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Examining job satisfaction among perfusionists: A brief report from Istanbul

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Abstract

Objective: To investigate the level of job satisfaction among perfusionists in Turkey.

Methods: The cross-sectional study was conducted from March to April 2012 comprising a randomly selected group of 52 perfusionists from public and private healthcare institutions in Istanbul. The questionnaire contained items about the socio-demographic characteristics of the perfusionists and an instrument especially designed to investigate their job satisfaction. Multiple logistic regression models were applied with age, gender, work setting, income, professional evaluation, possibility to improve and qualify, professional relations and time spent in current job. SPSS 10 was used for data analysis.

Results: The 52 perfusionists were selected from a total of 112 working in Istanbul (46.42%). The study sample had 38 (73%) females and 14 (27%) males. The level of overall job satisfaction was 55.9±4.9 (95% CI 49.05-64.10). The most dissatisfying areas were income, possibility to improve and qualify, and professional evaluation ($p < 0.05$), while the most satisfaying area was professional relations.

Conclusions: Interventions are needed to increase job satisfaction among perfusionists.

Income and possibility for professional development, professional relations and evaluation have the most positive impact on perfusionists' overall job satisfaction while work environmental factors are less important. Similarities of the results with other overseas studies suggest that they have international value.

Keywords: Job satisfaction, Perfusionists, Health management. (JPMA 63: 1157; 2013)

Introduction

The importance and influence of individual behaviour on social relations and social interactions are clearly shown in the economics literature. According to Hamermesh, a focus on individual behaviour is necessary to understand labour market behaviour and economic activity. Higher job satisfaction means better performance at work.[1] Researchers have defined job satisfaction as an individual's subjective assessment of different aspects of the job whose analysis may provide a number of insights into certain aspects of the labour market.[2] Job satisfaction can be considered a subjective and multi-dimensional measure of job quality.

Job satisfaction is one of the most widely studied work-related attitudes in the fields of industrial and organisational psychology, and organisational behaviour and economy.[2] On workplaces, employee job satisfaction is believed to be associated with increased productivity and lower turnover.[3,4] In the literature, employee performance is shown to be widely associated with an organisation's performance. Job satisfaction for all workers, including health workers, is a very important parameter that influences productivity and quality within companies. Previous studies have shown that job satisfaction depends not only on the nature of the work, but also on workers' expectations regarding that work. Those who expect less from their work and who are in poorer positions generally have lower job satisaction.[5]

Increasingly, job satisfaction among healthcare professionals is being measured as part of quality improvement and management programmes in hospitals.[6] Low job satisfaction among healthcare workers can reduce not only the efficiency of healthcare, but also the effective management of healthcare services.[7,8]

In Turkey, perfusion education is based on the master-apprentice relationship. When compared to other countries, academic institutions or schools for professional education of perfusionists is not available in the country yet.

Short training courses are organised by hospital for their own health staff like nurses, paramedics etc.

These courses are independent of each other without any standardisation appraisal and revalidation.[11]

The main purpose of this study was to explore job satisfaction among perfusionists, who are very important members of the open-heart surgery team.[9] They are

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responsible for the management of heart-lung machines that maintain patients' respiratory and circulatory functions during the surgery.[10] Perfusionists face increased risks in their work in operating theaters. Stress and hard work influence their professional satisfaction and well-being.[10]

It was hypothesised that the perfusionists are satisfied with their current job.

Subjects and Methods

The study was conducted from March to April 2012. A cross-sectional, survey design was employed to collect data for job satisfaction of the population of Istanbul's perfusionist within a relatively short timeframe. This type of design is commonly used to collect data from a representative segment of population at a single point of time.[12-14]

At the time of the study, there were 144 health workers who had the certificate of authenticity to be perfusionists, but only 112 were working actively in state and private hospitals in Istanbul.[11,14-16] The study used a systematic random sample of 50% of them and, as such, 56 questionnaires were distributed.

The perfusionists' workplaces were stratified into two groups: public hospitals; and private hospitals. Three public and three private hospitals were selected. The perfusionists needed for the sample were chosen systematically from lists provided by the Province Health Directorate. The distribution of the total perfusionists in these groups was carried out proportionately.

Data was collected using a questionnaire during face-to-face interviews. It included questions about socio-demographic variables, working conditions (age, gender, work setting, time in current job, satisfaction with professional evaluation, possibility to improve and qualify, income, social security, management, professional relations, work load, work organisation, personal time).

The questionnaire mainly comprised structured questions and a validated 10-item instrument specifically developed to measure job satisfaction among the perfusionists; the Yildirim-Kaptanoglu and Demir Job Satisfaction Scale (KDJS), which discloses and measures the areas that are essential for perfusionist satisfaction. The 10 items are scored on a 5-point Likert-type scale ranging from 1 (not at all satisfied) to 5 (extremely satisfied). The standard satisfaction scale ranging from 1 to 5 was converted into a 0 to 100 scale by utilising the following formula.[15-18]

$$adjSS=100 \times stdSS-1/5-1$$

In the formula, adjSS and stdSS represent the 'adjusted satisfaction score' and the 'standard satisfaction score,' respectively. The new scoring method gave the following adjusted scores for the five categories of job satisfaction: "Not at all satisfied" (adjSS: 10-29), "Not very satisfied" (30-49), "Somewhat satisfied" (50-69), "Very satisfied" (70-89), and "Extremely satisfied" (90-100) (Table-1).

The questionnaire used was tested for metric characteristics and was found satisfactory. The scale showed a normal distribution (Kolmogorov-Smirnov $Z = 0.85$, $P<0.001$; 43.2 ± 4.7) and good internal consistency overall ($\alpha = 0.82$).

The reliability of the KDJS was evaluated in terms of internal consistency reliability and test-retest reliability.

The reliability of the KDJS by internal consistency of the scales was assessed using Cronbach's α, and the test-retest reliability was assessed using the interclass correlation coefficient (ICC) in a sub-sample; 20 perfusionists who completed the KDJS on two separate occasions with a 3-week interval between the surveys.

Internal consistency reliability, as assessed using Cronbach's α, was 0.71 for the first dimension (satisfaction

Table-1: Yildirim-Kaptanoglu and Demir Job Satisfaction Scale with 10 items and seven sub-scales.

Sub-scales	Items	Not at all satisfied	Not very satisfied	Somewhat satisfied	Very satisfied	Extremely satisfied
F1.Personal satisfaction (= 0.78)	S.1. I get worthwhile and personal growth from my work	1	2	3	4	5
	S.2. I am satisfied with the extent to which I can use my skills	1	2	3	4	5
F2.Satisfaction with workload (= 0.77)	S.3.I am satisfied with my workload	1	2	3	4	5
	S.4.I am satisfied with overall staffing levels	1	2	3	4	5
F3.Satisfaction with professional support (= 0.72)	S.5.I am satisfied with the support available to me in my job	1	2	3	4	5
	S.6. I am satisfied with the contact I have with colleagues	1	2	3	4	5
F4.Satisfaction with training (= 0.74)	S.7.I am satisfied with the opportunities I have to advance my career	1	2	3	4	5
F5.Satisfaction with pay (= 0.73)	S.8.I am satisfied with my salary/pay scale	1	2	3	4	5
F6.Satisfaction with prospects (= 0.75)	S.9. I am satisfied with the amount of job security I have	1	2	3	4	5
F7.Satisfaction with standard of care (= 0.71)	S.10.I am satisfied with the standard of care given to patients	1	2	3	4	5

with the standard of care); 0.75 for the second dimension (satisfaction with the prospects); 0.73 for the third dimension (satisfaction with pay); 0.75 for the fourth (satisfaction with training); 0.72 for the fifth (satisfaction with professional support); and 0.78 for the sixth dimension (satisfaction with workload).

Cronbach's alpha coefficients were calculated for each of the domain scores from all participants to measure the internal consistency of the scales. The Cronbach's alpha values for the scale ranged from 0.71 to 0.78. Cronbach's alpha coefficients of greater than 0.71 for each of the seven domains are usually considered satisfactory for group comparisons.[17,18] This value indicated that the new instrument had good internal consistency.[15,16]

The test-retest reliability was determined by comparing responses to the KDJS questionnaire among a sub-sample of the total participants (n=20) after administration on two separate occasions with a one-week interval. Reliability assessed by this method was found to be 0.89. The correlation between each test given at different times was determined with Pearson's correlation coefficient.[18]

There are many approaches to assess validity (face, discriminant, construct and concurrent).[18] In this study, face validity, discriminant validity and construct validity methods were used.

Construct validity was measured by factor analysis. Seven factors of the KDJS were structured according to the criteria of principal component analysis. Ten items had values greater than 1 and items loading over 0.40 were selected.[18,19] Items that loaded highest on the rotated factors were grouped into seven factors: personal satisfaction, satisfaction with workload, satisfaction with professional support, satisfaction with training, satisfaction with pay, satisfaction with prospects and satisfaction with standard of care.

Table-3: Discriminatory Power of 10 items for job satisfaction.

Variables	Mean±SD	Discriminatory Power
DOMAIN KDJS 1		1.22
S1	53.31(0.70)	1.34
S2	52.91(0.90)	1.55
DOMAIN KDJS 2		1.34
S3	53.47(0.82)	1.44
S4	63.01(0.69)	1.56
DOMAIN KDJS 3		1.21
S5	53.61(0.80)	1.11
S6	63.31(0.70)	1.45
DOMAIN KDJS 4		1.62
S7	53.00(0.74)	1.69
DOMAIN KDJS 5		1.71
S8	52.69(0.67)	1.73
DOMAIN KDJS 6		1.58
S9	53.21(0.79)	1.60
DOMAIN KDJS 7		1.48
S10	63.01(0.73)	1.49

KDJS: Yildirim-Kaptanoglu and Demir Job Satisfaction.

Face validity was documented by an expert panel. The original KDJS consisted of 9 items with seven domains (factors). The number was increased from 9 to 10 based on the experts' suggesting.

For discriminant validity, seven factors of the KDJS were structured according to the criteria of principal component analysis. The final instrument consisted of 10 items (Table-2). Each item had discriminant validity in the KDJS. The correlation coefficients of each item in seven factors were over 0.7, which is greater than the correlation of each item in other inter factors (Table-3).

All statistical analyses were performed using SPSS version 10.0. Total scores were used to identify the study variables.

The association between satisfaction and socio-demographic factors and job variables were first

Table-2: Factor Analysis of KDJS by Varimax Rotation.

	F1	F2	F3	F4	F5	F6	F7	Communality
S1	0.82	0.17		0.26	0.23		0.21	0.83
S2	0.83	0.24		0.14	0.22		0.33	0.82
S3	0.15	0.88		0.15	0.31		0.22	0.86
S4	0.11	0.87	0.23	0.04	0.06	0.13	0.27	0.82
S5	0.10	0.08	0.83	0.01	0.15	0.16	0.22	0.80
S6	0.06	0.01	0.81	0.16	0.14	0.19	0.11	0.79
S7	0.24	0.19	0.25	0.79	0.24	0.11	0.13	0.73
S8	0.07	0.21	0.21	0.02	0.80	0.12	0.18	0.79
S9	0.26	0.13	0.27	0.05	0.18	0.83	0.17	0.81
S10	0.19	0.12	0.29	0.08	0.13	0.08	0.84	0.82
Eigenvalue	2.31	2.43	2.05	1.98	2.11	2.13	2.10	2.16

examined using the chi-squared test. Next, multiple logistic regression analysis was performed for all socio-demographic variables and job variables in the regression model as potential predictors of satisfaction.

Results

Of the total, 56 questionnaires distributed, 4 (7.14%) were not returned duly completed. The response rate, as such, was 92.8% and the sample size available for analysis was 52. The average job satisfaction score for perfusionists was 55.9±4.9 (Table-4).

There were statistically significant differences in scores between perfusionists in private and public hospitals on personal satisfaction (t=9.38; p<0.05), satisfaction with workload (t=12.31; p<0.05), satisfaction with pay (t=9.61; p<0.05), and satisfaction with standard of care (t=14.21; p<0.05).

Socio-demographic and job variables of the perfusionists were noted (Table-5). Responders and the non-responders did not differ significantly in terms of the main work settings.

Males were more satisfied with their job than females (p<0.05) and satisfaction was significantly lower among public hospital staff compared with staff in private hospitals (p<0.05). In the univariate analysis, the variables associated with job satisfaction were work setting (p<0.05) and age (p<0.05).

Total satisfaction scores were statistically significantly correlated with time in current job (p<0.05). Satisfaction scores were significantly higher for perfusionists working for more than five years (p < 0.05).

The KDJS total satisfaction scores were also statistically significant with income, possibility to improve and qualify, professional evaluation and professional relations (p<0.05).

The total satisfaction scores were not found statistically significant with social security, management, work load, work organization, personal time (p>0.05).

The multiple logistic regression analysis of work environmental factors to overall job satisfaction of perfusionists was performed. The dependent variable was being "Not very satisfied" or "Somewhat satisfied" with being a perfusionist. Age, gender, working hours per week, satisfaction with professional evaluation and

Table-4: Job satisfaction scores in seven job satisfaction domains.

Variables	Public hospital Mean score (SD)	Private hospital Mean score (SD)	Total score
Personal satisfaction	56.9 (10.0)	62.7 (9.0)	58.6*(8.2)
Satisfaction with workload	53.8 (9.2)	61.3 (8.4)	58.7*(8.6)
Satisfaction with professional support	61.9 (9.6)	62.4 (9.3)	59.7 (9.3)
Satisfaction with training	54.2 (10.6)	60.9 (9.5)	55.2 (10.1)
Satisfaction with pay	48.3 (11.0)	68.8 (8.6)	54.3*(8.7)
Satisfaction with prospects	53.4 (10.3)	67.5 (10.3)	51.4 (9.7)
Satisfaction with standard of care	51.6 (10.1)	66.3 (10.4)	57.7*(8.7)
Total score	52.1(8.9)	65.7(9.5)	55.9 (8.4)

*p < 0.05.

Table-5: Socio-demographics, job variables and number of perfusionists satisfied with their job.

Sociodemographic variables		n	Mean of KDJS	Statistical Tests	P
Gender	Female	38	58.1(7.5)	t=6.91	p<0.05
	Male	14	61.4(6.4)		
Age	20-39	41	59.5(5.3)	t=8.10	p<0.05
	40-50	11	63.8(4.1)		
Work setting	Private	34	63.1(3.2)	t=9.73	p<0.05
	Public	18	58.2(2.7)		
Income	Low than 1000 €	22	46.6(2.8)	t=11.94	p<0.05
	1001€-1500€	30	47.2(2.4)		
Possibility to improve and qualify	YES	29	45.6(1.3)	t=12.91	p<0.05
	NO	23	41.3(1.9)		
Professional Evaluation	YES	30	43.6(2.9)	t=14.11	p<0.05
	NO	22	45.2(1.7)		
Professional Relations	YES	42	65.6(1.8)	t=18.3	p<0.05
	NO	10	57.1(1.5)		
Time in current job	Less than 2 years	19	53.2(2.6)		
	2-5 years	18	56.7(3.3)	F=11.54	p<0.05
	More than 5 years	15	60.2(2.8)		

KDJS: Yildirim-Kaptanoglu and Demir Job Satisfaction.

Table-6: Job satisfaction. Multiple logistic regression model.

Independent Variables	Statistical OR (95% CI)	P
Income	53.88 (45,2-57.8)	0.001
Possibility to improve and qualify	51.51 (43,1-55.1)	0.001
Professional Evaluation	50.31 (48.5-56.2)	0.000
Professional Relations	65.83, (53.7-73.8)	0.0001

p - significance level, OR - odds ratio, CI - confidence interval.
Independent variables entered: Age, gender, work setting, time in current job, satisfaction with professional evaluation, possibility to improve and qualify, income, management, professional relations, work load, , work organization, personal time.
Only significant results are presented.

appreciation, possibility to improve and qualify, work environment, social security, management, professional relations, work load, income, personal time, time for family were included in the multiple logistic regression model as independent variables. Only significant results were noted down (Table-6).

According to the data of multiple logistic regression analysis, income had highly significant positive impact on perfusionists' overall job satisfaction ($p<0.001$). the same was the case with professional evaluation, professional relations and possibility to improve and qualify.

Discussion

Reasons for the low satisfaction level of perfusionists might include the poor salaries and working conditions in public hospitals compared with private hospitals.[20,21] In our study, job satisfaction increased with age and this finding was consistent with an earlier study.[22] However, other studies showed that age was negatively correlated with job satisfaction.[20,21]

Female perfusionists appear to have less job satisfaction than males. This finding may reflect the patriarchal structure of Turkish society, which gives men more opportunities for personal satisfaction.[21] The dilemma of choosing between a career and caring for children and family puts pressure on women in Turkish culture. Employers, including hospitals, are not family-friendly and there is insufficient provision of facilities such as child care. Therefore, Turkish women are affected by difficult working conditions and family characteristics compared with professional women in Europe,[21] where various researchers have found that females experience significantly higher job satisfaction than males.[23,24]

All these factors indicate that the most important thing for perfusionists to be satisfied with their job is the increase of income, professional evaluation and possibility to improve and qualify.

The findings of this study are consistent with those of other studies that indicated that increase of income, professional evaluation and possibility to improve and qualify, age, gender, work setting, and time in current job were the most important factors in job satisfaction. The similarities between our findings and results of studies in other countries suggest that they have international value.[21,22,25-27]

Hospital managers should understand that employees are a very important resource, and they must also motivate their healthcare workers. Research shows that public hospital managers seem to have little understanding of how to satisfy their perfusionists. Excessive employee turnover occurs in organisations if managers cannot ensure job satisfaction for healthcare workers.[28-32] Though the results of a single survey cannot be used for making decisions in healthcare management and quality programmes, our findings suggest that action is needed to increase job satisfaction among healthcare professionals and perfusionists, especially in public hospitals. More studies involving hospital perfusionists from other parts of Turkey will enrich the research and generate strategies for improvement to be used by hospital managers.

Conclusion

Because perfusionists in Turkey appear to have low levels of job satisfaction, efforts must be made to identify the problems. Seeking stakeholder involvement, meetings and interaction with perfusionists to discuss actions to improve job satisfaction are some of the steps that may set the ball rolling.

The limitations of this study needs to be acknowledged to put the findings in a proper context. All data was based on respondent self-reports.

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