



Burnout among labour inspectors in Greece: A nationwide cross-sectional study

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ABSTRACT

The principal role of labour inspectorates is labour law enforcement and compliance, to secure effective implementation of legal provisions relating to the protection of workers. These aspects can turn the job context of a labour inspector into a really demanding occupation, that may have significant physiological and psychological effects. The aim of this study is to investigate the prevalence of burnout between labour inspectors in Greece and associated factors. A semi-structured survey was conducted covering job characteristics, perceived job limitations, some associated with economic crisis, and a burnout assessment tool. There were 102 responses collected out of the 245 labour inspectors specialised in occupational safety and health. Two out of three inspectors (67.65%) reported that reduction of their salary resulted by austerity measures, affected their work quality and performance, 92% reported that job demands had significantly increased during the previous year and 55% that their work does not provide the flexibility, while NLI's framework does not provide support in performing their job related tasks. Our study identified high rates of burnout and a plethora of work-related contributing risk factors such as increased job demands, lack of staff and resources. The establishment of an effective work framework, that would be supportive and protective for inspectors, in a top-down approach, promoting interpersonal relations and providing the necessary degrees of freedom to labour inspectors' tasks, could significantly reduce the levels of experienced burnout.

1. Introduction

During the previous decades, the labour market has experienced significant changes. New forms of organisation and management of work, as well as new technologies have resulted in several new and emerging risks, including psychosocial risks such as burnout or work related stress (Anyfantis and Boustras, 2020). The economic crisis that hit Greece back in 2009, revealed significant structural inefficiencies that led to austerity measures for fiscal consolidation and deep structural reforms. Economic slowdown also put significant pressure on the labour market, resulting at an extraordinary unemployment rate that reached 27.8% back on Sept2013 (CEIC, 2019) setting the stage for significant reforms. Moreover, economic crisis posed significant pressure upon occupational safety and health (OSH), as previous studies indicate (Anyfantis et al., 2018; Anyfantis and Boustras, 2020).

Burnout is a psychological syndrome emerging from prolonged exposure to stressors related to the job (Maslach, 1993; Maslach and

Leiter, 2016). It is defined by the three dimensions of exhaustion (overwhelming exhaustion), cynicism (cynicism and detachment), and inefficacy (a sense of ineffectiveness and lack of accomplishment) (Maslach et al., 2001). Accordingly, burnout has a number of symptoms in three different dimensions: *Physical exhaustion* resulting in lack of energy, headaches, backaches and general fatigue; *Emotional exhaustion* denoted by loss of appetite, feelings of helplessness, and depression; *Mental exhaustion* revealed through irritability, cynicism, and a negative outlook on life (Aronsson et al., 2017). Obviously, burnout puts people at risk for causing injury to themselves or others.

Recently, World Health Organisation (WHO) has officially classified workplace burnout as an occupational phenomenon in its latest revision of the International Classification of Diseases (WHO, 2018). Moreover, in 9 EU countries (Denmark, Estonia, France, Hungary, Latvia, Netherlands, Portugal, Slovakia and Sweden) burnout syndrome may be recognized as an occupational disease (Lastovkova et al., 2018).

Previous research conducted in Greece, identified particular

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categories of occupations that share similar characteristics, in which high levels of burnout are identified. This was the case for teachers (Kantas and Vassilaki, 1997), special education teachers (Platsidou and Agaliotis, 2008) and healthcare workers (Galanakis et al., 2009; Tselebis et al., 2001; Rachiotis et al., 2014). It should be noted that Rachiotis et al found that medical supplied shortages related to economic crisis was an independent risk factor for burnout among health care workers. Moreover, Konstantinou et al reported high levels of burnout among a sample of Greek mental health nursing personnel.

Many countries have launched intervention programmes and campaigns over the previous years to tackle psychosocial risks, given the significant associated cost (EU-OSHA, 2014), while in many cases, campaigns were also performed following European Commission directions (SLIC, 2012). In every country, the proper application of labour legislation depends on an effective national labour inspectorate (NLI). Labour inspectors examine how national labour standards are applied in the workplace, and advise employers and workers on how to improve working conditions, including work environment. Previous research and systematic reviews have measured the impact of labour inspections in terms of injuries and occupational diseases (Anyfantis et al., 2018; MacEachen et al., 2016). However, there is limited research on labour inspector intervention for the prevention of psychosocial risks (Weissbrodt and Giauque, 2017).

The principal role of any labour inspectorate is labour law enforcement and compliance. In a context of proactive approach as well as the application of the complementary functions of advice and information along with enforcement, labour inspectors are expected to secure the effective implementation of legal provisions relating to the protection of workers (Fernández Rodríguez, 2020). Labour inspectors, are generally enjoying wide discretion and autonomy in their investigations (Loyens, 2013). However, day-to-day tasks performed by labour inspectors are demanding and require particular resources. Previous research has identified that the use of physical violence against labour inspectors is not uncommon (ILO, 2005; Loyens, 2013; Mamakwa, 2012).

Generally, we refer to job demands as those physical, psychological, social, or organizational aspects of the job that require sustained physical and/or psychological (i.e., cognitive or emotional) effort (Demerouti et al., 2001). In this study, specific demands related to labour inspectors' activities, were considered, assessed mainly qualitatively according to collected responses. Job resources refer to physical, psychological, social, or organizational aspects of the job that reduce job demands and the associated physiological and psychological costs; are useful in achieving work goals; stimulate personal growth and development (Hobfoll, 2002).

This study will investigate the prevalence and associated factors of burnout between labour inspectors in Greece. In that terms, the research question that this research attempt to answer, is: Do Greek Labour inspectors suffer from burnout syndrome and which factors are associated to that?

2. Materials and methods

2.1. Questionnaire

The study was conducted in the third quarter of 2019, following the approval from the Bioethics Committee of the Technological Educational Institute of Thessaly (ref 508/25-01-2019). Authorization to conduct the study was officially granted from the Special Secretary of Labour Inspectorate. An online survey was created and the web link was distributed to respondents by email, through the National Labour Inspectorate administration, while anonymity was retained.

The semi-structured questionnaire was divided into three main sections. The first section covered demographics, educational level, work experience, work position, etc. The second part included specific job characteristics including limitations to assess job demands-resources, characteristics of work environment, including relations with

colleagues and directors but also questions about the impact of economic slowdown over their job. Moreover, issues like the perceived importance regarding the lack of provided legal protection, the presence of a loan and the introduction of a new management informational system (MIS) were included in the questions. Respondents were also allowed to express their opinion for shortcomings and improvements through a number of open questions. Those questions were: a. Do you want to change some things in your work? If so, what are they? b. Do you feel that you have the power to change some things in your work? If so, what are they? c. Freely express your views regarding the professional exhaustion and the working conditions that you experience.

The third part included, a burnout assessment tool, based on a modified version of a Greek form of the Maslach Burnout Inventory (Maslach and Jackson, 1981; Anagnostopoulos and Papadatou, 1992). It included 22 statements where the respondents identified professional burnout at a six-point Likert-type rating scale ranging from 0 "never" to 6 "every day". To ensure validity and inter-relatedness of the items within the test internal consistency was determined (Tavakol and Dennick, 2011). Cronbach alpha was to provide a measure of the internal consistency and it was calculated at $\alpha = 0.836$. The three dimensions of professional burnout assessed were: emotional exhaustion (EE); depersonalization (DP); and personal accomplishment (PA). The subscales of this instrument demonstrated satisfactory face validity and internal consistency. The values of alpha Cronbach's were 0.93, 0.79 and 0.88 for emotional exhaustion, depersonalization, and lack of personal accomplishment, respectively.

2.2. Statistical analysis

Continuous variables are presented as mean (\pm standard deviation) and categorical variables, as absolute (n) and relative (%) frequencies. Associations between categorical variables were explored by the use of the Chi-square test (McHugh, 2013). Continuous variables were tested for normal distribution by the Kolmogorov-Smirnov test (Massey, 1951), while the Mann-Whitney test was used to compare variables that did not follow normal distribution. Univariate analysis of normally distributed continuous variables was performed by the Student *t* test.

Spearman rank-order correlation coefficient *r* was used to test the strength and direction of association that exists for ordinal variables. Linear regression was used in order to predict the relationship between independent variables and predictors.

Statistical analysis was performed using SPSS for Windows version 20.0 (IBM Corp. Released 2011. IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp). A two-tailed *p* value < 0.05 was considered statistically significant.

3. Results

According to the latest NLI's annual report there are 245 OSH labour inspectors in Greece, however the number of active inspectors is around 210. The questionnaire was distributed by the general director via email, through the official administrative channel and was expected to reach all active inspectors. There were 102 responses collected, providing a response rate of about 48.57%. Out of the 102 respondents, 61 (59,8%) were men and 41 (40.2%) were women. The average age of the target group was 50.44 (± 4.77) years old, 94% of them were married having on average 1.48 (± 0.853) kids and 63.7% had a loan. They were found to be highly qualified professionals in terms of educational level, since 59% holds a Bachelor degree, 27% and MSc and 14% a PhD, while they were also highly experienced, having on average 18 (± 5.143) years of experience. Among them there were 23 (22.55%) directors, while the rest 77.45% did not hold any kind of supervising position.

Regarding the job specific questions including the effects of economic slowdown, 56.86% reported that economic slowdown has affected the quality of his job in a negative way, and 54.9% that there is lack of available resources. Around the same percentage reported

deterioration of their job tasks related to proactive on-site visits and 34% reported deterioration of their job tasks related to accident investigations. Two out of three inspectors (67.65%) reported that reduction of their salary resulted by austerity measures during the previous years, affected their work quality and performance. The majority (88.24%) reported the significant effect of staff shortages over the quality of tasks performed by NLI. Apart from that, the most significant shortcomings related to their work, were reported to be the lack of legal protection and the lack of provided car as presented in Fig. 1.

The vast majority of them (92%) reported that job demands had significantly increased during the previous year, 55% that their work does not provide the flexibility to decide on the actual way to perform it and around the same percentages that NLI's framework does not provide support in performing their job related tasks. There is also a significant denial on the new MIS system that was recently introduced to the Greek NLI, since only 15.7% responded that the system will actually assist them in their work. For two out of three, their duties are strictly defined, but collaboration with colleagues is not satisfactory, so as support from their supervisor. The majority of respondents recognized the lack of legal protection as major shortcoming for their job. Moreover, only half of the respondents had been previously trained on the burnout syndrome recognizing dimensions, symptoms and effects.

The last part of the questionnaire was used to assess burnout among respondents. Chi-square statistic was used for testing relationships between burnout dimensions and each one of the categorical variables that refer to demographics and work characteristics. Results are presented in Table 1, in which are presented the variables which were found to have a statistically significant relationship with each one of the burnout dimensions. It is obvious that there is a number of variables referring to inefficiencies and job characteristics, such as lack of resources, lack of control, not clearly defined duties, collaboration with colleagues, etc. that are related to all dimensions of burnout.

Following the univariate analyses, those variables which were significantly related to each one of the burnout dimensions were entered into linear regression analyses to determine their collective ability to predict burnout. Results are presented in Table 2.

These results present a linear approach to modeling the relationship between burnout and the independent variables. By that way, the parameters that contribute to the score for each one of the burnout dimensions were identified as well as their respective contribution.

In particular, linear regression analysis identified seven predictors of Emotional Exhaustion dimension (Specialty, Job demands, loan, NLI's framework, burnout knowledge, Burnout knowledge, well defined duties and collaboration with Colleagues).

In addition, the analysis performed identified six determinants of

Table 1
Univariate analyses of burnout.

N = 102	Emotional Exhaustion (EE)		Depersonalization (DP)		Personal Accomplishment (PA)	
	Mean	SD	Mean	SD	Mean	SD
	26.05	± 13.57	7.16	± 3.984	39.33	± 6.415
	r	p-value*	r	p-value*	r	p-value*
Gender	-0.295	0.003	-	ns	-	ns
Marital status	-0.271	0.006	-	ns	0.398	<0.001
Kids	-	ns	-	ns	0.262	0.008
Educational Level	0.423	<0.001	-	ns	-0.388	<0.001
Experience	-0.204	0.40	-	ns	0.325	0.001
Specialty	0.27	0.006	0.395	<0.001	-	-
Effects of recession over work	0.311	0.001	0.353	<0.001	-	ns
Loan	0.234	0.018	-	ns	-0.273	0.006
Lack of available resources	0.341	<0.001	0.384	<0.001	-0.216	<0.001
Lack of legal protection	0.382	<0.001	0.322	<0.001	-0.297	<0.001
Lack of staff	0.423	<0.001	0.214	0.031	-	ns
Income decrease	0.269	0.007	-	ns	-	ns
Job demands	0.338	<0.001	-	ns	-	ns
Job control	-0.57	<0.001	-0.555	<0.001	0.314	0.001
NLI's framework	-0.351	<0.001	-0.257	0.009	0.282	0.004
Burnout knowledge	-0.364	<0.001	-0.302	0.002	0.266	0.07
Well defined duties	-0.584	<0.001	-0.362	<0.001	0.398	<0.001
Collaboration with Colleagues	-0.623	<0.001	-0.409	<0.001	0.433	<0.001

* chi-square test.

depersonalization (Specialty, economic crisis, lack of stuff, lack of available resources, job control and collaboration with colleagues).

Last, we report five independent risk factors for low personal accomplishment (Gender, number of children, educational level, work experience and loan).

4. Discussion

The present study reveals that apart from the intrinsic difficulties and

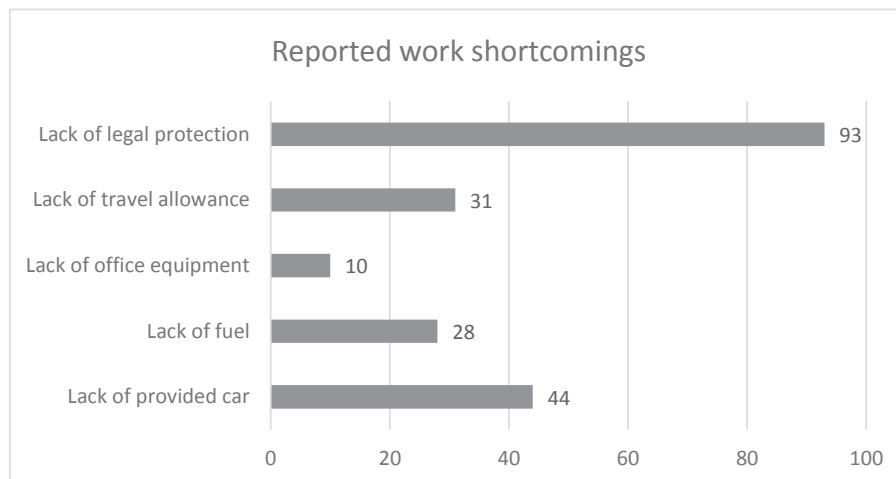


Fig. 1. The most important shortcomings related to the work of Greek labour inspectors.

Table 2
Multivariate regression model dimensions.

Regression model for burnout dimensions		Unstandardized Coefficients B	Standardized Coefficients B	p-value	95,0% confidence interval for B	
					Low Bound	Upper Bound
Emotional Exhaustion (R ² = 0.782)	(Constant)	6.408	–	0.738	–31.562	44.377
	Specialty	6.939	0.233	0.01	1.698	12.181
	Loan	6.034	0.222	0.003	2.058	10.010
	Job demands	5.937	0.222	0.003	2.067	9.807
	NLI's framework	5.724	0.399	0.001	2.494	8.954
	Burnout knowledge	–6.034	–0.229	0.004	–10.119	–1.95
	Well defined duties	–7.158	–0.516	<0.001	–10.634	–3.681
	Collaboration with Colleagues	–5.202	–0.344	<0.001	–7.72	–2.684
Depersonalization (R ² = 0.521)	(Constant)	5.347	–	0.131	–1.618	12.312
	Specialty	2.781	0.322	0.002	1.075	4.486
	Effects of recession over work	0.898	0.268	0.007	0.247	1.55
	Lack of available resources	1.053	0.259	0.013	0.226	1.879
	Lack of staff	0.861	0.212	0.028	0,096	1.625
	Job control	1.397	0.354	0.002	0,541	2.252
	Collaboration with Colleagues	–0.995	–0.228	0.021	–1.836	–0.154
	(Constant)	24.833	–	0.001	10.282	39.385
Personal Accomplishment (R ² = 0.482)	Gender	–3.983	–0.307	0.003	–6.544	–1.422
	Kids	1.534	0.643	0.019	0.256	2.813
	Educational Level	–1.756	–0.2	0.035	–3.384	–0.129
	Experience	0.348	0.233	0.045	0.007	0.689
	Loan	3.451	0.268	0.009	0.92	6.162

demands related to on-site inspections for the enforcement of legislation and day-to-day tasks, there is a number of additional stressors affecting Geek Labour Inspectors while resulting in high rates of burnout. Each one of the three burnout dimensions was analysed. Regression analysis identified seven predictors to explain the Emotional Exhaustion dimension. Compared to other employees, employees that experience high levels of burnout for the EE dimension, tended to be highly qualified engineers and physicians, having a loan. Those also who reported high job demands, while not satisfied of NLI's organizational framework since according to their perception their duties are not well defined and there is problematic collaboration with colleagues. Those parameters define the organizational and social context that according to theory and previous research are defining factors for the burnout syndrome (Maslach, 1993). The lack of burnout specific training was also identified as a contributing factor and this is an interesting finding, since during the last few years, several campaigns were promoted by EU-OSHA and NLIs, however a significant percentage of inspectors reported not previously attending any kind of training on the topic.

Such training can assist in early identifications of contributing factor, symptoms and provision of a burnout specific mitigation tools that have been developed during the previous years and are already in use in many countries. Training is an important tool to tackle with psychosocial risks but also with any other kind of new and emerging risks, such as musculoskeletal disorders, nanomaterials, etc. which are not readily conceived even by labour inspectors compared to traditional risks. Development of work-specific training plan in a managerial level focused on burnout and other emerging topics and the development or use of an existing platform, providing all the required resources and tools for training and risk mitigation could significantly reduce burnout levels experienced by labour inspectors.

Regression analysis for the Depersonalization dimension identified six predictors. Highly qualified engineers and physicians, who reported that were heavily affected by previous austerity measures and experience lack of available resources including staff, are those experiencing high levels of burnout for the DP dimension. Once again, parameters defining the organizational and social context, i.e. job control and collaboration with colleagues were identified as predictors of burnout.

For the personal accomplishment (PA) dimension, regression analysis revealed that gender has an effect on stress and burnout, demonstrating that female labour inspectors experience higher levels of burnout, regarding the personal accomplishment dimension compared

to males, that is in line with previous research (Greenglass et al., 1998). Caring of kids was a dominant contributor as well as if the inspector was having a loan. This is in line with previous research that has identified work-family conflict as positively associated with burnout (Smith et al., 2018). All those factors require resources from the inspectors which are limited, contributing to high scores of burnout. Finally, the educational level was identified as another contributing factor to the PA dimension, since the higher the level of education the higher the PA score. This comes in line with previous studies (Jamaludin and You, 2019; Shih et al., 2013).

The effects of economic crisis that Greece experienced during the previous years, are still affecting inspectors and form additional stress factors. According to our findings, Greek labour inspectorate lack access to human, financial and material resources and this diminishes the opportunity to increase inspectors' effectiveness.

The lack of legal protection regarding their job-related tasks was reported to be a major shortcoming and a stress factor. This factor has the potential of simulating conditions of work insecurity since inspectors feel unprotected in cases of disputes or non-compliance of the employees under inspection. Combined with the huge fines that they have to impose in cases of violation (€10500 per undeclared worker) and the frequency of reported violence and harassment events, it is obvious that during the last few years Greek labour inspectors were under conditions of persisting and severe stress.

The nature of work, work environment, associated work demands and provided resources combined with the fact that most of the inspectors are highly qualified professionals in terms of educational level, create a framework for the development of psychosocial risks. Actually, all the above mentioned work characteristics, create favorable conditions for an adverse psychosocial work environment, characterized by high demands and low control, imbalance between efforts and rewards, harassment, conflicts, lack of support and poor interpersonal relationships in the workplace of labour inspectors (ILO, 2016).

No similar study was identified in international literature in order to compare our findings with other documented cases. Similar rates have been previously reported in healthcare providers (Rotenstein et al., 2018) and specifically healthcare students (Jiménez-Ortiz et al., 2019), medical professors (Tijdkink et al., 2014) and nursing (Nowacka et al., 2018) especially for the Emotional Exhaustion dimension. Other professions that have been reported experiencing similar rates are applied psychologists (McCormack et al., 2018) and teachers (Hakanen et al.,

2006). The dynamic nature of burnout has also been studied extensively, providing the appropriate reasoning for application in public administration (Dunford et al., 2012).

During the same period a new management information system (MIS) was introduced to the Greek labour inspectorate to assist inspectors in their tasks. Even though such systems are intended to improve productivity and communication possibilities at workplaces, it has been reported that they create adaptation demands not only on the person and the tasks performed, but also in the physical and organisational context (Berg-Beckhoff et al., 2017). In that terms ICT becomes a stressor, especially for the first stages of the system's learning curve and the older inspectors that lack familiarity with ICT. This could also be considered as an organizational change that has been previously associated with high levels of burnout (Day et al., 2017). This stressor combined with rest of the abovementioned stress factors, may become a fertile soil for a number of psychosocial consequences, resulting in anxiety disorders, frustration, job dissatisfaction, and low job performance, and develop into burnout and mental health problems over longer periods of time (O'Driscoll et al., 2010; Salanova et al., 2013). Actually, a significant denial on the new MIS system was reported, since only 15.7% of the inspectors responded that the system can actually assist them in their work.

During the next few years, the learning curve for the new MIS used by the Greek labour inspectorate will flatten, the system and the associated functionality is expected to be generally accepted, so its effects on inspectors burnout could not only become minimal, but it could actually contribute to a further reduction of burnout, as described in previous research (Valcour and Hunter, 2005).

Provision of additional resources, not only in terms of wages but mainly in terms of staff, equipment could be considered as a mitigation measure to reduce risk of burnout. The establishment of an effective work framework, that would be supportive and protective for inspectors in a top-down approach, promoting interpersonal relations and providing the necessary degrees of freedom to labour inspectors' tasks, could significantly reduce the levels of experienced burnout in each one of the three dimensions (Idris et al., 2012). The social support received by labour inspectors from supervisors and coworkers was found to play a fundamental role in preventing the syndrome. This is in accordance with previous studies that investigated the impact of social support in preventing burnout syndrome (Velando-Soriano et al., 2020).

Future studies in National Labour Inspectorates of other countries, can further assess the prevalence and determinants of burnout among labour inspectors.

Our survey is subject to several limitations. First of all, it should be noted that Burnout per se is now a controversial entity. Several research lines provide psychometric evidence suggesting that the distinction between burnout and depression is blurry. Actually, it has been proposed that burnout may constitute a form of job-induced depression (Bianchi et al., 2015). Even though the topic of burnout has been extremely popular in scientific research, there are still several long-standing unanswered questions related to that, such as conceptual issues, unclear etiology and probable lack of discriminant validity (Bianchi, 2020; Durand-Moreau, 2019).

Apart from that, in our study we employed a cross-sectional design and we are not able to identify causal relationships between potential risk factors and dimensions of burn out syndrome. An additional limitation is that the study was questionnaire based and information bias could have occurred. Further we didn't obtain data from non-responders and there is a potential for selection bias. Nevertheless, our survey has the advantage that for the first time provides evidence on the prevalence and associated risk factors of burnout among labor inspectors, as well as the etiology of burnout.

5. Conclusion

Our study found increased levels of burnout among Greek Labor

Inspectors. In addition, we identified a plethora of work-related risk factors for burnout (increased job demands, lack of staff and resources). Training, provision of additional resources, the establishment of an effective work framework, and promotion of interpersonal relations, could be considered as possible mitigation measures for the prevention of burnout. Moreover, we report that economic crisis was an additional risk factor of burnout among Greek Labor Inspectors. Our results may have implications for policy and indicate the need for sustained, and comprehensive efforts by the organization to reduce burnout among Labor inspectors. Many effective interventions are relatively inexpensive, and small investments can have a large impact.

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