

Gender Differences in Stress and Coping Among Military Security Forces: Implications for Human Resource Management

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ABSTRACT

The COVID-19 pandemic intensified concerns about mental health and highlighted the importance of supportive and inclusive human resource practices, particularly in frontline professions. This study examined perceived stress and coping strategies among members of the Portuguese Republican Guard (GNR) and, from a gender-sensitive perspective, assessed whether differentiated human resource practices are needed in military security forces. A quantitative methodology was adopted, based on survey data collected from 383 GNR members across Portugal. Stress levels before and during the pandemic were measured with the DASS-21, and coping strategies were assessed using the Brief COPE scale. The findings show that the GNR personnel experienced significantly higher stress during the pandemic. Higher stress levels were reported by women, personnel with children, those in lower hierarchical positions, and those who feared contracting COVID-19. The most frequently used coping strategies were acceptance, active coping, and planning. Women reported greater use of emotional support and religion and showed a stronger tendency towards emotion-focused and avoidance coping, whereas men relied more on problem-focused coping. Avoidance was the least effective coping style, as it was associated with higher stress levels. These findings support gender-sensitive human resource practices and targeted mental health interventions in military organisations.

Keywords: Human resources management practices, Stress and coping strategies, Military security forces.

JEL Codes: I10, J28, D91.



I. Introduction

When individuals are confronted with disturbing or demanding events, the body responds through adaptive processes aimed at restoring equilibrium, often giving rise to coping behaviours (Sordes-Arder et al., 1996, as cited in Bishop, 1994; Costa & Leal, 2006; Lazarus & Folkman, 1984). Coping strategies thus represent the cognitive and behavioural efforts individuals employ to manage stressful demands, shaped by personal characteristics, situational context, and prior experiences. (Bachion et al., 1998).

The COVID-19 pandemic caused an unprecedented global public health emergency and had serious effects on economies, societies, and cultures (Pak et al., 2020). Beyond its immediate health effects, the pandemic triggered a substantial increase in mental health problems worldwide, including elevated levels of stress, anxiety, and depression (Santomauro et al., 2021; World Health Organization, 2022a). Recent evidence suggests that these psychological effects have persisted into the post-pandemic recovery phase, with certain occupational groups remaining particularly vulnerable (Tomlin et al., 2020).

Among the most affected were frontline professions, including military and security forces, whose roles required continuous interaction with the public amid uncertainty, risk of infection, and rapidly changing regulatory frameworks. In Portugal, the Portuguese Republican Guard (GNR – Guarda Nacional Republicana) played a central role in enforcing public health measures and ensuring social order during the crisis. These responsibilities significantly altered operational routines and intensified job demands, thereby increasing exposure to stressors. Recent research highlights that law enforcement personnel continue to experience elevated levels of occupational stress and psychological strain following the pandemic, due to both operational and organisational pressures (Cheung & Li, 2023; Violanti et al., 2017).

Despite growing attention to mental health in frontline occupations, empirical research focusing specifically on military security forces remains limited, particularly from a gender perspective. This gap is especially relevant given accumulating evidence that stress experiences and coping mechanisms differ substantially between men and women, with implications for both well-being and organisational performance (Farhane-Medina et al., 2022; Matud, 2004; McLean & Anderson, 2009).

Against this background, the present study aims to examine perceived stress and coping strategies among GNR personnel, with a particular focus on gender differences and their implications for human resource management (HRM) practices. In this context/within this framework, the present study aims to examine perceived stress and coping strategies among GNR personnel, with a particular focus on gender differences and their implications for human resource management (HRM) practices.

II. Theoretical Background

A. *Stress as a Natural Response to Challenges and Threats*

Stress is part of human life and is dynamically experienced by everyone, with varying frequency (de Lima, 2012; Greeshma et al., 2018). It is, in fact, a normal reaction of the

human body to a disturbing factor (Filgueiras & Hippert, 1999), and it is essential for the body to immediately restore physiological homeostasis (Chovatiya & Medzhitov, 2014). Stress is not a disease per se, but it is considered a comorbidity that can cause illness if not properly managed (Salleh, 2008).

The modern understanding of stress emerged as a combination of external forces and internal responses (Salleh, 2008). Later, Selye (1974, as cited in Malagris & Fiorito, 2006, p. 392) approached stress as "the body's non-specific response to any demand". Currently, the World Health Organization (WHO) considers stress to be the "epidemic of the 21st century" because it affects an increasing number of people worldwide (National Health Service, 2019). The importance of this concept has been recognised, and its definitions have been broadened, as "stress has a different meaning for different people under different conditions" (Fink, 2010, p. 5).

Although stress is experienced by everyone (Greeshma et al., 2018), it is not easy to describe. For example, when people report high stress levels, they are likely to be referring to specific stressors (Wheaton & Montazer, 2010). Thus, a stressor is defined as "events or properties of events (stimuli), which induce stress in the people who face them" (Cunha et al., 2014, p. 167) and can be acute, sequential, episodic, chronic/intermittent, sustained, or anticipated (Sapolsky et al., 2000). From this idea arises the concept of strain, that is, the psychological, physical, or behavioural response of an individual to stressors. In other words, strain refers to the effects resulting from exposure to stressful events (Greenberg & Baron, 1997).

Gender is a key factor in human health patterns, and there are clear trends in the prevalence of certain physical and mental illnesses (Wang et al., 2007). While men, biologically, are generally more likely to have infectious and cardiovascular diseases and to have aggressive behaviour and problems related to alcohol and drug abuse, women have higher rates of autoimmune diseases, chronic fear, depression, and anxiety disorders (Kajantie & Phillips, 2006; Kudielka & Kirschbaum, 2005; Lundberg, 2005). These gender differences are somehow related to hormones, with women being more likely to experience anxiety and depression disorders during periods of hormonal fluctuation (Solomon & Herman, 2009).

Several studies have shown that the levels of stress experienced by women are generally higher than those experienced by men. For example, Matud (2004) noticed that, compared to men, women have higher levels of chronic stress, but lower levels of daily stress. In addition, women also demonstrate marked rates of somatic symptoms and psychological distress (Matud, 2004). In fact, women are even more likely to develop post-traumatic stress disorders than men (Bangasser & Valentino, 2014; Moreno et al., 2024; Shansky, 2015). According to Solomon and Herman (2009), stress-related disorders such as anxiety and depression have unparalleled prevalence in women. Graves et al. (2021) further support this conclusion, reporting that males tend to experience significantly lower stress levels than females.

Nevertheless, vulnerability to stress varies from person to person, with some individuals extremely vulnerable to certain events and others able to overcome the most complex situations. Therefore, life is an objective component, but personal experiences

are subjective; thus, each person's vulnerability and susceptibility are largely linked to personal factors, beliefs, and available resources (Seabra, 2011).

In general, the effects of stress are divided into four main dimensions: physiological, cognitive, emotional, and behavioural. The physiological responses to stress are mainly manifested through the cardiovascular system and, when there is high exposure, can become a pathology (Butler, 1993), leading to serious conditions, such as high blood pressure, stroke, and heart attacks (Wheatley, 1984). Regarding the cognitive aspect, the first emergency signs include decreased attention, increased distractibility, and deterioration of short- and long-term memory. At an extreme level, confusion, irrationality, and difficulty connecting with reality may occur (Butler, 1993). When it comes to emotions, many are associated with stress, such as anger, frustration, fear, and apprehension. If the problem persists, these may turn into tension, depression, and demoralisation, and people can become out of control, start to panic, feel hopeless, and have suicidal ideations (Butler, 1993). Ultimately, there are many variations relative to behaviour, with some individuals tending to struggle and others succumbing. Here, interest decreases, absenteeism increases, and problems related to articulation of speech, extreme fatigue (Butler, 1993), poor eating habits, alcohol, tobacco, coffee, and drug use begin to appear (Butler, 1993; Ng & Jeffery, 2003; Wheatley, 1984). Thus, some of the major consequences of stress are constant agitation, exhaustion, burnout, fear, helplessness, a weak immune system, and organ damage. Furthermore, cardiovascular, muscular, and skeletal diseases, as well as depression and anxiety disorders can arise, and there is a high mortality risk linked to stress, even in apparently healthy people (Martin et al., 2018).

B. Coping Strategies as Cognitive and Behavioural Tactics to Manage Harmful Situations

Throughout their lives, people inevitably experience periods of stress. The difference lies in how each person is (or is not) able to cope with this stress; thus, all life translates into how one copes with challenges (Greenberg et al., 2002). According to Wechsler (1995), coping “is a behavioural reaction to aversive situations, i.e., to situations that induce physiological stress reactions”, and its success can be measured by the effectiveness of reducing this physiological stress or by the effectiveness of removing adverse situations and restoring skills (Wechsler, 1995, p. 124)]. Folkman and Lazarus (1985) regard coping as the cognitive and behavioural effort someone makes to manage (i.e., reduce or tolerate) a troubled relationship between the person and the environment (Folkman & Lazarus, 1985).

According to Lazarus and Folkman (1984), there are two generic types (or styles) of coping: the first is based on emotions and concerns adjustment, emotional demands, and the regulation of disturbing emotions; the second is based on problem-solving and helps adaptation to external demands. Emotion-based coping strategies are used when the source of stress is unchangeable and focus on the subject's internal state. Thus, cognitive processes aimed at decreasing emotional distress emerge, including strategies such as avoidance and detachment. On the other hand, problem-based coping strategies are used when the situations causing stress can be modified, and their goal is to end the situation

and thereby relieve stress (Folkman & Lazarus, 1985). Some individuals prefer one type of coping over the other and suffer the effects of stress if they do not use their preferred strategy. Even so, both can be learned, and people should be encouraged to develop their own strategies. In addition, reactions to stress, or coping, are influenced by both the nature of the stressful situation and one's personality (Butler, 1993).

Although Lazarus and Folkman (1984) identified only two types of coping, Graves et al. (2021) suggest dividing the 28 coping strategies comprising the Brief COPE scale (Carver, 1997) into three categories: problem-focused, emotion-focused, and avoidance. The first includes active coping, planning, and instrumental support. The second includes acceptance, humour, use of emotional social support, expression of feelings, religion, positive reinterpretation, and self-blame. Finally, the third category includes denial, self-distraction, behavioural withdrawal, and substance use strategies.

Some coping strategies, such as positive reinterpretation, acceptance, and support-seeking, are associated with low stress levels, whereas guilt, denial, distraction, and substance use are linked to poorly implemented coping strategies – thus, leading to higher stress levels (O'Brien et al., 2012). Petzold et al. (2020) also point out that some strategies, such as social support, acceptance of negative emotions, and avoidance of substance abuse, contribute to reducing psychological distress (Petzold et al., 2020). In addition, low stress levels are associated with high emotional intelligence (Enns et al., 2018), and these individuals are therefore able to understand others' emotional experiences and adopt more effective coping strategies (Zeidner et al., 2012). Despite this, there is still no consensus in the literature on the most effective coping strategy for stress reduction, as social, cultural, and experiential factors, as well as the stressor itself, influence outcomes (Carver & Connor-Smith, 2010; World Health Organization, 2022a, 2022b).

Gender affects every element of the processes underlying stress, influencing both the health implications of stress reactions and the coping strategies themselves (Barnett et al., 1987). Thus, there are gender differences in the use of these types of strategies (Wang et al., 2007). According to Matud (2004), women choose more emotion-based coping styles and avoidance, while men select more rational, detached, and emotionally inhibited strategies. On the contrary, Arble et al. (Arble et al., 2018) concluded, in their study of frontline professions, where security forces are included, that after exposure to stress, females are less likely to use avoidance-based coping strategies, compared to males (Arble et al., 2018). In addition, Billings and Moos (1981) suggested that while men's coping styles are mostly problem-focused, women are more likely to use emotion-focused and avoidance strategies (Billings & Moos, 1981). However, according to Rosario et al. (1988), although women find it easier to seek emotional support, men use more emotion-based coping strategies (Rosario et al., 1988). According to a more recent study, women primarily use coping styles such as self-distraction, emotional support, instrumental support, and expressing feelings (Graves et al., 2021). Nevertheless, "if any general conclusions can be made, women appear to use more passive strategies, whereas men engage in more active coping strategies" (Sigmon et al., 1995, p. 566).

C. Traumatic Events, Stress, and Coping Strategies in Security Forces

All individuals, no matter how secure they feel, are subject to sudden changes. Although pandemics are a potential threat in most of the strategies of European countries, none were sufficiently prepared to withstand the unexpected shock of the coronavirus pandemic. For this reason, there was a delay in the response (Branco, 2020), and governments needed the support of the security forces, which are usually the first to deal with the population in high-risk situations (Mehdizadeh & Kamkar, 2020). In situations where a state of emergency is declared, the GNR is considered the most suitable force to respond due to its gendarmerie nature (Guarda Nacional Republicana, 2022).

The emergence of the COVID-19 pandemic forced organisations to create and implement strategies, methods, and tools to adapt to a new reality, in record time (Joshi et al., 2020), requiring immediate responses and actions (Pilkington & Kumar, 2020). One of the first measures was the implementation of teleworking, as it was considered one of the quickest and simplest ways to follow safety and security protocols and protect individual and collective health (Joshi et al., 2020). However, as Portugal is a country without much previous experience in telework, despite this regime being expressly provided for in the Portuguese Labour Code, Article 165 and those thereafter (Autoridade para as Condições do Trabalho, 2022), and because the business fabric is mostly made up of small and medium-sized enterprises (Jornal de Negócios, 2019), the adoption of telework turned out to be a greater challenge than initially anticipated, both for companies and for employees (Joshi et al., 2020).

Organisations were forced to rethink how they operated and organised their business models, adopting an emerging operational model distinct from the traditional one (Pilkington & Kumar, 2020), which changed the functioning of distribution chains and (new) consumer behaviour (Madero Gómez et al., 2020). The problems experienced were real and had an impact on the economic, financial, and social levels, affecting employees, mainly due to the environment of uncertainty and constant change. Along these lines, employees faced new working conditions, necessitating the strengthening of home IT infrastructure and the development and enhancement of digital skills. Finally, teleworking involves working from home (sometimes without the necessary physical conditions) and difficulty separating work and personal life, leading to an excessive workload and, in turn, stress (de Menezes & Jansen, 2020). That daily, constant exposure to stressful living and working conditions triggers additional stressful situations, increasing the risk of deteriorating people's health and decreasing their ability to work (Magdinceva Sopova et al., 2021).

Professionals dealing with emergency situations, such as security forces, are constantly exposed to critical incidents, which increase their levels of stress and anxiety (Granter et al., 2019; Heath et al., 2021). Thus, stress can arise from both the work environment and its operational and occupational stressors, as well as from exposure to such incidents (Wankhade et al., 2020). Specifically, within security forces, challenges associated with performance during the pandemic and the types of functions they perform in their profession led to increased stress and anxiety (Drew & Martin, 2020; Laufs & Waseem, 2020).

With the purpose of measuring the degree of dissociation, stressful/traumatic experiences, and psychological adjustment, Aaron (2000) developed a study with a sample of 42 police officers in Charlottesville, Virginia, which presented some conclusions regarding coping strategies. First, it was noted that certain coping styles, especially those based on the avoidance of stressful thoughts and feelings, lead to increased psychological distress (Aaron, 2000). Military personnel who employ this type of coping strategy are more likely to develop mental health problems than those who choose to face their thoughts and feelings (Aaron, 2000). Strategies that promote dialogue, understanding, and recognition of stressors will lead to more psychologically healthy professionals and, consequently, improve individual performance. Furthermore, demographic factors, including age, marital status, and service time, were not associated with greater stress. Nevertheless, individuals with less education were found to have the most psychological distress (Aaron, 2000).

Three main stressors were considered in a study on 601 British police officers by Brown et al. (2010): exposure to death or disaster, violence and aggression, and sexual crime. It was found that there were differences in the likelihood of experiencing psychological distress according to gender and role. Women are more likely to experience distress, mainly because they are the ones who most often deal with sexual crime cases (Brown et al., 2010), due to the culture that they are more capable of dealing with "emotional labour" (Fielding & Fielding, 1992).

To measure the levels of stress experienced, the consequences of anxiety, and the adopted strategies, Acquadro Maran et al. (2015) conducted a study with a sample of 670 Italian police officers. The reported results suggest that women are more vulnerable to organisational and operational stressors, and that, in terms of work, both genders on patrol are susceptible to stressors and anxiety. Regarding coping strategies, the authors used Carver's (1997) Brief COPE scale and identified planning, active coping, and acceptance as the most frequently used, without distinction by gender or rank (Acquadro Maran et al., 2015).

In the German context, Calvano et al. (2021) conducted a study on perceived pandemic-related stress, general stress, parental mental health, parental stress, and the presence of adverse childhood experiences. They reported that more than 50% of parents felt more stressed, mainly due to social distancing and school and institutional closures. Thus, parental stress increased significantly during the pandemic, with some groups of parents also reporting higher levels of depression and anxiety symptoms (Calvano et al., 2021).

During the pandemic, Frenkel et al. (2021) developed a study in five European countries, Austria, Germany, Switzerland, the Netherlands, and Spain, with a total sample of 2,567 participants. The main goal of the study was to understand the strain on police officers over a 3-month period following confinement. The results showed that the risk of infection is among the main stressors for police officers, along with failures in leadership and communication. Furthermore, stress is closely related to gender, with women reporting feeling more stress than men. It is also related to service time, with the stress felt by military personnel during the pandemic decreasing with greater levels of work experience. As service time is related to age, it was also concluded that older

individuals learned to use more efficient emotion regulation strategies. Therefore, work experience is also associated with greater availability of coping strategies. The use of strategies such as reflection, sharing with others, and distraction reduced the stress of military personnel during the pandemic (Frenkel et al., 2021).

Besides the work element, there are also people who are more vulnerable to the effects of pandemics. Those who have contracted the virus, patients at risk (i.e., the elderly and people with immune system problems or who are receiving treatment), or individuals with pre-existing psychiatric problems are at greater risk of developing adverse conditions (Pfefferbaum & North, 2020). Also, stressors associated with COVID-19, such as the long quarantine period and fear of infection, feelings of hopelessness, boredom, lack of food, inadequate information, and financial problems, contributed to complications at the psychological level, such as stress, confusion and anger (Brooks et al., 2020; Duan & Zhu, 2020). Finally, the pandemic had psychological effects on the general population, including reduced well-being and increased levels of anxiety, stress, and helplessness (Liu et al., 2020; Rajkumar, 2020; Vindegaard & Benros, 2020).

III. Methods

This study employed a quantitative methodology, with a survey distributed to GNR members nationwide. The goal was to analyse the pandemic's impact on stress in a frontline profession, examine the coping strategies used by GNR military personnel, and determine their effectiveness through a conventional and gender perspective approach.

A. Research Hypotheses

Based on the literature review, the following research hypotheses were formulated:

H1: Stress levels experienced by the GNR military personnel increased with the pandemic (Granter et al., 2019; Heath et al., 2021).

H2: Age had a significant impact on the perceived stress of the GNR military personnel during the pandemic (Aaron, 2000; Frenkel et al., 2021).

H3: The impact of the pandemic on the stress levels of the GNR military personnel was different according to gender, with female military personnel experiencing higher stress levels than male military personnel (Brown et al., 2010; Frenkel et al., 2021).

H4: The GNR military personnel who have children experienced higher stress levels during the pandemic than military personnel who do not have children (Calvano et al., 2021).

H5: The GNR military personnel with fear of contracting COVID-19 experienced higher stress levels during the pandemic than military personnel without such a fear (Brooks et al., 2020; Duan & Zhu, 2020).

H6: Marital status impacted the stress experiences of the GNR military personnel (Aaron, 2000).

H7: The GNR military personnel with less service time experienced higher stress levels during the pandemic than military personnel with more service time (Aaron, 2000; Frenkel et al., 2021).

H8: The GNR military personnel with a lower rank in the hierarchy experienced higher stress levels during the pandemic than military personnel with a higher rank in the hierarchy (Aaron, 2000).

H9: Patterns of the use of coping strategies (H9a) and coping styles (H9b) varied between the genders of the GNR military personnel (Arble et al., 2018).

H10: The strategies of positive reinterpretation, acceptance, and support seeking (emotional and instrumental) were associated with lower stress levels (Acquadro Maran et al., 2015; O'Brien et al., 2012).

B. Data Collection Instruments and Procedures

The study was approved in the GNR by the *Comandante do Comando da Doutrina e Formação*, on 9 May 2022, reference number SO48652/2022/CDF/GAB, case number 080.30.04, and by the representative of the General Regulation on Data Protection of the Department of Economics, Management, Industrial Engineering and Tourism at the University of Aveiro. With these approvals, the survey was distributed via a mailing list covering all GNR officers in the country. Data collection occurred between May and June 2022.

One sociodemographic questionnaire and two self-administered questionnaires were distributed. The sociodemographic questionnaire collected information on respondents' age, gender, marital status, parenthood, rank, service time, and work area. As the study's aims also focused on COVID-19 and its impact, questions specifically related to the disease and the pandemic were asked, including tobacco, alcohol, and substance use habits, work regime during the pandemic, positive test results, and fear of contracting the virus.

The Depression, Anxiety and Stress Scale [DASS-21; original version by Lovibond & Lovibond, (1995); Portuguese version by Pais-Ribeiro et al. (2004)] was used to assess stress in the GNR military personnel. The "depression" subscale has 7 items (e.g., "I felt sad and depressed"), the "anxiety" subscale has seven items (e.g., "I was aware of my dry mouth"), and the "stress" subscale has another seven items ("I found it hard to relax", among others). Respondents indicated on a 4-point scale (0 – "It did not apply to me at all" to 3 – "It applied to me most of the time") how much each of the 21 items applied to them for two periods: before the pandemic and during the pandemic (more specifically, in the period between March 2020 and October 2021). The psychometric data from the validation study show internal consistency values of .81 for the "stress" subscale, .74 for the "anxiety" subscale, and .85 for the "depression" subscale [80;81]. In this study, the values were .93, .90, and .88, respectively.

The Brief COPE scale [original version by Carver (1997); Portuguese version by Pais-Ribeiro and Rodrigues (2004)], with 28 items and 14 subscales, was used to examine the coping strategies of the GNR military. The 14 subscales, with two items each, are: active coping, planning, using instrumental support, using emotional social support, religion, positive reinterpretation, self-blame, acceptance, expression of feelings, denial, self-

distraction, behavioural withdrawal, substance use (medication/alcohol) and humour (Pais-Ribeiro & Rodrigues, 2004). Participants marked each of the 28 items on a 4-point scale (0 - "I never did that" to 3 - "I always did that") to indicate how much each item applied to them during the pandemic period between March 2020 and October 2021. Regarding internal consistency, Cronbach's alpha values in the original version vary substantially, with the "expression of feelings" subscale having the highest (.84) and the "acceptance" subscale the lowest (.55) [82] (Pais-Ribeiro & Rodrigues, 2004). In the present study, the reliability statistics for the Brief COPE scale ranged from .50 (self-blame" subscale) to .94 ("expression of feelings" subscale).

The timeframe of March 2020 to October 2021 was used because it reflects the period respondents referred to. Regarding the starting date, the first measures related to when COVID-19 appeared in Portugal that month, mainly in public services (including the GNR). Thus, according to Order No. 2836-A/2020, "public employers are ordered to prepare a contingency plan in line with the guidelines issued by the Directorate-General of Health, in the context of prevention and control of infection by the new Coronavirus (COVID-19)" (Portuguese Ministries of State Modernisation and Public Administration, 2020, p. 2). Relative to October 2021, according to the Council of Ministers Resolution No. 135-A/2021, 29 September, "(...) a series of measures that have been in place to prevent the pandemic of the disease COVID-19 are now being lifted" (Presidency of the Council of Ministers, 2021, p. 9). Moreover, in the same month (October 2021), the percentage of vaccinated people in Portugal reached 85%, the goal set by the Government to reach "the day of liberation" (Abreu, 2021).

After closing the questionnaire period, data were analysed using IBM SPSS v.28, supported by appropriate preliminary analyses to confirm the assumptions of the procedures.

IV. Results

A. Sample Characteristics

In total, the survey had 385 responses, of which 383 were considered valid. The main sociodemographic and attitudinal characteristics are presented in Table 1. Based on these characteristics, the most representative participant in the present study is a midlife male (41-50 years), married or living in a consensual union, with children, typically holding the rank of guard (a lower rank in the hierarchy) and with 21-30 years of service.

B. Stress in Military Security Forces

During the pandemic, the mean perceived stress score for military personnel was 4.10 ($SD = 4.552$) on a 0-21 scale. To assess variability in the GNR's stress experiences between the pre- and pandemic periods, paired-samples t-tests were used. Results confirmed differences in average stress levels between the before- and during-the-pandemic periods [$t(382) = -12.863$, $p < .001$, $d = .66$], as well as the conclusion that during the pandemic, GNR military personnel experienced more stress than before, thereby validating H1.

The following analyses focused on stress patterns in the GNR and assessed the possible relevance of age, gender, marital status, parenthood, the hierarchical professional rank, service time, and fear of contracting COVID-19, as suggested by previous evidence. A one-way ANOVA for homogeneous variances [$F(3,379) = 1.606, p = .187$] showed a statistically non-significant effect between stress and age [$F(3,379) = 0.426, p = .734$], thus not supporting H2. Next, to examine which gender experienced higher stress levels during the pandemic, a t-test was applied, and the result [$t(39.942) = 2.339, p = .012$] showed that females did experience higher stress levels than males, which corresponds to the effect size of .485, and is in line with H3.

Table 1– Sociodemographic and attitudinal characterisation of the sample.

Sociodemographic and attitudinal characterisation of the sample.

Variable	n (%)	Variable	n (%)
Gender		Hierarchy	
male	347 (90.6)	guards	238 (62.1)
female	36 (9.4)	sergeants	98 (25.6)
Marital status		officers	47 (12.3)
single	51 (13.3)	general officers	—
married or living in a consensual union	312 (81.5)	Working regime during the pandemic	
divorced	20 (5.2)	on-site	330 (86.2)
Parenthood		hybrid	42 (11.0)
yes	317 (82.8)	remote	11 (2.9)
no	66 (17.2)	Time of service	
Fear of the virus		≤ 10 years	51 (13.3)
yes	188 (49.1)	11-20 years	147 (38.4)
no	195 (50.9)	21-30 years	167 (43.6)
Consumption		≥ 31 years	18 (4.7)
tobacco	53 (13.8)		
alcohol	206 (53.8)		
substances	55 (14.4)		

Note: n = Frequency; % = Percentage.

Other t-tests were used to determine whether parenthood and fear of contracting COVID-19 were associated with pandemic-related stress. The results of both were significant, indicating that the GNR military personnel who have children experienced higher stress levels during the pandemic than military personnel without children [$t(114.304) = 1.915, p = .029, d = .221$], and that military personnel who were afraid of contracting the virus experienced higher stress levels during the pandemic [$t(313.851) = 8.127, p < .001, d = .837$]. H4 and H5 were thus validated, respectively. Table 2 shows descriptive and test statistics for the conducted t-tests and the respective effect sizes.

Table 2– Descriptive statistics, test statistics, and effect size values from independent samples t-tests.

Notes. *M* = Mean; *SD* = Standard deviation; *t* = *t* statistic; *df* = Degrees of freedom; *p* = *p*-value; Cohen's *d* = Effect size.

Variable		<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>	Cohen's <i>d</i>
Gender	Male	3.90	4.41	2.339	39.942	.024	.485
	Female	6.08	5.48				
Parenthood	Yes	4.27	4.71	1.915	114.304	.058	.221
	No	3.27	3.67				
Fear of the virus	Yes	5.89	5.05	8.127	313.851	<.001	.837
	No	2.37	3.19				

One-way ANOVAs were conducted to determine whether stress levels were associated with marital status, service time, and hierarchy. The results show that there were no differences in stress during the pandemic by marital status ($F(2,380) = 1.279, p = .280$) or service time ($F(3,389) = 0.461, p = .710$), so H6 and H7 were not supported. On the other hand, a one-way ANOVA with non-homogeneous variances [$F(2,374) = 3.414, p = .034$] and analysed using Welch's test revealed a significant effect of stress and hierarchy [$F(2,124.41) = 3.553, p = .032$], corresponding to an effect size of .023. Post-hoc analyses with the Games-Howell test showed that the guard rank experienced the highest stress levels during the pandemic ($M = 4.64; SD = 4.881$), rather than the sergeant rank ($M = 3.20; SD = 3.794$) or the officer rank ($M = 3.26; SD = 4.552$), and those significant differences existed specifically between the guard rank and the sergeant rank (thus validating H8).

C. Strategies and Coping Styles Adopted by Military Personnel

The most used coping strategies among the GNR military personnel were acceptance ($M = 3.03; SD = 1.820$), active coping ($M = 2.89; SD = 1.831$), and planning ($M = 2.80; SD = 1.756$). According to the information obtained, the strategy used the least was substance use ($M = 0.12; SD = 0.559$). Table 3 presents statistics on individual strategies and coping styles, as well as test results by gender and style.

Two of the 14 individual coping strategies were applied significantly differently by men and women, one concerning the use of social support, namely emotional support, where women used it substantially more than men [$t(381) = 2.133, p = .034$], and religion, was also used significantly more by women [$t(38.596) = 2.743, p = .009$], allowing for a partial validation of H9a. The most common coping style was problem-focused, whereas avoidance was the least used. A repeated measures ANOVA calculated for these three coping styles, problem-focused, emotion-focused and avoidance, showed that the data did not meet the assumption of sphericity (Mauchly: $\chi^2(2) = 144.417, p < .001$), which is why the degrees of freedom were corrected using Greenhouse-Geisser sphericity estimates ($\epsilon = .76$).

This revealed that the coping styles were significantly different from each other ($F(1,520) = 447.262, p < .001$, corresponding to an effect size of .56 calculated based on eta squared). To determine the effect of gender on the three coping categories, a mixed-factor ANOVA with a split-plot design was used. Although there was a significant main effect regarding coping style, this did not apply to gender ($F(1,381) = 0.83, p = .774$), nor

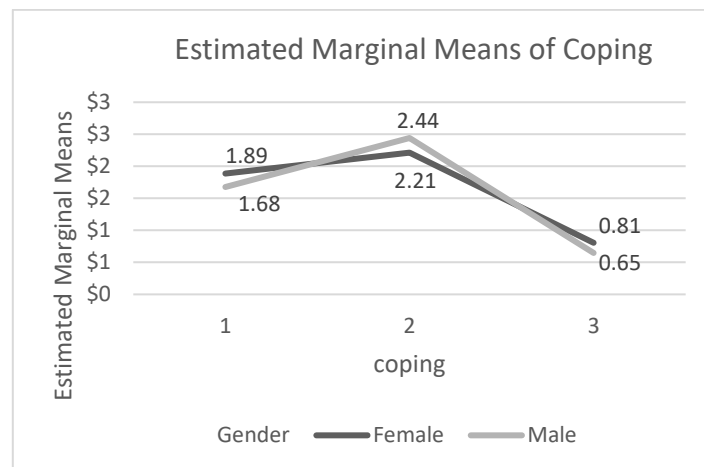
for the interaction ($F(1,520,579,108) = 3.022, p = .064$), although differences were observed in the patterns of coping styles used by men and women, as shown in Figure 1.

Table 2– Individual strategies and coping styles in GNR.

Notes. * $p < .001$; M = Mean; SD = Standard deviation; F = Snedecor's F distribution. Calculations based on Carver (1997) and Graves et al. (2021) classifications.

Individual strategies	<i>M</i>	<i>SD</i>	<i>p</i> (gender)	Coping style	<i>M</i>	<i>SD</i>	<i>F</i>
Acceptance	3.03	1.82	.997	Problem-focused	2.42	1.51	477.262*
Active coping	2.89	1.83	.437				
Planning	2.80	1.76	.203				
Positive reinterpretation	2.53	1.81	.700				
Humour	1.88	1.62	.302				
Using instrumental support	1.57	1.64	.874				
Self-distraction	1.57	1.53	.458	Emotion-focused	1.70	1.03	
Expression of feelings	1.42	1.50	.363				
Using emotional social support	1.32	1.61	.034*				
Self-blame	0.88	1.10	.185	Avoidance	0.66	0.73	
Religion	0.83	1.27	.009*				
Denial	0.70	1.14	.234				
Behavioural withdrawal	0.25	0.74	.356				
Substance use	0.12	0.56	.621				

Figure 1
The Estimated Marginal Means of the Analysed Coping Styles



Therefore, our results suggest that the different genders tend to use different coping styles: women more often resort to emotion-based and avoidance styles, and men more often resort to problem-based styles. Although evident in the mean values, this difference is not significant (and is not far from the cut-off level) and therefore does not support the statistical validation of H9b.

D. Effectiveness of Coping Strategies and Styles

A regression analysis was used to examine the effectiveness of coping strategies and styles in mitigating the stress experienced by GNR military personnel during the pandemic. After validating the assumptions, multiple stepwise regressions were calculated, first between perceived stress and individual coping strategies, and then between perceived stress and coping styles. The first estimated regression model was statistically significant [$F(5,376) = 57.096, p < .001$] and enabled the assessment of the relevance of the coping strategies used by GNR military personnel to manage stress during the pandemic. The identified strategies included in the regression model were expression of feelings ($b = 0.939; p < .001$), behavioural withdrawal ($b = 1.117; p < .001$), using emotional social support ($b = 0.369; p = .005$), substance use ($b = 1.395; p < .001$), and self-distraction ($b = 0.390; p = .003$). According to these results, it can be stated that these strategies led to higher stress levels in the military forces; that is, they were the least effective in coping with stress, and H10 was not validated. The defined model explained 41.4% of the stress variability in the sample during the pandemic. However, some of the strategies not considered in the model still seem to be somewhat related to lower stress levels, namely the following strategies: active coping ($b = -0.083; p = .69$), planning ($b = -0.039; p = .391$), using instrumental support ($b = -0.052; p = .346$), positive reinterpretation ($b = -0.034; p = .446$), acceptance ($b = -0.022; p = .611$) and humour ($b = -0.060; p = .141$). When analysed by gender, the results indicate that besides the two common strategies, self-distraction, and behavioural withdrawal, in the case of men, three more, expressing feelings ($b = 0.963, p < .001$), substance use ($b = 1.514, p < .001$) and using emotional social support ($b = 0.322, p = .016$)) resulted in them experiencing increased distress.

This pattern was more evident in the regressions between perceived stress and coping styles by gender. In the case of men, the regression model was statistically significant [$F(2,335) = 90.676, p < .001$], resulting in the conclusion that, overall, the avoidance and emotion-focused styles explained 35.3% of perceived stress ($N = 336$) and that these two coping styles contributed significantly to the prediction of the stress level ($b = 2.906, p < .001$ and $b = 0.583, p = .007$, respectively). In the case of women, the regression model was also significant [$F(1,35) = 35.252, p < .001$], explaining 50.9% of the variability in stress ($N = 36$), and had one explanatory variable which contributed significantly to the prediction of the perceived stress level - avoidance ($b = 4.088, p < .001$). The avoidance style, in both genders, was the least effective way to deal with stress, with men experiencing a 2,906-unit increase in stress for each unit of use, and women experiencing a 4,088-unit increase.

V. Discussion

The pandemic has had a far-reaching impact on economies, societies, and individuals. Due to the nature of their profession, GNR military personnel were required to operate on the front line during the pandemic, placing them at heightened risk. Despite this, empirical research on security forces with military status remains limited, particularly

regarding gender differences in stress and coping strategies. Accordingly, this study focuses on the relevance and applicability of gender-sensitive perspectives in human resource management practices.

The results suggest that GNR military personnel experienced higher levels of stress during the pandemic than in the previous period, and that this stress was associated with the fear of contracting COVID-19. The members of the GNR with this fear suffered more stress than those who did not. According to the study by Frenkel et al. (2021), the risk of infection is a major stressor in this profession. In fact, all over the world, security forces are expected to be the first to act when faced with difficulties, so the challenges associated with the pandemic eventually led to increased stress and anxiety in professions of this nature (Drew & Martin, 2020; Laufs & Waseem, 2020; Mehdizadeh & Kamkar, 2020). The conclusions also corroborate the findings of Norris (2005), Rajkumar (2020) and Vindegaard and Benros (2020), which indicate that emergency situations are closely linked to increased stress levels (Norris, 2005; Rajkumar, 2020; Vindegaard & Benros, 2020).

Regarding the stress tendency during the pandemic, according to gender, there are clear inequalities, with higher stress levels evident amongst females. This finding is consistent with the studies by Acquadro Maran et al. (2015) and Frenkel et al. (2021), which found that within the organisation, women report higher stress levels than men. The findings of Brown et al. (2010) also corroborate this research, since they observed, in a sample of 601 British police officers, that women are more susceptible to distress, mainly because they deal more closely with sexual crime cases.

Besides female gender, it was also the military personnel with children and with a lower rank in the hierarchy, i.e., from the guard rank, who suffered more stress during the pandemic than military personnel with a higher rank in the hierarchy, i.e., part of the sergeant or officer ranks. The conclusions obtained are in agreement with the literature. For example, Calvano et al. (2021) concluded that during the pandemic, parental stress increased, and one of the main reasons for this increase was the closure of schools and workplaces, which forced parents to (re)balance their work duties with parental responsibilities. This was further intensified by high economic uncertainty and reduced social support (Chung et al., 2022). On the other hand, Aaron's (2000) study advocated the possibility that individuals with lower levels of education showed greater psychological distress. Regarding the lower levels of stress associated with higher ranks in the hierarchy, there is the possibility that they may be related to the fact that the officers spent five to seven years at the Military Academy [88] and the fact that the courses are quite demanding, both from a physical and psychological perspective, may have prepared the military personnel for possible future adversities in their personal and professional life. Finally, the lack of association between stress and other sociodemographic variables is also consistent with previous studies (e.g., Aaron, 2000). However, there is no consensus in this regard [e.g., Frenkel (2021), who found that professional experience reduced stress among military personnel during the pandemic].

Regarding coping strategies, the three most often used by GNR members were acceptance, active coping, and planning. These results are in line with the research by Acquadro Maran et al. (2015), which revealed that the most commonly used coping

strategies among their sample of 670 Italian police officers were the same as those in this study. Even so, the strategies were applied differently by men and women, with women more often resorting to emotional support and religion. Some differences in coping styles were also evident, suggesting that women more often resorted to emotion-based and avoidance styles and men more often resorted to problem-based styles. This finding is consistent with the studies by Billings and Moos (1981) and Matud (2004), which suggest that women tend to use avoidance and emotion-focused strategies, while men are more likely to use problem-focused coping strategies.

The individual strategies of substance use, behavioural withdrawal, expressing feelings, self-distraction, and using emotional social support were associated with higher stress levels, thus they were the least effective. These results may be related to the fact that the sample in this study was predominantly male, a gender characterised by difficulty in expressing feelings (Simon, 2020). Men also find it difficult to ask for help, to share their most vulnerable feelings with friends and/or family, and to seek support from specialised professionals (Addis & Mahalik, 2003). In fact, men are less likely than women to seek help for problems such as depression, substance abuse, physical disabilities or stressful situations occurring throughout life (Husaini et al., 1994; McKay et al., 1996; Padesky & Hammen, 1981). Specifically in relation to the nature of the profession, members of the security forces generally demonstrate some reluctance in their openness towards certain subjects considered more sensitive [Horn (1996), as cited in Brown et al. (2010); Walker (1997)], especially in relation to mental health issues (Karaffa & Koch, 2016).

In this study, it was observed that stress levels increased in the GNR during the pandemic. To change this, it is important to create, at the organisational level, strategies to promote appropriate and effective coping styles and to build and sustain a solid base to help military personnel cope with adversity. According to Magdinceva-Sopova et al. (2021), the impact of the pandemic on stress can be reduced through certain actions, such as offering support to overcome problems, empowering each professional to cope with stress in the organisational environment (Magdinceva Sopova et al., 2021). The presence of organisational support can help not only reduce the stress that, in many cases, leads to burnout (Holmes et al., 2021), but also serve as an important factor in managing work-family conflict (Kossek et al., 2011). In fact, according to French et al. (2018), organisational support is generally the most important source of support (French et al., 2018).

In a reply sent to the Lusa agency, the GNR stated that it provides various instruments of prevention and help for psychological problems, as well as monitoring and suicide prevention. In the same response, it was stated that "the GNR has been implementing strategies to improve the levels of knowledge and literacy in mental health, to reduce prejudices and negative attitudes of its personnel and, consequently, raise awareness and reduce the stigma associated with mental illness" (Guarda Nacional Republicana, 2019, as cited in Agência Lusa, 2019 [99]). To this end, in 2019, the GNR's Psychology and Social Intervention Centre (CPISG) had 18 psychologists to respond quickly to urgent cases and to psychological appointments (Agência Lusa, 2019). The GNR's Psychosocial Support Line is a part of this centre, in operation since 2007, and whose main goal is

suicide prevention. Additionally, in 2018, the centre began teaching the psychological first aid course to train peers to recognise signs of disturbance and/or symptoms in their colleagues (such as mood, behaviour and/or attention changes) (Carrilho, 2018).

The GNR also pointed out the main reasons that lead to requesting psychology appointments: those related to situations concerning personal, marital, and physical health problems, anxiety, depression, and grief (Agência Lusa, 2019). According to an interview with the Lieutenant-Colonel of the GNR and head of the Clinical Centre of Porto's delegation, work-family conciliation is one of the biggest challenges – for example, military personnel are busier on weekends. In addition, professionals may be deployed far from home when promotions are involved, which can lead to instability within the family. Therefore, some military personnel prefer not to apply for career advancement (Martinho, 2018, as cited in Carrilho, 2018). The support proved essential not only in maintaining a sense of security at the institutional level (regarding concerns about the psychological state of the military), but also in offering, in a time of social instability, greater security to the population in general.

Considering the measures already implemented, difficulties in work-family conciliation are observed, and in some fields, it is not even possible in the GNR. One measure that could be implemented is adopting telework whenever possible. For example, at the detachment level, where work is mostly administrative, labour flexibility would allow career advancement without being deployed far away.

Concerning mental health, it would be important to decentralise psychology services. Their presence in major city centres is not enough, as the distance may discourage military personnel from making an appointment because they are unable to travel to a far-away city. . Although this issue is largely solved by the Helpline, it is not entirely resolved, since many people prefer face-to-face contact, which is not possible over the phone or via Zoom. Regarding this, Berle et al. (2015) assessed the preference of a set of Australian patients regarding online or face-to-face therapy and concluded that most participants prefer individual consultation in a face-to-face format (Berle et al., 2015). In addition, the Portuguese Psychologists Association states that "scientific research has not yet demonstrated that online psychological intervention is effective for everyone and in all situations" (Gabinete de Estudos da Ordem dos Psicólogos Portugueses, 2017, p. 3).

Moreover, related to mental health issues, the existence of periodic psychological evaluations of all GNR military personnel could be reexamined. Considering the high suicide rate in the GNR [103], this type of assessment could prevent the escalation of a problem into something more serious. Although Articles 167 and 168 of Law-Decree No. 30/2017 of 22 March state that "(...) psychic aptitude is periodically assessed" and that "(...) psychic aptitude can be assessed when it is deemed convenient" (Ministry of Internal Affairs, 2017, p. 1534), respectively, it would be important to establish a frequency, such as once or twice a year, to avoid problems which may be hidden.

Furthermore, given that a safe and healthy relationship among employees is fundamental, promoting team-building activities could benefit each individual in particular, and the institution as a whole. This could help bring co-workers closer together, fostering knowledge, trust, and support amongst them, making them not only co-workers but, above all, friends. Friendship and a good atmosphere among teammates

are key factors in workers' happiness (Riordan, 2013; Sirota et al., 2005), being happy is half the battle in avoiding psychological problems.

Regarding gender, the evident differences in attitudes, values, and behaviour at work have discouraged women from committing to their professional lives (Shin et al., 2020). Thus, developing gender equality policies is a key step in the right direction (USAID, 2022); however, all human resource policies should be developed with an understanding of workers' specific needs and with gender-sensitive profiles in mind. Therefore, when organisations adopt practices that effectively encourage employee involvement in initiatives, women respond positively to them (USAID, 2022). Finally, it is essential to mention that organisational policies do generally exist. The problem/gap lies in ensuring an implementation that safeguards adequate organisational support processes for workers (Brunetto et al., 2023).

VI. Conclusion

This research arises from the scarcity of empirical studies on the mental health of military security forces, particularly in Portugal. This study aimed at analysing the coping strategies and styles used by the GNR military personnel to deal with stress and pressures raised by the SARS-CoV-2 pandemic, with a special focus on gender. The results suggest that during the pandemic, stress levels were higher among all military personnel, which may be an important indicator for the GNR to adapt its professional training and develop additional internal strategies to enable its professionals to better overcome future adversities. With the discrepancies regarding stress according to gender (as well as parenthood, fear of contracting the disease, and hierarchy of rank), and the differences in coping strategies and styles used by men and women, it is suggested that HRM policies be rethought, allowing for a more adapted prevention and future intervention. Both genders are trained and educated in the same way, entering the institution on an equal footing. However, there is a need to understand the reasons for the differences and thus develop more congruent and efficiently adapted human resources practices, increasing the potential of each professional.

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Ethical statements: The study was approved by the *Comandante do Comando da Doutrina e Formação*, Major-General João Manuel de Sousa Meneses Ormonde Mendes (the body responsible for the approval of any research studies conducted in the GNR), on 9 May 2022, reference number So48652/2022/CDF/GAB, case number 080.30.04,

and with data collection carried out in the GNR under the supervision of Major José Cardoso, chief of the department of Clinical Psychology at the GNR. The survey was approved by the representative of the General Regulation on Data Protection of the Department of Economics, Management, Industrial Engineering and Tourism at the University of Aveiro. Informed consent was obtained from all study participants (informed consent was an integral part of the survey).

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REFERENCES

- Aaron, J. D. (2000). Stress and coping in police officers. *Police Quarterly*, 3(4), 438–450. <https://doi.org/10.1177/10986110000300405>
- Abreu, P. (2021). Portugal já tem 85% da população vacinada contra a covid-19. É o primeiro no mundo. *Jornal de Negócios*. <https://www.jornaldenegocios.pt/economia/coronavirus/detalhe/portugal-torna-se-primeiro-pais-do-mundo-com-85-da-populacao-vacinada-contr-a-covid-19>
- Acquadro Maran, D., Varetto, A., Zedda, M., & Ieraci, V. (2015). Occupational stress, anxiety and coping strategies in police officers. *Occupational medicine*, 65(6), 466–473. <https://doi.org/10.1093/occmed/kqv060>
- Addis, M. E., & Mahalik, J. R. (2003). Men, masculinity, and the contexts of help seeking. *American Psychologist*, 58(1), 5–14. <https://doi.org/10.1037/0003-066X.58.1.5>
- Agência Lusa. (2019). GNR com mais psicólogos e psiquiatras ao serviço. *Sábado*. <https://www.sabado.pt/portugal/detalhe/gnr-com-mais-psicologos-e-psiquiatras-ao-servico>
- Arble, E., Daugherty, A. M., & Arnetz, B. B. (2018). Models of first responder coping: Police officers as a unique population. *Stress and Health*, 34(5), 612–621. <https://doi.org/10.1002/smi.2821>
- Artigo 165 - Noção de teletrabalho e âmbito do regime, (2022). [https://www.act.gov.pt/\(pt-PT\)/Legislacao/LegislacaoNacional/Documents/CÓDIGO DO TRABALHO_Atualizado_03-01-2022.pdf](https://www.act.gov.pt/(pt-PT)/Legislacao/LegislacaoNacional/Documents/CÓDIGO DO TRABALHO_Atualizado_03-01-2022.pdf)
- Bachion, M. M., Peres, A. d. S., Belisário, V. L., & Carvalho, E. C. d. (1998). Estresse, ansiedade e coping: uma revisão dos conceitos, medidas e estratégias de intervenção voltadas para a prática de enfermagem. *Revista Mineira de Enfermagem*, 2(1), 33–39. <https://pesquisa.bvsalud.org/portal/resource/pt/lil-733396>
- Bangasser, D. A., & Valentino, R. J. (2014). Sex differences in stress-related psychiatric disorders: neurobiological perspectives. *Frontiers in Neuroendocrinology*, 35(3), 303–319. <https://doi.org/j.yfrne.2014.03.008>

- Barnett, R. C., Biener, L. E., & Baruch, G. K. (1987). *Gender and Stress*. Free Press.
- Berle, D., Starcevic, V., Milicevic, D., Hannan, A., Dale, E., Brakoulis, V., & Viswasam, K. (2015). Do patients prefer face-to-face or internet-based therapy? *Psychotherapy and Psychosomatics*, 84(1), 61–62. <https://doi.org/10.1159/000367944>
- Billings, A. G., & Moos, R. H. (1981). The role of coping responses and social resources in attenuating the stress of life events. *Journal of Behavioral Medicine*, 4(2), 139–157. <https://doi.org/10.1007/BF00844267>
- Bishop, G. D. (1994). *Health psychology: Integrating mind and body*. Allyn & Bacon.
- Branco, C. (2020). COVID-19 – Que impacto nas Forças Armadas? . Instituto de Defesa Nacional. https://comum.rcaap.pt/bitstream/10400.26/32160/1/idnbrief_29abril2020.pdf
- Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., & Rubin, G. J. (2020). The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. *The Lancet*, 395(10227), 912–920. [https://doi.org/10.1016/S0140-6736\(20\)30460-8](https://doi.org/10.1016/S0140-6736(20)30460-8)
- Brown, J., Fielding, J., & Grover, J. (2010). Distinguishing traumatic, vicarious and routine operational stressor exposure and attendant adverse consequences in a sample of police officers. *Work & Stress*, 13(4), 312–325. <https://doi.org/10.1080/02678379950019770>
- Brunetto, Y., Farr-Wharton, B., Wankhade, P., Saccon, C., & Xerri, M. (2023). Managing emotional labour: The importance of organisational support for managing police officers in England and Italy. *The International Journal of Human Resource Management*, 34(4), 832–854. <https://doi.org/10.1080/09585192.2022.2047755>
- Butler, G. (1993). Definitions of stress. In D. P. Gray (Ed.), *Stress management in general practice* (pp. 1–5). Royal College of General Practitioners.
- Calvano, C., Engelke, L., Di Bella, J., Kindermann, J., Renneberg, B., & Winter, S. M. (2021). Families in the COVID-19 pandemic: parental stress, parent mental health and the occurrence of adverse childhood experiences: Results of a representative survey in Germany. *European Child & Adolescent Psychiatry*, 1–13. <https://doi.org/10.1007/s00787-021-01739-0>
- Carrilho, A. (2018). Há cada vez mais militares da GNR a pedir apoio psicológico. *Rádio Renascença*. <https://rr.sapo.pt/noticia/pais/2018/07/18/ha-cada-vez-mais-militares-da-gnr-a-pedir-apoio-psicologico/119081/>
- Carver, C. S. (1997). You want to measure coping but your protocol is too long: Consider the brief cope. *International Journal of Behavioral Medicine*, 4(1), 92–100. https://doi.org/10.1207/S15327558IJBM0401_6
- Carver, C. S., & Connor-Smith, J. (2010). Personality and coping. *Annual Review of Psychology*, 61, 679–704. <https://doi.org/10.1146/annurev.psych.093008.100352>
- Cheung, Y.-K., & Li, J. C.-M. (2023). Predictors, mediators and moderators of police work-related stress: a scoping review. *International Journal of Environmental Research and Public Health*, 20(3), 2253. <https://doi.org/10.3390/ijerph20032253>
- Chovatiya, R., & Medzhitov, R. (2014). Stress, inflammation, and defense of homeostasis. *Molecular cell*, 54(2), 281–288. <https://doi.org/10.1016/j.molcel.2014.03.030>

- Chung, G., Lanier, P., & Wong, P. Y. J. (2022). Mediating effects of parental stress on harsh parenting and parent-child relationship during coronavirus (COVID-19) pandemic in Singapore. *Journal of Family Violence*, 37(5), 801–812. <https://doi.org/10.1007/s10896-020-00200-1>
- Costa, E. S., & Leal, I. P. (2006). Estratégias de coping em estudantes do Ensino Superior. *Análise Psicológica*, 24(2), 189–199. <https://doi.org/10.14417/ap.163>
- Cunha, M. P., Rego, A., Cunha, R. C., Cabral-Cardoso, C., & Neves, P. (2014). *Manual de comportamento organizacional e gestão*. Editora RH.
- de Lima, O. M. M. M. (2012). The impacts of leadership in the quality of municipal public services: case study of a Portuguese municipal council. *Cuadernos de Gestión*, 12(2), 131–147.
- de Menezes, R. C., & Jansen, A. C. (2020). The emergence and impacts of home office strategy during the pandemic scenario of COVID-19. *International Journal of Advanced Engineering Research and Science*, 7(9), 46–55. <https://doi.org/10.22161/ijaers.79.6>
- Drew, J. M., & Martin, S. (2020). Mental health and well-being of police in a health pandemic: Critical issues for police leaders in a post-COVID-19 environment. *Journal of Community Safety and Well-Being*, 5(2), 31–36. <https://doi.org/10.35502/jcswb.133>
- Duan, L., & Zhu, G. (2020). Psychological interventions for people affected by the COVID-19 epidemic. *The Lancet Psychiatry*, 7(4), 300–302. [https://doi.org/10.1016/S2215-0366\(20\)30073-0](https://doi.org/10.1016/S2215-0366(20)30073-0)
- Farhane-Medina, N. Z., Luque, B., Tabernero, C., & Castillo-Mayén, R. (2022). Factors associated with gender and sex differences in anxiety prevalence and comorbidity: A systematic review. *Science Progress*, 105(4), 00368504221135469. <https://doi.org/10.1177/00368504221135469>
- Fielding, N., & Fielding, J. (1992). A comparative minority: Female recruits to a British constabulary force. *Policing and Society: An International Journal*, 2(3), 205–218. <https://doi.org/10.1080/10439463.1992.9964642>
- Filgueiras, J. C., & Hippert, M. I. S. (1999). A polémica em torno do conceito de estresse. *Psicologia: ciência e profissão*, 19, 40–51. <https://doi.org/https://doi.org/https://doi.org/10.1590/S1414-98931999000300005>
- Fink, G. (2010). Stress: Definition and history. In *Stress science: Neuroendocrinology* (1 ed., Vol. 3, pp. 3–14). Academic Press.
- Folkman, S., & Lazarus, R. S. (1985). If it changes it must be a process: Study of emotion and coping during three stages of a college examination. *Journal of Personality and Social Psychology*, 48(1), 150. <https://doi.org/10.1037/0022-3514.48.1.150>
- French, K. A., Dumani, S., Allen, T. D., & Shockley, K. M. (2018). A meta-analysis of work–family conflict and social support. *Psychological Bulletin*, 144(3), 284. <https://doi.org/10.1037/bul0000120>
- Frenkel, M. O., Giessing, L., Egger-Lampl, S., Hutter, V., Oudejans, R. R., Kleygrewe, L., Jaspert, E., & Plessner, H. (2021). The impact of the COVID-19 pandemic on European police officers: Stress, demands, and coping resources. *Journal of Criminal Justice*, 72, 101756. <https://doi.org/10.1016/j.jcrimjus.2020.101756>

- Gabinete de Estudos da Ordem dos Psicólogos Portugueses. (2017). Sobre as consultas de psicologia através de videochamada. <https://recursos.ordemdospsicologos.pt/files/artigos/videochamada.pdf>
- Granter, E., Wankhade, P., McCann, L., Hassard, J., & Hyde, P. (2019). Multiple dimensions of work intensity: ambulance work as edgework. *Work, Employment and Society*, 33(2), 280–297. <https://doi.org/10.1177/0950017018759207>
- Graves, B. S., Hall, M. E., Dias-Karch, C., Haischer, M. H., & Apter, C. (2021). Gender differences in perceived stress and coping among college students. *PloS One*, 16(8), e0255634. <https://doi.org/journal.pone.0255634>
- Greenberg, J., & Baron, R. A. (1997). *Behavior in organizations: Understanding and managing the human side of work* Univerza v Mariboru, Ekonomsko-poslovna fakulteta]. Mariboru, Slovenia.
- Greenberg, N., Carr, J. A., & Summers, C. H. (2002). Causes and consequences of stress. *Integrative and Comparative Biology*, 42(3), 508–516. <https://doi.org/10.1093/icb/42.3.508>
- Greeshma, B., Priya, G. I., Aswathy, B., & Janani, S. (2018). Stress Management in the Workplace-Challenges Faced By HR. *Journal of Business and Management*, 20(4), 33–36. <https://doi.org/10.9790/487X-2004033336>
- Guarda Nacional Republicana. (2022). *Missão, visão e valores*. GNR. <https://www.gnr.pt/missao.aspx>
- Heath, G., Wankhade, P., & Murphy, P. (2021). Exploring the wellbeing of ambulance staff using the ‘public value’ perspective: opportunities and challenges for research. *Public Money & Management*, 1–11. <https://doi.org/10.1080/09540962.2021.1899613>
- Husaini, B. A., Moore, S. T., & Cain, V. A. (1994). Psychiatric symptoms and help-seeking behavior among the elderly: An analysis of racial and gender differences. *Journal of Gerontological Social Work*, 21(3-4), 177–196. https://doi.org/10.1300/J083V21N03_12
- Jornal de Negócios. (2019). <https://www.jornaldenegocios.pt/negocios-em-rede/pme/2019/detalhe/o-tecido-empresarial-portugues>. *Jornal de Negócios*. <https://www.jornaldenegocios.pt/negocios-em-rede/pme/2019/detalhe/o-tecido-empresarial-portugues>
- Joshi, A., Bhaskar, P., & Gupta, P. K. (2020). Indian economy amid COVID-19 lockdown: A perspective. *Journal of Pure and Applied Microbiology*, 14(1), 957–961. <https://doi.org/10.22207/JPAM.14.SPL1.33>
- Kajantie, E., & Phillips, D. I. (2006). The effects of sex and hormonal status on the physiological response to acute psychosocial stress. *Psychoneuroendocrinology*, 31(2), 151–178. <https://doi.org/10.1016/j.psyneuen.2005.07.002>
- Karaffa, K. M., & Koch, J. M. (2016). Stigma, pluralistic ignorance, and attitudes toward seeking mental health services among police officers. *Criminal Justice and Behavior*, 43(6), 759–777. <https://doi.org/10.1177/009385481561310>
- Kossek, E. E., Pichler, S., Bodner, T., & Hammer, L. B. (2011). Workplace social support and work–family conflict: A meta-analysis clarifying the influence of general and work–family-specific supervisor and organizational support. *Personnel Psychology*, 64(2), 289–313. <https://doi.org/10.1111/j.1744-6570.2011.01211.x>

- Kudielka, B. M., & Kirschbaum, C. (2005). Sex differences in HPA axis responses to stress: a review. *Biological Psychology*, 69(1), 113–132.
<https://doi.org/j.biopsycho.2004.11.009>
- Laufs, J., & Waseem, Z. (2020). Policing in pandemics: A systematic review and best practices for police response to COVID-19. *International Journal of Disaster Risk Reduction*, 51, 101812. <https://doi.org/10.1016/j.ijdrr.2020.101812>
- Lazarus, R. S., & Folkman, S. (1984). *Stress, Appraisal, and Coping*. Springer Publishing Company.
- Liu, S., Yang, L., Zhang, C., Xiang, Y.-T., Liu, Z., Hu, S., & Zhang, B. (2020). Online mental health services in China during the COVID-19 outbreak. *The Lancet Psychiatry*, 7(4), e17–e18. [https://doi.org/0.1016/S2215-0366\(20\)30077-8](https://doi.org/0.1016/S2215-0366(20)30077-8)
- Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour Research and Therapy*, 33(3), 335–343.
[https://doi.org/10.1016/0005-7967\(94\)00075-U](https://doi.org/10.1016/0005-7967(94)00075-U)
- Lundberg, U. (2005). Stress hormones in health and illness: the roles of work and gender. *Psychoneuroendocrinology*, 30(10), 1017–1021.
<https://doi.org/j.psyneuen.2005.03.014>
- Madero Gómez, S., Ortiz Mendoza, O. E., Ramírez, J., & Olivas-Luján, M. R. (2020). Stress and myths related to the COVID-19 pandemic's effects on remote work. *Management Research: Journal of the Iberoamerican Academy of Management*, 18(4), 401–420.
<https://doi.org/10.1108/MRJIAM-06-2020-1065>
- Magdinceva Sopova, M., Stojanovska-Stefanova, A., & Aleksoski, O. (2021). Employee stress management caused by the impact of the covid-19 virus: the Macedonian case. *SocioBrains*(80), 15–27. <https://eprints.ugd.edu.mk/28163/>
- Malagris, L. E. N., & Fiorito, A. C. C. (2006). Stress level evaluation of technicians from the health area. *Estudos de psicologia (Campinas)*, 23, 391–398.
<https://doi.org/10.1590/S0103-166X2006000400007>
- Martin, L., Oepen, R., Bauer, K., Nottensteiner, A., Mergheim, K., Gruber, H., & Koch, S. C. (2018). Creative arts interventions for stress management and prevention - A systematic review. *Behavioral Sciences*, 8(2), 28. <https://doi.org/10.3390/bs8020028>
- Matud, M. P. (2004). Gender differences in stress and coping styles. *Personality and Individual Differences*, 37(7), 1401–1415. <https://doi.org/j.paid.2004.01.010>
- McKay, J. R., Rutherford, M. J., Cacciola, J. S., Kabasakalian-McKay, R., & Alterman, A. I. (1996). Gender differences in the relapse experiences of cocaine patients. *The Journal of Nervous and Mental Disease*, 184(10), 616–622. <https://doi.org/10.1097/00005053-199610000-00006>
- McLean, C. P., & Anderson, E. R. (2009). Brave men and timid women? A review of the gender differences in fear and anxiety. *Clinical Psychology Review*, 29(6), 496–505.
<https://doi.org/10.1016/j.cpr.2009.05.003>
- Mehdizadeh, S., & Kamkar, K. (2020). COVID-19 and the impact on police services. *Journal of Community Safety and Well-Being*, 5(2), 42–44.
<https://doi.org/10.35502/jcswb.139>

- Ministry of Internal Affairs. (2017). *Law-Decree No. 30/2017 of the Ministry of Internal Affairs*. Retrieved from <https://dre.pt/dre/detalhe/decreto-lei/30-2017-106642828>
- Moreno, A. F., Karanika-Murray, M., Batista, P., Hill, R., Vilalta, S. R., & Oliveira-Silva, P. (2024). Resilience Training Programs with Police Forces: A Systematic Review. *Journal of Police and Criminal Psychology*, 39(1), 227–252. <https://doi.org/10.1007/s11896-023-09633-y>
- National Health Service. (2019). *Dia de consciencialização do stress*. SNS. <https://www.sns.gov.pt/noticias/2019/11/06/dia-de-consciencializacao-do-stress/>
- Ng, D. M., & Jeffery, R. W. (2003). Relationships between perceived stress and health behaviors in a sample of working adults. *Health Psychology*, 22(6), 638. <https://doi.org/10.1037/0278-6133.22.6.638>
- Norris, F. H. (2005). Range, magnitude, and duration of the effects of disasters on mental health: Review update 2005. *Research Education Disaster Mental Health*, 1–23.
- O'Brien, L., Mathieson, K., Leafman, J., & Rice-Spearman, L. (2012). Level of stress and common coping strategies among physician assistant students. *The Journal of Physician Assistant Education*, 23(4), 25–29. <https://doi.org/10.1097/01367895-201223040-00006>
- Padesky, C. A., & Hammen, C. L. (1981). Sex differences in depressive symptom expression and help-seeking among college students. *Sex Roles*, 7(3), 309–320. <https://doi.org/10.1007/BF00287545>
- Pais-Ribeiro, J. L., Honrado, A. A. J. D., & Leal, I. P. (2004). Contribuição para o estudo da adaptação portuguesa das escalas de ansiedade, depressão e stress (EADS) de 21 itens de Lovibond e Lovibond. *Psicologia, Saúde & Doenças*, 36(2), 229–239. https://www.researchgate.net/publication/37650532_Contribuicao_para_o_estudo_da_adaptacao_portuguesa_das_Escalas_de_Ansiedade_Depressao_e_Stress_de_Lovibond_e_Lovibond
- Pais-Ribeiro, J. L., & Rodrigues, A. P. (2004). Questões acerca do coping: A propósito do estudo de adaptação do Brief Cope. *Psicologia, Saúde e Doenças*, 5(1), 3–15. https://www.researchgate.net/publication/262739455_Questoes_acerca_do_coping_A_proposito_do_estudo_de_adaptacao_do_Brief_COPE
- Pak, A., Adegboye, O. A., Adekunle, A. I., Rahman, K. M., McBryde, E. S., & Eisen, D. P. (2020). Economic consequences of the COVID-19 outbreak: the need for epidemic preparedness. *Frontiers in public health*, 8, 241. <https://doi.org/10.3389/fpubh.2020.00241>
- Petzold, M. B., Bendau, A., Plag, J., Pyrkosch, L., Mascarell Maricic, L., Betzler, F., Rogoll, J., Große, J., & Ströhle, A. (2020). Risk, resilience, psychological distress, and anxiety at the beginning of the COVID-19 pandemic in Germany. *Brain and Behavior*, 10(9), e01745. <https://doi.org/doi.org/10.1002/brb3.1745>
- Pfefferbaum, B., & North, C. S. (2020). Mental health and the Covid-19 pandemic. *New England Journal of Medicine*, 383(6), 510–512. <https://doi.org/10.1056/NEJMp2013466>
- Pilkington, W., & Kumar, D. (2020). Public Health Departments Face Formidable Issues During COVID-19 Pandemic. *Homeland Security Affairs*, 16. <https://hdl.handle.net/10945/66331>

- Order No. 2836-A/2020 (2020). <https://dre.pt/dre/detalhe/despacho/2836-A-2020-129793730>
- Presidency of the Council of Ministers. (2021). *Council of Ministers Resolution No. 135-A/2021* Retrieved from <https://dre.pt/dre/detalhe/resolucao-conselho-ministros/135-A-2021-172153528>
- Rajkumar, R. P. (2020). COVID-19 and mental health: A review of the existing literature. *Asian Journal of Psychiatry*, 52, 102066. <https://doi.org/10.1016/j.ajp.2020.102066>
- Rosario, M., Shinn, M., Mørch, H., & Huckabee, C. B. (1988). Gender differences in coping and social supports: Testing socialization and role constraint theories. *Journal of Community Psychology*, 16(1), 55–69. [https://doi.org/10.1002/1520-6629\(198801\)16:1<55::AID-JCOP2290160108>3.0.CO;2-U](https://doi.org/10.1002/1520-6629(198801)16:1<55::AID-JCOP2290160108>3.0.CO;2-U)
- Salleh, M. R. (2008). Life event, stress and illness. *The Malaysian Journal of Medical Sciences*, 15(4), 9. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3341916/>
- Santomauro, D. F., Herrera, A. M. M., Shadid, J., Zheng, P., Ashbaugh, C., Pigott, D. M., Abbafati, C., Adolph, C., Amlag, J. O., & Aravkin, A. Y. (2021). Global prevalence and burden of depressive and anxiety disorders in 204 countries and territories in 2020 due to the COVID-19 pandemic. *The Lancet*, 398(10312), 1700–1712. [https://doi.org/10.1016/S0140-6736\(21\)02143-7](https://doi.org/10.1016/S0140-6736(21)02143-7)
- Sapolsky, R. M., Romero, L. M., & Munck, A. U. (2000). How do glucocorticoids influence stress responses? Integrating permissive, suppressive, stimulatory, and preparative actions. *Endocrine Reviews*, 21(1), 55–89. <https://doi.org/10.1210/edrv.21.1.0389>
- Seabra, A. P. P. d. C. (2011). *O Síndrome de Burnout e a Depressão no Contexto da Saúde Ocupacional* Instituto de Ciências Biomédicas Abel Salazar, Universidade do Porto]. <https://repositorio-aberto.up.pt/handle/10216/19388>
- Shansky, R. M. (2015). Sex differences in PTSD resilience and susceptibility: Challenges for animal models of fear learning. *Neurobiology of Stress*, 1, 60–65. <https://doi.org/j.ynstr.2014.09.005>
- Shin, D., Garmendia, A., Ali, M., Konrad, A. M., & Madinabeitia-Olabarria, D. (2020). HRM systems and employee affective commitment: The role of employee gender. *Gender in Management: An International Journal*, 35(2), 189–210. <https://doi.org/10.1108/GM-04-2019-0053/FULL/PDF>
- Sigmon, S. T., Stanton, A. L., & Snyder, C. (1995). Gender differences in coping: A further test of socialization and role constraint theories. *Sex Roles*, 33, 565–587. <https://link.springer.com/article/10.1007/BF01547718>
- Simon, R. W. (2020). Gender, emotions, and mental health in the United States: Patterns, explanations, and new directions. *Society and Mental Health*, 10(2), 97–111. <https://doi.org/10.1177/2156869320926236>
- Solomon, M. B., & Herman, J. P. (2009). Sex differences in psychopathology: Of gonads, adrenals and mental illness. *Physiology & Behavior*, 97(2), 250–258. <https://doi.org/j.physbeh.2009.02.033>
- Tomlin, J., Dalgleish-Warburton, B., & Lamph, G. (2020). Psychosocial support for healthcare workers during the COVID-19 pandemic. *Frontiers in Psychology*, 11, 1960. <https://doi.org/10.3389/fpsyg.2020.01960>

- USAID. (2022). *Integrating Gender into Workplace Policies*.
- Vindegaard, N., & Benros, M. E. (2020). COVID-19 pandemic and mental health consequences: Systematic review of the current evidence. *Brain, Behavior, and Immunity*, 89, 531–542. <https://doi.org/10.1016/j.bbi.2020.05.048>
- Violanti, J. M., Charles, L. E., McCanlies, E., Hartley, T. A., Baughman, P., Andrew, M. E., Fekedulegn, D., Ma, C. C., Mnatsakanova, A., & Burchfiel, C. M. (2017). Police stressors and health: a state-of-the-art review. *Policing: An International Journal*, 40(4), 642–656. <https://doi.org/10.1108/pijpsm-06-2016-0097>
- Walker, M. (1997). Conceptual and methodological issues in the investigation of occupational stress. A case study of police officers deployed on body recovery at the site of the Lockerbie air crash. *Policing and Society: An International Journal*, 7(1), 1–17. <https://doi.org/10.1080/10439463.1997.9964761>
- Wang, J., Korczykowski, M., Rao, H., Fan, Y., Pluta, J., Gur, R. C., McEwen, B. S., & Detre, J. A. (2007). Gender difference in neural response to psychological stress. *Social Cognitive and Affective Neuroscience*, 2(3), 227–239. <https://doi.org/10.1093/scan/nsm018>
- Wankhade, P., Stokes, P., Tarba, S., & Rodgers, P. (2020). Work intensification and ambidexterity-the notions of extreme and ‘everyday’ experiences in emergency contexts: Surfacing dynamics in the ambulance service. *Public Management Review*, 22(1), 48–74. <https://doi.org/10.1080/14719037.2019.1642377>
- Wechsler, B. (1995). Coping and coping strategies: A behavioural view. *Applied Animal Behaviour Science*, 43(2), 123–134. [https://doi.org/10.1016/0168-1591\(95\)00557-9](https://doi.org/10.1016/0168-1591(95)00557-9)
- Wheatley, D. (1984). Anxiolytic drug use in cardiovascular disease: an overview. *Psychopharmacology bulletin*, 20(4), 649–659.
- Wheaton, B., & Montazer, S. (2010). Stressors, stress, and distress. In T. L. Scheid & T. N. Brown (Eds.), *A handbook for the study of mental health: Social contexts, theories, and systems* (Vol. 2, pp. 171–199). Cambridge University Press.
- World Health Organization. (2022a). *COVID-19 pandemic triggers 25% increase in prevalence of anxiety and depression worldwide*. <https://www.who.int/news/item/02-03-2022-covid-19-pandemic-triggers-25-increase-in-prevalence-of-anxiety-and-depression-worldwide>
- World Health Organization. (2022b). *Mental health and COVID-19: Early evidence of the pandemic’s impact*. WHO. https://www.who.int/publications/i/item/WHO-2019-nCoV-Sci_Brief-Mental_health-2022.1
- Zeidner, M., Matthews, G., & Roberts, R. D. (2012). The emotional intelligence, health, and well-being nexus: What have we learned and what have we missed? *Applied Psychology: Health and Well-Being*, 4(1), 1–30. <https://doi.org/10.1111/j.1758-0854.2011.01062.x>