

# Measurement of job satisfaction among healthcare workers during the COVID-19 pandemic: A cross-sectional study

GEORGE E. DIAKOS<sup>1,3</sup>, SOTIRIOS KOUPIDIS<sup>2</sup> and GEORGE DOUNIAS<sup>2</sup>

<sup>1</sup>Department of Public Health Policy, School of Public Health, and <sup>2</sup>Centre for Occupational and Environmental Health, Department of Public Health Policy, School of Public Health, University of West Attica, 11521 Athens, Greece

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**Abstract.** Job satisfaction is one of the most frequently studied subjects for numerous researchers, aiming to investigate the behavior of employees in the workplace. Moreover, it is an important predictor of well-being in the workplace, having a direct association with the productivity of employees and the quality of services provided by each organization. In the field of health, the high level of job satisfaction of healthcare workers translates into a high level of patient care. Therefore, during the period of the coronavirus disease 2019 (COVID-19) pandemic, efforts to evaluate the level of job satisfaction of healthcare workers represents a cornerstone in the effort to maintain high-level health services. The aim of the present study was to evaluate job satisfaction among healthcare workers in a COVID-19 emergency department during the pandemic and its potential association with the demographic characteristics of the participants. For the present cross-sectional study, which included 89 frontline healthcare workers, the 36-item Job Satisfaction Survey questionnaire was used. The findings concluded that the majority of the participants were not satisfied with their work ( $120 \pm 25.58$ ). Among the nine job satisfaction factors examined, only the co-worker factor received a high job satisfaction score in the entire sample ( $16.08 \pm 4.14$ ). By contrast, the other motivating factors were classified as unsatisfactory, namely pay ( $10.10 \pm 4.63$ ), promotion ( $11.22 \pm 4.38$ ), fringe benefits ( $10.63 \pm 4.09$ ), contingent rewards ( $11.39 \pm 4.13$ ) and communications ( $14.15 \pm 4.21$ ). The control of the association between the socio-demographic data of the participants and the motivating factors of job satisfaction revealed that the age group of 45-55 years and the paramedical staff were more satisfied with the communication factor than the other categories of colleagues. In addition, it appears that the average value of satisfaction with the pay factor was significantly lower in

the participating physicians (mean=8.59,  $P < 0.05$ ) compared to the other employee categories. On the whole, the present study demonstrates that the measurement and evaluation of job satisfaction in the workplace of a hospital environment is a cornerstone in the efforts to create a healthy and safe work environment for healthcare staff during the period of the COVID-19 pandemic. Ensuring a high level of job satisfaction for healthcare workers will provide a high level of services to health service users.

## Introduction

The public health emergency crisis triggered by the coronavirus disease 2019 (COVID-19) pandemic massively exacerbated a well-known critical structural condition that exposed the public health system and healthcare workers to an unprecedentedly elevated levels of occupational stress (1). The most comprehensive definition of job satisfaction was described by Locke (2) in 1976 who defined it as a pleasing or positive emotional situation resulting from the appraisal of one's job experience. The level of job satisfaction among frontline medical staff is a paramount factor for both healthcare workers and public healthcare organizations. Additionally, high levels of job satisfaction are directly related to a better quality of the services and care provided, and to a greater patient adherence to treatment. Human resources should take into consideration the fact that the maintenance of high-level job satisfaction among healthcare workers through motivation patterns has a potential direct effect on the quality of care and services that patients receive (3,4). Since the onset of the COVID-19 pandemic in 2019, a number of researchers worldwide have focused on the mental health of healthcare workers (5,6). A previous meta-analysis of 13 studies, 12 were from China and one from Singapore, focused on mental health during the COVID-19 pandemic and identified a pooled prevalence of 22.8% for depression, 38.9% for insomnia and 23.2% for anxiety (7). To date, the potential negative consequences, such as a low level of job satisfaction and the effects of a pandemic remain on mental health remain a relatively unexplored field of research. In the period when the present study was conducted, there was limited literature available focusing on the issue of job satisfaction of healthcare workers during the period of the COVID-19 pandemic in Greece. Therefore, the aim of the present study was to evaluate the level of job

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*Correspondence to:* Dr George E. Diakos, <sup>3</sup>*Present address:* Department of Occupational and Environmental Medicine, Athens Naval Hospital, 70 Deinostratou Street, 11521 Athens, Greece  
E-mail: diakosg88@gmail.com

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satisfaction among healthcare workers and the existence of a potential association with the demographic characteristics of the participants. The findings of the present study may be used to organize targeted interventions in the public health system.

### Subjects and methods

A cross-sectional study was conducted from August to October, 2021 among healthcare workers of the COVID-19 Emergency Department in the Athens Naval Hospital (Athens, Greece). The participants were requested to complete a self-administrated questionnaire which included two separated sections. The first one included questions on demographic characteristics, such as sex, age, educational level, marital status, specialization, working experience, accommodation status and the existence of children. The second one included the Job Satisfaction Survey (JSS) to measure the level of job satisfaction participants experienced (8). The JSS is a 36-item questionnaire measuring nine separate aspects of job satisfaction including payment, coworkers, fringe benefits, communication, nature of work, promotion, supervision, contingent rewards and operation conditions. Scores on each of the nine aspects, based on four items each can range from 4 to 24, while scores for the total job satisfaction, based on the summary of all 36 items, can range from 36 to 216. Each item is scored from 1 (strongly disagree) to 6 (strongly agree), based on a 6-point Likert-type rating scale. A higher score indicates a higher level of job satisfaction (9).

*Study participants.* A total of 89 participants were included in the present study. In accordance with the demographic factor, sex, 41 participants were male (n=41, 46.1%) and 44 were female (n=44, 49.4%).

The Athens Naval Hospital Ethics Committee approved the study (Approval no. 7498/15.07.2021). The study participants received a cover letter with information regarding the study aims, that participation was voluntary and data would be treated with discretion.

*Statistical analysis.* Microsoft Excel was used for data classification, while data analysis was conducted using the SPSS 22.0 statistical program (IBM Corp.). Additionally, using the Kolmogorov-Smirnov criteria test, the distributions of the quantitative variables were examined for the regularity of their distribution, while the mean values and standard deviation were calculated. The t-test was used to determine the existence of a statistically significant difference between the means of two independent groups [for demographic factors including sex (male/female), accommodation status (with others/alone), the existence of children (yes/no)]. The Mann-Whitney U test was used to compare differences between two independent groups when the variable was not normally distributed. One-way analysis of variance (ANOVA) and a Tukey's post hoc test was used to determine the existence of statistically significant differences between the means of three or more independent groups. A P-value <0.05 was considered to indicate a statistically significant difference.

### Results

Among the 89 healthcare workers who participated in the present study, the majority of the participants were female

Table I. Demographic characteristics of the study participants.

Characteristic	Frequency (no. of participants)	Percentage
Sex		
Female	44	49.4
Male	41	46.1
Did not answer	4	4.5
Age, years		
18-34	35	39.3
34-44	29	32.6
45-55	21	23.6
>55	4	4.5
Marital status		
Married	47	52.8
Single	38	42.7
Divorced	2	2.2
Widowed	0	0
Did not answer	2	2.2
Accommodation status		
Resides with others	65	73.0
Alone	23	25.8
Did not answer	1	1.2
Existence of children		
Yes	44	49.4
No	45	50.6
Educational level		
Intermediate vocational training	31	34.8
College degree	37	41.6
MSc/PhD	15	16.9
Did not answer	6	6.7
Work experience (years)		
0-5	25	28.1
6-10	12	13.5
11-20	22	24.7
>20	22	24.7
Did not answer	8	9.0
Specialization		
Medical doctor	34	38.2
Nursing staff	33	37.1
Paramedics	10	11.2
Administrative staff	11	12.4
Did not answer	1	1.1

(n=44, 49.4%) In addition, the age group of 18-24 years had the highest percentage (n=35, 39.3%). The majority of the participants were currently married (n=47, 52.8%) and lived with others in their habitat (n=65, 73%). As regards the educational level, the college degree collected the highest percentage among the other options (n=37, 41.6%). The working experience category of 0-5 years had the highest percentage (n=25, 28.1%), followed by the category of 11-20 years (n=22, 24.7%) (Table I).

Table II. Associated demographic characteristics of the study participants and statistical analyses.

Factor	Communication	Coworkers	Contingent rewards	Fringe benefits	Promotion	Pay	Overall job satisfaction	P-value
Specialization								P<0.05
Medical doctor	12.88±3.95	15.4±4	12.9±4	9.4±4	10.2±4.2	8.59±4	112.8±25.8	
Nursing staff	13.64±4	16.1±4.1	13.6±4	15.7±4	12±5	10.1±4.7	119±24.7	
Paramedics	17.2±4.5	15.7±4	17.2±4.5	13.3±2.8	12.9±1.8	14.2±4.3	134.7±17.2	
Administrative staff	16.4±3.3	17.6±4	16.4±3.3	11.8±4.1	9.9±1.2	10.3±4.6	129±25	
Work experience (years)								P<0.05
0-5	14.8±3.5	16±3.8	11.6±3.9	11.2±3.8	11.9±3.3	10.6±4.3	125±23	
6-10	12.9±3.5	14.8±3.1	11.1±4	9±3	10±4.6	8.8±3.9	111±21	
10-20	12.6±5	15.4±4.9	10±4.3	9.7±4.7	9.4±3.5	8.4±4.6	110±29	
>20	15±3.7	17±4.3	12.6±4.2	11.7±4.4	13.22±5.6	11.5±4.8	129±24	
Educational level								P<0.05
Intermediate vocational training	15.7±4.6	16.7±4.5	11.3±2.6	12.3±3.5	12±4.2	13.3±5.6	131±24	
College degree	12.5±3.9	15.2±4.6	9.8±3.7	9.3±3.5	10±3.9	8.7±3.5	111±23.8	
MSc/PhD	15.1±4.3	16.8±4.2	13.7±4.5	11.2±4.8	10±4	10.3±4.5	119±25.3	
Age (years)								P<0.05
18-34	13.6±3.44	16±3.6	11.3±4.4	10.2±3.8	11.2±4	9.9±4	119±25	
34-44	13.1±4.6	14.6±4.1	10.3±3.7	10.2±4.2	10±3.6	8.9±4.9	111±24.5	
45-55	16.2±4.5	17.7±4.2	12.4±2.5	12.1±4.5	12.2±5	11.6±5	134±23.8	
>55	15.7±1.7	18.5±4.6	14.7±2.5	9±1.1	15±7.5	12±4	130±24.6	
Accommodation status								P<0.05
Resides with others	14.25±4.5	16.9±3.7	12±4.1	11±4.1	11.9±4.53	10.7±4.7	125±24.3	
Lives alone	13.7±3.9	13.7±4.4	9.1±3.1	9.2±3.7	9±3.2	8.34±3.9	120±25.7	

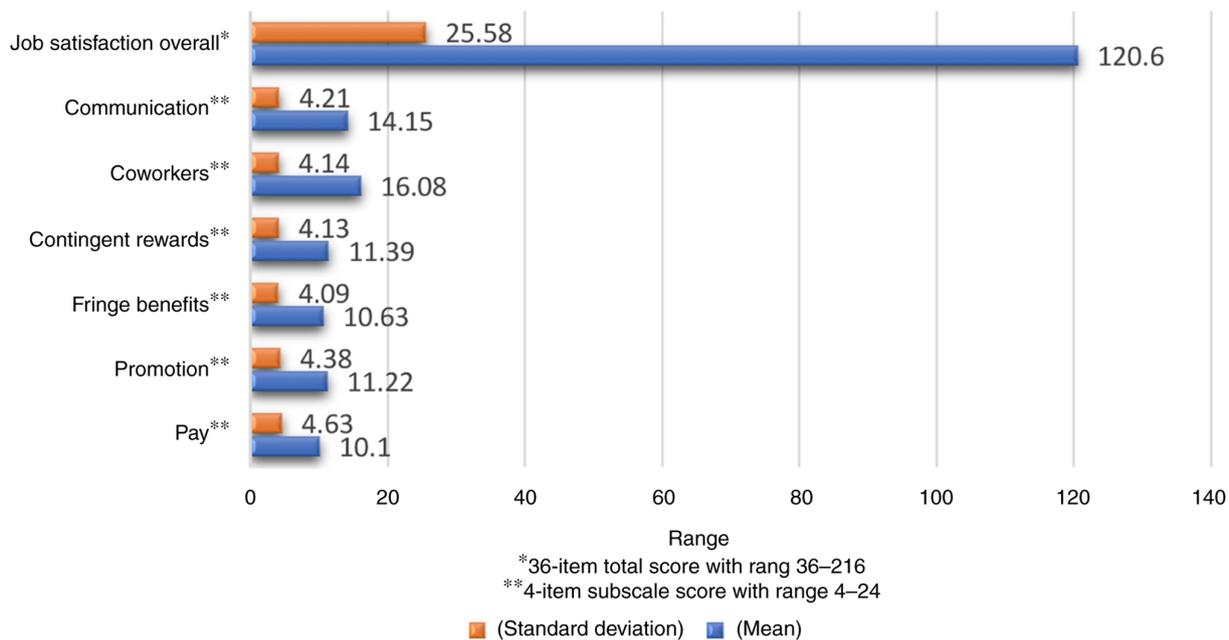


Figure 1. The level of satisfaction through the mean score of six aspects and the overall job satisfaction score. This had a reliability based on the Cronbach Alpha test variable (Cronbach alpha >0.7).

The results of the level of satisfaction through the mean score of six aspects and the overall job satisfaction score are presented in Fig. 1. This had a reliability based on the Cronbach Alpha test variable (Cronbach alpha >0.7). In

general, the job satisfaction among healthcare workers was relatively low ( $120.6 \pm 25.58$ ). The coworkers' aspect was found to have the highest level of job satisfaction ( $16.08 \pm 4.14$ ), followed by the aspect of communication ( $14.15 \pm 4.2$ ). On the contrary, the lowest level of job satisfaction was observed in pay ( $10.10 \pm 4.63$ ) and fringe benefits ( $10.63 \pm 4.09$ ).

In accordance with the demographic factors, the participants with the specialization of medical doctor ( $n=34$ , 38%) had the lowest level of job satisfaction for the aspects of pay (mean, 8.59;  $P<0.05$ ) and fringe benefits (mean, 9.41;  $P<0.05$ ). The healthcare workers with  $>20$  years of work experience had the highest level of overall job satisfaction (mean, 129.27;  $P<0.05$ ). Participants with a college degree presented the lowest level of job satisfaction for the pay aspect (mean, 8.73,  $P<0.05$ ). The age group of 45-55 years had the highest level of job satisfaction overall (mean, 134;  $P<0.05$ ) and for the aspect of communication (mean, 16.19;  $P<0.05$ ). Moreover, healthcare workers who resided with others had a higher level of job satisfaction for the aspects of pay (mean, 10.78;  $P<0.05$ ), promotion (mean, 11.92;  $P<0.05$ ), coworkers (mean, 16.91;  $P<0.05$ ), communication (mean, 14.72;  $P<0.05$ ) and contingent rewards (mean, 12.09;  $P<0.05$ ) (Table II).

On the whole, the findings of the present study demonstrated that a healthcare worker who belongs to the paramedics specialization, has a higher educational level, is aged 45-55 years, has  $>20$  years of work experience and resides with others, has a higher level of job satisfaction in several of the aspects measured.

## Discussion

The results of the present study demonstrated that the vast majority of the participants presented a higher level of job satisfaction in certain aspects, including communication and coworkers. This finding is in accordance with the findings of previous studies employing the same questionnaire (JSS) to evaluate job satisfaction. In 2020, a survey conducted in Vietnam among 319 healthcare workers with the use of the JSS revealed that healthcare workers were highly satisfied with coworkers ( $19.6 \pm 3.9$ ), while presenting a lower level of job satisfaction for aspects, such as operation conditions ( $11.4 \pm 3.4$ ) and pay ( $14.3 \pm 3.8$ ) (8). Moreover, the researchers demonstrated that the older male healthcare workers who were married and those who had a higher monthly salary reported a higher level of job satisfaction in several aspects (10). The present study demonstrated that, according to the demographic factors, a higher level of job satisfaction was noted for participants with a higher level of education,  $>20$  years of work experience and who were married and resided with others. In 2020, researchers in China, Hubei Province, conducted a survey using the Minnesota Satisfaction Questionnaire among 455 frontline healthcare workers and found that, in accordance with the demographic characteristics, the educational level ( $P=0.002$ ), work experience ( $P=0.006$ ) and specialization ( $P<0.001$ ) resulted in a higher level of job satisfaction (11). Another study by Dinić *et al* (12), which conducted a survey in Serbia in 2021 among 1,553 registered clinicians using an online questionnaire, demonstrated that participants who belonged to the public health sector, were younger and with less working experience were negatively influenced by the COVID-19 pandemic and reassigned to other positions ( $P<0.001$ ). In Egypt, a comparative cross-sectional research was conducted

among 210 nurses from a COVID-19 triage hospital (group 1) vs. 210 nurses from a non-COVID-19 hospital (group 2) during the pandemic in 2020 using an online questionnaire aiming to evaluate job satisfaction level, work-related stress and intention to resignation (13). In that study, more than half of the nurses (51%) in group 1 exhibited a low satisfaction level vs. 41.9% in group 2. The work load (98.6%), confronting death (96.7%), fears and individual demands (95.7%), and employing strict biosecurity measures (95.2%) represented the highest priority stressors in group 1, while potential exposure to infection factors (97.6%) was the dominant stress factor for group 2 (14).

Over the period of almost 3 years of the COVID-19 pandemic, it has become clear that working in the healthcare system may be emotionally and physically demanding. The health and wellbeing of healthcare staff is directly associated with patient safety, staff retention and economic burden to the national health system of each country due to the absence of staff due to illness (15). Blake *et al* (16) conducted a survey in the UK to evaluate the implementation of Supported Wellbeings Centers for hospital employees during the COVID-19 pandemic through an online questionnaire, which was completed before and after the usage of the facilities (14). During the period of 17 weeks, 14,934 facility visits were recorded across two well-being centers. Facilities were highly valued from the majority of the participants. A total of 819 hospital employees completed an online questionnaire (88% female; 37.7% working in COVID-19 high risk areas; 52.4% frontline workers; 55.2% had visited a wellbeing center). There was moderate-to-high level of work-related stress (62.9%), low well-being status (26.1%), presenteeism (68%) and intentions to leave (3.6%). Wellbeing was recorded higher in those that visited a wellbeing center. The dominant reason for accessing a wellbeing center was quiet rest and recuperation, suggesting an urgent need for time-out facilities and rest spaces for healthcare workers. This is crucial, since work breaks may reduce the risk of burnout syndrome and its consequences for patients and colleagues (17,18).

Healthcare workers represent the most vital part of each health system and its efforts to confront infectious disease outbreaks, such as the COVID-19 pandemic. The level of job satisfaction among healthcare workers appears to be low during the period of the COVID-19 pandemic. The measurement and evaluation of job satisfaction in the workplace of a hospital environment is a cornerstone in the efforts to create a healthy and safe work environment for healthcare staff during the COVID-19 pandemic. Ensuring a high level of job satisfaction for healthcare workers may provide a high level of services to the health services users (19). Moreover, in each structure of the national health system, human recourse departments need to be in direct communication with specializations, such as psychiatrists, occupational physicians under the umbrella of securing a high level of job satisfaction among healthcare workers (20). In 2016, the World Health Organization, through the *Global Strategy on Human Recourses for Health* clearly illustrated that efforts should be made to improve working conditions, reward system, continuous educational programs and career opportunities by adopting evidence-based health working policies which are similar to the local structure so as to make feasible the best possible use of limited recourses and augment motivation for improved performance for healthcare workers (21). Given the fact that the reasons for dissatisfaction vary, they must be combated preventively. Moreover, the efficacious strategic

plan to improve physician job satisfaction will target organization-directed interventions rather than the level of individual. Otherwise, the loss of professionals may become an inconvenience for the institution (22).

In conclusion, the present study demonstrated that the overall level of job satisfaction among healthcare workers during the period of the COVID-19 pandemic was relatively low. The findings of the present study shed light on the urgent need to improve the working status of healthcare workers. Globally, health policy makers ought not only improve the current remuneration system of healthcare workers but also provide them a secured work field to enhance work stability. In the frame of the COVID-19 pandemic, further studies on the job satisfaction of healthcare workers are warranted in order to collect more data and information in order to take targeted measures.

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### Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

### Authors' contributions

GED conceived and designed the study, collected the data, performed the statistical analyses and drafted the manuscript. SK and GED assisted with the study design, provided professional guidance and made several important revisions to the manuscript. All authors have read and approved the final manuscript. GED and SK confirm the authenticity of the raw data.

### Ethics approval and consent to participate

The Athens Naval Hospital Ethics Committee approved the study (approval no. 7498/15.07.2021). The study participants received a cover letter with information regarding the study aim, that participation was voluntary and data would be treated with discretion.

### Patient consent for publication

Not applicable.

### Competing interests

The authors declare that they have no competing interests.

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