Job satisfaction and associated factors in Greek public hospitals

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Abstract. Background and aim: To investigate the level of job satisfaction of health care professionals in the public hospitals of the 1st Regional Health Authority of Attica and further to assess its determining factors. Methods: The Job Satisfaction Survey questionnaire was administered to health professionals in thirteen hospitals. The 36 items of the questionnaire are expressed on a Likert scale and are divided into nine dimensions. Additional questions were added covering the demographic and socio-economic characteristics. Results: The reliability of the tool was: α Cronbach = 0.89. The response rate was 81.95%, 3,278 questionnaires were collected overall, of which 32.96% (n=1,736) originated from the nursing staff, 24.50% (n=803) from the medical staff and 22.54% (n=739) from other health employees. The average overall job satisfaction is moderate (3.33 out of 6). The category with the lowest score in job satisfaction was that concerning salaries (2.12). Questions related to promotion (2.45), additional benefits (2.67), operating procedures (2.82) received low job satisfaction rates. Instead, the categories that garnered positive job satisfaction concerned questions related to the supervision (4.66), the nature of work (4.34), and co-workers (4.25). Questions related to communication received 3.79. Conclusions: The findings showed lowest satisfaction levels in pay, fringe benefits, contingent rewards, promotion and operating procedures dimensions of job satisfaction. Participants were more satisfied with the nature of work, supervision and co-workers. The findings can be used as a set of reference levels and indicators for the human resources development component of the quality management system in the public hospitals. (www.actabiomedica.it)

Key words: job satisfaction; public hospitals; hospital employees; Greece

Introduction

The quality of health care services is affected by various factors including the health infrastructure, human resources and health care system. Among these, human resources are the most important component in the provision of health care services. One of the main factors which impact the productivity of human resources is job satisfaction, as plays a prominent role in determining a person's intention to stay at an organization. Job satisfaction is defined as the positive response of professionals to working conditions that meet their needs, as a result of their assessment of the value or fairness of their professional experience. Also, it is regarded as an indicator of working-life quality (1).

In the public health care sector, the job satisfaction of professionals plays an protrusive role in their performance and is further reflected in the health of the patients. Employees directly influence patient satisfaction because of their involvement and interaction with patients (2). In addition, job satisfaction has been closely associated with the effectiveness and sustainability of a health care system (3, 4). Managers should concentrate on job satisfaction of employees because, if dissatisfied, they are more likely to provide inferior
service. It is necessary to understand what motivates them and the extent to which the organization and other factors affect their job satisfaction in order to be more productive. Health care systems cannot function effectively without skilled, motivated and supported health workers (5,6).

Objectives

The research study attempted to assess the level of job satisfaction and its relationship with the personal and professional characteristics of the employees in public hospitals of 1st Regional Health Authority of Attica in Athens, Greece. Additionally, to identify the sources of satisfaction or dissatisfaction. For the Ministry of Health (MoH) the purpose of the study was to establish a system of indicators and reference levels for measurement of job satisfaction as a component of human resources development in public hospitals.

Materials and methods

Instrument

All organizations recognize the need to monitor the satisfaction levels of their employees, because employee dissatisfaction could be very costly and disruptive to organizational effectiveness and commitment. The Job Satisfaction Survey (JSS) questionnaire developed by Spector, is the most frequently used instrument and has the purpose of evaluating the individual’s satisfaction (7,8).

The current research is based on the Greek JSS. The validity and reliability of which was documented by Tsounis and Sarafis (2018) and was tested with a sample of 239 employees of various specialties in drug addiction treatment (9). The study instrument consists of 36 items and nine dimensions of job satisfaction: pay, fringe benefits, promotion, co-workers, contingent rewards, nature of work, supervision, operating procedures and communication. The items are written in both directions, so about half of them must be reverse scored. The measurement scale was a six-point Likert, where 1=strongly disagree, 2=moderately disagree, 3=slightly disagree, 4=slightly agree, 5= moderately agree and 6=strongly agree – the higher the score, the greater the job satisfaction. The survey instrument also included socio-demographic data, like participants’ age, gender, marital status, educational status and work-related information such as professional category, professional qualification and experience time.

Ethical considerations

The Ethical Committee of National and Kapodistrian University of Athens approved the study protocol. Additionally, the study was conducted after review and written approvals from relevant institutional ethics and research committees were secured from all thirteen hospitals and from the 1st Regional Health Authority of Attica (approval number: 31707-7/6/2019). The researcher informed each participant about the purpose of the study. Furthermore, participation of employees was voluntary and based on written informed consent prior to data collection. Anonymity of participants and confidentiality of data were assured.

Settings and participants

A pilot study was carried out with 30 volunteer participants to identify any problems. Since, all questionnaires were returned with no problems reported; no alterations were made. The reliability of the pilot study was checked, as Cronbach’s alpha was 0.78 the reliability of the instrument was verified (10).

The survey was conducted between July 2019 and October 2020, in 13 hospitals out of a total of 24 in 1st Regional Health Authority of Attica. The region of Attiki with its capital Athens, is the largest region of Greece, has a total population of around 3,75 millions, approximately 35% of total Greece population. For those employees who agreed to participate in the study, an envelope containing the instruments and the consent form was delivered. Thus, the participants filled a personal and professional characterization form and answered the Greek version of the JSS. Of the 4,000 questionnaires distributed, 3,278 (81.95%) were returned. Respondents were informed that the study results would be used only for scientific purposes.
**Statistical analysis**

Descriptive statistics were used to report the job satisfaction of respondents. The 36 items of job satisfaction and other variables on ratio scales were expressed as means (M) and standard deviations (SD) and qualitative data as absolute and relative frequencies. Percentages of agreement/disagreement with different aspects of job satisfaction were also calculated. The Kolmogorov-Smirnov and Shapiro-Wilk tests were used for normality assessment. Kruskal Wallis test were used for comparisons according to gender, education, age and job-related variables. Spearman Rank Differences correlation analysis were developed to explore intercorrelations among subscales. Reliability analysis included Cronbach's Alpha for internal consistency. The level of statistical significance was set at 0.05. All statistical analyses were performed using the Statistical Package for Social Sciences, Version 26.0 for Windows.

**Results**

**Normality analysis**

The Kolmogorov-Smirnov and Shapiro-Wilk normality tests were used for normality. Based on the results, the data was determined as not normally distributed, since the p-value was less than 0.05 for both tests.

**Sociodemographic analysis**

The majority of the respondents were female (2,666; 81.33%) mostly due to the large number of female nursing staff (1,736; 52.96%). Men represented the minority (612; 18.67%). The age distribution was: 1.49% under 25 years old, 15.86% between 26-35, 33.25% between 36-45, 38.16% between 46-55, and 11.23% over 56. As far as the educational level is concerned, the majority was university graduates (59.55%), while 19.37% had post-graduate studies. Concerning employment status, the majority worked as permanent staff (2,655; 80.99%) and only 623 (19.01%) employees worked as temporary staff. As regards length of service, 19.37% had under 5 years, 11.90% of study participants had worked from 6 to 10 years, 17.63% from 11 to 15 years, 22.45% from 16 to 20 years, while 28.65% had worked for more than 20 years. About half employees stated that they managed to cope with their financial obligations but without having much money left aside whereas 4 out 10 faced greater economic problems (Table 1).

On a scale of 1 to 6, male respondents were a little more satisfied with their jobs than were female staff. The overall score was 3.49, indicating neither satisfaction nor dissatisfaction among the staff. The overall female job satisfaction score was 3.30. Both male and female employees were most satisfied with “Co-workers”: 4.37/4.23 and “Nature of work”: 4.34/4.34 respectively. Both genders were least satisfied with “Pay”: 2.42/2.05 and “Promotion”: 2.77/2.38 respectively. Only on the “Supervision” job satisfaction facets did male respondents report being slightly more satisfied than their male counterparts: 4.61/4.67 respectively. The results indicate a weak relationship between respondents’ gender and facets of job satisfaction. In a more detailed analysis of age, it was possible to detect differences in job satisfaction by age group. Although the differences were small (M=3.30-3.60), youngest respondents in the range ≤ 25 years old (M=3.60), showed a higher satisfaction level compared to the intermediate age groups. Respondents who were between 46 to 55 years old (M=3.30) expressed lower satisfaction levels (Table 2).

**Bivariate Correlation Analysis**

In Table 2, Kruskal Wallis Test shows that there is a significant difference in dimensions of pay, promotion, fringe benefits and contingent rewards of respondents with respect to gender, age, level of education, marital and employment status, professional experience and economic situation (p=0.000) at 0.05 level of significance. Similarly, there is a significant difference in supervision of respondents with respect to age, professional experience, marital and employment status (p=0.000), but no significant difference with respect to gender (p=0.287) and level of education (p=0.166). Yet, a significant difference there is in operating conditions of respondents with respect to level
Table 1. Sociodemographic characteristics of the sample per professional category.

| Characteristics        | Professional Categories          | Doctors  | Nurses  | Other Health Professionals | Overall Sample |
|------------------------|---------------------------------|----------|---------|----------------------------|----------------|
|                        |                                 | N=803    | %       | N=1,736                    | %              |
| **Gender**             |                                 |          |         |                            |                |
| Male                   |                                 | 294      | 36.61%  | 150                        | 8.64%          |
| Female                 |                                 | 509      | 63.39%  | 1,586                      | 91.36%         |
| Age                    |                                 |          |         |                            |                |
| < 25 years             |                                 | 5        | 0.62%   | 32                         | 1.84%          |
| 26-35 years            |                                 | 236      | 29.39%  | 243                        | 14.00%         |
| 36-45 years            |                                 | 273      | 34.00%  | 612                        | 35.25%         |
| 46-55 years            |                                 | 210      | 26.15%  | 723                        | 41.65%         |
| 56 > years             |                                 | 79       | 9.64%   | 126                        | 7.26%          |
| Marital Status         |                                 |          |         |                            |                |
| Married                |                                 | 385      | 47.95%  | 1,170                      | 67.40%         |
| Single                 |                                 | 393      | 48.94%  | 431                        | 24.83%         |
| Divorced               |                                 | 24       | 2.99%   | 124                        | 7.14%          |
| Widowed                |                                 | 1        | 0.12%   | 11                         | 0.63%          |
| Level of Education     |                                 |          |         |                            |                |
| Compulsory             |                                 | 0        | 0.00%   | 7                          | 0.40%          |
| Secondary              |                                 | 0        | 0.00%   | 313                        | 18.03%         |
| Bachelor               |                                 | 559      | 69.61%  | 1,099                      | 63.31%         |
| Master's / PhD         |                                 | 244      | 30.39%  | 317                        | 18.26%         |
| Employment status      |                                 |          |         |                            |                |
| Permanent              |                                 | 425      | 52.93%  | 1,590                      | 91.59%         |
| Temporary              |                                 | 378      | 47.07%  | 146                        | 8.41%          |
| Professional Experience|                                 |          |         |                            |                |
| < 5 years              |                                 | 290      | 36.11%  | 221                        | 12.73%         |
| 6-10 years             |                                 | 158      | 19.68%  | 158                        | 9.10%          |
| 11-15 years            |                                 | 114      | 14.20%  | 376                        | 21.66%         |
| 16-20 years            |                                 | 135      | 16.8%   | 457                        | 26.32%         |
| 20 > years             |                                 | 106      | 13.20%  | 524                        | 30.18%         |
| Economic situation     |                                 |          |         |                            |                |
| I cannot cope with my financial obligations | 2 | 0.25% | 70 | 4.03% | 55 | 7.44% | 127 | 3.87% |
| I manage financially with great difficulties | 108 | 13.45% | 716 | 41.24% | 363 | 49.12% | 1,187 | 36.21% |
| I manage financially but I do not have much left aside | 570 | 70.98% | 871 | 50.17% | 274 | 37.08% | 1,715 | 52.32% |
| I am financially comfortable | 105 | 13.08% | 31 | 1.79% | 25 | 3.38% | 161 | 4.91% |
| I do not know / I do not answer | 18 | 2.24% | 48 | 2.76% | 22 | 2.98% | 88 | 2.68% |
Table 2. Mean scores and Standard Deviations (SD) by demographic and job related variables for Job Satisfaction.

| Demographic variables | N     | Gender | %   | Pay Mean | SD    | Promotion | Mean | SD    | Supervision | Mean | SD    | Fringe Benefits | Mean | SD    | Contingent Rewards | Mean | SD    | Operating Conditions | Mean | SD    | Co-workers | Nature of work | Communication | Overall Job Satisfaction |
|-----------------------|-------|--------|-----|----------|-------|-----------|------|-------|-------------|------|-------|------------------|------|-------|---------------------|------|-------|-------------------|------|-------|-----------|---------------|---------------|------------------------|
|                       |       | Male   | 612 | 18.67%  | 2.42  | 0.82      | 2.77 | 0.86 | 4.61        | 0.87 | 2.98 | 0.92             | 2.85 | 0.67 | 4.37               | 0.71 | 4.34 | 0.77               | 3.86 | 0.82 | 3.49      | 0.56          |
|                       |       | Female | 2,666 | 81.33% | 2.05  | 0.78      | 2.38 | 0.82 | 4.67        | 0.88 | 2.59 | 0.82             | 2.85 | 0.90 | 4.23               | 0.70 | 4.34 | 0.76               | 3.77 | 0.82 | 3.30      | 0.50          |
|                       |       | Overall | 3,278 | 100%   | 2.12  | 0.80      | 2.45 | 0.84 | 4.66        | 0.88 | 2.67 | 0.92             | 2.82 | 0.69 | 4.25               | 0.71 | 4.34 | 0.76               | 3.79 | 0.82 | 3.33      | 0.52          |
|                       | P-sig |         | 0.000 |        |       |           |      |       |             |      |       |                  |      |       |                    |      |       |             |              |               |                         |
|                       | Age   | < 25 years | 49  | 1.50%  | 2.44  | 1.07      | 2.79 | 1.04 | 4.97        | 0.98 | 2.84 | 1.20             | 3.23 | 1.19 | 4.37               | 0.91 | 4.65 | 1.02               | 3.85 | 0.89 | 3.60      | 0.74          |
|                       |       | 26-35 years | 520 | 15.86% | 2.31  | 0.82      | 2.49 | 0.84 | 4.69        | 0.86 | 2.78 | 0.86             | 3.01 | 0.77 | 4.32               | 0.73 | 4.35 | 0.77               | 3.77 | 0.82 | 3.39      | 0.54          |
|                       |       | 36-45 years | 1,090 | 33.25% | 2.12  | 0.78      | 2.39 | 0.79 | 4.71        | 0.81 | 2.63 | 0.81             | 2.88 | 0.63 | 4.23               | 0.69 | 4.25 | 0.78               | 3.73 | 0.78 | 3.31      | 0.49          |
|                       |       | 46-55 years | 1,251 | 38.16% | 2.02  | 0.79      | 2.43 | 0.85 | 4.60        | 0.95 | 2.61 | 0.85             | 2.85 | 0.70 | 4.25               | 0.71 | 4.36 | 0.76               | 3.79 | 0.85 | 3.30      | 0.52          |
|                       |       | 56+ years | 368  | 11.23% | 2.18  | 0.80      | 2.60 | 0.89 | 4.60        | 0.81 | 2.76 | 0.80             | 3.06 | 0.68 | 4.26               | 0.69 | 4.48 | 0.69               | 3.96 | 0.80 | 3.41      | 0.51          |
|                       | Overall | 3,278 | 100% |       |       |           |      |       |             |      |       |                  |      |       |                    |      |       |             |              |               |                         |
|                       | P-sig |         | 0.000 |        |       |           |      |       |             |      |       |                  |      |       |                    |      |       |             |              |               |                         |
|                       | Level of Education | Compulsory | 50  | 1.53%  | 2.30  | 0.88      | 2.47 | 0.73 | 4.53        | 0.86 | 2.69 | 0.76             | 3.02 | 0.84 | 3.19               | 0.59 | 4.09 | 0.66               | 4.41 | 0.61 | 4.06      | 0.61          |
|                       |       | Secondary | 641 | 19.55% | 1.92  | 0.74      | 2.31 | 0.82 | 4.66        | 1.03 | 2.49 | 0.82             | 2.75 | 0.95 | 2.82               | 0.76 | 4.19 | 0.80               | 4.37 | 0.86 | 3.76      | 0.91          |
|                       |       | Bachelor | 1,952 | 59.55% | 2.16  | 0.79      | 2.48 | 0.82 | 4.69        | 0.78 | 2.71 | 0.83             | 2.95 | 0.86 | 2.84               | 0.65 | 4.30 | 0.65               | 4.32 | 0.70 | 3.80      | 0.75          |
|                       |       | Master’s/PhD | 635 | 19.37% | 2.20  | 0.85      | 2.49 | 0.92 | 4.58        | 1.00 | 2.72 | 0.91             | 2.95 | 1.02 | 2.72               | 0.71 | 4.21 | 0.77               | 4.34 | 0.86 | 3.73      | 0.94          |
|                       | Overall | 3,278 | 100% |       |       |           |      |       |             |      |       |                  |      |       |                    |      |       |             |              |               |                         |
|                       | P-sig |         | 0.000 |        |       |           |      |       |             |      |       |                  |      |       |                    |      |       |             |              |               |                         |
|                       | Marital Status | Married | 2,054 | 62.66% | 2.07  | 0.75      | 2.45 | 0.84 | 4.63        | 0.85 | 2.63 | 0.80             | 2.89 | 0.87 | 2.83               | 0.66 | 4.25 | 0.67               | 4.35 | 0.71 | 3.80      | 0.79          |
|                       |       | Unmarried | 976  | 29.77% | 2.28  | 0.86      | 2.51 | 0.83 | 4.69        | 0.90 | 2.78 | 0.90             | 3.02 | 0.74 | 4.30               | 0.76 | 4.33 | 0.82               | 3.76 | 0.85 | 3.39      | 0.57          |
|                       |       | Divorced | 210  | 6.41%  | 1.87  | 0.81      | 2.22 | 0.83 | 4.78        | 1.06 | 2.46 | 0.91             | 2.64 | 1.02 | 2.70               | 0.74 | 4.15 | 0.82               | 4.30 | 0.99 | 3.69      | 0.94          |
|                       |       | Widowed | 38  | 1.16%  | 2.06  | 0.82      | 2.42 | 1.00 | 4.55        | 0.81 | 2.68 | 0.75             | 2.84 | 0.78 | 2.93               | 0.56 | 4.09 | 0.46               | 4.20 | 0.65 | 3.95      | 0.66          |
|                       | Overall | 3,278 | 100% |       |       |           |      |       |             |      |       |                  |      |       |                    |      |       |             |              |               |                         |
|                       | P-sig |         | 0.000 |        |       |           |      |       |             |      |       |                  |      |       |                    |      |       |             |              |               |                         |

(continues)
### Demographic variables

| Professional Experience | N   | %     | Mean | SD  | Mean | SD  | Mean | SD  | Mean | SD  | Mean | SD  | Mean | SD  | Mean | SD  | Mean | SD  | Mean | SD  | Mean | SD  | Mean | SD  | Mean | SD  | Mean | SD  | Mean | SD  | Mean | SD  | Mean | SD  | Mean | SD  | Mean | SD  | Mean | SD  | Mean | SD  |
|------------------------|-----|-------|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|
| < 5 years              | 635 | 19.37%| 2.44 | 0.87| 2.62 | 0.86| 4.84 | 0.89| 2.93 | 0.95| 3.18 | 1.02| 2.84 | 0.78| 4.40 | 0.78| 4.41 | 0.85| 3.77 | 0.91| 4.94 | 0.85| 4.41 | 0.85| 3.77 | 0.91| 4.94 | 0.85| 4.41 | 0.85| 3.77 | 0.91|
| 6-10 years             | 390 | 11.90%| 2.25 | 0.84| 2.50 | 0.81| 4.74 | 0.79| 2.79 | 0.83| 3.03 | 0.86| 2.89 | 0.68| 4.30 | 0.69| 4.33 | 0.77| 3.81 | 0.74| 3.79 | 0.76| 3.82 | 0.77| 3.87 | 0.77| 3.79 | 0.76| 3.82 | 0.77| 3.79 | 0.76|
| 11-15 years            | 578 | 17.63%| 2.04 | 0.73| 2.35 | 0.78| 4.62 | 0.79| 2.62 | 0.78| 2.83 | 0.83| 2.87 | 0.59| 4.21 | 0.66| 4.27 | 0.70| 3.79 | 0.76| 3.29 | 0.49| 3.29 | 0.49| 3.29 | 0.49| 3.29 | 0.49| 3.29 | 0.49|
| 16-20 years            | 736 | 22.45%| 2.02 | 0.68| 2.39 | 0.80| 4.62 | 0.77| 2.60 | 0.76| 2.85 | 0.81| 2.84 | 0.61| 4.21 | 0.59| 4.28 | 0.66| 3.82 | 0.71| 3.29 | 0.44| 3.29 | 0.44| 3.29 | 0.44| 3.29 | 0.44| 3.29 | 0.44|
| 20+ years              | 939 | 28.65%| 1.99 | 0.79| 2.42 | 0.88| 4.56 | 1.01| 2.51 | 0.81| 2.79 | 0.95| 2.72 | 0.73| 4.21 | 0.75| 4.37 | 0.81| 3.75 | 0.90| 3.26 | 0.51| 3.26 | 0.51| 3.26 | 0.51| 3.26 | 0.51| 3.26 | 0.51|
| Overall                | 3,278| 100%  | 2.12 | 0.80| 2.45 | 0.84| 4.66 | 0.88| 2.67 | 0.84| 2.91 | 0.92| 2.82 | 0.69| 4.25 | 0.71| 4.34 | 0.76| 3.79 | 0.82| 3.33 | 0.52| 3.33 | 0.52| 3.33 | 0.52| 3.33 | 0.52| 3.33 | 0.52|

**P-sig**

| N   | %     | Mean | SD  | Mean | SD  | Mean | SD  | Mean | SD  | Mean | SD  | Mean | SD  | Mean | SD  | Mean | SD  | Mean | SD  | Mean | SD  | Mean | SD  | Mean | SD  | Mean | SD  | Mean | SD  | Mean | SD  | Mean | SD  |
|-----|-------|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|
| < 5 years              | 635 | 19.37%| 2.44 | 0.87| 2.62 | 0.86| 4.84 | 0.89| 2.93 | 0.95| 3.18 | 1.02| 2.84 | 0.78| 4.40 | 0.78| 4.41 | 0.85| 3.77 | 0.91| 4.94 | 0.85| 4.41 | 0.85| 3.77 | 0.91| 4.94 | 0.85| 4.41 | 0.85| 3.77 | 0.91|
| 6-10 years             | 390 | 11.90%| 2.25 | 0.84| 2.50 | 0.81| 4.74 | 0.79| 2.79 | 0.83| 3.03 | 0.86| 2.89 | 0.68| 4.30 | 0.69| 4.33 | 0.77| 3.81 | 0.74| 3.79 | 0.76| 3.82 | 0.77| 3.87 | 0.77| 3.79 | 0.76| 3.82 | 0.77| 3.79 | 0.76|
| 11-15 years            | 578 | 17.63%| 2.04 | 0.73| 2.35 | 0.78| 4.62 | 0.79| 2.62 | 0.78| 2.83 | 0.83| 2.87 | 0.59| 4.21 | 0.66| 4.27 | 0.70| 3.79 | 0.76| 3.29 | 0.49| 3.29 | 0.49| 3.29 | 0.49| 3.29 | 0.49| 3.29 | 0.49|
| 16-20 years            | 736 | 22.45%| 2.02 | 0.68| 2.39 | 0.80| 4.62 | 0.77| 2.60 | 0.76| 2.85 | 0.81| 2.84 | 0.61| 4.21 | 0.59| 4.28 | 0.66| 3.82 | 0.71| 3.29 | 0.44| 3.29 | 0.44| 3.29 | 0.44| 3.29 | 0.44| 3.29 | 0.44|
| 20+ years              | 939 | 28.65%| 1.99 | 0.79| 2.42 | 0.88| 4.56 | 1.01| 2.51 | 0.81| 2.79 | 0.95| 2.72 | 0.73| 4.21 | 0.75| 4.37 | 0.81| 3.75 | 0.90| 3.26 | 0.51| 3.26 | 0.51| 3.26 | 0.51| 3.26 | 0.51| 3.26 | 0.51|
| Overall                | 3,278| 100%  | 2.12 | 0.80| 2.45 | 0.84| 4.66 | 0.88| 2.67 | 0.84| 2.91 | 0.92| 2.82 | 0.69| 4.25 | 0.71| 4.34 | 0.76| 3.79 | 0.82| 3.33 | 0.52| 3.33 | 0.52| 3.33 | 0.52| 3.33 | 0.52| 3.33 | 0.52|

Notes: N=3,278, p<0.01, p<0.05
interpretation for correlations: if the r-value equals 0.10 to 0.29 (positive) or -0.29 to -0.10 (negative), there is a weak correlation between the two independent variables. If the r-value is 0.30 to 0.49 (positive) or -0.49 to -0.30 (negative), there is a moderate correlation. If the r-value equals 0.50 to 1.00 (positive) or -1.00 to -0.50 (negative), a strong correlation is indicated (11). Correlations were strong in seven cases, while there were also eleven moderate and sixteen weak intercorrelations (Table 3).

Reliability analysis

The overall job satisfaction was 0.89. The internal consistency values of each dimension of Spector's Job Satisfaction Survey range from 0.41 to 0.81. Two subscales, supervision and contingent rewards have alpha values in the range of 0.74 to 0.81. Six other subscales have the alpha values slightly lower than the mark of $\alpha=0.70$. More specifically, fringe benefits ($\alpha=0.68$), pay ($\alpha=0.66$), promotion ($\alpha=0.65$), communication ($\alpha=0.64$), co-workers ($\alpha=0.62$), nature of work ($\alpha=0.62$). Exceptionally, the subscale operating conditions reports an outstandingly low value of Cronbach's alpha ($\alpha=0.41$). This subscale also reported a very low internal consistency in the Greek Sample of Tsounis and Sarafis (0.48). Despite that, the whole Spector's Job Satisfaction Survey show cases a very high level of internal consistency

Correlation Analysis

We calculated the correlations between dimensions using the pair wise Spearman's correlation coefficient. Positive intercorrelations among subscales ranged between 0.059 to 0.636. Only one intercorrelation among subscales (supervision-operating procedures) founded. Cohen (1988) proposed the following

| Dimensions       | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    |
|------------------|------|------|------|------|------|------|------|------|------|
| Pay              | 1    | 0.556** | 0.034* | 0.624** | 0.547** | 0.265** | 0.220** | 0.211** | 0.288** |
| Promotion        | 0.556** | 1    | 0.072** | 0.576** | 0.526** | 0.194** | 0.223** | 0.241** | 0.283** |
| Supervision      | 0.034* | 0.072** | 1    | 0.076** | 0.230** | -0.01  | 0.401** | 0.254** | 0.229** |
| Fringe benefits  | 0.624** | 0.576** | 0.076* | 1    | 0.617** | 0.332** | 0.282** | 0.249** | 0.318** |
| Contingent rewards | 0.547** | 0.526** | 0.230** | 0.617** | 1    | 0.338** | 0.389** | 0.348** | 0.470** |
| Operating procedures | 0.265** | 0.194** | -0.01 | 0.332** | 0.338** | 1    | 0.139** | 0.132** | 0.359** |
| Co-workers       | 0.220** | 0.223** | 0.401** | 0.282** | 0.389** | 0.139** | 1    | 0.360** | 0.383** |
| Nature of work   | 0.211** | 0.241** | 0.254** | 0.249** | 0.348** | 0.132** | 0.360** | 1    | 0.344** |
| Communication    | 0.288** | 0.283** | 0.229** | 0.318** | 0.470** | 0.359** | 0.383** | 0.344** | 1    |

Notes: N=3,278.  *
Correlation is significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.01 level (2-tailed)
(α=0.91), similar to the value achieved by Spector himself. Generally (12), if a Cronbach’s alpha value is α<0.40 the scale is not reliable, if 0.40≤α<0.60 then the scale reliability is low, if 0.60≤α<0.80 then the size is quite reliable and if 0.80≤α<1.00 the scale is highly reliable (Table 4).

Split-half reliability (Table 5) was also assessed by dividing the measure into two halves; Part 1: consisted of first 18 items and Part 2: consisted of the remaining 18 items of the scale. The findings showed that JSS had good split-half reliability as assessed through the Guttman Split-Half Coefficient (0.77). A general accepted rule is that α value of 0.60-0.70 indicates an acceptable level of reliability, and 0.80 or greater a very good level (13).

The mean score of overall perception of job satisfaction of healthcare staff who worked at the 1st Regional Health Authority of Attica was 3.33 on a one to six scale. The overall perception of job satisfaction exceeded slightly disagree (score 3) and approached slightly agree (score 4). Employees are thus neither satisfied nor dissatisfied with their job. The dimension associated with the highest levels of dissatisfaction was pay or remuneration. Additionally, the dimension associated with the highest levels of satisfaction was supervision. The findings reported that more respondents

| Table 4. Internal consistency coefficients of JSS. |
|---|---|---|---|---|---|
| Dimensions | United States Sample Spector (2007) | Greek Sample Tsounis & Sarafis (2018) | Current Study |
| | | | Doctors | Nurses | Other Health Professionals | Overall Job Satisfaction |
| Pay | 0.75 | 0.62 | 0.71 | 0.58 | 0.57 | 0.66 |
| Promotion | 0.73 | 0.67 | 0.74 | 0.55 | 0.59 | 0.65 |
| Supervision | 0.82 | 0.87 | 0.78 | 0.80 | 0.83 | 0.81 |
| Fringe Benefits | 0.73 | 0.73 | 0.70 | 0.58 | 0.63 | 0.68 |
| Contingent Rewards | 0.76 | 0.71 | 0.75 | 0.65 | 0.80 | 0.74 |
| Operating Conditions | 0.62 | 0.48 | 0.48 | 0.38 | 0.41 | 0.41 |
| Coworkers | 0.60 | 0.67 | 0.59 | 0.58 | 0.62 | 0.62 |
| Nature of work | 0.78 | 0.74 | 0.64 | 0.58 | 0.69 | 0.62 |
| Communication | 0.71 | 0.71 | 0.66 | 0.59 | 0.68 | 0.64 |
| The final score | **0.91** | **0.87** | **0.91** | **0.85** | **0.90** | **0.89** |
| The sample size | 2,870 | 239 | 803 | 1,736 | 739 | 3,278 |

| Table 5. Split-Half reliability analysis. |
|---|---|---|
| Cronbach’s Alpha | Part 1 | Value 0.81 |
| | N of Items 18 | |
| | Part 2 | Value 0.83 |
| | N of Items 18 | |
| | Total N of Items 36 | |
| Correlation Between Forms | 0.63 | |
| Spearman-Brown Coefficient | Equal Length 0.77 | |
| | Unequal Length 0.77 | |
| Guttman Split-Half Coefficient | 0.77 | |

a. The items are: Q1, Q2, Q3, Q5, Q7, Q9, Q11, Q13, Q15, Q17, Q20, Q22, Q25, Q27, Q28, Q30, Q33, Q35.
b. The items are: Q4, Q6, Q8, Q10, Q12, Q14, Q16, Q18, Q19, Q21, Q23, Q24, Q26, Q29, Q31, Q32, Q34, Q36.
In this analysis, respondents to our survey considered the tasks and duties of helping others (79.4%) as the major source of their satisfaction, the average level of job satisfaction being 4.34 (Doctors 4.47, Nurses 4.32, Other Health Professionals 4.24). Several relative studies found that the most important for healthcare workers’ job satisfaction is the ‘nature of work’. The study confirmed that health professionals were dissatisfied with operating procedures (73.3%), the average level of job satisfaction being 2.82 (Doctors 2.81, Nurses 2.86, Other Health Professionals 2.72). Robbins (2009) defines operating procedures as the organization policy and the work itself (28-30). Additionally, professionals reported ambivalence concerning only for the communication domain.

According to our study, males were found to have slightly higher job satisfaction scores in several aspects than females. Young health workers were more satisfied with salary, supervision, and co-workers rather than old health workers. Marital status did not have significant relationship with job satisfaction. The lower job satisfaction scores were reported among nurses.

What is more, health workers in this study have various qualifications, mostly physicians and nurses with significant proportion of medicine doctors and public health bachelors.
Table 6. Scores and percentages of satisfaction levels for dimensions of job satisfaction.

| Dimensions       | Doctors | Nurses | Other Health Professionals | Overall Sample |
|------------------|---------|--------|----------------------------|----------------|
|                  | N=803   | N=1,736 | N=739                      | N=3,278        |
| Pay              | 2.60 ± 0.79 | 1.90 ± 0.69 | 2.13 ± 0.81 | 2.12 ± 0.80 |
| Promotion        | 2.87 ± 0.87 | 2.26 ± 0.75 | 2.44 ± 0.85 | 2.45 ± 0.84 |
| Supervision      | 4.73 ± 0.70 | 4.66 ± 0.88 | 4.57 ± 1.02 | 4.66 ± 0.88 |
| Fringe Benefits  | 3.17 ± 0.80 | 2.41 ± 0.73 | 2.73 ± 0.87 | 2.67 ± 0.84 |
| Contingent Rewards | 3.38 ± 0.84 | 2.70 ± 0.82 | 2.90 ± 1.02 | 2.91 ± 0.92 |
| Operating Procedures | 2.81 ± 0.64 | 2.86 ± 0.67 | 2.72 ± 0.77 | 2.82 ± 0.69 |
| Coworkers        | 4.50 ± 0.62 | 4.18 ± 0.69 | 4.16 ± 0.77 | 4.25 ± 0.71 |
| Nature of work   | 4.47 ± 0.65 | 4.32 ± 0.74 | 4.24 ± 0.90 | 4.34 ± 0.76 |
| Communication    | 3.94 ± 0.74 | 3.79 ± 0.79 | 3.60 ± 0.94 | 3.79 ± 0.82 |
| Overall Job Satisfaction | 3.61 ± 0.51 | 3.23 ± 0.44 | 3.28 ± 0.58 | 3.33 ± 0.52 |

Table 6a. Scores and percentages of satisfaction levels for dimensions of job satisfaction before of March 13, 2020.

| Dimensions       | Doctors | Nurses | Other Health Professionals | Overall Sample |
|------------------|---------|--------|----------------------------|----------------|
|                  | n=761 - 94.8% of Total | n=1,553 - 89.5% of Total | n=659 - 89.2% of Total | n=2,973 - 90.7% of Total |
| Pay              | 2.60 ± 0.80 | 1.88 ± 0.72 | 2.14 ± 0.85 | 2.12 ± 0.83 |
| Promotion        | 2.85 ± 0.88 | 2.24 ± 0.77 | 2.44 ± 0.88 | 2.44 ± 0.86 |
| Supervision      | 4.74 ± 0.72 | 4.71 ± 0.91 | 4.60 ± 1.08 | 4.69 ± 0.91 |
| Fringe Benefits  | 3.16 ± 0.82 | 2.39 ± 0.76 | 2.72 ± 0.90 | 2.66 ± 0.87 |
| Contingent Rewards | 3.36 ± 0.85 | 2.67 ± 0.85 | 2.88 ± 1.07 | 2.90 ± 0.95 |
| Operating Procedures | 2.80 ± 0.66 | 2.82 ± 0.70 | 2.68 ± 0.80 | 2.79 ± 0.71 |
| Co-workers       | 4.50 ± 0.63 | 4.20 ± 0.72 | 4.19 ± 0.81 | 4.27 ± 0.73 |
| Nature of work   | 4.46 ± 0.67 | 4.33 ± 0.77 | 4.23 ± 0.95 | 4.34 ± 0.80 |
| Communication    | 3.92 ± 0.75 | 3.74 ± 0.81 | 3.53 ± 0.97 | 3.74 ± 0.84 |
| Overall Job Satisfaction | 3.60 ± 0.52 | 3.22 ± 0.46 | 3.27 ± 0.61 | 3.33 ± 0.54 |

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Table 6b. Scores and percentages of satisfaction levels for dimensions of job satisfaction after March 14, 2020.

| Dimensions            | Doctors n=42 - 5.2% of Total | Nurses n=183 - 10.5% of Total | Other Health Professionals n=80 - 10.8% of Total | Overall Sample n=305 - 9.3% of Total |
|-----------------------|------------------------------|--------------------------------|-----------------------------------------------|-------------------------------------|
|                       | Mean | SD  | Satisfied | Dissatisfied | Mean | SD  | Satisfied | Dissatisfied | Mean | SD  | Satisfied | Dissatisfied | Mean | SD  | Satisfied | Dissatisfied |
| Pay                   | 2.74 | 0.58| 16.7%      | 83.3%       | 2.06 | 0.33| 0.0%      | 100.0%      | 2.01 | 0.67| 0.9%      | 99.1%       | 2.15 | 0.45| 2.5%      | 97.5%       |
| Promotion             | 3.22 | 0.50| 39.3%      | 60.7%       | 2.46 | 0.48| 7.1%      | 92.9%       | 2.42 | 0.81| 5.6%      | 94.4%       | 2.56 | 0.56| 11.1%     | 88.9%       |
| Supervision           | 4.60 | 0.36| 99.0%      | 1.0%        | 4.24 | 0.28| 94.9%     | 5.1%        | 4.36 | 1.45| 97.8%     | 2.2%        | 4.32 | 0.32| 96.3%     | 3.7%        |
| Fringe Benefits       | 3.40 | 0.49| 49.4%      | 50.6%       | 2.56 | 0.36| 4.4%      | 95.6%       | 2.75 | 0.92| 12.8%     | 87.2%       | 2.74 | 0.49| 27.7%     | 72.3%       |
| Contingent Rewards    | 3.69 | 0.45| 54.9%      | 35.1%       | 2.95 | 0.36| 11.9%     | 88.1%       | 3.07 | 1.02| 20.6%     | 79.4%       | 3.09 | 0.45| 21.5%     | 78.5%       |
| Operating Procedures  | 2.99 | 0.22| 31.6%      | 68.4%       | 3.16 | 0.27| 32.0%     | 68.0%       | 3.06 | 1.02| 24.7%     | 75.3%       | 3.10 | 0.28| 30.0%     | 70.0%       |
| Co-workers            | 4.48 | 0.27| 91.7%      | 8.3%        | 4.01 | 0.27| 78.7%     | 21.3%       | 3.96 | 1.32| 74.4%     | 25.6%       | 4.07 | 0.33| 76.2%     | 23.8%       |
| Nature of work        | 4.57 | 0.24| 94.6%      | 5.4%        | 4.22 | 0.31| 80.9%     | 19.1%       | 4.23 | 1.41| 90.0%     | 10.0%       | 4.28 | 0.32| 85.2%     | 14.8%       |
| Communication         | 4.23 | 0.26| 86.9%      | 13.1%       | 4.23 | 0.30| 94.9%     | 5.1%        | 4.12 | 1.37| 90.0%     | 10.0%       | 4.21 | 0.29| 92.5%     | 7.5%        |
| Overall Job Satisfaction | 3.77 | 0.26| 63.8%      | 36.2%       | 3.32 | 0.19| 45.0%     | 55.0%       | 3.33 | 1.11| 46.3%     | 53.7%       | 3.39 | 0.26| 49.2%     | 50.8%       |

Notes: As of March 13, 2020, the World Health Organization (WHO) has declared Europe as the center of the coronavirus pandemic 2019–2020 [31]
This survey was carried out in the midst of the pandemic crisis of COVID-19, as on 13 March 2020 the WHO declared Europe as the epicentre of the pandemic (31). As a result, our survey was dichotomized in two periods, before and after March 13, 2020. Regarding the data in Table 6a, was found that a great number of the respondents were mostly before the 13th of March 2020, pre-COVID period, employees (2,973; 90.7% of total) were mostly dissatisfied (54.0%) and the average level of overall job satisfaction was 3.33 out of 6 (Doctors 3.60, Nurses 3.22, Other Health Professionals 3.27). After the 13th of March 2020 (Table 6b), first wave of the COVID-19 pandemic, employees (305; 9.3% of total) remained dissatisfied, but to a lesser extent (50.8%), as the average level of overall job satisfaction was 3.39 out of 6 (Doctors 3.77, Nurses 3.32, Other Health Professionals 3.33), slightly improved compared to the pre-COVID period. Therefore, the study findings revealed improvements in most of the dimensions of job satisfaction, as supervision, fringe benefits, operating procedures, co-workers, nature of work, communication but the results concerning the pay, promotion and contingent rewards remained low. During this period, Greece and its public health system were still struggling to recover from the multiyear global financial crisis of the past decade, hospitals' staff worked longer hours than usual, with no days off. The findings reveals that the strict protocols and procedures were implemented, the recognition and trust of society and the collaboration of employees seems that affected positively in job satisfaction of employees in hospitals.

Our findings are in alignment with prior studies. According to 61 studies conducted in European Union countries, in which enrolled a total of 50,001 physicians working in hospitals among 17 different countries, the majority of whom were conducted in Germany (13 studies), Sweden (7 studies), the UK (6 studies), Spain (5 studies), Italy (5 studies) and the Netherlands (5 studies), the level of satisfaction of physicians was moderate. Low levels of satisfaction connected with salaries, increasing workloads, working conditions as well as migration and ageing of doctors (32). Moreover, it was found Italian female physicians perceived a lower level of procedural justice related to their work situation (career path, type of activities, workload and level of remuneration) and their levels of anxiety, depression and psychological problems were higher than in males. In this same vein, in a sample of 1,304 nurses from 15 different wards working in Italian public hospitals the results show a low level of job satisfaction. From data were gathered in 2013, revealed dissatisfaction with task requirements, organizational policies and advance in career - although to a lesser extent - with the relationship with colleagues and physicians (33). Similarly, in Bulgaria 60% of respondents expressed general dissatisfaction with their work and over 44% would not recommend their profession to young people; 90% were dissatisfied with healthcare reforms. Job satisfaction in the nursing profession is also important. Remuneration was the biggest reason for dissatisfaction, followed by poor working conditions and poor interpersonal relationships. In a survey of 31,627 nursing staff distributed between 2009-2010, in 2,170 general medical/surgical units within 488 hospitals across 12 European countries: Belgium, England, Finland, Germany, Greece, Ireland, Netherlands, Norway, Poland, Spain, Switzerland and Sweden, overall 8,666 nurses (27%) experienced high emotional exhaustion, 3,127 nurses (10%) experienced high depersonalization and 5,300 nurses (17%) experienced low feeling of personal accomplishment. Still, a total of 8,268 nurses reported being very or a little dissatisfied with their job (26%). Hence, a total of 8,016 nurses (25%) reported being greatly or a little dissatisfied with work schedule flexibility and 10,440 (33%) reported intention to leave their current job (34). In Spain, within 5,654 respondents that collected between 2009-2010, about 55% of nurses (3,080) showed moderate job satisfaction, 26% of nurses (1,468) showed their intention to leave the hospital, as the work environment was unfavorable for 48% (2,729) of nurses. 22% (1,091) showed high burnout levels (35). Lastly, in a survey was conducted in 2013 among 494 nurses working in 5 hospitals in the prefecture of Achaia, West-Greece (36). The results indicate that further stress increasing and satisfaction reducing factors were connected with the limited decision latitude and autonomy, low participation in decision making and low supervisors' support. The lack of support and respect and lack of communication and collaboration between doctors and colleagues affect negatively the quality of the provided nursing care. The present study revealed higher stress levels in nurses with
regular working hours. This paradox could be explained by the lower salary they receive and the difficulties to cover their everyday family expenses.

This study was conducted in Athens the capital of Greece, where there are several hospitals, future research needs to expand the scope of this study by focusing on a large and geographically more diverse sample so that its results can be generalized to the entire public health care sector of Greece.

Conclusion

Research findings showed that the job satisfaction of employees in general is on the decline. In hospitals, job dissatisfaction is strongly associated with staff’s intention to quit, suboptimal healthcare delivery and poor clinical outcomes. Hospital employees will demonstrate pleasurable positive attitudes when they are satisfied with their job.

Can any steps be taken to improve job satisfaction? In our view, now, even more than in the past, increasing pay and perks may not be easy in days of shrinking budgets. As job satisfaction is affected by many variables to different degrees and public hospitals in Greece are under the supervision of the Ministry of Health (MoH), emphasis should be placed straight away on positive factors (supervision, communication, favorable conditions of work) that can enhance employees’ satisfaction and organizational commitment. Negative factors (promotion, operating procedures, contingent rewards) should be addressed to assist in increasing the satisfaction level and diminishing staff turnover, tardiness, absenteeism and low productivity. There is a need to innovate and come up with low/no cost measures. Appreciation and recognition of staff can be one of the easiest, cost-effective strategies to retain experienced mature staff. Job satisfaction significantly influenced by factors such as opportunities to develop and responsibility. Moreover, job satisfaction can be higher in a work environment in which there are health and safety measures, supervisors and subordinates consult together and individuals are involved with peers in decision making and task definition. Encouragement from management and organizational support are remarkable factors when there are exist.

In summary, an employee’s overall satisfaction with his job is the result of a combination of factors. The findings of this study clearly suggest that implementing career plans and benefits, as well as readjustment of staff and improvement of working conditions may result in job satisfaction.

Acknowledgements: The authors acknowledge all those who participated in the study and also those who helped with conducting this survey.

Conflict of Interest: Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article

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Received: 26 March 2022
Accepted: 26 April 2022
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