ELECTRONIC JOURNAL OF MEDICAL AND EDUCATIONAL TECHNOLOGIES
https://www.ejmets.com
ISSN: 2754-544X (Online)

To cite this article: Adamopoulos IP, Syrou NF. Administration safety and occupational risks relationship with job position training quality and needs of medical public health services workforce correlated by political leadership interventions. ELECTR J MED ED TE. 2023;16(3):em2305. https://doi.org/10.29333/ejmets/13585

Original Article

Administration safety and occupational risks relationship with job position training quality and needs of medical public health services workforce correlated by political leadership interventions

Ioannis Pantelis Adamopoulos [1,2*], Niki Fotios Syrou [3,4]

[1] Hellenic Republic Region of Attica, Department of Environmental Hygiene Public Health and Sanitarian Inspections, West Sector of Athens, Athens, GREECE
[2] Research Center of Excellence in Risk & Decision Sciences, School of Sciences, Department of Health Sciences, School of Medicine, European University Cyprus, Nicosia, CYPRUS
[3] Department of Physical Education and Sport Science, University of Thessaly, Karies, Trikala, GREECE
[4] Medical School, National and Kapodistrian University of Athens, Athens, GREECE
* Corresponding author: Ioannis Pantelis Adamopoulos E-mail: adamopoul@gmail.com ORCID: 0000-0002-4942-7123
Received: 10 May 2023 Accepted: 09 August 2023

ABSTRACT

Background: Workplaces are changing, work exposures are changing, and medical public health workers' ability to continue doing productive and healthy work is being impacted by social, technical, environmental, economic, and political pressures. This Research has shown the strong link between safety and occupational risks relationship with job position training quality and needs, and their consequences on medical public health services workforce. To determine the severity of the impact as signs of presents a range of threats provides evidence of the perceived risks predictors of these needs, although the sociodemographic characteristics describe the frequency of risk exposure.

Methods: This research is a nationwide study in Greece, construction March to June of 2022. For data collection, a web link was distributed to respondents by email. Providing n=185 responses, safety and occupational risks classification, and were measured with a questionnaire instrument developed, and also a questionnaire developed instrument for measured training needs and quality. ANOVAs one-way test to define variable properties job position, training quality, and training needs correlated by political leadership interventions factor (F).

Results: Chemical risks scores for head of office (median [Mdn]=2.13) were higher to all other job position, χ^2= 10.991, p<0.05. Biological risks for head of office (Mdn=3.08) were higher compared to all other categories, χ^2=20.770, p<0.01. Psychosocial risks scores for employees (Mdn=3.08) were higher compared to all other categories, χ^2=11.349, p<0.05. Organizational risks scores for employees (Mdn=2.84) and head of office (Mdn=2.78) were higher compared to all other categories, and the Kruskal-Wallis test indicated that this difference was statistically significant, $\chi^2(4)$=18.278, p<0.01. Perceived training quality 43.78% of participants rate as low (β=0.195, p=0.002), and 65.41% high training needs.

Conclusions: Adding new data to advance the quality of public health services provision organizational support, benefits, resources, and personal protective equipment. Assist in the planning and decision-making phase management provide educational training programs of medical public health workforce to ensure sustainability and optimal performance. There has never been a greater need for trustworthy and unbiased information to assist and guide policymakers, employers, and employees as they go forward.

Keywords: medical public health workforce, occupational risk, administration & job position training, occupational safety & health, medical public health services

INTRODUCTION

This study provides evidence of the safety and occupational risks that are perceived by employees in medical public health services workforce (MPHSW) in Greece, such as working at extreme weather conditions, facing various biological risks, multi-hour computer work, lack of personal protective equipment, human and technical resources, as well as organizational risks of overlapping responsibilities and shortcomings in the legal framework.

To explore the educational training needs and training quality and its association with safety and occupational risks, severity of exposure and frequency of impact of occupational hazards. In addition, this study provides in terms of complete classes of occupational hazards specifically addressing the particularities of the medical public health workforce profession. Perceived risks levels were affected by demographics and more specifically the workplace environment (urban vs. rural) [1, 2]. Environmental factors, such as job characteristics, pay, equality, and justice in the workplace, have a significant impact on the satisfaction of the individual with his work [3].

Research and publications of articles and international conferences papers have been done and published on the safety and occupational organizational factors and socio-psychological risks in the work environment of public health services in Greece also international, inform how they affect employees [1-7]. Occupational safety and performance affected by the policies and administration of public health authority services [8-13]. Job dissatisfaction among employees and the need for training and quality education in public health workers is another determinant of performance and quality service delivery to the society.

Burnout is observed in employees and consequently affected and increased by political interventions while the pressure from politicians-administrators combined with urban and semi-urban environments have a negative factor in the operation of workforce in medical public health services, especially this was reflected in the period of during COVID-19 pandemic [1, 2, 7, 8, 13-16]. In the frame of risk factors, the combination of public health and occupational health and safety (OHS) as well as public hygiene and occupational safety, is addressed in this study following a comprehensive approach.

That is to say that this study is more comprehensive relative to possible occupational hazards of employees, incorporating already established but also new evidence of ergonomic and psychosocial risks (i.e., harassment, verbal abuse) that are increasing in current working conditions worldwide. Job risk categories were produced, and the proposed classification was verified scientifically, i.e., by examining the validity and reliability of each proposed risk category with pilot study [1].

The examination of job risks and employees' risk perceptions is becoming increasingly important for the protection of health and safety at work, as well as the prevention of the consequences of harmful factors in the workplace [4, 11]. Based on the reports, complaints and working conditions, responsibilities, and duties of MPHSW, as well as the personal observations and remarks of the researchers, which are confirmed by the international literature, this research was selected in such an important profession that remains neglected despite the fact that it contributes significantly to the protection of society [16].

The importance for the operation MPHSW during the COVID-19 pandemic, global financial crisis, decreased salaries and social instability, the results on safety occupational risks, contribute significantly to the working conditions and the impact on the performance of employees of MPHSW [8]. The multidisciplinary nature of MPHSW, different environments and materials of inspected facilities, out-of-office work, and the responsibilities constitute the basic elements that the importance of health, safety and occupational risks relationship with job position training quality and needs in MPHSW and organizations [1, 5, 17].

The risks that are related to the work life of MPHSW, 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 public healthcare workers and law enforcement officers [1-7]. Environmental factors, such as job characteristics, pay, equality, and justice in the workplace, have a significant impact on the satisfaction of the individual with his work [13]. Perceived job risks stress, burn out and job satisfaction levels were affected by demographics and more specifically the workplace environment (urban vs. rural) [4, 12].

The pilot study [1] in Greece proposed a classification of OHS risks for PHIs similar for MPHSW, namely physical, chemical, biological, ergonomic, organizational, and psychosocial risk factors [1, 4, 5, 10]. Economic slowdown of recent decades have increased the probability of the existing occupational hazards and have also introduced new risks for employees, such as psychological risks and burnout [15, 18].

Psychosocial risks for MPHSW include factors that may adversely affect the emotional state of employees [19] and are of uncontrolled exposure [20], ranging from excessive job demands and workload [21] to lack of human and material support [22, 23], poor psychological safety climate [24, 25], moral harassment and violence [17, 26].

Therefore, the purpose aimed to investigate of this study was to assess the perceived job risks experienced by in Greece and examine the association between job risks, and to explore the educational training needs and training quality of MPHSW in Greece. The research model of the present study is based on the pilot study [1], to adopt model to the purpose of this study and the setting of public health services in Greece, several modifications were implemented. More specifically verbal abuse, along with other factors such as harassment category of risks.

Training needs (health and safety at work, stress management, health services administration, crisis management in the health sector-natural disasters, personal protective equipment [masks, gloves, antiseptics, labor investor, etc.], protection against biological agents, and protection from chemical agents), according to proposed classification. Medical public health workforce was of immediate need of high-quality training, infrastructure, human and technical resources as well as competitive salaries, opportunities for professional development. Training has been documented as a key part of health and safety at work [27]. Occupational training is needed to ensure the high quality of outcomes [28-30].

Study Objectives

1. To investigate the perceived job risks experienced severity of exposure and frequency of impact of safety and occupational hazards, relationship with political job position of MPHSW in Greece.

2. To explore the educational training needs and training quality of MPHSW in Greece and its association with the perceived administration safety and occupational risks hazards.

Therefore, the purpose of this study was to assess the perceived safety and occupational risks experienced by MPHSW in Greece, aimed to investigate the training needs and training quality of Greek MPHSW.

MATERIALS AND METHODS

This research is a cross-sectional study, data were collected online mainly through state board directly from a sample of employees of MPHSW in Greece, at one time-period, and statistical analysis was utilized to uncover possible associations between the data. An online survey was created, and the web link was distributed to respondents by email, through the National Public Health Inspectorate Administration, while anonymity was retained. The research was approved by the Scientific Council of the Department of Public Health Services.

Sample

The sample of this study comprised 185 employees of MPHSW 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. The active professionals had the position of employees, head of departments, head of office, directors or supervisors in the directorates of public health control and environmental hygiene of all the regions prefectures, Ministry of Health of Greece, and the Hellenic Food Authority of all peripheral directorates.

Took place between March 2022 and June 2022, the sampling process was carried out by first communicating via email to explain the purpose and frame of the research study and assure them that the survey will be anonymous, optional, and encoded. Public health services organizations and departments nationwide participants could be working in any capacity unit.

Data Collection

In this study a questionnaire was utilized for data collection, which consists of three parts:

In section A, the questions cover the participant's basic demographics (gender, age, marital status) as well as job status and work experience.

Section B included a questionnaire designed to record participants' perceptions of the possible types of safety & occupational risks and their intensity. To investigate the perceived job risks experienced, severity of exposure and frequency of impact of occupational hazards. In the development of the risk assessment questionnaire, the content of the questionnaire was based on the findings of pilot study research [1].

More specifically, physical, chemical, biological, ergonomic, a psychosocial hazards, and organizational risk factors were included, and the respondent had to answer with the frequency of exposure and the severity of consequences in a 5-point Likert scale (0=not at all/never, 4=very often/very high).

Section C included a short set of questions to assess training quality (two items) and training needs (seven items) of MPHSW, as training satisfaction [31]. Training needs included health and safety of work, stress management, health services administration, crisis management in the health sector, natural disasters, personal protective equipment (masks, gloves, antiseptics, labor investor, etc.), protection against biological agents, and protection from chemical agents. The answers were given on a 5-point Likert scale (1=strongly disagree, 5=strongly agree).

Statistical Analysis

Data were summarized with the use of descriptive statistics. Frequency analysis was performed for nominal and ordinal demographic and job-characteristic variables, while for scale variables mean, median (Mdn), standard deviation (SD), and range measures were calculated.

Cronbach's alpha was calculated to assess 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 job risks. Significant differences between groups of employees relative to workplace environment (urban, rural and semi-urban) were identified and reported Kruskal-Wallis tests. The associations between job risks, and training needs, and training quality were calculated with non-parametric correlation analysis (Spearman's coefficient). Since the main aim of this study was to investigate how the perceived job risks of Greek of MPHSW are associated to training needs, and training quality, job risks were considered as independent variables.

Finally used ANOVA one-way test to define variable properties job position, training quality and training needs effected for political leadership interventions factor (F). Statistical analyses and met analysis were performed using the statistical package SPSS v.23 and statistical significance was set at $p<0.00$.

RESULTS

The population under study, 37.84% men (n=70) and 62.16% women (n=115) with a mean age of 48.96 years (SD=8.22) and a mean work experience of 15.84 years (SD=8.53). Most participants were employees (64.86%), yet 12.97% had the position of head of office, 11.89% of head of department, and 10.27% supervisor or director.

Most participants were married (63.24%) and had children (70.27%). The prevailing educational level was college/university (60%) followed by MSc/MA or postgraduate diploma (36.76%) and PhD (3.24%). Most participants lived (56.22%) in an urban environment, while 27% lived in a provincial city (semi-urban environment) and 16.76% in village-town (rural environment).

Regarding their workplace most participants worked (61.08%) in an urban environment, 19.46% in a provincial city (semi-urban environment) and 19.46% in village-town (rural environment). **Table 1** presents the results of the Kruskal-Wallis tests of job risks in relation to job position. Chemical risks scores for head of office (Mdn=2.13) were higher compared to all other categories, a difference that was statistically significant, $\chi^2=10.991$, $p<0.05$.

Moreover, biological risks scores for head of office (Mdn=3.08) were higher compared to all other categories, and the Kruskal-Wallis test indicated that this difference was statistically significant, $\chi^2=20.770$, $p<0.01$. Psychosocial risks scores for Employees (Mdn=3.08) were higher compared to all other categories, and the Kruskal-Wallis test indicated that this difference was statistically significant, $\chi^2=11.349$, $p<0.05$.

Organizational risks scores for employees (Mdn=2.84) and head of office (Mdn=2.78) were higher compared to all other categories, and the Kruskal-Wallis test indicated that this difference was statistically significant, $\chi^2(4)=18.278$, $p<0.01$.

Table 1. Univariate analyses of job risks in relation to job position (Kruskal-Wallis test)

		Physical	Chemical	Biological	Ergonomic	Psychosocial	Organizational
Employee	Mean	2.1847	2.0315	2.7444	2.9264	2.8833	2.7901
	Standard deviation	.76964	.81619	.88004	.73074	.69111	.68070
	Median	2.3333	2.1071	2.8333	3.0000	3.0833	2.8438
	Range	3.33	3.43	3.33	3.33	3.25	3.25
Head of office	Mean	2.0347	2.3155	3.0590	3.0347	2.9340	2.6224
	Standard deviation	.70365	.69951	.65084	.63127	.62890	.80367
	Median	2.1667	2.5000	3.0833	2.9167	2.9583	2.7813
	Range	2.67	2.93	2.17	2.33	2.50	2.81
Head of department	Mean	1.7879	1.5357	2.0341	2.6894	2.3636	2.1563
	Standard deviation	.91458	.88029	.88066	.50473	.82518	.87282
	Median	1.8333	1.6786	2.1250	2.6667	2.4583	2.1563
	Range	3.33	2.79	3.25	2.00	3.17	3.13
Supervisor/director	Mean	1.9649	1.7895	2.2675	2.7632	2.4781	1.9737
	Standard deviation	.87061	.92044	.74617	1.00664	.92956	1.03798
	Median	2.1667	1.9286	2.4167	3.1667	2.5000	2.3125
	Range	3.50	3.29	3.33	3.33	3.33	3.63
Kruskal-Wallis test	χ^2	5.950	10.991	20.770	4.012	11.349	18.278
	p-value	0.114	0.012	0.000	0.260	0.010	0.000

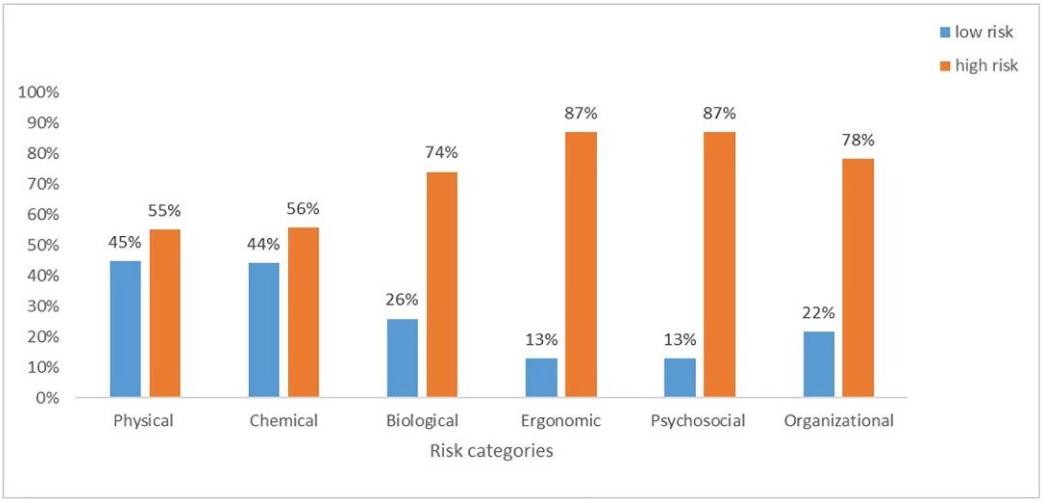

Figure 1. Total scores in each risk category (low risk-high risk) (Source: Authors' own elaboration)

Descriptive Statistics

Descriptive statistics (mean values and SDs) of the perceptions relative to the 33 different job risk factors. The summary statistics for the total scores per risk category were calculated as averaged values of the responses in frequency and severity perceptions and are presented in **Table 1**.

Physical risks of working outdoors at extreme high/low temperatures, chemical risks of insufficient ventilation of workplaces, biological risks (exposure to viruses, fungi, pests and bacteria, lack of cleanliness in the workplace), ergonomic risks (multi-hour office work and using a computer), psychosocial risks (excessive workload, pressure from audited citizens, verbal abuse by members of the public, work under psychosomatic stress and political leadership interventions) and organizational risks (lack of equipment, office materials, official vehicles for inspections, overlapping responsibilities and shortcomings in the legal framework, lack of conflict management framework and lack of regular training, have presented above average ratings, as perceived by the participants of this study. Following, frequencies of participants providing above average (>2) and below average (<2) total scores in each risk category were calculated and the results are presented in **Figure 1**.

Associations Between Job Risks and Training Needs & Quality

The associations between job risks, and training needs & quality were examined with Spearman correlation coefficients, as presented in **Table 2**.

It is shown that had medium to strong positive association with biological ($r=371$, $p<0.01$), ergonomic ($r=0.418$, $p<0.01$) and organizational ($r=0.351$, $p<0.01$) risks, and strong positive correlation with psychosocial risks ($r=0.513$, $p<0.01$). Moreover, training needs are positively associated with physical ($r=0.337$, $p<0.01$) and organizational ($r=0.350$, $p<0.01$) risks. Physical risks and chemical risks they do not

Table 2. Spearman correlation coefficients between job risks, training quality, & training needs

	1	2	3	4	5	6	7	8	9	10	11	12	13
Physical risks	1												
Chemical risks	.666**	1											
Biological risks	.450**	.589**	1										
Ergonomic risks	.360**	.448**	.609**	1									
Psychosocial risks	.349**	.446**	.579**	.628**	1								
Organizational risks	.363**	.359**	.523**	.517**	.656**	1							
Training quality	0.098	-0.041	-0.032	-0.06	-0.057	-0.012	-0.071	-0.132	-0.136	-0.12	.194**	1	
Training needs	.337**	.185*	.185*	.175*	.260**	.350**	0.011	-.151*	-.272**	-0.093	-0.136	0.02	1

Note. **p< 0.01 level (2-tailed) & *p<0.05 level (2-tailed)

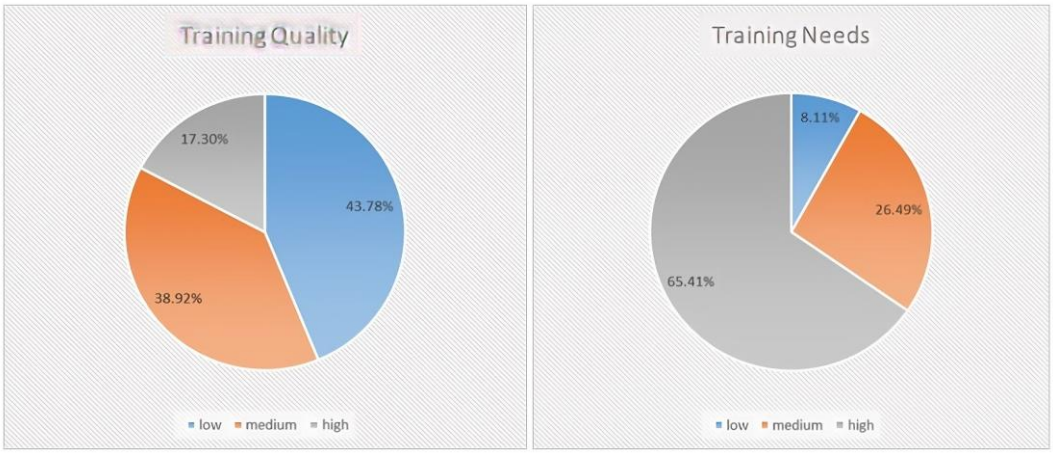

Figure 2. Training quality level (1-6): low (≤3), medium (3, 4), & high (≥4)/training needs level (0-4): low (≤2), medium (2, 3), & high (≥3) (Source: Authors' own elaboration)

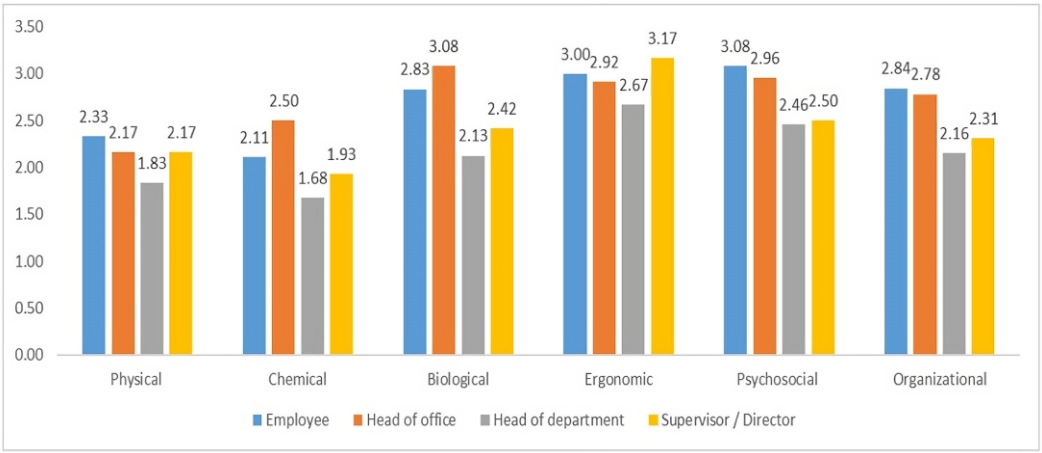

Figure 3. Median values of job risk scores per job risk category & job position (Source: Authors' own elaboration)

have important correlations with training needs. Training quality as low 43.78% while only 17.30% rate training quality as high, 64.51% of participants report high training needs while only 8.11% report low training needs presented in **Figure 2**.

Figure 3 presents the results of the Kruskal-Wallis tests of job risks in relation to job position. Chemical risks scores for head of office (Mdn=2.13) were higher compared to all other categories, a difference that was statistically significant, χ^2=10.991, p<0.05. Moreover, biological risks scores for head of office (Mdn=3.08) were higher compared to all other categories, and the Kruskal-Wallis test indicated that this difference was statistically significant, χ^2=20.770, p<0.01. Psychosocial risks scores for employees (Mdn=3.08) were higher compared to all other categories, and the Kruskal-Wallis test indicated that this difference was statistically significant, χ^2=11.349, p<0.05. Organizational risks scores for employees (Mdn=2.84) and head of office (Mdn=2.78) were higher compared to all other categories, and the Kruskal-Wallis test indicated that this difference was statistically significant, $\chi^2(4)$=18.278, p<0.01.

Table 3 presents the results of the ANOVAs one-way test to define variable properties job position, training quality and

Table 3. ANOVA one-way value labels define variable properties job position training quality & training needs correlated by political leadership interventions factor (F)

Political leadership interventions factor (F)		Sum of squares	df	Mean square	F	Sig.
Job position	Between groups	11.411	4	2.853	2.744	.030
	Within groups	187.130	180	1.040		
	Total	198.541	184			
Training quality	Between groups	4.211	4	1.053	.597	.665
	Within groups	317.554	180	1.764		
	Total	321.765	184			
Training needs	Between groups	.071	4	.018	.035	.998
	Within groups	90.942	180	.505		
	Total	91.013	184			

training needs correlated by political leadership interventions factor (F).

DISCUSSION

Training has been documented as a key part of health and safety at work [27]. During the COVID-19 pandemic, PHSW and healthcare workers faced greater biological risks of infections and therefore personal protective equipment has been found to be of great importance for their health and safety [9,32]. OHS, education take place in universities within bachelor diploma (BSc), master diploma (MSc), and doctoral (PhD) programs studies, in professional contexts (internship, on-the-job training, continuous personal development, industry-based research), and inspection education (learning from company inspection or other inspectorates). In terms of health literacy [33, 34], education and training on basic medical matters may help prevent pandemics and ensure self-care for the public, mainly because expanding the formal healthcare system to every town and village is financially almost impossible [35].

Education and training are also important for leaders of healthcare professions, general practitioners, and other healthcare professionals to ensure their capability of helping people to remain or to return to work, enhancing the occupational health function [36]. Training of OHS specialists is a key issue for the protection of the health and safety of workers and the public, especially because OHS specialists are experts in resolving many issues simultaneously, emphasizing the need for OHS education and training in a wide range of systems approaches [27]. E-learning training programs were also introduced for OHS education of migrant industrial workers in Korea [30,37], described the proposed methods of OHS training, such as risk mapping, body mapping, storytelling with graphic materials, simulations, role plays, computer-based instructions, quizzes and games and art-based approaches.

Biological risks and especially exposure to viruses have been identified as important for Greek PHIs, which relates to the inspection of healthcare and welfare facilities, as well as restaurants, since infectious diseases from biological agents are the most frequent among occupational diseases [38, 39]. Moreover, the factor of exposure to viruses may also be attributed to the fact that this study took place during the COVID-19 pandemic.

Training needs were associated with physical, biological, ergonomic, psychosocial, and organizational risks, but none of the risk categories were significant predictors of training needs. In this frame, an ongoing communication based on the specific training needs and circumstances of employees, between the organization and the training institutions is a key factor to facilitate best outcomes [40]. Yet, job risks were not significant predictors of training needs, while demographics, gender, age, educational level and workplace environment were the only significant predictors. More specifically, younger, women employees and employees with lower educational levels in urban workplace environments have higher levels of training needs [9, 16].

STUDY'S LIMITATIONS AND SUGGEST NEW LINES OF RESEARCH

Online sampling -biased respondents may choose to respond and therefore affect the sample. Cross-sectional design, which does not allow for the examination of causal effects between the variables. Suggested study in the Republic of Cyprus and countries of southern Europe that were hit most severely by the financial crisis and therefore are expected to have limited resources, and technical, equipment for personal protection equipment and training opportunities. Examine other facets such as motivation and commitment, providing a deeper understanding of the effects that perceived job risks have on the qualitative aspects of work and hence the performance and wellbeing of employees, would help to develop country- or cluster-specific strategies to enhance the work conditions.

CONCLUSIONS

This research has shown the strong link between safety and occupational risks relationship with job position training quality and needs, and their consequences on PHSW. Perceptions of job risks have been studied based on the classification proposed, including physical, chemical, biological, ergonomic, psychosocial, and organizational risks. Overall, psychosocial and organizational risk factors were perceived as the most important by Greek MPHSW, followed by ergonomic, biological, physical and chemical risks. The solid facts and results of biological, ergonomic, psychosocial and organizational factors, are perceived as hazardous by 87.00% of participants gave high ratings to psychosocial risks and ergonomic risks, followed by 78.00% for organizational risks, and 74.00% for biological risks. Physical risks and chemical risks are less prevalent (55.00% and 56.00%, respectively). Most participants (65.41%) reported high training needs (health and safety at work, stress management, personal protective equipment, protection against biological agents and protection from chemical agents). This study contributes to the literature were provided relative to the safety and occupational hazards risks that are encountered by Greek MPHSW updating the evidence from a limited global literature. The risk assessment questionnaire and checklist that was created in response to the results of this study may be a very useful tool for the managers of public health organizations in health and occupational safety. Assist in the planning and decision-making phase management provide educational training programs of medical public health workforce to ensure sustainability and optimal performance, for specialists (occupational safety technicians, occupational physicians, managers, etc.) to be able to assess the occupational hazards of health professionals and especially MPHSW related with the job position correlated by political leadership interventions.

Author contributions: All authors were involved in concept, design, collection of data, interpretation, writing, and critically revising the article. All authors approved the final version of the article. Supervision, and Project Administration, I.Adamopoulos.

Funding: The authors received no financial support for the research and/or authorship of this article.

Acknowledgements: The authors would like to thank the participants.

Ethical statement: The authors stated that ethical approval of the research was carried out in accordance with the rules and current bioethics legislation, all the conditions and specifications of the national and European Union legislation for the protection of personal data as well as in accordance with the instructions of the quality assurance and the study was carried out according to the Declaration of Helsinki.

Declaration of interest: The authors declare no competing interest.

Data sharing statement: Data supporting the findings and conclusions are available upon request from the corresponding author.

REFERENCES

1. Adamopoulos IP, Lamnisos D, Syrou NF, Boustras G. Public health and work safety pilot study: Inspection of job risks, burn out syndrome and job satisfaction of public health inspectors in Greece. Saf Sci. 2022;147:105592. (doi:10.1016/j.ssci.2021.105592).
2. Adamopoulos IP, Syrou NF, Lamnisos D, Boustras G. Inspection perceptions of occupational training needs and training quality in public health inspectors and organizations services in Greece. SSRN. 2023. (doi:10.2139/ssrn.4319406).
3. Adamopoulos IP. Public health services and organizations anti-corruption management from political interventions-Hellenic Republic. SSRN. 2022. (doi:10.2139/ssrn.4304656).
4. Adamopoulos IP, Syrou NF. Occupational burnout in public health care sector, scales, measures, and education in the frame of period COVID-19 pandemic. Eur J Environ Public Health. 2023;7(2):em0127. (doi:10.29333/ejeph/12532).
5. Adamopoulos IP, Syrou NF, Lamnisos D, Boustras G. Cross-sectional nationwide study in occupational safety & health: Inspection of job risks context, burn out syndrome and job satisfaction of public health Inspectors in the period of the COVID-19 pandemic in Greece. Saf Sci. 2023;158:105960. (doi:10.1016/j.ssci.2022.105960).
6. Adamopoulos IP, Bardavouras AN, Syrou NF. Occupational safety, policy, and management in public health organizations and services. Eur J Environ Public Health. 2023;7(1):em0122. (doi:10.29333/ejeph/12445).
7. Adamopoulos IP, Lamnisos D, Syrou NF, Boustras G. Training needs and quality of public health inspectors in Greece during the COVID-19 pandemic. Eur J Public Health. 2022;32(Suppl 3):ckac131.373. (doi:10.1093/eurpub/ckac131.373).
8. Adamopoulos IP. Classification categorizations of job risks occupational hazards in environmental and public health inspectors. SSRN. 2022. (doi:10.2139/ssrn.4230063).
9. Adamopoulos IP, Syrou NF, Lamnisos D, Boustras G. Risk contexts occupational hazards associated with quality and training needs in public health inspectors in Greece. SSRN. 2022. (doi:10.2139/ssrn.4230062).

10. Adamopoulos IP. Epidemiological surveillance, detection and classification of infection in community from SARS-CoV-2, and control in municipal wastewaters in Cyprus and reuse water. SSRN. 2022.

11. Adamopoulos IP, Syrou NF, Lamnisos D. Workplace environment and burn out in public health workforce inspection services: Research study. Int Res J Pharm Med Sci. 2022;5(5):28-35. (doi:10.54985/peeref.2210p2115465).

12. Adamopoulos IP, Syrou NF. Workplace safety and occupational health job risks hazards in public health sector in Greece. Eur J Public Health. 2022;6(2):em0118. (doi:10.21601/ejeph/12229).

13. Adamopoulos IP. Job satisfaction in public health care sector, measures scales and theoretical background. Eur J Environ Public Health. 2022;6(2):em0116. (doi:10.21601/ejeph/12187).

14. Adamopoulos IP, Syrou NF. Associations and correlations of job stress, job satisfaction and burn out in public health sector. Eur J Environ Public Health. 2022;6(2):em0113. (doi:10.21601/ejeph/12166).

15. Adamopoulos IP, Lamnisos D, Syrou NF, Boustras G. Inspection of job risks, burn out syndrome and job satisfaction of Greek public health inspectors. Saf Health Work. 2022;13(Supplement):S294. (doi:10.1016/j.shaw.2021.12.1670).

16. Adamopoulos IP. Public health and occupational safety study: Inspection of job risks context, burn out syndrome and job satisfaction of public health inspectors in Greece in the frame of the COVID-19 pandemic [PhD dissertation]. Nicosia: Cyprus: European University Cyprus: 2022. (doi:10.12681/eadd/52537).

17. Tustin J, Hau J, Hon C. Occupational health and safety hazards encountered by Ontario public health inspectors. Environ Health Rev. 2019;62(1):14-9. (doi:10.5864/d2019-004).

18. Leitão S, Greiner BA. Psychosocial, health promotion and safety culture management–Are health and safety practitioners involved? Saf Sci. 2017;91:84-92.

19. Koulentianou M, Katsori A. Organization of occupational health services in health care institutions in the European Union and Greece. Sci Chron. 2014;19(1).31-42.

20. Drivas S, Zorba K, Koukoulaki T. Methodological guide for the assessment and prevention of occupational risk. Athens: IN.Y.A.E.; 2003.

21. Akodu A, Ashalejo Z. Work-related musculoskeletal disorders and work ability among hospital nurses. J Taibah Univ Med Sci. 2019;14(3):252-61. (doi:10.1016/j.jtumed.2019.02.009).

22. Garbarino S, Cuomo G, Chiorri C, Magnavita N. Association of work-related stress with mental health problems in a special police force unit. BMJ Open. 2013;3(7):e002791. (doi:10.1136/bmjopen-2013-002791).

23. Hoven H, Wahrendorf M, Siegrist J. Occupational position, work stress and depressive symptoms: A pathway analysis of longitudinal share data. J Epidemiol Commun Health. 2015;69(5):447-52. (doi:10.1136/jech-2014-205206).

24. Idris M, Dollard M, Coward J, Dormann C. Psychosocial safety climate: Conceptual distinctiveness and effect on job demands and worker psychological health. Saf Sci. 2012;50(1):19-28. (doi:10.1016/j.ssci.2011.06.005).

25. Potter R, Dollard M, Owen M, O'Keeffe V, Bailey T, Leka S. Assessing a national work health and safety policy intervention using the psychosocial safety climate framework. Saf Sci. 2017;100:91-102. (doi:10.1016/j.ssci.2017.05.011).

26. Koinis A, Velonakis E, Tzavella F, Tziaferi S. The effect of the phenomenon of mobbing at the quality of life of health professionals. To Vima tou Asklipiou. 2016;15(4):380-93.

27. Hale A, Booth R. The safety professional in the UK: Development of a key player in occupational health and safety. Saf Sci. 2019;118:76-87. (doi:10.1016/j.ssci.2019.04.015).

28. Buckley J. Food safety regulation and small processing: A case study of interactions between processors and inspectors. Food Policy. 2015;51:74-82. (doi:10.1016/j.foodpol.2014.12.009).

29. Lefebvre S, Montgomery P, Michel I, Warren C, Larose T, Kauppi C. The role of public health inspectors in maintaining housing in northern and rural communities: Recommendations to support public health practice. Can J Public Health. 2012;103(2):84-9. (doi:10.1007/bf03404208).

30. Lee J, Nelson D, Almanza B. Health inspection reports as predictors of specific training needs. Int J Hosp Manag. 2012;31(2):522-8. (doi:10.1016/j.ijhm.2011.07.010).

31. Huang W-R. Job training satisfaction, job satisfaction, and job performance. In: Fahed-Sreih J, editor. Career development and job satisfaction. InTechOpen; 2020. (doi:10.5772/intechopen.89117).

32. Shehab M, Shuaibi S, Qadhi I, Alfadhli A. Effectiveness of inspectors' team in increasing compliance with personal protective equipment use and reducing COVID19 infection spread among healthcare workers. Infect Prev Pract. 2021;3(2):100137. (doi:10.1016/j.infpip.2021.100137).

33. Schmidt K, Holtermann A, Jørgensen M, Svendsen M, Rasmussen C. Developing a practice and evidence-based guideline for occupational health and safety professionals to prevent and handle musculoskeletal pain in workplaces. Appl Ergon. 2021;97:103520. (doi:10.1016/j.apergo.2021.103520).

34. Sorensen K, Van den Broucke S, Fullam J, et al. Health literacy and public health: A systematic review and integration of definitions and models. BMC Public Health. 2012;12:80. (doi:10.1186/1471-2458-12-80).

35. WHO. Preparing for pandemics. World health Organization; 2022. Available at: https://www.who.int/westernpacific/activities/preparing-for-pandemics

36. Black D. Work, health, and wellbeing. Saf Health Work. 2012;3(4):241-2. (doi:10.5491/shaw.2012.3.4.241).

37. O'Connor T, Flynn M, Weinstock D, Zanoni, J. Occupational safety and health education and training for underserved populations. New Solut. 2014;24(1):83-106. (doi:10.2190/NS.24.1.d).

38. Rim KT, Lim CH. Biologically hazardous agents at work and efforts to protect workers' health: A review of recent reports. Saf Health Work. 2014;5(2):43-52. (doi:10.1016/j.shaw.2014.03.006).

39. Varotsos C, Krapivin V, Xue Y. Diagnostic model for the society safety under COVID-19 pandemic conditions. Saf Sci. 2021;136:105164. (doi:10.1016/j.ssci.2021.105164).

40. Creaton J, Anderson V. The impact of the professional doctorate on managers' professional practice. Int J Manag Educ. 2021;19(1):100461. (doi:10.1016/j.ijme.2021.100461).

◈◈◈