklärt, wobei „Vorgesetzte und Hierarchie" das höchste Beta-Gewicht aufweisen ($\beta = -0.49$). Auch die „Eigene Gesundheit" bestimmt die berufliche Zufriedenheit, das für Ärztinnen in stärkerem Maße ($\beta = -0.31$) als für die Ärzte ($\beta = -0.11$). Die Zufriedenheit mit der finanziellen Lage wird deutlich geringer durch die ausgewählten Prädiktoren erklärt ($R^2_{adj.} = 0.18$), wobei die Arbeitsbedingungen, die eigene Gesundheit und die Zusammenarbeit der Berufsgruppen die höchsten Beta-Gewichte aufweisen.

Diskussion: Für die Zufriedenheit von Ärzten in der stationären Versorgung ist das Verhalten der Vorgesetzten, die Hierarchie im Krankenhaus sowie Mitentscheidungsmöglichkeiten bestimmend. Entsprechende Verbesserungen könnten ihre berufliche Zufriedenheit positiv beeinflussen und Probleme der Stellenbesetzung im Krankenhaus reduzieren.

Résumé

Situation de travail et de contentement professionnel des médecins d'une clinique universitaire

Objectifs: En considération des accablements hauts pour les médecins dans l'approvisionnement stationnaire, la question se pose quels aspects de l'activité médicale ont une influence considérable sur le contentement professionnel des médecins.

Méthodes: On a analysé le réponds de questionnaire de 447 médecins d'une clinique universitaire à leur situation et contentement de travail et de métier ainsi qu'avec la situation financière et leur ressentiment subjective concernant la propre santé.

Résultats: La satisfaction des médecins avec le travail et la profession est expliquée dans une large mesure ($R^2_{adj.} = 0.53$) par les variables enregistrées, pendant que «les supérieurs et la hiérarchie» montrent le poids de bêta le plus haut. Le contentement professionnel est aussi déterminé par la «propre santé» en effet pour les femme médecins dans une plus large mesure ($\beta = -0.31$) que pour les médecins ($\beta = -0.11$). Le contentement avec la situation financière est expliqué distinctement plus insignifiant par le modèle enregistré ($R^2_{adj.} = 0.18$) à quoi les conditions de travail, la propre santé et la coopération dans le profession montrent les poids de bêta les plus hauts.

Conclusion: Le contentement des médecins dans l'approvisionnement stationnaire s'explique par le comportement des supérieurs, par les données de hiérarchie ainsi qu'aux possibilités de codécision. Des améliorations dans ce domaine pourraient aussi influencer positivement la satisfaction professionnelle et réduire les problèmes de l'occupation dans l'hôpital.

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Korrespondenzadresse:

PD Dr. Wilfried Laubach
Abteilung für Medizinische Psychologie
und Medizinische Soziologie
Johannes Gutenberg-Universität Mainz
Saarstr. 21
55099 Mainz
Tel.: +49 6131 39 25979
Fax: +49 6131 39 22750
e-mail: laubach@uni-mainz.de

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