

Original Article

## Investigation of business satisfaction of medical and nursing staff of the Naval Hospital of Athens

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### Abstract

**Background:** Business satisfaction is the key for business success, as indicated by numerous surveys in the last decades, and is associated with many factors which are related to the working environment.

**Objective:** The purpose of this research is to study the level of business satisfaction of the medical and nursing staff of the Naval Hospital of Athens and find its association with several factors.

**Methodology:** A quantitative survey was conducted, using a structured questionnaire consisting of 23 questions, 22 of which were closed and one was open-ended. The survey population consisted of 454 people, doctors and nurses who work at the Naval Hospital of Athens. The questionnaire was sent electronically to a sample of 62 people, as the hospital was able to provide us with valid mails and social media accounts (Facebook, LinkedIn) for those 62 people. The 44 people who replied (71% of the initial sample and 10% of the survey population) formed the final sample. Data analysis recorded the average level of business satisfaction concerning various factors related to the workplace. We used Statistical Package for Social Sciences (SPSS) v20 (descriptive statistics,  $\chi^2$  independence test).

**Results:** Most of the participants found facilities very suitable and the relationship with their colleagues and the hospital management very satisfactory, but they are not satisfied at all with their income. Despite the fact that most of them believe that management does not recognize good performance and does not provide them with opportunities for intervention in organizational aspect of the hospital, they are satisfied with the general working conditions in the hospital and they would not prefer working in another non-military hospital. It was revealed that there is an association between years working in the hospital and opportunities for intervention in organizational matters of the hospital ( $\chi^2=21$ ,  $p$ -value=0.007), as well as between education and belief that management rewards good performance ( $\chi^2=33.7$ ,  $p$ -value=0.006).

**Conclusions - Discussion:** The conclusions arising from the analysis show a general satisfaction from the relationship between colleagues, the adequacy of staff's skills and the need for improvement in several areas, such as the need for modernization of hospital equipment. It is important for medical and nursing staff to feel part of the organization they work in, by being included in decision making. This works as a motive and has a positive effect on job satisfaction.

**Keywords:** Business satisfaction, Naval Hospital of Athens, medical and nursing staff.

## Introduction

Defining job satisfaction has been a controversial issue for decades. A definition was given by Locke (1983), who defines business satisfaction as a pleasurable or positive emotional state resulting from the appraisal of one's job or job experience. Business satisfaction is the key for business success and it is associated with many factors that should be taken into consideration by management. Measuring job satisfaction is of high interest for enterprises and organizations in our days because it helps understanding the value of human resources for the organization and hence the need for the optimal resource management (Katelidou & Theodorou, 2007, Sapountzi-Krepia et al., 2016). Specifically, when medical and nursing staff has to deal with demanding situations and is required to take critical decisions on a daily basis, business satisfaction is of even great importance. Job satisfaction is linked to employees' performance which, as a result, brings higher income to the company or organization (Bhatnagar & Srivastava, 2012). For nursing staff, factors of job satisfaction include the organization of nursing care and the ways in which hospital restructuring redefines the context for provider - patient relations and clinical decision making (Adams & Bond, 2000). A research on medical and nursing staff's business satisfaction would highlight all those factors and parameters that contribute to an increase in business satisfaction, and as a result to an increase in work effectiveness.

The purpose of this study is to investigate the level of business satisfaction of medical and nursing staff of the Naval Hospital of Athens in relation to various factors associated to staff's working environment, in order to demonstrate deficiencies in facilities, raw materials and personnel and to make propositions that would improve staff's business satisfaction.

According to Lu et al. (2004), nursing staff is not satisfied with their salary, long working hours, inadequate training and lack of motivation. Life-long education is very important in medical

professions, since it allows them to follow the changes in research and labor market and increases their confidence, independence and satisfaction (Maliarou 2009; Theofanidis & Foundouki 2006; Eason, 2010).

This study is linked to a number of similar researches, such as the research of Petsetaki & Gogos (2010), who investigated the job satisfaction of nursing staff in the General Hospital of Naoussa, Greece and the research of Labrou et al. (2010), who investigated motivation and job satisfaction among medical and nursing staff in a public general hospital in Cyprus.

## Research questions

The main research questions of this study examine the demographic characteristics of the surveyed population, and their relation to the expressed satisfaction level, as far as it concerns the adequacy of facilities, machinery, raw materials and human resources. The research also examines the association between demographic variables and staff suggestions on what can be improved on their working conditions.

## Methodology

This study implements the quantitative research method. Quantitative research method is used to explore attitudes, values and beliefs (Robson, 2010). The tool used to conduct the study was a structured, self – administered and anonymous questionnaire which was designed to obtain an overview on the topic of the study. The fact that the study intends to present this overview quantitatively – potential provided by the statistical analysis of the data obtained by the structured questionnaire - justifies the choice of the method (Cohen et al., 2008).

The questionnaire consists of two parts. The first part includes demographic questions and the second part includes questions concerning the factors that relate to satisfaction from the working environment of the hospital. Through a set of open-ended questions, suggestions for the improvement of working conditions in the hospital are also collected.

During the investigation, the research team respected the respondents' anonymity and confidentiality regarding the survey data and respected the ethical aspects of research (Cohen et al., 2008).

The usability of this survey's results is strongly connected to their reliability and consistency. Reliability is the degree to which an assessment tool produces stable and consistent results. Reliability was estimated to be 0.89 using Cronbach's Alpha value. Before the distribution of the questionnaire, it was subjected to a construct validity test by applying the test-retest technique, in order to ensure its consistency and the stability of its results (Apostolakis & Stamouli, 2006).

The survey's reference population was the medical and nursing staff of the Naval Hospital of Athens which consists of 454 people, 178 of which are doctors and 276 nurses. The actual number of medical and nursing staff of the hospital was provided by the human resources management of the hospital.

The questionnaire was distributed electronically to a sample of 62 professionals, out of which 44 responses have been collected (response rate 71%). This final survey sample (10% of the survey population) consisted of 20 doctors and 24 nurses (45.5% of the sample were doctors and 54.5% nurses). Weighting of the data was done on the variable "specialty" (doctor, nurse) based on the actual rate of doctors and nurses of the hospital, according to the data provided by the Naval Hospital of Athens, which corresponded to 39.2% doctors and 60.8% nurses. The ratio of doctors and nurses of the sample adjusted to the respective actual ratios and the weighted data ended up with 17 doctors and 27 nurses in order to conform to the valid data from the hospital. The questionnaire was sent via email and social media (Facebook, LinkedIn) and the answers were received anonymously (url of the questionnaire was

<https://docs.google.com/forms/d/1ZV4LdU97Ec53hbgwNHqSyFi5aJpqtyGlxhOHVsxUln4/viewform>).

The questions concerning the level of satisfaction were initially recorded in a 10-likert scale, where 1 meant "Not at all" and 10 "Very much". In the analysis phase, they were recoded as follows: rates 1 and 2 were coded as 'Not at all' and 4 as "little", 5 and 6 as "Enough," 7 and 8 "much" and 9 and 10 as "very much". Overall, 6 nominal and 17 ordinal variables were coded.

Statistical process of the data was performed by the statistical package SPSS (Statistical Package for Social Sciences V 20).

Association between different variables was tested with the  $\chi^2$  independence test. For significance level  $\alpha=0.05$ , a result was considered statistically significant when  $p\text{-value}<0.05$  (Apostolakis & Stamouli, 2007; Apostolakis et al. 2009).

## Results

Table 1 presents the demographic characteristics of the sample. The majority of the respondents were males and the largest proportion of the sample consisted of nurses. Regarding the facilities, the largest proportion of the sample (33.2%) find facilities very suitable and they believe that raw materials are quite sufficient (32.8%). The majority of the sample is very satisfied from the relationship with colleagues (36.5%) and the management of the hospital (28.1%). Furthermore, most of the respondents are not satisfied at all by their income (36.5%), they feel that their work is not being recognized at all by the hospital administration (32.6%), they believe that management does not rewards good performance (39.1%) and they are not provided with opportunities for intervention in organizational aspects of the hospital (45.3%). On the other hand, the majority of the sample is quite satisfied from the overall working conditions of the hospital (30.6%) and they believe that colleagues recognize their work (43.0%). The largest proportion of the sample (40.8%) wouldn't prefer to work in another non military health service (Table 2).

**Table 1. Demographic characteristics of the sample (%)**

<b>Variable</b>	<b>%</b>
<b>Sex</b>	
Male	47.9
Female	52.1
<b>Age</b>	
18-30	28.3
31-40	21.0
41-50	22.5
>50	2.5
<b>Marital status</b>	
Single	44.9
Divorced	9.0
Married	41.6
Separated	2.5
Widowed	2.0
<b>Years Working at NHA</b>	
Up to 10	46.3
10-20	42.2
>20	11.5
<b>Specialty</b>	
Doctor	39.2
Nurse	60.8

**Table 2. Feeling of satisfaction from various aspects (%).**

Variable	%				
	Not at all	Little	Enough	Much	Very much
How adequate do you find the facilities of the hospital?	16.6	26.4	21.9	33.2	2.0
How much do I believe that there is adequacy of raw material?	16.6	24.4	32.8	26.2	0.0
How much do I believe that there is adequacy of personnel in the clinic I work in?	18.5	39.1	23.0	17.4	2.0
How satisfied do I feel from my relationship with colleagues?	4.5	30.1	11.5	36.5	17.4
How satisfied do I feel from my relationship with management?	14.1	25.0	21.3	28.1	11.5
How satisfied do I feel from my job income?	36.5	19.4	29.5	14.6	0.0
How much do I believe that hospital administration recognizes my work?	32.6	18.0	27.0	14.8	7.6
How satisfied do I feel from working conditions at NHA	17.2	27.0	25.2	30.6	0.0
How much do I believe that my colleagues recognize my work?	9.6	23.0	9.0	43.0	15.4
I would rather work in another (non- military) Health Service	40.8	16.0	10.9	19.4	12.9
How much do I believe that patients recognize my work?	2.0	35.1	10.9	33.5	18.5
Management rewards my good performance	39.1	21.9	22.5	9.1	7.6
At my workplace, I am provided with opportunities for intervention in organizational aspects of the hospital	43.5	17.4	23.0	10.9	5.2

**Table 3. Contingency tables between education and belief of rewarding good performance by management.**

Education	Administration rewards me for performance					Total
	Not at all	A little bit	Enough	much	Very much	
High school graduated	4.5%	0.0%	0.0%	0.0%	2.3%	6.8%
Technological education graduated	0.0%	0.0%	0.0%	2.3%	0.0%	2.3%
University education graduated	22.7%	20.5%	15.9%	0.0%	0.0%	59.1%
Master degree holder	9.1%	2.3%	6.8%	2.3%	2.3%	22.7%
PHD holder	2.3%	0.0%	0.0%	4.5%	2.3%	9.1%
<b>Total</b>	<b>38.6%</b>	<b>22.7%</b>	<b>22.7%</b>	<b>9.1%</b>	<b>6.8%</b>	<b>100%</b>

**Table 4. Contingency tables between years working in the hospital and staff's belief about capabilities for intervention in organizational matters of the hospital provided by management.**

Years working at NNA	I am provided with intervention capabilities in organizational matters of the hospital					total
	Not at all	A little bit	Enough	much	Very much	
Up to 10 years	24,4%	6,7%	13,3%	2,2%	0,0%	46,7%
11-20	17,8%	8,9%	6,7%	8,9%	0,0%	42,2%
More than 20	2,2%	2,2%	2,2%	0,0%	4,4%	11,1%
<b>Total</b>	<b>44,4%</b>	<b>17,8%</b>	<b>22,2%</b>	<b>11,1%</b>	<b>4,4%</b>	<b>100%</b>

A  $\chi^2$  independence test on the variables education and belief of rewarding good performance by management (Table 3), rejected the independence ( $\chi^2=33.7$ , p-value=0.006). The independence was also rejected for the variables ( $\chi^2=21$ , p-value=0.007) years working in the hospital and staff's belief about capabilities for intervention in organizational matters of the hospital provided by management (Table 4). It seems that as years working in the hospital increase opportunities for intervention into organizational matters of the

hospital grow, according to the beliefs of the respondents.

The  $\chi^2$  independence test rejected the independence for the variables recognition of personnel's work by administration and satisfaction from working conditions in Naval Hospital of Athens ( $\chi^2=39.6$ , p-value=0). The independence was also rejected for the variables recognition of personnel's work by administration and satisfaction from the relationship with the

administration ( $\chi^2=48.5$ ,  $p\text{-value}=0$ ). As the belief that administration recognizes staff's work grows, the satisfaction from working conditions of the hospital increases as well, and so does the satisfaction of the relationship with the administration.

The sample was also asked to write down their proposals on how their business satisfaction could improve. Those proposals concerned the improvement of the working conditions, the need for more staff, fewer concerned shifts and salary increase and the need for motivation, rewards for good performance and participation in decision making. They also concerned the need for raw materials and continuing education.

### Discussion

According to the literature, hospital personnel have difficulties in meeting the needs of their patients if their own needs are not met (Linn et al. 1985). Creating effective working environment with appropriate and sufficient resources contributes to the achievement of goals and simultaneously increases job satisfaction.

According to the literature, the relationship among colleagues and administration, the working conditions, the possibility of intervention in matters of organization, the recognition of their value by patients and colleagues, and the reward of the administration, significantly affect the level of job satisfaction of medical and nursing staff of the hospital (Love, 1977; Freedom & Hooker, 1995).

Increasing the opportunities for intervention in organizational aspects of the hospital, can increase confidence and ultimately staff satisfaction and efficiency. According to the survey when someone is actively involved in the organization of his/her job, feels more that he/she is a part of it and tries for the best possible result. The administration has to perform in a way that will enable staff's participation in decision making and will motivate them in order to have a positive effect on job satisfaction.

Satisfaction from financial rewards seems to have an important part in job satisfaction as a whole. Financial incentives could increase job satisfaction and staff efficiency. The acquisition of more modern medical and nursing equipment is of major importance for the hospital staff.

### Conclusions

Staff training does not seem to particularly affect job satisfaction of medical and nursing staff (79.5% agree that they are qualified/trained properly). Nevertheless, a large proportion of the staff suggests better training and qualification of personnel. Increased opportunities for intervention in organizational is associated with increased satisfaction from the relationship with administration and the satisfaction from working conditions at the hospital. It was also revealed that there is no association between education and satisfaction from income as well as between years working at the hospital and satisfaction from income. It was found, though, that education is related to rewarding of good performance by the administration.

The majority of respondents proposed hiring more staff, as they believe that the hospital is understaffed. Increase personal or better allocation of tasks is likely to solve the problem.

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### References

- Adams, A., Bond, S. (2000). Hospital nurses' job satisfaction, individual and organizational characteristics, *Journal of Advanced Nursing*, 32(3), 536-542
- Apostolakis, I., Stamouli, MA. (2006). Validity and reliability assessment of quantitative research questionnaires in health units: The case of a questionnaire concerning the evaluation of a nursing services management information system of a hospital file:///C:/Users/twins/Downloads/apostolakis%20stamouli%20VALIDITY\_RELIABILITY%20Journal%20Statistical%20Review.pdf

- Apostolakis, I., Daras, T., Stamouli, MA. (2009) Exercises of Computational Statistics A, Athens, Papazisis Pub. (in Greek).
- Apostolakis, I., Stamouli, MA. (2007). Exercises of Computational Statistics B, Athens, Papazisis Pub. (in Greek).
- Bhatnagar, K., Srivastava, K. (2012). Job satisfaction in health-care organizations, *Ind Psychiatry J.* 21,1:75-8.
- Cavanash, S.J. (1992). Job satisfaction of nursing staff working in hospitals, *Journal of Advanced Nursing*, 17, 704-711
- Cohen, L., Lawrence, M., Morrison, K. (2008) Research methods in education. Publication: Metehmio, Athens.
- Eason, T. (2010). Lifelong learning: fostering a culture of curiosity. *Creat Nurs*, 16(4):155-9.
- Freeborn, D.K., Hooker, R.S. (1995). Satisfaction of physician assistants and other nonphysician providers in a managed care setting, *Public Health Rep.* 110:714-719
- Kaitelidou, D., Theodorou, M. (2007). Job satisfaction of nursing and paramedical staff in a public general hospital. *Hellenic journal of nursing* <http://www.hjn.gr>
- Lambrou, P., Kontodimopoulos, N., Niakas, D. (2010) Motivation and job satisfaction among medical and nursing staff in a Cyprus public general hospital, *Human Resources for Health*, 8:26
- Linn, LS, Brook, RH, Clark, VA, Davies, AR, Fink, A, Kosecoff, J. (1985). Physician and patient satisfaction as factors related to the organization of internal medicine group practices. *Med Care.*,23:1171–1178.
- Love, JE., Jr, A (1977). Study of the relationships between perceived organizational stratification, and individual job satisfaction and adaptiveness in hospital laboratories, *Am J Med Technol.*, 43:1135.
- Lu, H., While, A., Barriball, L. (2004). Job satisfaction among nurses: a literature review, *International Journal of Nursing Studies*, 42, 211–227
- Mahmoud, AL Hussami, (2008). A Study of Nurses' Job Satisfaction: The Relationship to Organizational Commitment, Perceived Organizational Support, Transactional Leadership, Transformational Leadership, and Level of Education, *European Journal of Scientific Research*, 22, 2: 286-295
- Maliarou, M. (2009). Remote Professional Nurses Training. *Nursing* 48(1):58–64
- Petsetaki, E., Gogos, X., (2010). Investigation of business satisfaction of nursing staff in the hospital. The case of general hospital of Naousa, *Hellenic Journal of Nursing Science*, 4, 4: 15-31
- Robson, C. (2010) «Real world research» Publication: Gutenberg, Athens
- Sapountzi-Krepia D, Zyga S, Prezerakos P, Malliarou M, Efstathiou C, Christodoulou K, Charalambous G.(2016) Kuopio University Hospital Job Satisfaction Scale (KUHJSS): its validation in the Greek language. *J Nurs Manag.* doi: 10.1111/jonm.12418.
- Theophanidis, D., Foundouki, A. (2006). Lifelong education in nursing science and practice, *Nursing* 45(4):476–482.