

# Burnout as predictor of aggressivity among police officers

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## ABSTRACT

This paper aims to understand the relationship between aggressivity and burnout among police officers, more precisely, it investigates whether burnout is a predictor of aggressivity among police officers. The study focuses on the relationship between burnout and aggressivity, using regression analysis to identify aggressivity predictors. The Maslach Burnout Inventory was used to measure burnout, while the Aggression Questionnaire was used to measure aggressivity. A cross-sectional study collected data from 274 male police officers (from PSP – Portuguese Police of Public Security) exercising urban patrol tasks in Porto or Lisbon. Low burnout and moderate aggressivity levels were found, with positive significant correlations. Regression analysis reveals that burnout, more than socio-demographic characteristics, predicts 13% to 22% of aggressivity. In particular, feelings of high depersonalisation and low personal accomplishment are the burnout dimensions that most strongly explain anger and aggressivity, whereas emotional exhaustion only explains 4% of verbal aggression. The study highlights the need to develop prevention strategies of stress, aiming to avoid the development of burnout as occupational chronic stress, and decreasing the risk of developing aggressivity among police officers. Despite the wide literature in the area of police officers' burnout and individual characteristics (e.g. aggressivity proneness as a personality trait), there is limited research on the relationship between burnout and aggressivity. Within democratic societies where excessive use of force by police officers is criticised, aggressivity predicted by burnout reinforces the need to prevent occupational stress that leads to burnout.

**Keywords:** Aggressivity, burnout, police officers, patrollers, Portuguese sample.



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## 1. Introduction

According to Cumming and colleagues (1965, p. 276), daily activities of police officers can be divided into two major groups: providing support and controlling public order, which leads these authors to refer '*policeman as philosopher, guide and friend*'. Later, Bittner (1974; 1975) suggested that the police force is the most well-known organisation amongst the citizenry, being open 24h per day and constantly available to solve different situations. In this decade, numerous studies have been conducted analysing policing tasks, and most of them agree that policing is a stressful job needing situations to be solved quickly and dealing with uncertainty and ambiguity in the demands from citizens (Brown & Campbell, 1994; Gillet, Huart, Colombat & Fouquereau, 2013; Oligny, 1991; Schaible & Gecas, 2010; Violanti & Aron, 1995).

Different studies refer the influence of individual characteristics on the experience of stressors among police officers, and consequently the experience of burnout among this population (Alarcon, Eschleman & Bowling, 2009; Ivie & Garland, 2011; Swider & Zimmermann, 2010; Vuorensyrja & Malkia, 2011). Additionally, police job stressors and burnout have detrimental consequences on the physical and mental health of the police officer, such as depression, aggressive behaviours and suicide (Blum, 2000; Violanti, 1996). Previous research investigating the causes of burnout has mainly concentrated on the external triggers of burnout such as work criteria or organisational or social influences (Bühler & Land, 2003). However, one may ask why under the same working conditions, one police officer burns out, while another shows no symptoms at all. It is likely that other causes, such as personality, play a big role in burnout development.

Numerous studies have been conducted analysing personality and individual characteristics of police officers (Abrahamsen & Strype, 2010; Burbeck & Furnham, 1984; Detrick & Chibnall, 2013; Goldstein, 1968; Hennessy, 1999; Twersky-Glasner, 2005), particularly personality traits such as '*predispositional personality*' and '*occupational personality*', both concepts defined by Bonifacio (1991, p. 147). In other words, several discussions have emerged analysing the reasons and motivations underlying the choice to become a police officer: e.g. '*cops are born, not made*', or is this choice influenced by a job culture and job socialisation which influences the personality profile of police officers '*produced by its experiences once he is on the job*'.

Aggressivity is an individual characteristic explained by biological or social theories (Bandura, 1973; Berkowitz, 1993; Lorenz, 1966) and frequently referred as a personality trait of police officers (Bittner, 1991; Rubinstein, 2006). However, aggressivity is also an emotional state elicited by stressful situations, leading the person to evaluate the situation as more threatening than it really is (Griffin & Bernard, 2003). Despite human evolution being related to violence and aggressivity, in the current society violence is not acceptable. Therefore, when analysing police officers' duties it is clear that they suffer some ambivalence over aggressivity. In other words, although sometimes they are the target of aggressivity from citizens, they can not react aggressively, except in special situations of danger and threat to

public order. Thus, aggressivity and the used of excessive force by police officers is a concern for democratic societies, where police officers are expected to respect citizens (Griffin & Bernard, 2003; Koepfler, Brewster & Stoloff, 2012; Neely & Cleveland, 2012; Seron, Pereira & Kovath, 2004).

Considering that police officers have a stressful occupation that can elicit burnout and the fact that stressful situations lead to a misinterpretation of the stimuli as threatening, and consequently to react aggressively, we are interested in further investigating the relationship between burnout and aggressivity. In particular, investigating if burnout predicts aggressivity among police officers. It is believed that the findings will contribute not only to the theoretical understanding of the burnout concept, but will also include implications for practitioners in the area and thus, result in the design of successful stress management interventions for police officers.

### **1.1. Police officers' stress and burnout**

Few occupations require employees to face so many dangerous and stressful situations as police officers on a daily basis. They are constantly under pressure, exposed to multiple stressors and uncertainty (Blum, 2000; Brown & Campbell, 1994; Oligny, 1991; Ransley & Mazerolle, 2009). Additionally, as suggested by Stone (2004), being a police officer is a consuming job with increased experience of stress during tasks that aim to ensure public safety through crime prevention and law enforcement. Ranta and Sud (2008) suggested that law-enforcement officers are killed more often by job-related stress than by crime. When comparing occupational stress among different professions with data collected between 1988 and 2005, it was found that being a police officer was the second most stressful activity (Gonçalves & Neves, 2010; Johnson et al., 2005). Exposure of police officers to stressors can be detrimental to the job performance, the public image of the police (especially in the use of excessive force), and has individual consequences like turnover, absenteeism, physical and mental diseases and, especially, suicide due to easy access to a gun (Brown & Campbell, 1994; Hackett & Violanti, 2003; Selye, 1978; Turvey, 1995).

Researchers have shown increasing interest in the study of police officers' stress and burnout. Research relating to the causes of burnout has mainly concentrated on external triggers, especially organisational or social influences, ignoring individual reactions and personality as a possible aetiology of burnout (Alarcon et al., 2009). Nevertheless, it is important to be aware that some studies have investigated the relationship between stress, burnout and personality traits, trying to identify vulnerability factors (Gustafsson, Persson, Eriksson, Norberg & Strangberg, 2009; Polman, Borkoles & Nicholls, 2010; Silva & Queirós, 2013; Swider & Zimmermann, 2010). The majority of the studies investigated mainly the individual and organisational consequences of burnout. It is well known that occupational stress is frequent in today's society, provoking physical and mental illness, and decreasing the quality of services (Stinchcomb, 2004). According to Ransley and Mazerolle (2009), the 21<sup>st</sup> century is an era of uncertainty, bringing terrorism, violence, poverty, and crime

to different countries, requiring police forces to adapt quickly to new demands. However, when there is a mismatch between job demands and the person's adaptive resources, occupational stress occurs and can lead to burnout (Schaufeli & Buunk, 2003). Burnout can be defined as *'to fail, wear out, or become exhausted by making excessive demands on energy, strength, or resources'* (Freudenberger, 1974, p. 159). Actually, the most accepted definition of burnout is provided by Maslach and colleagues (2001, p. 402) who describes *'burned-out'* as related to human services coping with emotional demands of citizens, expressed by three dimensions: emotional exhaustion as a *'subjective experience'*, depersonalisation as *'an attempt to put distance between oneself and the service recipients'* and reduced personal accomplishment as a *'lack of efficacy'*.

Scientific literature analysing stress and burnout among police officers is wide, especially after the 1990s. It can be found in countries such as Australia (Ransley & Mazerolle, 2009), the United States of America (Goodman, 1990; Hassell, Archbold & Stichman, 2011; Menard & Arter, 2013), Canada (Le Blanc, Regehr, Jelley & Bareth, 2008; Oligny, 1991), Taiwan (Chen, 2009; Chueh, Yen, Lu & Yang, 2011), Israel (Pines & Keinan, 2006), Africa (Agolla, 2009; Storm & Rothmann, 2003), India (Bawa & Kaur, 2011; Ranta & Sud, 2008) and Brazil (Coleta & Coleta, 2008; Soares et al., 2012). Within Europe we found studies in The Netherlands (Euwema, Kop & Bakker, 2004; Velden, Kleber, Grievink & Yzermans, 2010), Switzerland (Gerber, Hartmann, Brand, Holsboer-Trachsler & Pühse, 2010), Finland (Vuorensyrja & Malkia, 2011), Norway (Langballe, Innstrand, Hagtvét, Falkum & Aasland, 2009), Lithuania (Bandzeviciene, Birbilaite & Dirzyte, 2010), Turkey (Azizoglu & Ozyer, 2010), Italy (Pancheri et al., 2002), Spain (Durán, Montalbán & Stangeland, 2006; Gil-Monte, 2002; Ravelo, Garcia & Dorta, 2009), and Portugal (Durão, 2010, 2011; Gonçalves & Neves, 2010; Manuel & Soeiro, 2010; Queirós & Marques, 2013; Recasens i Brunet, Basanta, Agra, Queirós & Selmini, 2009). It is important to highlight that despite cultural differences among countries, the data seems to consistently show that policing provokes stress, burnout, physical diseases, aggressive behaviours and suicide. The main stressors identified are: fear of killing someone during policing, excessive administrative tasks, lack of support from the institution (Kop, Euwema & Schaufeli, 1999; Page & Jacobs, 2011; Ravelo et al., 2009; Violanti, 1999), the need to suppress some emotions and the conflict between expressed emotions and feelings (Le Blanc et al., 2008; van Gelderen, Bakker, Konijn & Demerouti, 2011), conflict between job demands and job resources (Euwema et al., 2004), coping styles and dealing with danger and uncertainty (Pancheri et al., 2002), low salary, hostility from citizens (Pines & Keinan 2006), lack of training and the public image of the police (Agolla, 2009; Wu, 2009). However, little is known about the relationship between burnout and aggressivity among police officers.

## 1.2. Aggressivity as a characteristic or as reaction to stress among police officers

Personality profiles of police officers is a topic under research since Goldstein (1968) and Bittner (1974, 1975) discussed the tasks of modern policing or

individual motivations to be a police officer, and recent studies continued to identify specific personality traits of police officers (Ainsworth, 2002; Gerber & Ward, 2011; Salters-Pedneault, Ruef & Orr, 2010). Despite traditional definitions of personality as a stable trait over time (Allport, 1961; Eysenck, 1953), recently Piekola (2011, p. 2) suggested that personality can be viewed as '*an adaptation worked out in the cultural and historical context of the individual life*'. Thus, the '*occupational personality*' of police officers referred by Bonifacio (1991) can reflect this adaptation to the job, leading police officers to acquire certain personality attributes that equip them to be stronger and see themselves as aggressive and dominant. Although some studies refused the specificity of personality traits among police officers (Biggam & Power, 1996; Laguna et al., 2010), evidence has shown that personality traits are related to preferences for conflict-resolution tactics among this population (Abrahamsen & Strype, 2010). Particularly, the existence of traits such as authoritarianism, cynicism, need for achievement, exhibition, power, bravery, and sensation seeking were frequently reported (Bonifacio, 1991; Gaines Kappeler & Vaughn, 1997; Gerber & Ward, 2011).

Authoritarianism and power are individual characteristics that usually concern researchers due to their relationship to aggressivity predispositions, and the excessive use of force by police officers during their work (Bittner, 1991; Garner & Maxwell, 2002; Griffin & Bernard, 2003; Reno et al., 1999; Rubinstein, 2006). Although there are times when aggression can be necessary for police officers (e.g. the need to detain and arrest people), these professionals should be able to control aggressive behaviour. In support of this idea, Castora and colleagues (2003) suggested that police departments should not consider the recruitment of police officers who tend to be aggressive or behave in an abusive manner toward citizens in interpersonal situations.

During their work police officers frequently deal with citizens' difficulties when they try to solve problems and arrest people involved in criminal activities. They are prone to see these people as guilty, and feel more anger and hostility towards them, especially if they resist during the arrest (Lange & Verhallen, 1978; McCluskey, Terrill & Paoline, 2005; Wilson, Gross & Beck, 1994). Seron and colleagues (2004, p. 665) stated that '*in their interactions with citizens, police officers are prohibited from using unnecessary force, abusing their authority, speaking discourteously, or using offensive language*'. When evaluating citizen's expectations, the authors concluded that they expect officers to behave professionally. Despite some "street-level" discretion, offensive language and threatening behaviour (e.g. placing a hand on a gun) can be perceived as police misconduct, discourtesy or abuse of authority. These results can be used to improve the interactions between police and community, and especially to highlight the fact that citizens' perceptions of aggressive behaviour from police officers toward citizens is more complex than just the use of excessive force.

Regarding the relationship between burnout and aggressivity, Sack (2009) found small correlations between burnout and the use of excessive force. However, Kop and Euwema (2001) found that officers using verbal or physical force in interactions with civilians scored high on burnout, particularly on depersonalisation.

Police officers' proneness to aggressivity seems to increase with job experience and within stressful situations (Adams & Buck, 2010; Beutler, Nussbaum & Meredith, 1988; Boyanowsky, 1982; Fyfe, 1980; Geller & Toch, 1996; Nieuwenhuys, Savelsbergh & Oudejans, 2012; Riddle, 2000; Why et al., 2003). Recently, several studies investigating excessive use of force have been conducted (Akdogan, 2009; Culver, 2007; Foster, 2010; Koepfler et al., 2012; Kurtz, 2008; Manzoni & Eisner, 2006; Neely & Cleveland, 2012), suggesting that this is an important topic of research. Griffin and Bernard (2003, p. 4) explain excessive force using anger-aggression theory, suggesting that police officers *'experience chronic physiological arousal ... (similar to stress, leading them) to see threats more frequently and to respond to threats more aggressively than do other people'*. According to these authors, this behaviour is a consequence of the social isolation, and the consistent experience of stress (that can lead to burnout), risk and potential threat experienced by police officers in their job. Among Portuguese studies (e.g. Oliveira, 2008; Silva, 2012; Queirós, Silva & Teixeira, 2012) using self-reported measures of burnout and aggressivity (respectively Maslach Burnout Inventory and the Aggression Questionnaire), it was found positive significant correlations between all aggressivity dimensions and emotional exhaustion and depersonalisation. Additionally, negative significant correlations were found between all aggressivity dimensions and personal accomplishment.

It is clear that both aggressive behaviour and its relationship with stress and burnout should become an important area of research when aiming to further understand police officers' behaviour. Evidence has shown that police officers have a stressful occupation that can elicit burnout (Bawa & Kaur, 2011). Additionally, previous research (Griffin & Bernard, 2003) suggested that stressful situations lead to misinterpreting stimuli as threatening, and consequently to an aggressive reaction. However, few conclusions can be drawn about the relationship between stress, burnout and aggressivity, since the majority of the studies investigated burnout vulnerability factors (Eddy, 2013; Gallavan & Newman, 2013; Maslach, 2011; Maslach et al., 2001; Schaufeli & Buunk, 2003), such as being the victim of aggression during occupational activity (Deery, Walsh & Guest, 2011; Ko, Lansky, Hensel & Dewa, 2012; Winstanley & Whittington, 2002) or personality traits such as neuroticism or impulsivity as aggressivity predictors (Lee & Egan, 2013). In accordance with this idea, few studies analysed the relationship between aggressivity and burnout among police officers. Thus, the current paper will address this gap in the literature by investigating the relationship between burnout and aggressivity among police officers. Since no similar studies were found in this area, our study is exploratory in nature, and based on the current literature analysed above, it is believed that, using self-reported measures, burnout is a predictor of aggressivity.

## 2. Method

### 2.1. Participants and Procedure

Data was collected from a non-probabilistic sample of 274 Portuguese male police officers, doing patrol tasks in Porto or Lisbon, working in Police of Public Security (PSP). Participants were aged between 24 and 57 years ( $M=36.3$  and  $SD=7.7$ ), with 31% of the sample having 9<sup>th</sup> grade and 59% with 12<sup>th</sup> school grade education (equivalent to UK A Levels). Concerning marital status, 73% were married, and 65% have children. Work experience ranged between 2 and 31 years ( $M=12.9$  and  $SD=7.3$ ).

A self-completed, anonymous and confidential questionnaire was filled in after formal authorisation. Data was analysed using PASW 19 for descriptive statistic, R Pearson analysis, and regression analysis. Due to the difficulties in data collection among this population, data was collected between 2007 and 2010 during several cross-sectional similar studies, where the participants voluntarily completed at the same time all the questionnaires of each study. Data was collected among 400 questionnaires during 4 years of research, using the same procedure. For this study a sample of 274 male participants was used based on the following inclusion criteria: questionnaires that were not outliers in each dimension of burnout or aggressivity questionnaires, and questionnaires that allowed no statistical significant differences between sub-samples related with year and town where data were collected ( $p$  value between 0.057 and 0.370).

### 2.2. Measures

A socio-demographic questionnaire was administered to participants, containing socio-demographic (sex, age, marital status and children) information and professional characteristics (academic degree and professional experience).

Burnout as a chronic occupational stress elicited by professional activities with interpersonal intercourses was assessed by the *Maslach Burnout Inventory – Human Services Survey* (Maslach & Jackson, 1997), with adequate reliability (Maroco, 2010). The instrument included 22 items divided into three scales: emotional exhaustion, depersonalization, and personal accomplishment. The emotional exhaustion scale had 9 items, and assessed feelings of being emotionally overextended and having depleted one's emotional resources (e.g. *'I feel emotionally drained by my work'*). The depersonalisation scale had 5 items, and is about becoming indifferent to colleagues or people that the individual serves (e.g. *'I feel I treat others as if they are impersonal objects'*). The personal accomplishment scale had 8 items, assessing feelings of competence and achievement at work (e.g. *'I feel I'm positively influencing other people's lives through my work'*). Burnout is related to high scores on the first two scales and low scores on the third scale. All items are scored on a 7-point frequency rating scale ranging from 0 (*'never'*) to 6 (*'every day'*).

Aggressivity was assessed by the *Aggression Questionnaire* (Buss & Perry, 1992) with adequate reliability (Maroco, 2010). This instrument included 29 items,

divided into four subscales: physical aggression, verbal aggression, anger, and hostility, each scored on a 5-point frequency rating scale ranging from 1 (*'extremely uncharacteristic of me'*) to 5 (*'extremely characteristic of me'*), including also a total score for overall aggressivity. The physical aggression scale had 8 items (e.g. *'Given enough provocation, I may hit another person'*), the verbal aggression scale had 5 items (e.g. *'When people annoy me, I may tell them what I think of them'*), the anger scale had 7 items (e.g. *'When frustrated, I let my irritation show'*), and the hostility scale had 9 items (e.g. *'I sometimes feel that people are laughing at me behind my back'*). During the development of the questionnaire it shows correlations between its dimensions and personality traits such as impulsivity, competitiveness and emotionality, and also between self-reports and observations of knowledgeable informants (Buss & Perry, 1992). Thus, it can be used to identify proneness to aggressivity (Buss & Perry, 1992) or to operationalise aggression (Lee & Egan, 2013).

### 3. Results

Since we had a sample of 274 male participants extracted from 400 participants, outliers were not included. According to the Kolmogorov-Smirnov test, there is an absence of normality of the distribution for the majority of variables (Table 1), suggesting the use of non-parametric tests. However, our sample has more than 30 participants ( $n = 274$  police officers), and according to the Central Limit Theorem of probability theory, when the sample size increases, the distribution of the mean approaches a normal distribution (Barnes, 1994; Maroco, 2010). Additionally, skewness is lower than 3 and kurtosis is lower than 7 (Kline, 2005; Maroco, 2010), suggesting that the results are not affected by the absence of normality. Thus, parametric tests were used.

Table 1: Reliability, skewness, kurtosis and Kolmogorov-Smirnov test for dependent variables

Dimensions	Alpha Cronbach	Skewness	Kurtosis	Kolmogorov-Smirnov	p
Emotional exhaustion	.85	.811	-.015	2.089	.000**
Depersonalisation	.74	1.049	.653	2.429	.000**
Personal accomplishment	.79	-1.012	.867	1.786	.003**
Physical aggression	.74	.632	.794	1.629	.010**
Verbal aggression	.73	.076	-.002	1.466	.027*
Anger	.81	.367	-.279	1.112	.169
Hostility	.74	.118	-.444	1.018	.252
Aggressivity	.86	.414	-.050	.928	.355

Note. \*  $p \leq 0.050$  \*\*  $p \leq 0.010$



Regarding means, standard deviations and the Pearson correlation between variables (Table 2), low emotional exhaustion, low depersonalisation and high personal accomplishment were found, suggesting a low burnout level. Regarding aggressivity, moderate levels for physical and verbal aggression, and hostility were found. Additionally, overall low aggressivity and low anger were found. Correlations between burnout dimensions and aggressivity dimensions are almost all statistically significant. Positive correlations were found between aggressivity, emotional exhaustion and depersonalisation. Negative correlations were found between aggressivity and personal accomplishment. Age and years of experience correlated negatively with emotional exhaustion, and positively with hostility.

*Table 2: Means, standard deviations and Pearson correlation between variables*

Dimensions	M	SD	Age	Work experience	Emotional exhaustion	Depersonalisation	Personal accomplishment
Age	36.29	7.653					
Years of work experience	12.94	7.311					
Emotional exhaustion (0-6)	1.790	1.165	-.137*	-.130*			
Depersonalisation (0-6)	1.054	1.003	-.115	-.107			
Personal accomplishment(0-6)	4.736	1.015	.050	.038			
Physical aggression (1-5)	2.135	.535	-.062	-.027	.258**	.319**	-.316**
Verbal aggression (1-5)	2.725	.479	-.001	.013	.207**	.145*	-.098
Anger (1-5)	1.958	.611	.099	.110	.378**	.309**	-.315**
Hostility (1-5)	2.325	.562	.176**	.193**	.328**	.318**	-.136*
Aggressivity (1-5)	2.257	.440	.096	.121*	.367**	.354**	-.292**

Note. \*  $p \leq 0.050$  \*\*  $p \leq 0.010$

We performed some analyses comparing burnout and aggressivity dimensions according to participants' socio-demographic characteristics (t-test or Anova for independent groups). Regarding marital status, children and academic degree, no statistical differences were found, except for anger, hostility and aggressivity, which were higher among participants with low academic qualification ( $p$  values between 0.005 and 0.032).

Some Portuguese or international studies measured burnout and aggressivity of police officers (or army personnel in Suris and colleagues' study) and used as self-reported measures the same instruments as those used in the current study.

These allowed us to make comparisons (Table 3), and to conclude that our results are similar to those found in previous research, especially among Portuguese samples (Oliveira, 2008; Silva, 2012), particularly for low depersonalisation, high personal accomplishment and moderate aggressivity dimensions.

*Table 3: Comparison between means for burnout and aggressivity from this study and other studies*

Dimensions	Mean	Oliveira (2008)	Silva (2012)	Sack (2009)	Schaufeli & Enzman (1998)	Suris et al. (2005)
Emotional exhaustion (0-6)	1.79	1.61	1.61	1.82	1.95	-
Depersonalisation (0-6)	1.05	0.92	0.91	1.78	2.50	-
Personal accomplishment (0-6)	4.74	4.82	4.61	5.09	3.99	-
Physical aggression (1-5)	2.14	2.10	2.21	average *	-	2.19
Verbal aggression (1-5)	2.73	2.72	2.81	average *	-	2.58
Anger (1-5)	1.96	1.88	2.11	low average *	-	2.36
Hostility (1-5)	2.33	2.21	2.52	average *	-	2.41
Aggressivity (1-5)	2.26	2.19	2.41	average *	-	2.36

\* standardised T scores from AQ 34 items version

Multiple regression analysis using the enter model (Field, 2009) was performed to test the predictive value of burnout dimensions and socio-demographic characteristics in aggressivity dimensions (Table 4). The first block was burnout dimensions (emotional exhaustion, depersonalisation and personal accomplishment) and the second block was socio-demographic variables (age and years of work experience as quantitative variables; marital status, children and academic degree transformed on ordinal variables where single=1, married=2 and divorced=3; no children=0 and children=1, academic qualification with 1=low level and 3=high level). Results show that burnout dimensions are a stronger predictor for aggressivity than socio-demographic variables, except for hostility, where socio-demographic variables explain near 10% and burnout explain 14%. Adjusted  $R^2$  presents inferior values than  $R^2$  and the differences are larger when socio-demographic variables were added, than for burnout alone.

*Table 4: Regression analysis of predicted values of burnout and socio-demography on aggressivity*

Dependent variable	Predictors	$R^2$	$R^2$ Adjusted	$R^2$ change	$F(p)$ ( $df = 5, 262$ )
Physical aggression	Burnout dimensions	.195	.186	.195	9.143 (.000)
	Socio-demographic variables	.218	.194	.023	
Verbal aggression	Burnout dimensions	.052	.041	.052	2.068 (.039)
	Socio-demographic variables	.059	.031	.008	
Anger	Burnout dimensions	.233	.224	.233	12.175 (.000)
	Socio-demographic variables	.271	.249	.038	

Dependent variable	Predictors	R <sup>2</sup>	R <sup>2</sup> Adjusted	R <sup>2</sup> change	F (p) (df = 5,262)
Hostility	Burnout dimensions	.147	.137	.147	10.513 (.000)
	Socio-demographic variables	.243	.220	.096	
Aggressivity	Burnout dimensions	.233	.225	.233	13.239 (.000)
	Socio-demographic variables	.288	.266	.055	

Since socio-demographic variables present a weak influence on aggressivity and our aim was to explore the relationship between burnout and aggressivity, a linear regression analysis using the stepwise model was performed to test the predictive value of burnout dimension in aggressivity (Table 5). Results show that depersonalisation and personal accomplishment explain (*Adjusted R<sup>2</sup>*) 17.3% of physical aggression (coefficient Beta show they are, respectively, positive and negative predictors). Emotional exhaustion explains only 3.9% of verbal aggression (positive predictor), whereas emotional exhaustion and depersonalisation explain 13.4% of hostility (positive predictors). All dimensions of burnout explain 22.3% and 22.2%, respectively, of anger and overall aggressivity (positive predictors, except for personal accomplishment that is a negative predictor).

Table 5: Regression analysis of predicted value of burnout on aggressivity

Dependent variable	Predictors	R <sup>2</sup>	R <sup>2</sup> Adjusted	R <sup>2</sup> change	β	t (p)	F (p)
Physical aggression	Depersonalisation	.102	.098	.102	.284	5.119 (.000)	29.580 (.000)
	Personal accomplishment	.179	.173	.077	-.281	-5.058 (.000)	
Verbal aggression	Emotional exhaustion	.043	.039	.043	.207	3.487 (.001)	12.161 (.001)
	Emotional exhaustion	.143	.139	.143	.278	4.539 (.000)	
Anger	Personal accomplishment	.217	.211	.074	-.265	-4.914 (.000)	27.135 (.000)
	Depersonalisation	.232	.223	.015	.140	2.286 (.023)	
Hostility	Emotional exhaustion	.107	.104	.107	.227	3.511 (.001)	22.084 (.000)
	Depersonalisation	.140	.134	.033	.207	3.208 (.001)	
	Emotional exhaustion	.135	.132	.134	.238	3.874 (.000)	
Aggressivity	Personal accomplishment	.198	.192	.063	-.248	-4.411 (.000)	26.945 (.000)
	Depersonalisation	.230	.222	.033	.208	3.395 (.001)	

Since burnout is a complex syndrome, some variables can be predictors or consequences of burnout (Hatinen et al., 2009; Rostamani & Abedi, 2012) and some authors attribute personality and individual characteristics as vulnerability factors to burnout (Alarcon et al., 2009). We performed another linear regression analysis using the stepwise model to test the predictive value of aggressivity dimensions in burnout dimensions (Table 6), considering that the Aggression Questionnaire could be used also as a personality test to measure a profile of aggressivity proneness. Results show that anger and hostility explains (*Adjusted R<sup>2</sup>*) 15.1% of emotional exhaustion (coefficient Beta show they are positive predictors), whereas aggressivity and verbal aggression explain 13.2% of depersonalisation

(respectively positive and negative predictor). Physical aggression and anger explain 11.5% of personal accomplishment (negative predictors). These results suggest that aggressivity is a weaker predictor of burnout (*Adjusted R<sup>2</sup>* between 11.5% and 15.1%) whereas burnout is a strong predictor of aggressivity (*Adjusted R<sup>2</sup>* between 13.4% and 22.3%, except for the case of emotional exhaustion as predictor of verbal aggression).

Table 6: Regression analysis of predicted value of aggressivity on burnout

Dependent variable	Predictors	R <sup>2</sup>	R <sup>2</sup>	R <sup>2</sup> change	$\beta$	t (p)	F (p)
Emotional exhaustion	Anger	.143	.139	.143	.283	3.986 (.000)	25.222
	Hostility	.157	.151	.014	.153	2.151 (.032)	(.000)
Depersonalisation	Aggressivity	.125	.122	.125	.453	6.074 (.000)	21.770
	Verbal aggression	.138	.132	.013	-.151	-2.022 (.044)	(.000)
Personal accomplishment	Physical aggression	.100	.097	.100	-.194	2.615 (.009)	18.640
	Anger	.121	.115	.021	-.191	-2.569 (.011)	(.000)

#### 4. Discussion

This study aimed to investigate whether burnout was a predictor of aggressivity, using self-reported measures. Results support the preliminary hypothesis that burnout dimensions explained 13% to 22% of aggressivity, except for verbal aggression that presents a low correlation with burnout. Socio-demographic variables explain less weakly aggressivity, contributing a maximum of 9.6%. Additionally, more dimensions of burnout explained aggressivity dimensions than the opposite. This finding adds support to the wide literature in the area of burnout, suggesting that consequences of this syndrome can be not only physical but also psychological. Furthermore, in line with previous findings (Akinola & Mendes, 2012; Gachter, Savage & Torgler, 2011; Johnson et al., 2005; Ranta & Sud, 2008) our results provide support to the view that policing is considered to be a major stressful profession. It is important to be aware that aggressivity tends to increase during stressful situations, where individuals experience strong physiological arousal that leads them to perceive situations as threats more frequently, thus reacting more aggressively (Griffin & Bernard, 2003; Manzoni & Eisner, 2006; Neely & Cleveland, 2012; Riddle, 2000; Why et al., 2003). In addition to this fact, burnout dimensions such as emotional exhaustion and depersonalisation can negatively influence the capacity to adequately interact with citizens, contributing to more overt aggressivity and even hide aggressivity such as suicide (Adams & Buck, 2010; Nieuwenhuys et al., 2012; Violanti, 1996, 1999). Thus, our findings support the argument that aggressivity is related to burnout among police officers, despite their socio-demographic characteristics. Hence, further attention should be drawn to this fact from a theoretical and applied perspective.

Despite the concept of ‘*occupational personality*’ referred by Bonifacio (1991), it is believed that recent modifications in police officers’ training (Paymal, 2011) and legal obligations to behave appropriately may prepare police officers to deal more appropriately with stress and control their aggressivity. Furthermore, in agreement with our findings, the majority of studies analysing burnout among police officers emphasize organisational or situational stressors, such as uncertainty, fear of killing someone during policing, excessive administrative tasks, low salary, lack of training and support from the institution, and conflict between job demands and job resources (Agolla, 2009; Euwema et al., 2004; Kop et al., 1999; Page & Jacobs, 2011; Pancheri et al., 2002; Pines & Keinan, 2006; Ransley & Mazerolle, 2009). Thus, it is believed that rather than burnout being explained by personality (Alarcon et al., 2009), exposure to stressors over time may be a stronger predictor of burnout among police officers (Lucas, Weidner & Janisse, 2012). However, since this research question goes beyond the scope of the current study, future research in the area should draw attention to the topic.

When comparing burnout and aggressivity values of our study with other international studies among police officers, results show that our findings are consistent with these other samples, and similar profiles were found for the experience of burnout and aggressivity. However, it is important to highlight that the policing tasks of this sample implies patrolling the two major Portuguese cities. This job includes interacting frequently with citizens in urban areas, and less frequently working with suspects and carrying out arrests. Thus, it is believed that aggressivity and force are not behaviours they tend to use very often, as supported by our findings. Therefore, it is likely that burnout levels observed in this sample may be better explained by organisational factors. Future research is warranted in this area, to support this argument.

Our results suggest that burnout is a predictor of aggressivity, reinforcing the need to prevent occupational stress and burnout among police forces. Practical implications of our study should concentrate on the design of efficient stress management interventions for patrolling tasks starting as early as during the police academy training in order to prepare police officers to cope efficiently with stressors (Kaiseler, Queirós, Passos & Rosa, 2012; Ranta & Sud, 2008; Scanff & Taugis, 2002; Taris, Kompier, Geurts, Houtman & Heuval, 2010; van Gelderen et al., 2011). As suggested by Williams and colleagues (2010), training police officers since their recruitment can increase their resilience and give them skills to cope with stress. Additionally, it is believed that stress and burnout symptoms should be regularly assessed among this population, and feedback should be provided, since personality traits can both mitigate or increase the impact of environmental stressors (Garbarino, Chiorri & Magnavita, 2013). This strategy would allow police officers to be more alert to their proneness to burnout, controlling in this way some consequences of burnout, such as aggressivity. It is important to note that some of these strategies are already under investigation in the project ‘*SCOPE – Stress and Coping among Portuguese Police Officers*’ developed by Kaiseler since 2012 at the University of Porto, a project funded by the European Union Seventh Framework Programme. Further attention should be drawn to this area of research in the future

in order to negate Ranta and Sud's (2008) sentence that law enforcement officers are killed more often by job-related stress rather than crime in their jobs.

In the theoretical implications of our study, we found support for the view that burnout can explain aggressivity, when evaluated by self-reported measures. Previous research in the area of burnout emphasizes numerous consequences of this syndrome. However, despite the importance of investigating aggressivity among this population, very few studies draw attention to this fact. Recently Koepfler and his collaborators (2012) tried to predict the aggressive behaviour of police officers using psychological tests, warning that under stressful situations police officers can present aggressive behaviours, which highlights the importance of behavioural training to control impulsivity. It is believed that previous research in the area was more concerned with the behaviours and attitudes of police officers, neglecting the fact that they can react aggressively due to a chronic physiological arousal that leads them to be constantly stressed and interpret situations as threats. Thus, our findings reinforce the need to prevent burnout and consequently some aggressivity among this population, in order to increase citizen safety.

Finally, in Portugal, few studies have investigated police work (Recasens i Brunet et al., 2009) and the literature about the relationship between burnout and aggressivity is even scarcer. This fact is probably due to the difficulty in accessing the population. Therefore, the current study addresses this gap in the literature and highlights the usefulness of psychology in policing to prevent excessive force (Ainsworth, 2002; Bittner, 1991; Sack, 2009).

This study has some limitations. Firstly, the cross-sectional design allowed us to analyse only the predictive power of burnout on aggressivity, but not aggressivity itself or the use of excessive force as a consequence of burnout. For this purpose, longitudinal studies are needed. Secondly, the generalisation of findings to the overall police population needs further investigation, combining an appropriate research design and a larger sample the one used in the current study. This study was exploratory in nature, since previous research analysing the relationship between self-reported burnout and aggressive behaviours was not found. Thirdly, the present study presents low values of burnout and moderate values of aggressivity from a non-probabilistic sample extracted from a larger sample where outliers and differences between towns and years of data collection were eliminated. Hence, this procedure may influence data collection with healthy and not stressed participants. Furthermore, the Aggression Questionnaire (Buss & Perry, 1992) does not give us detailed information about the use of excessive force, and burnout is interpreted merely as a response to chronic occupational stress. Future research in this area should contemplate a longitudinal design, the possibility of using questionnaires more oriented to police stressors, and also ask more detailed information about aggressive behaviours towards citizens. As Stinchcomb (2004, p. 260) says, occupational stress '*is not equally distributed among various occupational work groups*'. Nowadays, stress is a significant part of modern society, provoking physical and mental illness that affect individual workers in a contagious way (Bakker, Le Blanc & Schaufeli, 2005; Gonzalez-Morales, Peiró, Rodríguez & Bliese, 2012), but also decreases the quality of services in institutions. Stress, burnout and aggressivity

affects the well-being and emotional stability of police officers, but also reduces the quality of police services and the quality of the relationship between police officers and the citizens. Preventing stress provoked by occupational activity should be a priority (Maslach & Leiter, 1997; Schaufeli, Maslach & Marek, 1993), especially according to recent positive occupational psychology and work engagement perspectives (Bakker, Rodrigues-Munoz & Derks, 2012; van Beek, Hu, Schaufeli, Taris & Schreurs, 2012). Interventions where organisational factors are combined with individual factors present better results (Lamontagne, Keegel, Louie, Ostry & Landsbergis, 2007) and help professionals to face stress and recover from stress elicited by policing (Demerouti, Bakker, Sonnentag & Fullager, 2012), thus reducing aggressive interactions with citizens.

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