Burnout and Post Traumatic Stress Disorder among Greek and Cypriot Police Officers

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Abstract

Aim: To investigate the effects of the exposure of police officers to stressors and/or traumatic events on their professional functionality.

Methods: A total of 206 police officers were involved in the study, from the police academies of Greece and from the Special Antiterrorist Platoon of Cyprus (SAP). The MBI scale, the MINI interviews Scale, the CES-D Scale, the COPE inventory and a questionnaire with demographic information was used.

Results: A statistically significant difference was found between the police academies of Greece and the SAP in the emotional exhaustion subscale (p=0.046) and the personal accomplishment subscale (p=0.000). In addition the PTSD symptomatology was present in 3.8% for the academies population and 4.5% for the SAP population. Police officers of the academies were found to have unsatisfactory communication among them (p=0.000), inadequate institutional support (p=0.000) and work issues (p=0.000) associated with burnout.

Conclusions: The results demonstrate the need for the implementation of anthropocentric management of the personnel by the Police leadership, with concurrent culture of teamwork and creating personal relationships between members of the force.

Keywords: Burnout; Stress; PTSD; Police; Coping mechanisms

Abbreviations: GPOS: Greek Police Officers School; SC: School of Constables; SAP: Special Antiterrorist Platoons; MBI-GS: Maslach Burnout Inventory-General Survey; MINI: Mini International Neuropsychiatric Interview, version 5.0.0.; CES-D: Center for Epidemiological Studies-Depression Scale

Introduction

Working in police services is characterized by high levels of stress [1,2], higher than that found in the general population [3,4]. Relevant research, suggests two main categories of potential stressors to the staff of the Police:

i. Service factors, that are related to the culture of the Police which is highly competitive, the governance, the degree of support to the staff, the workload, the cyclic working schedule, the unsatisfactory communication between colleagues [5,6].

ii. Factors related to the nature of police work, such as the threat to physical integrity, the dealing with unknown and potentially dangerous situations, and the exposure to violence, death and generally traumatic events [3,7,8]. An important factor in this category is the systematic contact with and assistance to third persons who suffer traumatic experiences.

The prolonged exposure of professionals, in general and police officers in particular, to stressors, has been associated with burnout [9,10]. Furthermore, the exposure to traumatic events has been implicated in the development of Post Traumatic Stress Disorder (PTSD) [11,12].

In police officers, traumatic events are potentially life-threatening conditions [13], which are different from other populations in frequency of events and the danger of being harmed by others or witnessing others people harming other people [14]. What is demonstrated by a number of studies, which deal with the posttraumatic period and the symptomatology of exposed populations, is that a respectable number of these individuals develop symptoms of the aforementioned disorders, which affect the mental and physical health of these people and their everyday lives in general [15-17]. As a result, police officers could develop behavioral, emotional and psychosomatic symptoms.

The majority of the research has been focused on subjects directly

exposed to traumatic events. Policemen can be subjects of a personal stressful event, but mainly they fall into the category of people supportive others who have suffered the traumatic experiences. That's why research efforts investigate this indirectly exposed population [18] and a sub-category called secondary PTSD concerns professionals who support those who have been exposed to a traumatic event [19].

Furthermore, the mere presence of stressors is not predictive for the consequences to the exposed persons [20]. Other indicators, such as the nature of the job of the victim, reveal the complexity of the relationship between the stressful event and its effects to the person exposed to it [21]. Despite extensive existing research into professional exposure to PTSD and Burnout on police officers in other countries [22], there are very few studies concentrated on the Greek population and none concentrated on the Cypriot population which our study aims to rectify which is especially interesting in the period following the airplane crash tragedy [23] and the ammunitions explosion tragedy [24] which posed especially traumatic events for emergency personnel.

Definitions of key concepts

Burnout (burnout) is defined as "a set of negative psychological experiences that reflect the exhaustion experienced by the individual, due to prolonged exposure to work stress factors [25]. It is a psychological syndrome whose main dimensions are depersonalization, emotional exhaustion, and feeling of lack of personal accomplishment [26].

The Post Traumatic Stress Disorder (PTSD) was introduced as an official diagnosis in 1980 in DSM-III. It describes the symptoms that may be developed by a subject that has been exposed to one or more traumatic events. There are four symptom areas (i) Intrusion, (ii) Avoidance, (iii) Hyper-arousal and (iv) Emotional numbing [27].

To be diagnosed with PTSD a person must have symptoms for at least one month after the incident and being experienced must affect day to day functioning and not be merely unpleasant or simply cause non-impairing distress. Another criterion is the symptoms not being attributable to a substance or co-occurring medical condition [28].

The factors that determine the development of the disorder are extrinsic such as psychological, social, environmental, circumstantial, biological and genetic ones. In the first group are included the preparation for the upcoming stress, where this is possible, the individual system of faith and values, previous experiences, internal and external-family, community, social networks-sources of support, the duration and extent of exposure.

In general, the events which are characterized by the element of the conscious interpersonal aggression and violence carry a higher risk of developing PTSD compared to events such as natural disasters or car accidents [29-31]. In the biological factors, are included the individual developmental history, the successful (or not) fight or flight response while Stein, et al. [31] concluded that the symptoms of PTSD in a population of non-veterans is characterized by moderate heritability, similar to the one found in veterans [31,32].

Populations and methods

The selection of Police officers was made according to the individual objectives of the study and was based on the classification and hierarchy of the police services, in Greek and Cypriot police respectively. Specifically, the first (total population of 60) and second (total population of 40) years of the Greek Police Officers School (GPOS), the first (total population of 250) and second (total population of 250) years of the School of Constables (SC) and the Special Antiterrorist

Platoons (SAP) (total population of 30) of the Cyprus Police were the study population. A total of 57 (95% of population) officers were sampled and 54 officers responded (response rate 95%) from the first year of the Greek Police Officers School (GPOS), 26 (65% of population) officers were sampled and 21 officers responded (response rate 88%) from the second year of the Greek Police Officers School (GPOS), 24 officers were sampled (10% of population) and 23 officers responded (response rate 96%) from the first year of the School of Constables (SC) and finally 90 officers were sampled (36% of population) and 85 officers responded (response rate 94%) from the second year of the School of Constables (SC). From Special Antiterrorist Platoons (SAP) a total of 22 officers (73% of population) were sampled and 22 officers responded (response rate 100%).

The administration of the questionnaires was made with the physical presence of a researcher on the working premises of the Police. The questionnaires that were given were:

i. Demographic data and staff information questionnaire. The questionnaire was been especially designed for the study.

ii. Maslach Burnout Inventory-GS (MBI) [33-35]. This version (General Survey) of the Maslach questionnaire has been used in a multitude of international surveys that have studied burnout for employees of the police authorities.

iii. Scale for the diagnosis of the disorder after traumatic stress that is a separate part of the MINI interview (Mini International Neuropsychiatric Interview, version 5.0.0., January 1, 2003).

iv. Center for Epidemiological Studies-Depression Scale (CES-D) [36] is a scale weighted for the Greek population and detects depressive symptomatology. It is included due to high comorbidity such disorder after traumatic stress and the burnout depression.

v. The Multidimensional Cope Inventory COPE [37]. For the statistical analysis, we used the statistical package SPSS 17.0. The data will first be presented descriptively (e.g. means, standard deviations, etc.),. Followed by an inferential statistical investigation (multiple linear regression, Pearson correlation, comparison of means by T-test, analysis of variance ANOVA, X^2 test, post-hoc analysis) of individual research questions.

In order to investigate the difference between independent Groups, we will use the independent-samples t-test and the one-way ANOVA. The independent-samples t-test is used to compare the mean values of the same variable between two independent groups and as such is used to examine the differences between each pair of independent groups. To avoid multiple testing errors, a similar comparison but for more than two independent groups can be performed with the one-way ANOVA test which also compares the means between independent groups. Both tests determine if a group has a means value which is statistically significantly different from the other group (t-test) or the rest of the groups (ANOVA). Since the one-way ANOVA examines all the groups together (omnibus test) it does not specify which groups were statistically significantly different from each other. In the case that the ANOVA test indicates a significant difference, in order to look for more specific differences we follow up with pair wise comparisons in the form of the Tukey's honestly significant difference post hoc test (HSD).

For all categorical (ordinal and nominal) variables, consisting of two or more independent groups, we used Pearson's chi-square test to investigate the relationship between any pair of categorical variables. Given that the chi-square test assumes that the expected value for any cell is at least five, in all other cases we used the Fisher's exact test

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which does not make such an assumption. Furthermore, since the simple Fisher's exact test is only used for 2 × 2 cross tabulations the Freeman-Halton Fisher's exact test extension to R × C cross tabulations was used in all cases that the cross tabulation was bigger than 2 × 2 and the expected value for any cell was not at least five.

We will use the Pearson correlation coefficient to see the association of numeric data as it is a measure of the strength of a linear association between two numeric variables and it can take a range of values from +1 to -1 where a value of 0 indicates that there is no association between the two variables. The stronger the association of the two variables, the closer the Pearson correlation coefficient will be to either +1 or -1 depending on whether the relationship is positive or negative, respectively.

Linear regression is the next step up after correlation. It is used when we want to predict the value of a variable based on the value of another variable. If you have two or more independent variables, rather than just one, you need to use multiple regression. Multiple regression also allows you to determine the overall fit (variance explained) of the model and the relative contribution of each of the predictors to the total variance explained.

Results

The police officers from the academies had on average, 1.58 years of service whilst the SAP police officers had on average 8.91 years of service. From the police officers of the academies, 148 (81.3%) were male whilst 34 (18.7%) were female whilst for the population of the SAP all 22 were men. From the 22 police officers of the SAP, 14 (63.6%) were married with 2 (9.1%) being divorced and 6 (27.3%) not married. Being younger, almost all (181) of the police officers of the academies (99.5%) were not married with none being married and only 1 (0.5%) being divorced. Similarly, almost all of the police officers of the academies (179 or 98.9%) were childless with only 2 (1.1%) of them with children, while for the SAP 16 (72.7%) were parents and only 6 (27.3%) childless.

The police officers of the SAP, characterize the quality of relationships and communication with their colleagues almost satisfactory, with a ratio of 91%, which is statistically significant (Pearson Chi-Square p=0.000) compared to the Police cadets from the academies, where the figure is 33%.

In the evaluation of support-administrative, educational, psychological-received from the service in line with performing their duties, the population of SAP also showed a statistically significant difference (Pearson Chi-Square p=0.000) compared with the Police cadets from the academies (Table 1).

In the evaluation of support-administrative, educational, psychological-receive from the service in line with performing their duties, the group of the SAP had a statistically significant difference

Table 1: Characterization of the quality of relationships and communication with their colleagues.

	Satisfactory	Almost satisfactory	Medium	Almost bad
Police cadets from the academies GPOS and SC	43%	33%	21%	3%
Police officers of the SAP	9%	91%		
Statistically significant difference (Pearson Chi-Square p=0.000).				

in relation to the population of the academies GPOS and SC (Pearson Chi-Square p=0.000) (Table 2).

When asked about the most stressful event that they were involved with during the performance of their professional duties 58% of the police officers of the academies responded that these were due to service factors, 32% that they were due to factors related to the nature of police work and 10% due to other factors. In contrast 100% of the SAP responded that the most stressful event that they were involved with during the performance of their professional duties was due to actors related to the nature of police work (Pearson Chi-Square p=0.000). The respondent population of the academies considers that the most morally rewarding professional occupations that they provide are related to factors associated with the service-culture of the Police and factors related to the nature of the job. For the population of SAP, morally rewarding was the only factors related to the nature of the police work (active duty policing) (Table 3).

In performing their professional duties, 68.8% of the respondents of the SAP had suffered physical injury, with statistically significant difference in relation to the 4.1% respondents of the population of the academies (Pearson Chi-Square p=0.000). There was a statistically significant difference between the sick leaves taken by the population of the academies and that of the SAP (Pearson Chi-Square p=0.005). Whilst the population of the academies showed no statistically significant difference between the different schools in relation to the sick leave taken with around 70-80% taking no leave, 36% of the respondents from the population of the SAP, took a sick leave between one (1) and ten (10) days.

In the Police academies, a higher value in the scale of emotional exhaustion subscale was observed and lower value in the scale of personal accomplishment subscale in relation to the population of the SAP (Table 4). The population of the SAP, had a lower value in the emotional exhaustion subscale compared to the population of the Police academies whilst the population of the SAP, had a higher value in the personal accomplishment subscale scale compared to the population of the Police academies (Table 5).

The existence of stressful events in the line of the performance of the professional duties of a Police officer was assessed as traumatic events which could cause posttraumatic symptomatology. The existence (prevalence) of current symptomatology of posttraumatic stress disorder was 3.8% for the population of the academies and 4.5% for the population of the SAP.

In the total responses to the Police academies, planning had the highest average (3.1544), which falls under the coping strategy that focuses on the problem, while the substance use had the lowest average (1.3101). The same effect is found in the answers of respondents of SAP, with planning having the highest average (3.4167) and substance use the lowest average (1.1818) (Table 6).

Statistical investigation (t-test) was performed comparing the outcomes of the four groups of police academies with the SAP and statistically, significant difference was found in use of emotional support (coping strategy focused on emotion), in venting and on self-distraction (coping strategies that focus on emotion in a maladaptive way). These coping strategies were in the population of police academies, but not in the population of SAP (Table 7).

When the effects of burnout were modeled with the COPE inventory, using multiple linear regression methodology, the model was found to be statistically significant (F=4.732, p=0.000) whereas significant predictors of the emotional exhaustion subscale in the model were

Table 2: Evaluation of support-administrative, educational, and psychological - received from the service in line with performing their duties.

	Adequate	Almost adequate	Medium	Almost inadequate	Inadequate
Police cadets from the academies GPOS and SC	5%	12%	44%	18%	21%
Police officers of the SAP	36%	18%	18%	5%	23%
Statistically significant difference (Pearson Chi-Square p=0.000).					

Table 3: Reward prioritization.

Police academies	
Morally rewarding	5%
Offering (to citizens)	40%
Successful performance of operational duties	26%
Successful performance of administrative duties	19%
Other	10%
SAP	
Offering (to citizens)	56%
Successful performance of operational duties	38%
Other	6%

Table 4: Emotional exhaustion subscale.

	Low	Medium	High
Police cadets from the academies GPOS and SC	30.05%	37.16%	32.79%
Police officers of the SAP	50%	40.90%	9.10%
Statistically significant difference (Pearson Chi-Square p=0.046)			

Table 5: Personal accomplishment subscale.

	Low	Medium	High
Police cadets from the academies GPOS and SC	25.14%	47.54%	27.32%
Police officers of the SAP	68.18%	22.73%	9.10%
Statistically significant difference (Pearson Chi-Square p=0.000).			

Table 6: Group Statistics.

	Group	N	Mean	Std. Deviation	Std. Error Mean
Planning	Police academies	183	3.1544	0.60734	0.0449
	SAP	22	3.4167	0.70711	0.15076
Substance use	Police academies	183	1.3101	0.61823	0.0457
	SAP	22	1.1818	0.45762	0.09756

Table 7: Independent Samples Test.

t- test for Equality of Means			
	T value	p value	Difference
Use of emotional support	4.189	0	0.67933
Venting	1.939	0.044	0.30825
Self-distraction	3.111	0.001	0.47914

planning (β=-0.368, p=0.000) and denial (β=0.169, p=0.021) (coping strategies focused on the problem), venting (β=0.221, p=0.006) and self-distraction (β=0.189, p=0.013) (coping strategies that focus on emotion in a maladaptive way). The depersonalization subscale was also modeled with the COPE inventory and the model was also found to be statistically significant (F=3.826, p=0.000) whereas this time significant predictors of the depersonalization subscale in the model were venting (β=0.186, p=0.016) (coping strategy that focuses on emotion in a maladaptive way), planning (β=-0.414, p=0.000) (coping strategy that focuses on the problem) and religion (β=-0.133, p=0.018) (coping strategy that focuses on emotion). Finally when the personal accomplishment subscale is modeled with the COPE inventory the model was also found to be statistically significant (F=2.209, p=0.011) with the only significant predictor of the model being self-distraction (β=0.209, p = 0.006) (coping strategy that focuses on emotion with maladaptive way).

Statistical correlation was calculated for the questionnaire responses for posttraumatic symptomatology using the COPE inventory as the independent variables (binary logistic regression). As a model, the question 5 of the questionnaire of posttraumatic symptomatology with two or even with three positive responses, is influenced by the COPE inventory and has a more positive impact by venting (coping strategy that focuses on emotion with maladaptive way). The question 4 of the questionnaire of posttraumatic symptomatology with two positive responses is positively affected by the COPE inventory and has a more positive effect on the self-distraction (coping strategy that focuses on emotion with maladaptive way).

A statistical correlation analysis was performed between the results of posttraumatic symptomatology and burnout, and it was not found to be related. This may be due to the small percentage of posttraumatic symptomatology in the population under consideration.

Discussion

In this study, we investigated the exposure of police candidates and officers of certain police services to stressors and traumatic events and the effects of this exposure to their professional functionality (evaluation of burnout) and on their mental state with regards to stress management (evaluation of posttraumatic symptomatology).

In the investigation of burnout we found a high value in the scale of emotional exhaustion subscale and low value in the scale of personal accomplishment subscale for the people of the academies, while the population of SAP, had the lowest value in the emotional exhaustion subscale and highest value in the personal accomplishment subscale respectively. The SAP which was the group with the highest average service time (8.91), presented no burnout in any of the scales, while the groups of the academies with an average service time of (1.58) presented burnout in the subscales of emotional exhaustion and personal accomplishment. In a similar survey conducted in Greece concerning the burnout of Police, it was found that the higher burnout was found in women police officers, police officers with higher education levels and younger police officers [38].

The service-related factors that were found to be related to burnout for the academies candidates were the unsatisfactory communication among colleagues, the insufficient support-administrative, educational, psychological-received from the service towards the performance of their duties and, finally, professional occupations, such as services, that are concerned with the professional tasks that they are requested to perform more frequently that cause them stress, anxiety, and tension. Similar studies suggest that lack of support from supervisors and peers is one of the specific stressors that have been most associated with stress in police officers [39]. The population of the SAP exhibited satisfactory communication between colleagues and reported an adequate support from the service. Professional occupations that were causing the population of SAP, anxiety, worry and tension were related to the nature of their work and not to service-related factors.

With regards to factors related to the nature of the work of a police officer, it was found that the majority of respondents of police officers had the experience of a traumatic event that is outside the range of normal experience for humans. The mere experience of a traumatic event was not found to be related to burnout. Also, a higher percentage of the SAP personnel, (58%), has suffered physical injury during the performance of their professional duties, while most of the population of the schools, 96%, (statistically significant) did not suffer physical injury. However this factor was not found to be related to burnout either.

The police officers who participated in a survey by Kohan & Mazmanian [40] evaluated the negative experiences related to the nature of the work as more aggravating than the corresponding experiences in the service environment. These views were not confirmed by other similar studies, [41,42] which reported that departmental satisfactory and rewarding experiences have a stronger impact on the positive assessment of the profession in general, than the rewards that come from the nature of the work (active duty policing). In our study, we found that the most rewarding for both the population of the academies and for the population of the SAP, is giving (offering) to the people, which is related to the nature of the work (active duty policing). For the population of academies, rewarding are factors associated with service culture of the Police and factors related to the nature of the job. For the population of the SAP, rewarding are the only factors related to the active duty policing.

For the general population, the presence of PTSD ranges from 1% to 3% (43-45). Studies in populations with increased risk dealing with traumatic events that are outside the range of common experience for humans, the stress disorder existence rate is greater than the percentage of the general population [46-48]. In our populations, the existence of current symptomatology for PTSD was for the population of the academies 3.8% and for the population of the SAP 4.5% i.e. rates higher than the general population. Additionally, a meta-analysis found that 4.5% of Police Officers may suffer from P.T.S.D [49]. Similar results were found in investigations involving Police officers faced with a terrorist attack in Norway in 2011 [50], Madrid [51] and policemen who took part in tackling the effects of the deadly tsunami in the Indian Ocean in 2004 [52].

Investigations involving indirectly exposed populations that were supporting other people who have suffered a traumatic experience [18], reported secondary PTSD [49,53]. The population of SAP, reported that the most stressful events in which they had direct involvement in the context of performing their professional duties was an explosion at the Naval Base in Mari with major human casualties and the transportation of the coffins from a plane crash without any survivors. The police officers of the SAP had direct contact with the relatives of the victims, but they did not develop a statistically significant difference in the PTSD symptomatology, compared to the population of the schools that did not have similar experiences. This is probably due to the fact that the population of the SAP does not use coping strategies such as venting and self-distraction (coping strategies focused on emotion with maladaptive way) which were found to be more related to the existence of PTSD.

The involvement of a child population in a traumatic event is considered a positive prognostic factor for developing PTSD symptomatology [54]. The victims of the plane crash included several children, and the explosion at the Naval Base left many underage orphans. The police officers of the SAP, had direct and indirect involvement with families of victims, but did not develop PTSD at a larger percentage than the percentage of the general population.

Both burnout and posttraumatic symptomatology have been associated with frequent leaves [55,56] and use of substances [57]. Of the total responses for the entire population sample, the lowest average was for the substance use (1.3101). On the sick leave taken, the population of the academies does not show any significant difference, whilst the respondent population of the SAP, with a percentage of 36% took a sick leave from one (1) to ten (10) days. The obtained sick leaves are affected by the years of service, but just like the substance use there was no influence to burnout and traumatic symptomatology found.

In investigating COPE inventory there was a statistically significant difference in search for use of emotional support (coping strategy focused on emotion), in venting and self-distraction (coping strategies focused on emotion with maladaptive way). These coping strategies existed in the population of Police academies, but not in the population of the SAP. The emotional exhaustion subscale observed in the population of the academies is associated with venting and self-distraction, while personal accomplishment subscale is associated only with self-distraction.

Conclusions

The results of our study highlight the presence of burnout in the emotional exhaustion and personal accomplishment scales in police officers of the academies with an average of 1.58 years of service. Burnout was found to be associated with service factors and particularly with unsatisfactory communication between colleagues, not enough support-administrative, educational, and psychological that they receive from the service whilst performing their duties-and, finally, the professional occupations (e.g. services). The factor related to the nature of the work of the police officer was not found to influence Burnout. In investigating the COPE inventory, the subscales that are related to burnout are venting and self-distraction (coping strategies focused on emotion with maladaptive way).

The SAP with an average service of 8.91 years showed no Burnout. The police officers of the SAP had suffered injury in time of duty and on average they received more sick leaves compared with the Police academies. The absence of burnout symptomatology is probably due to the high value of personal accomplishment subscale, the moral reward they receive from the active duty policing (offer to the citizens), on the good communication between colleagues, the adequate support-administrative, educational, psychological they receive from the service-and the non-use of coping strategies focused on emotion in a maladaptive way.

The majority of responders had experienced a traumatic event that is outside the range of normal experience for humans. In the population of our research, the existence of current PTSD symptomatology was

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for the population of the Schools 3.8% and for the population of the SAP 4.5%., i.e. percentages higher than the existence of the current symptomatology in the general population.

The results demonstrate the need to redefine the organization of the academies, with anthropocentric management of the staff, with a simultaneous assimilation of teamwork and the creation of personal relationships between members of the department. At the same time, use of emotional support is necessary and should be considered as essential [58-60].

Limitations

The major limitation of the study is the comparison of police populations from two countries, who have some, rather minor, cultural differences. Another limitation is the selection of certain police populations. Nevertheless, this selection can reveille the burden accumulated during the years in service.

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