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# WORKPLACE ENVIRONMENT AND BURN-OUT IN PUBLIC HEALTH WORKFORCE INSPECTION SERVICES IN GREECE DURING COVID-19 PANDEMIC

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## Abstract

**Background.** The strong link between emotional exhaustion, personal accomplishment, depersonalization, and total occupational burn out, with workplace environment, and their consequences to the general wellbeing of employees in Public Health inspection workforce services is limited. The aim of this study was to report the burnout of Public Health workforce in Greece and investigate possible relationships with workplace environment, during COVID-19 Pandemic in Greece.

**Methods.** This is a quantitative, cross-sectional, nationwide research study in Greece, conducted in the second quarter of 2021. An online survey was conducted. The response rate was 27%. Burnout was measured with Maslach Burnout Inventory Questionnaire.

**Results.** 19.46% of participants report low burnout levels, 37.84% of participants' medium burnout levels and 42.70% high (above average) burnout levels. Burnout total score of rural environment was higher compared to all other groups ( $\chi^2= 16.017$ ), ( $\beta=0.455$ ),  $p<0.001$ . Medium levels of Emotional exhaustion score were reported. Levels of depersonalization score were low. Personal Accomplishment of rural environment was higher compared to all other groups ( $\chi^2= 26.417$ ). Depersonalization of semi-urban environment was higher compared to all other groups ( $\chi^2= 6.188$ ).

**Conclusion.** The findings indicated that burnout has proven to be an issue. This study contributes to the limited evidence supporting the link between burnout and adding new information to occupational health and safety for workplace environment which could be exploited to advance the quality of Public Health Services provision during COVID-19 Pandemic in Greece.

**Keywords:** - Burnout - Workplace environment -Public health workforce -Occupational health - COVID-19 Pandemic

## Introduction

The Public Health sector ensures, promotes, and acts proactively on health issues. Public health deals with health threats based on population health analysis. The population may be too small or too large so to include residents of many continents - as in the case of the pandemic COVID-19. In Greece, public health services were provided by the Ministry of Health, and Directorates of Health Control and Environmental Hygiene of all the Regions Prefectures. In this frame, it can be argued that the multidisciplinary nature of employees in public health inspections services workforce, different environments and materials of inspected facilities, out-of-office work, and the responsibilities of

employees in public health inspection services workforce in Greece during COVID-19 Pandemic constitute the basic elements that highlight the importance of OHS in public health inspection organizations [1,2]. Yet, the risks that are related to the work life in workplace environments are under-researched, although this specific occupation possesses a range of threats to physical and psychological health of employees, similar to a variety of risks that have been reported by the extended literature for healthcare workers and law enforcement officers [1, 3, 4].

In the frame of COVID-19 pandemic, the burden on health workers has been characterized as highly severe in low- and middle-income countries, such as Greece, due to resource constraints, underfunded and understaffed organizations [5], while occupational stress and burnout combined with insufficient resources and health services during the pandemic may put health workers at greater risks of mental health disorders [6]. As well, during the COVID-19 pandemic, healthcare staff has reported moderate to extreme concerns of burnout, nervousness, anxiety, depression, and hopelessness [7]. A recent study in Iran for the healthcare workers at the frontline of fighting COVID-19 showed a higher risk for mental health problems, including stress, anxiety, depression, and insomnia. More specifically, factors such as communications, manager support, change and demand had the greatest impact on employee stress levels [8].

Workplace environment (rural, urban, semi urban) affects perceived levels of burnout. Employees in rural environments report higher levels of burnout compared to employees in urban environments. A most recent study from China during the COVID-19 pandemic, utilizing the Maslach Burnout Inventory, demonstrated that more than half of rural healthcare workers reported moderate to severe levels of burnout, raising the issue of immediate strategizing to mitigate this prevalent mental health issue [9]. Leskovic et al. [10] also found that Slovenian healthcare workers in rural areas presented intensified burnout during the COVID-19 pandemic as well as decreased levels of job satisfaction compared to the pre-pandemic era. Given the importance of Public Health Services in society and especially for the safety of the population, the quality of Public Health inspection must remain high, and this presupposes the high quality and performance of service provision from employees of Public Health inspection workforce services that oversee these tasks.

### **Study Objectives**

Despite the repeated evidence that point out the strong link between burn out total score, emotional exhaustion, personal accomplishment, depersonalization, to this date, and their consequences to the general wellbeing of employees of Public Health inspection workforce is very limited, although the nature of the work presents a range of threats as well as the link of workplace conditions to burnout. The research model of the present study is based on the pilot study of Adamopoulos et al. [2] also on the expanded mediation model of job burnout by Leiter [9,11] developed for the healthcare setting. The main objectives of the current study are the following:

- 1) To examine the various types and levels of burnout in employees in Public Health inspection workforce services in Greece during COVID-19 Pandemic.
- 2) To detect possible differences between urban and rural settings, in burnout.

## **Methodology –Results**

### **Methodology**

#### **Research design**

This is a cross-sectional, original research, since data were gathered by the researcher directly from a sample of employees in Public Health inspection workforce services in Greece during COVID-19 Pandemic, at one time-period, and statistical analysis was utilized to uncover possible associations between the data. As the purpose of this research is to reveal the burn out syndrome of employees in Public Health inspection workforce services and investigate the causal relationship between workplace environment and burnout, the study utilizes a quantitative methodology.

#### **The Sample**

The sample of this study comprised 185 employees in Public Health inspection workforce services in Greece. We should point out that according to the information that existed from the Human Resources Directorates and the organizational charts of the Services of Public Health Organizations and the imprint given by the research carried out,

#### **Sampling process**

Took place between March 2021 and June 2021 and the total number of active Public Health Workforce all over Greece were contacted, providing N=185 responses, which account for 27% (185/684) of the population under study. The web-based survey was hosted on Google Forms and was made available between March 1<sup>st</sup> and June 22<sup>nd</sup> of 2021. Also explain the purpose and frame of the research study and assure them that the survey will be anonymous, optional, and encoded.

#### **Statistical analysis**

Data gathered by the questionnaire were analyzed with SPSS version 20. Frequency analysis was performed for nominal and ordinal demographic and job-characteristic variables, while for scale (dependent) variables mean (M), median (Mdn) and standard deviation (SD) measures were calculated for each variable. Descriptive statistics, while not allowing conclusions about the correlations of the variables considered, are especially important because they visualize the raw data and allow for simpler interpretation of the data. Cronbach's alpha was calculated to conclude the reliability of each questionnaire and sub-scale. Based on the scoring of each survey section, new variables were calculated, and they were examined relative to their distribution characteristics with the Shapiro-Wilk test, that showed non-normal distributions leading to non-parametric statistical test selection. All demographics and job characteristics were examined in relation to the dependent variables (burnout). Significant differences between groups of the demographic variables (gender, education, marital status, job position etc.) were identified and reported with Mann-Whitney and Kruskal-Wallis tests. Median values were plotted for each group in clustered diagrams to showcase the detected differences. To explore the variety and extent encountered by employees in Public Health inspection workforce services in Greece, descriptive statistics were calculated and presented in summary for each

demographic group as well as in total. The associations between burnout, and workplace environment were calculated with non-parametric correlation analysis (Spearman's coefficient). Since the main aim of this study was to investigate associated to burnout and workplace environment. Specifically, for burnout, each dimension (emotional exhaustion, depersonalization, personal accomplishment) was examined as separate dependent variables as well. For each dependent variable, hierarchical linear regression analysis was used to assess the effect of workplace environment. Statistical analyses were performed using the statistical package SPSS 20 and statistical significance was set at  $p < 0.05$ .

## Results

### Burnout and Workplace Environment

Table 1 presents the summary statistics for Emotional Exhaustion (EE), Personal Accomplishment (PA), Depersonalization (DP), and Burnout (Total) in the sample of the final study (N=185). Burnout and its dimensions range at a 7-point Likert scale (0=never, 6=always), meaning that average values equal to or larger than 3 indicate high levels of burnout, while values less than or equal to 2 indicate low levels of burnout. Mean scores of burn out in the range (2,3) were considered as medium levels of burnout. On average, medium levels of Emotional Exhaustion score (M=2.97, SD=0.99) and Personal Accomplishment score (M=2.54, SD=0.83) are reported. Levels of Depersonalization score are low (M=1.81, SD=1.17). The total score of Burnout (M=2.72, SD=0.69) indicates an average burnout level among participants, yet the histogram in Figure 1 is slightly negatively skewed (Skewness = -0.378). More specifically, Figure 1 presents the distribution of the sample according to this categorization: 19.46% of participants report low burnout levels, 37.84% of participants' medium burnout levels and 42.70% high (above average) burnout levels. This means that although the majority of the sample (57.3%) report low to medium burnout levels, there is a significant proportion (42.7%) that reports above average burnout.

Table 1. Summary statistics for Emotional Exhaustion (EE), Personal Accomplishment (PA), Depersonalization (DP), and Burnout (Total) (N=185)

	Mean	SD	Median	Range	IQR	Skewness	Kurtosis
EmotionalExhaustion(EE)	2967	099221	3000	5110	1380	-0394	-0127
Personal Accomplishment (PA)	2546	082964	2500	3750	1250	0065	-0635
Depersonalization(DP)	18189	117071	1500	5500	1500	0465	-0264
BurnoutScore(Total)	27233	069808	2770	2860	1060	-0378	-08

Similar results were derived for the workplace environment as presented in Figure 2.

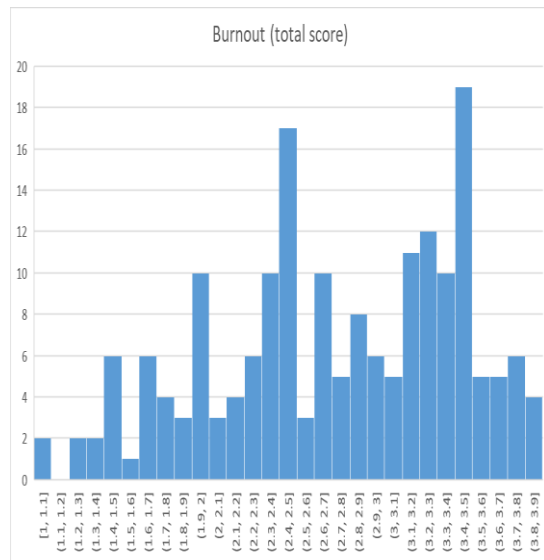


Figure 1. Histogram of burnout total score (N=185)

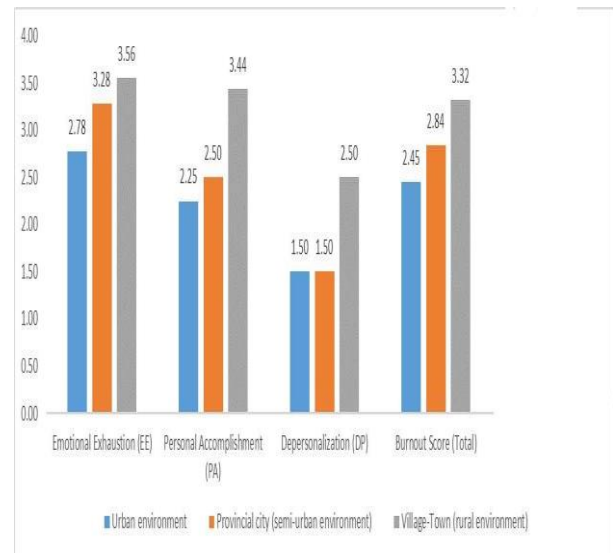


Figure 2. Median values of burnout and job satisfaction per job risk category and workplace environment

Table 2 presents the results of the Univariate analyses of burnout in relation to workplace (Kruskal-Wallis test). Personal Accomplishment of Village-Town (rural environment) (Mdn=3.56) was higher compared to all other groups, a difference that was statistically significant,  $\chi^2= 26.417$ ,  $p < 0.01$ . Depersonalization of Provincial city (semi-urban environment) (Mdn=2.00) was higher compared to all other groups, a difference that was statistically significant,  $\chi^2= 6.188$ ,  $p < 0.05$ . Burnout total score of Village-Town (rural environment) (Mdn=3.32) was higher compared to all other groups, a difference that was statistically significant,  $\chi^2= 16.017$ ,  $p < 0.01$ .

Table 2. Univariate analyses of burnout in relation to workplace (Kruskal-Wallis test)

Workplace		Emotional Exhaustion (EE)	Personal Accomplishment (PA)	Depersonalization (DP)	Burnout Score (Total)
Urban environment	Mean	2.8092	2.2865	1.6195	2.5294
	Std. Deviation	1.04194	.71606	1.17693	.68184
	Median	2.7778	2.2500	1.5000	2.4545
	Range	5.11	3.63	5.50	2.77
Provincial city (semi-urban environment)	Mean	3.0895	2.6250	1.9167	2.8497
	Std. Deviation	1.02416	.86137	1.11163	.68306
	Median	3.2778	2.5000	1.5000	2.8409
	Range	4.11	3.50	4.50	2.86
Village-Town (rural environment)	Mean	3.3395	3.2639	2.3472	3.2058
	Std. Deviation	.64348	.69422	1.05437	.47988
	Median	3.5556	3.4375	2.5000	3.3182
	Range	3.22	3.13	4.00	2.45
Kruskal-Wallis	$\chi^2$	4.098	26.417	6.188	16.017
	p	0.129	0.000	0.045	0.000

Hierarchical linear regression analysis was performed for Burnout total score. For Burnout, variables that were significantly correlated were imported the model was adjusted for demographics. For the unadjusted model, higher levels of burnout for employees in Public Health inspection workforce services ( $R^2=0.284$ ). When adjusting for demographics ( $R^2=0.449$ ), were significant predictor of burnout total ( $\beta=0.455$ ,  $p<0.001$ ), while being married ( $\beta=-0.166$ ,  $p=0.022$ ) and working in an urban

environment ( $\beta=-0.184$ ,  $p=0.017$ ) decreased burnout. On the other hand, working in a rural environment ( $\beta=0.167$ ,  $p=0.031$ ) had a positive effect on burnout, to the employees in Public Health inspection workforce services in Greece during COVID-19 Pandemic.

## **Discussion**

A cross-sectional, nationwide quantitative research was designed, and an online survey was distributed to public health workforce, including demographics and instruments to measure, burnout. In this study, burn out in different workplace environment has been identified as relevant to the employees in Public Health inspection workforce services in Greece during COVID-19 Pandemic. These tasks are achieved through a variety of functions including, but not limited to, inspections and assessments, consultation with public as well as other agencies, data and sample collection, and enforcement of regulations. Given the breadth of their duties, it comes as little surprise that face many health and safety issues while at work [1, 2, 12, 13]. Health and safety, as well as employee well-being at has been found to relate to several qualitative values that influence the workplace [13,14,15], in the frame of organizational and prevention culture. Moreover, justice and responsibility, as well as compliance of individual and organizational development leads to growth and resilience [10]. Burnout has proven to be an issue for employees of Public Health Workforce inspection services since 42.7% of participants' report above average burnout scores. Indeed, health related professions are more prone to burnout as depicted by previous research [11]. Moreover, in the frame of COVID-19 pandemic, the burden on health workers has been characterized as highly severe in low- and middle-income Countries, due to resource constraints, underfunded and understaffed organizations [4]. Another study argues that occupational stress and burnout combined with insufficient resources and health services during the pandemic may put Health Workers at greater risks of mental health disorders [16].

## **Conclusions**

During the pandemic in Greece, the combination of limited technical and manpower resources as well as long work hours may explain the higher levels of burnout of employees in Public Health inspection workforce services in Greece during COVID-19 Pandemic in rural areas. These results can help the public administration from programs and interventions in order to provide a safe work environment for employees in Public Health inspection workforce services and other Health Employees. Also, the public administration may use these results and insights in the effort to increase performance and productivity of the public sector, employees in rural workplaces report higher scores of burnout in all dimensions (emotional exhaustion, personal accomplishment, and depersonalization).

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