

**UNIVERSITY "ALEXANDRU IOAN CUZA" FROM IAȘI
FACULTY OF PSYCHOLOGY AND
EDUCATIONAL SCIENCES
DOCTORAL SCHOOL OF PSYCHOLOGY**

DOCTORAL THESIS

**STRESS AND WELL- BEING AMONG THE
MILITARY PERSONNEL**

SUMMARY

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My gratitude to my husband.

For my son

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Chapter 1. Theoretical fundamentals

1.1. Stress among military personnel

The military personnel of the Gendarmerie represent a professional category with risk, vulnerable to psychological suffering. Military forces must constantly manage complicated conflict situations, critical incidents, with an increasingly reduced number of personnel. Mental health problems that soldiers may experience as a result of the countless high-risk missions they handle include depression, substance abuse, violence or post-traumatic stress symptoms (Hoge et al., 2002). Mental health problems resulting from stress can have major negative consequences, both professionally and personally. Thus, ensuring efficient and effective mental functionality becomes an indispensable condition for the activity of military gendarmes.

The stressors that a military gendarme can face are both mental in nature and environmental. The mental stress factor represents the information related to a danger, threat or traumatic situation, with direct effects on the physiological functioning of the body. The primary effect of encountering such a stressor is the activation of the brain's perceptual, cognitive and emotional systems. Sometimes imbalances or inefficiencies in functionality can generate negative effects such as information overload, perceived lack of control or distressing losses.

The literature refers to the following stress factors faced by the military: support from leaders, social support and cohesion, role conflict, commitment, overcommitment and effort-reward imbalance, imbalance between work and family life. Although the activity of the Gendarmerie may not generate the same intensity of stress as that of military combat in the theatres of operations, the cumulative effects of the many traumatic exposures of the missions, but also of the bureaucratic and administrative stressors, can have significant results on the military gendarmerie. Although good health and adequate physical fitness, restful sleep, and a positive sense of purpose support resistance to stress, the literature states that each person, no matter how strong or resilient, has a finite capacity to withstand the cumulative effects of potentially traumatic factors (Flannery & Everly, 2000).

Based on the literature, similar to the studies that investigated the stress felt by the police forces and in the absence of previous information to capture the stress factors faced by military gendarmerie in peace times, this study refers to two distinct dimensions: organizational stress and operational stress. Organizational stress factors are associated with the activities carried out within the institution, including conflicts with superiors or colleagues, lack of material or human resources, overwork and excessive administrative tasks (Queirós et al., 2020; Purba et

al., 2019). Studies on organizational stress refer to bureaucratic aspects, perceived lack of support from the community and leaders, or lack of promotion opportunities (Burke & Mikkelsen, 2006). Operational stress can be associated with specific operational activities carried out by military gendarmes, such as facing dangerous situations, risk of injury, critical incidents, potentially traumatic events, inappropriate attitude of citizens, fear of using force, aggressive interactions, crime or continuous exposure to citizens and their problems.

In the face of stressors, resilience represents the ability to adapt positively during and after facing a traumatic situation, the ability to manage, recover and grow after facing difficult, potentially stressful situations (Richardson et al., 2020). Officers who have a high sense of control over the environment and situations they face, are better able to manage stress (McCafferty et al., 1992). However, the nature of frequent critical incidents means that officers rarely have such control (Mitchell & Everly, 1996).

Research on the coping strategies used by military gendarmes when dealing with stressors during peacetime is lacking. However, those that concern the population of policemen to which we can refer by the similarity of the attributions, have conceptualized coping in different ways. Evans and colleagues (1993), for example, showed that police officers more frequently use problem-focused or action-directed coping strategies when dealing with stressors compared to social support or self-blame.

Coping strategies have been shown to have a moderating effect on the relationship between stress and psychological well-being among the police population. Studies have shown an interaction between the level of perceived stress and coping strategies on psychological well-being: police officers who reported high levels of stress at work and used avoidant coping strategies reported higher levels of depression and anxiety, compared to those who did not use such strategies (Gershon et al., 2009).

1.2. Stress and well-being in military personnel

Despite countless debates about the essence of a well-lived life, much research has focused more on the notion of illness than on health (Ryff & Singer, 2008). According to the literature, the principles underlying well-being refer to the state of health and are philosophical rather than medical in nature. Therefore, these principles relate to the well-being of mind and body and link well-being to the level of engagement in life (Ryff et al., 1999).

Psychological well-being is a complex construct, defined as a state of optimal functioning and experience (Ryan & Deci, 2001). It represents a positive psychological state, derived from

two points of view: a hedonic approach, which suggests that it involves pleasure and happiness in the form of positive feelings and emotions, and a eudaimonic approach, which shows that well-being consists of being fully functional, in a life fully lived in a satisfying and rewarding way (Ryan & Deci, 2001). Psychological well-being is a concept that appears as a combination of several factors. Hart et al. suggest, for example, that psychological well-being represents the manner in which the individual appreciates life quality in the form of cognitive, affective and somatic components (Hart & Cooper, 2001; Hart & Cotton, 2002). Affective components can be perceived as positive (e.g. positive affect, increased morale and high well-being) and negative (e.g. negative affect, increased stress, a reduced level of well-being). The cognitive component is associated with satisfaction in various domains of life (Hart & Cotton, 2002).

Due to the stressors they face at work, gendarmerie military staff are at high risk of developing mental dysfunction. For example, at the level of the police population, to which we can report through the similarity of some of the activities and in the absence of analyses related to the stress of military gendarmes in times of peace, organizational stress factors are the strongest determinants of psychological suffering and the perception of a low quality of life (Hart & Cotton, 2002).

Resilience among the military personnel

The literature conceptualizes resilience as either a trait or a process. As a trait, resilience represents a set of characteristics that allow the individual to adapt to the circumstances he/she encounters (Connor & Davidson, 2003). This notion was initially approached by Block & Block (1980), who used the term ego-resilience, described by a set of traits, such as ingenuity, strength of character and flexibility. Resilient people have a high level of energy, optimism, curiosity, the ability to conceptualize problems and detach from them (Block & Block, 1980).

Exposure to stressful situations and potentially traumatic incidents may have a negative impact on an individual's cognitive abilities, memory, mental and physical health, and overall well-being. Confronted with the stressors faced by personnel engaged in military operations, resilience is a significant resource. Resilience represents the ability to maintain a state of balance in the face of extremely unfavorable events (Bonanno, 2004). Resilient people show insight, initiative, humour, creativity and independence. In the face of trauma, the factors that ensure protection and increase resilience are represented by beliefs, attitudes, adaptation strategies, behavioural style and psychosocial cohesion (Ahmed, 2007).

1.3.The psychological preparation of the military in the context of dealing with stress factors

The operational environment in which military gendarmes carry out their work is characterized by unpredictable, ambiguous, sometimes unclear and complex scenarios. The negative effects of exposure to potentially traumatic events can be exacerbated by family or relationship problems. The permanent character of the success of the missions thus depends to a large extent on the resilience of the military. In this context, the preparation activity is an essential step.

In recognition of the adverse effects that stress can have, training programs are constantly being developed and implemented in military organizations. Lectures, briefings, instructions and trainings, conducted by specialists in the field of weapons or mental health, are of variable duration and cover general information on stress, principles of stress, stressors and information on coping strategies, ways of intervention or control (Thompson & Pastò, 2003). Military training has traditionally focused on developing technical skills, strength, endurance, teamwork and cultivating discipline. Constantly, the theoretical training, which provides basic knowledge, is complemented by demonstrations and exercises to improve specific skills.

Chapter 2. Research Objectives and General Methodology

This present Research Project is structured in five surveys, having at their core the stress faced by military gendarmes in their professional activity. It was aimed to determine the impact that stress has on the psychological well-being and resilience of military gendarmerie staff, with the approach of variables with a protective role. Also, the studies highlight the importance of the psychological preparation of the gendarmes when facing the stress factors specific to the missions carried out. All in order to increase the resistance to the demanding activity, which involves facing adverse events with a negative impact on the well-being of the military gendarmes. The first study is a longitudinal one. Two measurements of the analyzed variables were carried out, at an interval of four months. Based on the results, four longitudinal parallel mediation models were constructed and analyzed. The following three studies are cross-sectional and analyze, based on parallel mediation models, the role of internal and external resources of the military gendarmes in the face of organizational and operational stressors. The

last analysis, the fifth, represents a randomized controlled trial and addresses the effectiveness of a psychological training program at the level of the gendarme military population.

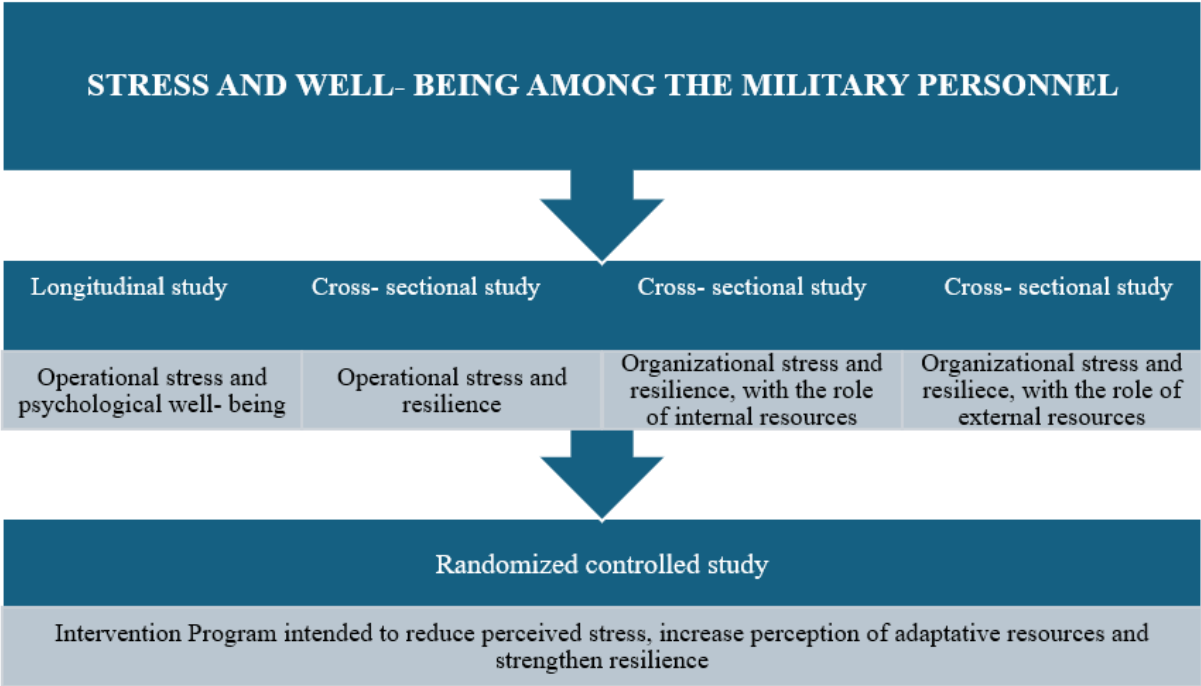


Figure number 1. Schematic presentation of the surveys within the Research Project

Study 1. Stress and Psychological Well-Being in Military Gendarmes¹

2.1. Introduction

Professions that involve managing other people’s concerns, such as healthcare as well as law enforcement, generate particularly high levels of stress compared to other professions (Finn & Tomz, 1998). The Gendarmerie is the military branch of the police, with law enforcement duties among the civilians. In addition to their law enforcement duties, gendarmes can also undertake military defence functions in the event of war, and they have often been deployed in external inter-state conflicts (Lutterbeck, 2004). Gendarmes interact with people belonging to different social groups, from people with mental disorders to criminals and are frequently exposed to aversive situations, from verbal to physical aggression, and to potentially

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traumatic situations, ranging from assault to murder (He et al., 2002). They are constantly interacting with citizens, exposed to their issues and exposed to physical or verbal aggression. In addition to operational stress (OpS) factors, gendarmes deal with organizational stress (OrgS) factors, such as the militarized structure, bureaucracy, lack of support from their coworkers or bosses, difficulties with promotion, a plethora of disciplinary procedures and restrictions, and an excessive work volume or administrative attributes (Pflanz, 2001).

To our knowledge, this is the first study to investigate the longitudinal relationship between OrgS and OpS and the psychological well-being (PWB) of gendarmes in a southeastern European country during their peacetime activity. The strengths of this present study also lie in the use of a longitudinal design and in the identification of some of the explanatory mechanisms of these relationships, such as perceived social support, seeking social support, positive reappraisal and self-control. More specifically, the negative longitudinal correlation between baseline work-related stress, OrgS and OpS, experienced by military gendarmes and their PWB four months later was examined. Furthermore, it was investigated whether social support and coping mechanisms, measured at baseline and four months apart, act as mediators in these relationships.

Stress and Psychological Well-Being in Military Personnel of the Gendarmerie, during Peacetime

Psychological well-being represents individuals' satisfaction with their own life, their mental health, happiness, hope and positive perception of their own self (Ryff, 1989). This depends on individual experiences, and its aspects refer to personal affect, ability and self-perception (Campbell et al., 1996). Psychological well-being is extremely important for the success of military operations and for the mental and physical health of military personnel (Chen et al., 2018).

In certain situations, the stress associated with the workplace directly influences well-being (i.e., the direct effect model, Wheaton 1985). Garbarino et al. (2013) mentioned that working in stressful conditions leads to the dissatisfaction and exhaustion of police officers, affecting their mental well-being and professional efficiency. Similarly, Ortega et al. (2007) underlined that police officers work in a unique environment, being exposed to traumatic events that have negative effects on their emotional and physical well-being. Given the negative health consequences of stress for both police and other law enforcement professions (Steptoe & Kivimaki, 2012; Olsen et al., 2013), the following hypotheses were proposed:

Hypothesis 1. Baseline work-related stress, OrgS and OpS, significantly and negatively predict PWB four months apart.

The mediating role of social support

The literature has identified two types of impacts of social support on the link between stress and its consequences. Social support can have a buffering effect so that the negative effects of stress are less felt (e.g., the buffering model, Cohen & Wills, 1985). Individuals who have developed supportive social relationships generally feel better in comparison to those who do not (Westman, 1992), even when they are confronted with stress. Additionally, social support can have a significant mediating role in the link between stress and its outcomes. The negative effect of stress on social support and mental well-being is explained in the model of damaged social support (Dean & Ensel, 1982). This indicates that negative life experiences can damage one's perception of the available social support and diminish one's mental health. Although numerous studies have demonstrated the negative relationship between stress and social support (Mitchell & Moos, 1984; Dignam et al., 1986), there are not enough recent data to clarify the nature and intensity of stressors that can cause a deterioration of social support. Using PWB as an outcome, stress will be negatively associated with perceived social support and well-being, while social support will have a positive association with PWB. Based on the reviewed literature and on the damaged social support model (Dean & Ensel, 1982), we assumed that:

Hypothesis 2.1. Baseline social support mediates the relationship between organizational or operational stress and PWB.

Hypothesis 2.2. Four months apart, social support still mediates the relationship between organizational or operational stress and PWB.

The mediating role of coping mechanisms

Research has shown that different coping strategies are associated with different ways of psychological adaptation (Finstad et al., 2021). First, emotion-focused coping, such as positive refocusing, can facilitate posttraumatic growth (Tuncay and Musabak, 2015). Second, self-control is associated with a higher level of cognitive well-being and positive affect (Hofmann et al., 2014). Third, in contrast to perceived social support, discussed previously, the search for social support—as a coping mechanism—represents the tendency to seek social support when needed, and research suggests that people who actively seek support may be more

effective in managing traumatic stressors (Chao, 2011). Empirical research also indicates that emotion-focused coping and seeking social support mediate the relationship between various situational factors and posttraumatic growth (Bellur et al., 2018). Based on Lazarus and Folkman's transactional model of stress (1984), this research aims to clarify the role of active, positive coping strategies. In the sense of clearly establishing the psychological or behavioral efforts in the use of its own resources to face problematic operational and organizational situations, we hypothesized the following:

Hypothesis 3.1. Baseline seeking social support, positive refocusing, and self-control would act as mediators of the relationship between organizational or operational stress and PWB;

Hypothesis 3.2. Four months apart, seeking social support, positive refocusing and self-control would act as mediators of the relationship between organizational or operational stress and PWB.

2.2. Materials and Methods

2.2.1. Participants and Procedure

Research was conducted on 210 military personnel, gendarmes, officers and sub-officers in a military unit, with the following characteristics: all were members of operational staff, including 202 men (96.19%) and 8 women (3.90%), with at least 6 months of experience in the organization. The mean age was 38.52 years ($SD = 8.92$). The mean duration of military service was 14.52 years ($SD = 7.94$).

2.2.2. Measures

Organizational stress was measured using the *Organizational Police Stress Questionnaire (PSQ-Org; McCreary and Thompson, 2006)*. The Cronbach's alpha value for this present study was 0.937 for time point T1 and 0.950 for time point T2.

Operational stress was measured using the *Operational Police Stress Questionnaire (PSQ-OP, McCreary and Thompson, 2013)*. The Cronbach's alpha value for this present study was 0.918 for time point T1 and 0.963 for time point T2.

Coping mechanisms were measured using *The Ways of Coping Scale (WCS, Folkman and Lazarus, 1986)*. The Cronbach's alpha values for the present study were 0.882 at time T1 and 0.857 at time T2.

The *Psychological Well-Being Scale (PWBS, Ryff, 1989)* was used to measure well-being in military personnel. Due to the high overlap among the dimensions of PWB, in the present study, we used the PWBS total score, with Cronbach's alpha values of 0.792 for time point T1 and 0.755 for time point T2.

Social support was measured using the *Interpersonal Support Evaluation List (ISEL, Cohen and Wills, 1985)*. In this present study, we used the ISEL total score, and the Cronbach's alpha values were 0.925 at T1 and 0.955 at T2.

2.2.3. Statistical Analysis

First, the descriptive and correlational statistical analyses were created using the software SPSS[®], version 28 (IBM Corporation, Armonk, NY, USA). Second, four longitudinal parallel mediation models were proposed and analyzed using Model 4 (Hayes, 2018) from Process version 4.0 with IBM SPSS 28.

2.3. Results

2.3.1. Descriptive Statistics and Correlational Analyses

Both types of stress at baseline, OrgS and OpS, are negatively associated at low and moderate levels with PWB, social support and coping mechanisms. Regarding perceived stress, the results show a significant longitudinal difference in the level of operational stress (MT11 = 34.33; SDT1 = 14.48; MT2 = 36.17; SDT2 = 18.38) compared to organizational stress (MT1 = 33.84; SDT1 = 14.37; MT2 = 33.78; SDT2 = 15.05). Additionally, at an interval of four months, a significant decrease in PWB was found (MT1 = 219.63; SDT1 = 11.84; MT2 = 105.50; SDT2 = 60.71).

2.3.2. Parallel Mediation Analyses of the Relationship between OrgS and PWB

The first model of the study tested both the negative association between baseline OrgS and PWB four months apart and the role of social support and coping mechanisms (social support, positive reappraisal and self-control) measured at baseline as mediators.

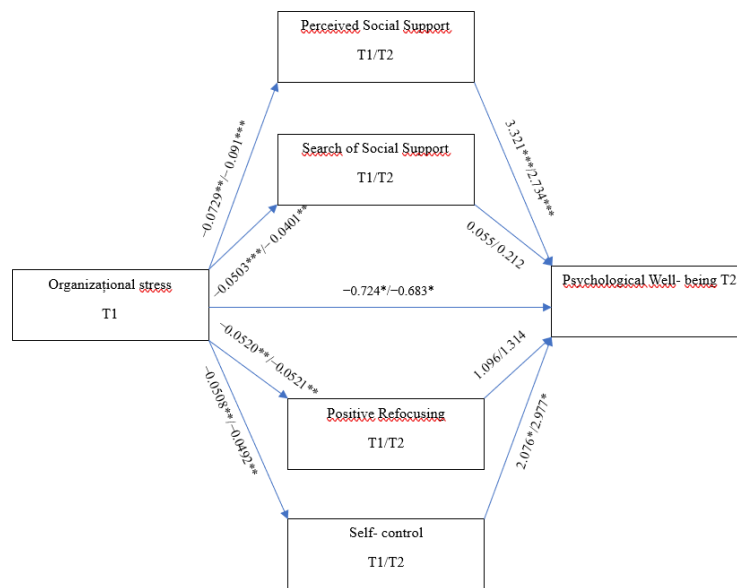


Figure number 2. The relationship between organizational stress and psychological well-being with mediators at T1 and T2.

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$

Similarly, the second model analyzed the same association, with the same mediators measured after four months (see also Figure 1). The multiple regression analysis was performed to estimate the components of the mediation models.

2.3.3. Parallel Mediation Analyses of the Relationship between OpS and PWB

The third model of the study tested both the negative association between baseline OpS stress and PWB four months apart and the role of social support and coping mechanisms (seeking social support, positive reappraisal and self-control) as mediators, measured at baseline. Similarly, the fourth model analyzed the same association and role of the same mediators, measured four months apart (see also Figure 2).

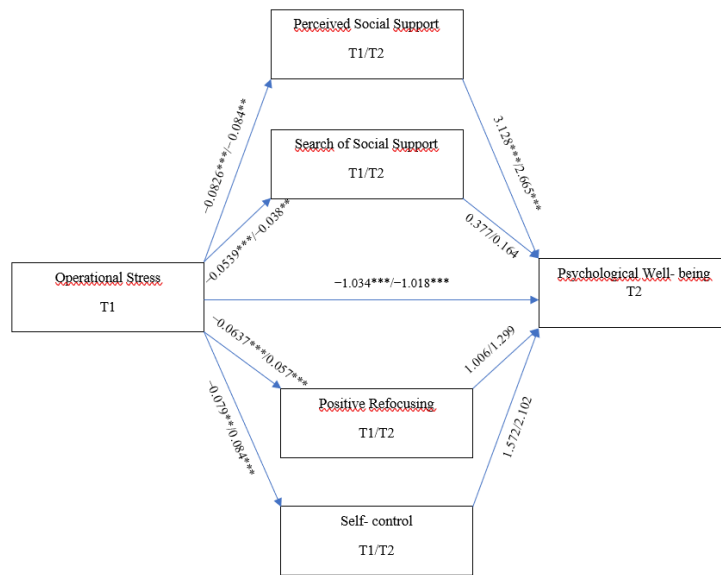


Figure number 3. The relationship between operational stress and psychological well-being with mediators at T1 and T2.

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$

2.4. Discussions

2.4.1. Theoretical Implications

Preliminary analysis indicated that both types of stress, OrgS and OpS, are negatively associated with PWB, social support, positive refocusing, self-control and search for social support. OrgS shows low and negative correlation with PWB, while OpS is moderately and negatively correlated with PWB. These findings contradict some previous research indicating that OrgS may be more strongly associated with well-being than OpS in low enforcement forces because their work environment is perceived as oppressive (Shane, 2010) and under-rewarded (Basinska & Wiciak, 2013). However, OrgS factors could be more easily underestimated in participants' reports compared to OpS factors.

OrgS factors were identified as being likely to cause psychological turmoil among personnel who work in the field of public order and security (Tyagi & Dhar, 2014). The schedule, large amount of work, culture and organizational changes have a significant impact on the mental state of the mentioned personnel (Purba & Demou, 2019). Research mentions that OrgS factors have such a significant effect on PWB due to the rigidity and bureaucratic nature of the organization, as well as the resistance to change and the refusal to correct traditional practices (Stinchcomb, 2004).

The present study hypothesized and confirmed that baseline OpS is directly and negatively correlated with PWB measured four months apart. OpS has its origin in high-risk missions, unpredictability of duties, activities of great importance, sometimes threatening, confrontations with public hostility or insults, direct threats of death or threats regarding family and personal integrity. This result is consistent with previous research indicating that OpS factors represent a main source of stress (Violanti et al., 2016).

Social support measured at baseline and four months apart are significant mediators of the longitudinal relationship between both OrgS and PWB, and OpS and PWB. Therefore, military gendarmes who are more stressed at work report not only lower levels of PWB four months apart, but also lower baseline and four-month levels of perceived social support. This is consistent with one of the main assertions of the damaged social support model (Dean and Ensel, 1982; Lin and Dean, 1984), indicating that stress deteriorates the perception of available social relationships, which diminishes PWB. Perceived available social support is important in the long term, producing significant indirect effects on the relationship between Org/OpS and PWB.

Concerning coping mechanisms, self-control measured after four months, acts as a mediator only in the relationship between OrgS and PWB. OrgS has a significantly negative longitudinal effect on self-control, and after four months, self-control positively correlates with PWB. Military gendarmes with a higher level of OrgS will show less self-control in comparison to those with a lower level, and vice versa. Although some research has mentioned a positive association between self-control and stress (Schilling et al., 2022), this present study indicates their negative correlations and the role of self-control after four months in the links between OrgS and PWB.

2.4.2. Practical Implications

First, the study could provide the basis for strengthening intervention programs aimed at raising awareness of the importance of identifying and mitigating OrgS and OpS factors to reduce their impact on military personnel's PWB. Second, interventions should focus on increasing perceived social support. Educating staff about the types of behaviors and support that are beneficial in the work of the gendarmes could help to increase the perception of support available and the perception of support given and received within the organization, which could have a direct positive effect on PWB. Third, managers and mental health professionals could create an organizational culture based on mutual support through intervention programs. Fourth, an important role that mental health specialists have is to promote and educate the most

effective coping mechanisms that military gendarmes can use when faced with stressors. Moreover, significant consideration must be given to vulnerable military personnel likely to experience reduced well-being. Therefore, developing intervention strategies focused on awareness of the importance of social support, increasing awareness of available support, understanding the value of the provider and developing the ability to provide support within the military organization are very important. In order to positively influence psychological well-being, attitude and behavior, this study directs organizations to develop training programs that help gendarmes understand the values and philosophy of the culture, based on team spirit and mutual support. Moreover, strengthening healthy behavior and adaptive coping strategies or replacing maladaptive coping with adaptive coping are important in training effective military personnel (Cahill et al. 2021).

Study 2. Stress and Resilience in Military Personnel.

The Mediating Role of Internal versus External Resources

3.1. Introduction

Given the fact that, operational stress can have different outcomes, both negative and positive, this is the first study to clarify the relationship between stress and resilience in military gendarmes. It also contributes to the existing literature by examining the mediating role of internal resources (occupational commitment and perceived self-efficacy) and of external resources (perceived efficacy of psychological training and management style) first separately, and then together, in the relationship between operational stress and resilience in military gendarmes.

Stress and resilience in military personnel

This present study addresses operational stressors specific to military gendarmes' peacekeeping missions, resulting from exposure to aversive events, crime, aggression, interaction with criminals and their victims etc. (He et al., 2012). Frequent exposure to aversive events can also have positive consequences, contributing to faster physiological and emotional recovery and resilience (Tugade et al., 2004). After stressful events, individuals are more likely to develop their level of resilience, being less likely to develop mental health issues proportional to the suffered stress. They are less influenced by stressors, less lonely, have better social adaptation skills and experience a greater level of psychological comfort (Kalisch et al., 2021).

Studies show varying weak to strong negative associations between stress and resilience (Janssens et al., 2021). The effects of stress on resilience can manifest depending on the intensity and duration of exposure (Oken et al., 2015). If the response to the stressor is too intense or frequent, this causes mental or physiological problems (Oken et al., 2015), explaining the decrease in resilience. A trajectory of resilience represents a relatively short period of disequilibrium, following traumatic exposure, but in a state of continued health (Bonanno et al., 2012). Therefore, the present study offers clarification on the association between these two variables, based on hypothesis (**H1**): The perceived stress level of military gendarmes is a significant negative predictor of resilience.

The mediating role of internal resources: occupational commitment and perceived self-efficacy

Occupational commitment is strongly associated with perceived stress negatively (Lee et al., 2000) and resilience (Wang et al., 2018). Military personnel with a lower stress level report a higher commitment level and a higher health level (Harris et al., 2005). Occupational commitment has a negative association with stress factors, depression and psychological suffering (Andrew et al., 2008) and a positive association with resilience (Vohra & Goel, 2009) in the case of police officers.

Self-efficacy, which plays an important role in competitiveness and resilience of military gendarmes, is the belief regarding the ability of an individual to perform well in challenging situations (Bandura, 2010). It is a resource in the process of cognitive processing, essential for the management of high-stress and for a better control of stressors (Kashdan & Roberts, 2004). Both, self-efficacy and resilience, are positive personal characteristics, having in common an individual's ability to persevere when facing difficulties. Despite the similarities, they are two distinct, independent psychological resources: perceived self-efficacy refers to accomplishing tasks, while resilience refers to adaptability to change and the ability to overcome challenges (Schwarzer & Warner, 2013). Based on the theory of self-efficacy and the reviewed literature, the following hypothesis is proposed: (**H2**): Internal resources, occupational commitment and self-efficacy, mediate the relationship between perceived stress and resilience in military personnel.

The mediating role of external resources: management style and perceived effectiveness of psychological training in military gendarmes

Management style refers to the behavior a manager uses when trying to persuade subordinates to reach the organization's ideal performance (Hersey & Blanchard, 1977). Bass's

theory of transformational leadership (1985) points out a leader's ability to change the subordinates' interest from a personal one to a group-oriented one.

Military training refers to the development of workplace-related skills to increase job performance (Meyer, 2016). Adaptation of military gendarmes to critical situations can be improved and developed (Goldfein, 2014) through psychological training. Therefore, military personnel constantly take part in psychological training programs to strengthen their ability to face stress, problems (Robles, 2010) and difficulties regarding accomplishing work-related tasks or interpersonal relationships. Based on the research, the following hypothesis is proposed (**H3**): External resources, management style and perceived effectiveness of psychological training mediate the relationship between operational stress and resilience in military gendarmes.

3.2. Method

3.2.1. Participants and procedure

The sample includes N=214 military personnel. From the initial data set, 6 subjects were eliminated because they failed to answer all the questionnaire items. The average age of the participants (90.65% non-commissioned officers vs. 9.34% officers) was 38.41 (SD=9.04). The average length of military service was 14.48 years (SD=7.95).

3.2.2. Measures

The *Operational Police Stress Questionnaire (PSQ-OP, McCreary & Thompson, 2006)* was used to measure operational stress. The Cronbach's alpha coefficient for this study was 0.913.

The *Connor-Davidson Resilience Scale (CD-RISC, Connor & Davidson, 2003)* was used to measure resilience in military gendarmes. The Cronbach's alpha coefficient of this study was 0.754.

Perceived self-efficacy was measured using the *General Self-Efficacy Scale (GSES, Schwarzer & Jerusalem, 1995)*. The Cronbach's alpha coefficient of this study is 0.838.

Professional commitment (Meyer, Allen & Smith, 1993) was used to measure occupational commitment. The Cronbach's alpha coefficient for this study is 0.714.

The *Multifactor Leadership Questionnaire (MLQ – 5X, Avolio & Bass, 2004)* was used to measure leadership style. The Cronbach's alpha coefficient of this study is 0.879 for the transformational style, 0.781 for the transactional style and 0.748 for the passive-avoidant style.

The perceived efficacy of the psychological training was measured using the item "Please assess how efficient you found the psychological training to be". The answers were

rated on a Likert scale with a range of 5 points, from 1 (“extremely inefficient”) to 5 (“extremely efficient”).

3.2.3. Statistical analysis

First, descriptive and correlational statistical analyses were created using the software SPSS®, version 28 (IBM Corporation, Armonk NY; USA). Second, three longitudinal parallel mediation models were proposed and analyzed using Model 4 (Hayes, 2018) from Process version 4.0 with IBM SPSS 28.

3.3. Results

Operational stress is significantly negatively correlated with the resilience of military gendarmes ($r = -0.66, p < 0.01$), perceived self-efficacy ($r = -0.59, p < 0.01$), occupational commitment ($r = -0.62, p < 0.01$), transformational management style ($r = -0.62, p < 0.01$), transactional management style ($r = -0.52, p < 0.01$) and perceived efficacy of psychological training ($r = -0.56, p < 0.01$), while being significantly positively correlated with passive-avoidant management style ($r = 0.53, p < 0.1$).

3.3.1. Internal resources acting as mediators

The first parallel mediation model of the study investigated the predictor effect of operational stress on resilience, as well as the mediator effect, occupational commitment and perceived self-efficacy. This indicates that occupational commitment and perceived self-efficacy are partial mediators of the relationship between operational stress and resilience because the direct path is still significant. Therefore, hypothesis H1.1 is confirmed (Figure 3).

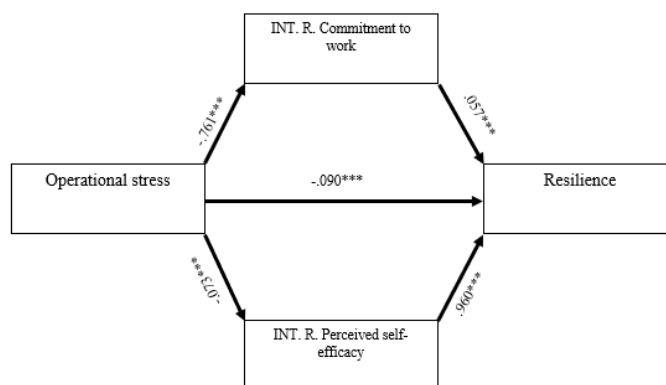


Figure number 4. The relationship between operational stress and resilience mediated by internal resources

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$

3.3.2. External resources acting as mediators

The second parallel mediation model of the study investigated the mediator effect of external resources, management style and perceived efficacy of the psychological training, in

the relationship between operational stress on resilience. This indicates that the transformational management style and the perceived efficacy of the psychological training are partial mediators of the relationship between operational stress and resilience because the direct path is still significant. Therefore, hypothesis H2.1 is confirmed (Figure 4).

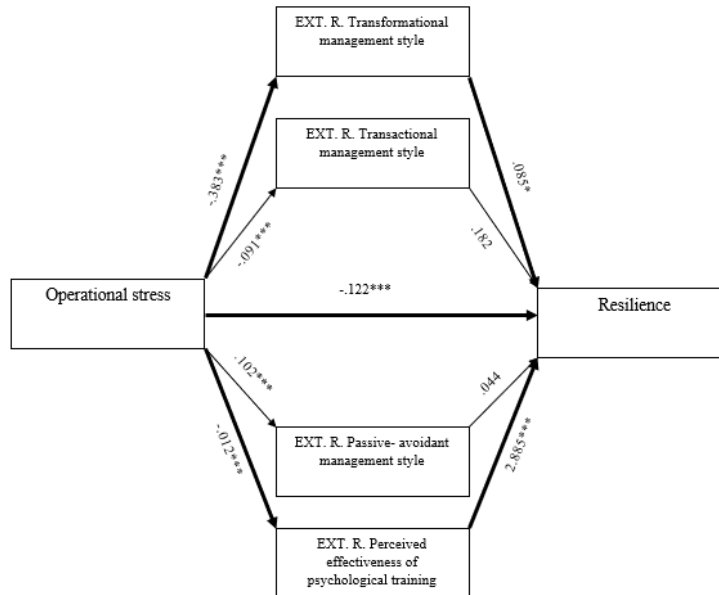


Figure number 5. The relationship between operational stress and resilience mediated by external resources

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$

3.3.3. Internal and external resources acting simultaneously as mediators

The third parallel mediation model of the study investigated the mediator effect of military gendarmes' internal and external resources in the relationship between operational stress and resilience. This proves that occupational commitment and perceived efficacy are partial mediators of the relationship between operational stress and resilience because the direct path is still significant. Therefore, hypothesis H2.2 is confirmed (Figure 5)

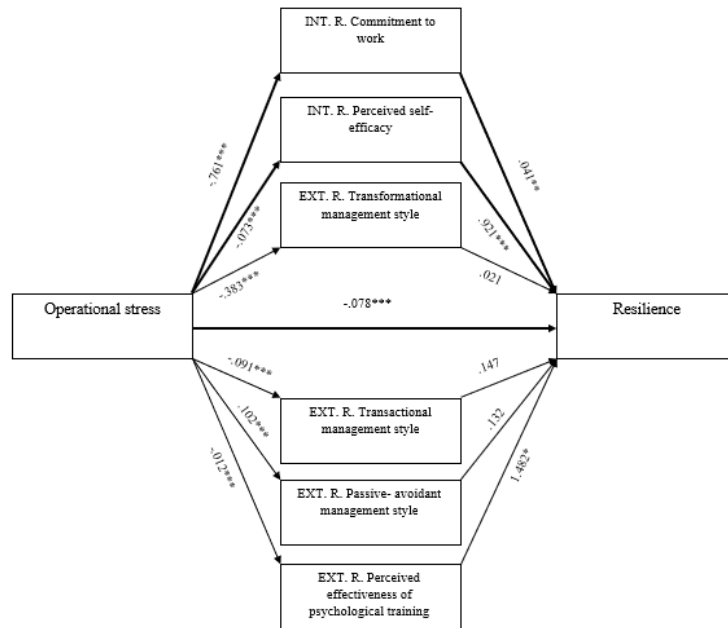


Figure number 6. The relationship between operational stress and resilience mediated by internal and external resources

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$

3.4. Discussion

This is the first study to investigate the relationship between operational stress and resilience and some of its explanatory mechanisms using a sample of military gendarmes. To clarify the direction and level of association between operational stress and resilience, including several of its explanatory mechanisms, the study introduces three parallel mediation models: the first investigates the mediating role of internal resources, external resources, and both internal and external resources. Military gendarmes are permanently exposed to operational stressors, and a high level of operational stress affects their ability to adapt, recover and develop.

This study proves that a higher level of operational stress is associated with a lower level of resilience, indicating that gendarmes reporting a higher level of operational stress exhibit lower level of resilience. The level of resilience in military gendarmes is a result of a complex interaction among biological, psychological and environmental factors (Yao et al., 2019), and it can be affected by the intensity of the experienced stressor. High adversity reduces psychological resilience or the ability of individuals to recover from emotionally negative experiences (Tugade et al., 2004), and to be effective when faced with intense and constant stressors.

When military gendarmes only have access to their internal resources, such as when acting alone, these variables partially explain the relationship between operational stress and

resilience. Operational stress negatively predicts resilience directly and indirectly through organizational commitment and perceived self-efficacy.

The negative association between operational stress and organizational commitment suggests that higher stress will reduce workplace commitment. This finding is in line with previous research indicating that, in various work environments, stress is negatively correlated with occupational commitment (Amin et al., 2018). Along with commitment, perceived self-efficacy partially mediates the relationship between operational stress and resilience of military gendarmes. Our findings indicate a significant negative association between operational stress and perceived self-efficacy of military gendarmes.

Our findings also indicate that perceived self-efficacy is significantly positively associated with resilience, supporting previous research suggesting that persons with a higher level of perceived self-efficacy, have more positive expectations of the future (Lyubomirsky, 2001), and more control over their thoughts, feelings and actions (Diehl et al., 2008), thus facilitating the development of resilience.

Transformational management style is an external resource for the military gendarme, acting as a mediator in the relationship between operational stress and resilience. This study fills the gap in the literature regarding the effectiveness of management styles specific to military police organizations by demonstrating that operational stress has a negative effect on transformational leadership. Simultaneously, the transformational leadership style ensures an increase in resilience for military gendarmes. Together with the transformational management styles, perceived effectiveness of psychological training is an external resource that acts as a mediator in the relationship between operational stress and resilience for military gendarmes. A more positive perception of psychological training's effectiveness ensures an increase in military gendarmes' resilience.

The results of this study have many practical implications. First of all, if resilience is supported and enhanced by the internal resources of military gendarmes, the intervention of health practitioners to diminish military operational stress should first aim at strengthening internal resources, such as occupational commitment and perceived self-efficacy. Along with most proximal resources, additional action can be taken on increasing the perceived effectiveness of psychological training and developing the transformational management style of military leaders. Second, military organizations can apply strategies to promote occupational engagement and perceived self-efficacy to encourage cognitive interpretations of exposure to stress with the purpose of increasing resilience. In addition, psychological training, as an external resource, can facilitate the processing aversive events, encouraging adaptive coping

mechanisms and promoting growth and personal development. Third, the study offers useful information for psychological assessment work. The results can be used by mental health specialists to facilitate the identification of vulnerable personnel and providing the best intervention to strengthen weaknesses and developing new abilities. Finally, the study has important practical implications for the managers of military organizations. It underlines the importance of implementing a transformational management style in training, guiding, empowering and looking after the subordinate gendarmes to transform their values, behaviors and reasons into long- term, high ideals.

Study 3. Organizational stress and resilience. The role of internal resources²

4.1. Introduction

Military gendarmes represent a professional group at risk, being constantly exposed to potentially traumatic events. This makes them vulnerable to developing mental health problems, such as depression, substance abuse, post-traumatic stress symptoms and family violence (Hoge et al., 2002). The significant costs associated with the recruitment, training and retention of military personnel make it important to identify and capitalize on psychological support resources. Thus, it is possible to avoid the loss of valuable military personnel, following the negative effects associated with stress (Keller et al., 2005). Given the many negative effects that traumatic impact factors have on mental and physical health, this is the first study to clarify the influence of organizational stress on resilience. Based on a parallel mediation model, the role of internal resources, work engagement and perceived self-efficacy, as protective factors in the relationship between organizational stress and resilience of military gendarmes, was also investigated.

This present study refers to the organizational stress factors faced by military gendarmes. These are both stress factors associated with organizational tasks, such as (a) role ambiguity; (b) role conflict; (c) responsibility; (d) role overload (Gomez & Afonso, 2016). The challenges and obstacles stress framework (Cavanaugh et al., 2000) states that workplace stressors have the power to enhance or diminish resilience. Research differentiates between

² This study was published as follows Balcan, A.D., Turliuc, M.N. (2023). Organizational stress and resilience. The role of internal resources. *Journal of Psychology*. 69(4). 261-338. ISSN: 0034-8759. eISSN: 2344-4665

challenging and hindering stressors. Obstructive stressors are demands that become barriers to achieving goals and become inhibitors of personal growth, as opposed to challenging stressors that create opportunities for personal growth and development (Cavanaugh et al., 2000). The effects of stress can vary depending on the intensity and duration of exposure, from relaxation to intense physiological activation (Oken et al., 2015). The specialized literature provides a broad picture of the effects of stress on resilience, in different categories of populations. The present research complements previous studies by providing important insights into how organizational stress affects resilience in the military population.

4.2. Method

4.2.1. Research overview and hypothesis

Considering the previously mentioned theoretical and empirical framework, we aim to explore a possible model of investment that not only refers to stress and resilience, but also includes work engagement and perceived self-efficacy. Our main hypotheses are as follows:

Hypotheses 1: The level of perceived stress is a significant predictor of resilience.

Hypotheses 2: Work engagement and perceived self-efficacy mediate the relationship between organizational stress and resilience of military gendarmes.

4.2.2. Measures

Organizational stress was measured using the *Organizational Police Stress Questionnaire (PSQ-Org, McCreary, D. R., & Thompson, M. M., 2001)*. The Cronbach's Alpha value for this study is 0.928.

The *Connor-Davidson Resilience Scale (CD-RISC, Connor & Davidson, 2003)* was used to measure the resilience of police officers. The Cronbach Alpha coefficient for this study is 0.754.

Perceived self-efficacy was measured using the *General Self-Efficacy Scale (GSES, Schwarzer & Jerusalem, 1995)*. The Cronbach Alpha coefficient for this study is 0.838.

Professional Commitment (Meyer, Allen & Smith, 1993) was used to measure work engagement. The Cronbach's Alpha coefficient for this study is 0.714.

4.2.3. Procedure

The testing was carried out individually, by applying the tools using the pencil-paper method, in an appropriate environment, without a time limit.

4.2.4. Participants

The research was carried out on a group of military gendarmes from a military unit, operative and non-operative personnel, with an experience in the organization of at least 6 months, N= 214 military personnel (95.32 % men and 4.67% women). The participants have a mean age of M= 38.41 years, standard deviation was SD= 9.04 and a mean seniority of M= 14.48 years, with a standard deviation SD= 7.95. 9.34% of the respondents are officers and 90.65% are non-commissioned officers.

4.3. Results

4.3.1. Preliminary analysis

In the first step, we performed descriptive and correlational statistical analyzes using the SPSS 28.0.1.0 software. In the second step we proposed and analyzed a parallel mediation model using Model 4 (Hayes, 2018) of Process version 4.0 with IBM SPSS 28.

Organizational stress correlates significantly negatively with the resilience of military gendarmes ($r = -0.64, p < 0.05$), perceived self-efficacy ($r = -0.55, p < 0.05$) and work commitment ($r = -0.60, p < 0.05$).

4.3.2. Mediation analysis

The parallel mediation model of this study addressed the predictive effect of organizational stress on resilience, as well as the mediating effect of internal resources of the military gendarmerie: work commitment and perceived self-efficacy. The direct effect is statistically significant, indicating that organizational stress significantly negatively predicts military resilience ($\beta = -0.088; p < .001$), in a relationship partially mediated by work engagement and perceived self-efficacy, thus confirming the research hypothesis (Figure number 6)

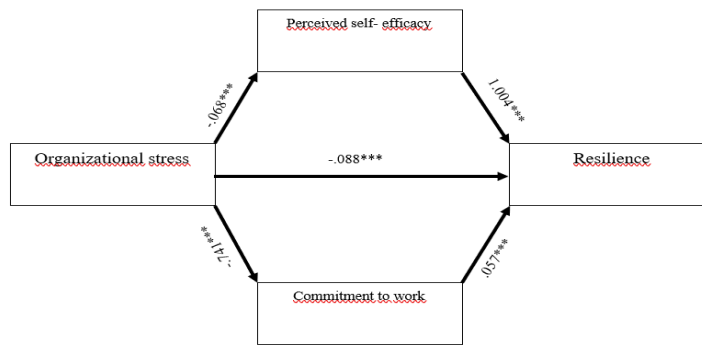


Figure number 7. The relationship between organizational stress and resilience mediated by perceived self-efficacy and work engagement

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$

4.4. Discussion

In emergency situations, critical incidents can create a sense of psychological disequilibrium, during which personnel lose the ability to organize their experiences in meaningful and effectively manageable ways (Paton, 1994). The military organization is the context in which police officers experience and interpret critical incidents and challenging events (Weick & Sutcliffe, 2007), influencing their thoughts and actions. The present research indicates that organizational stress is significantly negatively associated with resilience. It is shown that military gendarmes are exposed to organizational stress, which can arise from difficult relationships, unpredictable changes, role responsibilities, competition, service location, excessive bureaucracy, etc. Moderate stress can create excitement and energy, but too much stress can cause disruptive events to be perceived as adversity (Warner & April, 2012).

The results of this research demonstrate the mediating role of internal resources: perceived self-efficacy and work commitment, which partially explains the relationship between organizational stress and the resilience of military gendarmes. In agreement with previous research, resilience is increased when, when faced with professional stress factors, internal resources are activated (Back et al., 2016). In agreement with previous literature, the present research demonstrates a positive association between perceived self-efficacy and resilience (Violanti et al., 2016) of military gendarmes. A high level of perceived self-efficacy determines proactive responses to the stressful organizational environment (Prilleltensky et al., 2001). Perceived self-efficacy is essential for the development of resilience (Lightsey, 2006) of

military gendarmes. Work engagement represents an internal resource that intervenes as a mediator in the relationship between organizational stress and resilience. In agreement with previous research, organizational stress correlates negatively with work engagement (Amin et al., 2018). Also, high commitment causes an increase in the resilience of military gendarmes.

Study 4. Organizational stress and resilience. The role of external resources³

5.1. Introduction

Studies show that, along with inherent operational stress factors, factors related to organizational structure and the nature of the climate represent a major source of stress for personnel working in the field of public order and safety (Dollard et al, 2012). Organizational stressors related to the administration and management of organizational processes (Kop et al., 1999) represent a major source of stress for public order and safety workers because they are perceived as oppressive, useless (Kroes, 1985), uncontrollable (Davey et al., 2001) and unavoidable (Kroes, 1985). Due to the prevalence of stress, ensuring and promoting the resilience of military personnel of the Gendarmerie is a priority. In this context, this study aims to investigate the effect that organizational stress has on resilience, in a relationship mediated by the external resources of the military gendarmerie. The mediating role of different types of military management and the perceived effectiveness of psychological training activity is analyzed.

Organizational stress factors can be found in work relationships, overloading with tasks, low control, lack of communication or resources, job insecurity as well as conflicts between professional and private life (Faragher et al., 2004) with negative effects on individual health or organizational functioning (Vanhove et al., 2015). Exposure to a tolerable dose of stress can maximize the ability to respond effectively to future adversity and lead to strengthened resilience. However, repeated and intense exposure can lead to difficulties in maintaining efficiency or returning to the previous level of functioning (Oken et al., 2015). The effects of stress on resilience depend on the duration and intensity of exposure and can range from a state of relaxation to intense physiological activation. With intense, sustained and frequent exposure, negative physiological or psychological effects can be observed (Oken et al., 2015), such as a

³ This study was published as follows Balcan, A.D., Turliuc, M.N. (2024). Organizational stress and resilience. The role of external resources. *Journal of Educational Sciences & Psychology*.

decrease in resilience. The present research provides a picture of how organizational stress influences the resilience of military gendarmes, based on the hypothesis (**H1**): The level of perceived organizational stress of military gendarmes is a significant negative predictor of resilience.

This present study uses the conceptualization of leadership according to the Full Range of Leadership Model (Avolio & Bass, 1991). According to this model there are three main types of management: transformational, transactional and laissez-faire. Studies report that transformational leadership can increase military resilience (Jayasingam et al., 2019) by positively reinterpreting stressful experiences as opportunities for personal growth and development (Bartone, 2012). Studies demonstrate the effectiveness of psychological training activity in the sense of increasing resilience, both at the level of police personnel and in the military environment (Arnetz et al., 2013). Despite expectations that psychological training may influence military development, no study has directly examined its mediating role in the relationship between organizational stress and resilience. The research hypothesis (**H2**) was thus issued: External resources, management style and the perceived effectiveness of psychological training, mediate the relationship between organizational stress and the resilience of military gendarmes.

5.2. Method

5.2.1. Procedure

The testing was carried out individually, by applying the tools using the pencil-paper method, in an appropriate environment, without a time limit.

5.2.2. Participants

The research was carried out on a group of military gendarmes from a military unit, operative and non-operative personnel, with experience in the organization for at least 6 months, N= 214 military personnel (95.32 % men and 4.67% women). The participants have a mean age of M= 38.41 years, standard deviation was SD= 9.04 and a mean seniority of M= 14.48 years, with a standard deviation SD= 7.95. 9.34% of the respondents are officers and 90.65% are non-commissioned officers.

5.2.3. Measures

Organizational stress was measured using the *Organizational Police Stress Questionnaire* (PSQ-Org, McCreary, D. R., & Thompson, M. M., 2001). The Cronbach's Alpha value for this study is 0.928.

The *Connor-Davidson Resilience Scale* (CD-RISC, Connor & Davidson, 2003) was used to measure the resilience of police officers. The Cronbach Alpha coefficient for this study is 0.754.

The *Multifactor Leadership Questionnaire* (MLQ-5X, Avolio & Bass, 2004) was used to measure leadership. The Alpha Cronbach coefficient for this study: transformational style-0.879, transactional style 0.781 and passive-avoidant style 0.648.

The perceived effectiveness of the psychological training activity was measured by the item "Please rate to what extent you consider the psychological training activity to be effective".

5.3. Results

5.3.1. Preliminary analysis

In the first step, we performed descriptive and correlational statistical analyzes using the SPSS 28.0.1.0 software. In the second step we proposed and analyzed a parallel mediation model using Model 4 (Hayes, 2018) of Process version 4.0 with IBM SPSS 28.

Organizational stress correlates significantly negatively with the resilience of military gendarmes ($r = -0.64$, $p < 0.05$), transformational management style ($r = -0.62$, $p < 0.05$), transactional management style ($r = -0.46$, $p < 0.05$), perceived effectiveness of the psychological training activity ($r = -0.52$, $p < 0.05$) and positively with passive- avoidant management style ($r = 0.53$, $p < 0.05$).

5.3.2. Mediation analysis

The parallel mediation model of the study addressed the predictive effect of organizational stress on resilience, as well as the mediating effect of external resources of the military gendarmerie: transformational management style, transactional management style, passive - avoidant management style and the perceived effectiveness of the psychological training activity.

The direct effect is statistically significant, indicating that organizational stress significantly negatively predicts military resilience ($\beta = -0.118$; $p < .001$), in a relationship partially mediated by transformational management style, transactional management style and the perceived effectiveness of the psychological training activity, thus confirming the research hypothesis (Figure number 7).

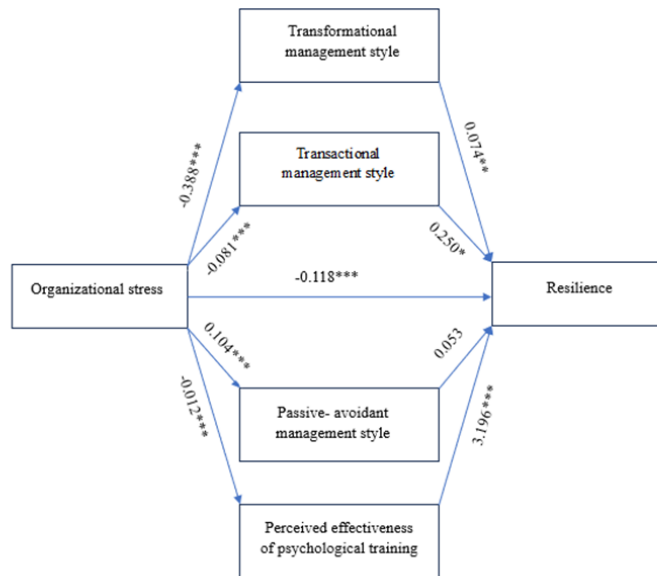


Figure number 8. The relationship between organizational stress and resilience mediated by the transformational management style, transactional management style, passive-avoidant management style and the perceived effectiveness of the psychological training activity

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$

5.4. Discussion

The more intense the exposure to organizational stress factors, the less the ability to recover and adapt (Masten & Wright, 2010). The results must be interpreted in the specific operative context of the unit at which the research was carried out. Constant exposure to stressors associated with high-risk missions makes it difficult to mobilize resilience resources when dealing with organizational stressors. Stress responses depend on the intensity and frequency of exposure and can range from relaxation to intense physiological activation (Oken et al., 2015).

This present study demonstrates the role of military external resources: transformational and transactional management style and the perceived effectiveness of psychological training activity in managing organizational stressors. The transformational leader influences and transforms subordinates' values, behaviors and motives to achieve long-term goals (Bass, 1985), encourages subordinates beyond expectations, has superior communication skills, persuasive skills and inspires followers through respect and belief. The transactional leader focuses on rewarding effort and commitment (Bass, 1985) and has an important role in strengthening resilience in the face of organizational stress. Performance rewards corresponds to the objectives against which organizational achievements are measured. It is shown that

military gendarmerie who have a more positive perception of the psychological training activity feel a lower level of organizational stress and have a higher level of resilience, compared to those who do not support the benefit of the activity. Consistent with previous research, the present study shows that the training of stress adaptation mechanisms leads to a decrease in negative evaluations of stress (Doran et al., 2006).

The study guides us towards the development of intervention programs with a preventive role, which ensure the increase of resilience in the face of organizational stress factors. The psychological training activity, as an external resource of the military gendarmerie, can facilitate the effective processing and management of organizational tasks, by clarifying role ambiguity, reducing role conflict, effectively managing workplace overload or establishing interpersonal relationships based on mutual social support. The study has important implications for managers of military organizations because it emphasizes the importance of practicing a transformational or transactional management style in guiding subordinate military personnel to ensure increased resilience in the face of organizational challenges.

Study 5. Psychological Intervention Program for Developing Resilience in the Military Personnel. A Randomized Controlled Trial⁴

6.1. Theoretical background

The well-being of military personnel, including resilience, can be increased by early preventive interventions, with the role of psychological preparation (Harms et al., 2013). In the military population, programs developed by mental health professionals improve the support network, reduce PTSD symptomatology or depressive symptoms and increase the quality of interpersonal relationships (Collinge et al., 2012). The literature suggests that individuals who experience challenging occupational events may experience numerous positive changes (Calhoun et., 2006). However, after reviewing the literature, it is unclear whether interventions aimed at reducing stress and improving resilience are effective. Although some psychological training programs have proven useful, other studies conclude that such interventions have little effect on resilience and improving mental health, either because they do not target modifiable

⁴ The study was published as follows M. N. Turliuc, A. D. Balcan. (2024). Psychological intervention programme for developing resilience in the military personnel. A randomized controlled trial. *Stress & Health*. e3399. <https://doi.org/10.1002/smi.3399>

predictors of mental health, due to the poor design of the interventions or the low methodological quality of the research (Wild et al, 2020). Some studies show significant differences between pre- and post-test measurements regarding the level of perceived stress (Anshel & Brinthaupt, 2014), while others show no changes (Patterson et al., 2012).

The literature on psychological training in the sense of stress management and resilience training is quite varied. Stress management refers to the application of techniques to improve reactions to stress (Barlow, 2007), including both relaxation and cognitive coping strategies (Cigrang et al., 2000). Most research on the effectiveness of stress management programs focuses on two types of training: stress inoculation training, in order to build tolerance to stress through exposure and resilience training, through stress management techniques (Meichenbaum, 2007). Psychological training programs are based either on theory, by organizing seminars or on realistic scenarios (Ilnicki et al., 2012) and aim to convey general information on stress, up to the use of specific methods of adaptation to traumatic situations (Oliver & Meier, 2009). Moreover, interventions in the field have adopted and integrated several different theoretical models: desensitization of officers to stress factors (Arnetz, 2009), cognitive therapy and feedback training within the US Navy's Stress Resilience Training System (Rose, 2013), mindfulness and relaxation training (Fikretoglu et al, 2019), stress inoculation/management strategies (Hourani et al, 2018) or psychoeducation (Jones, 2019).

This present study assesses the effectiveness of the *Military Resilience Training* (MRTR), a psychological intervention program on resilience, perceived stress and adaptive resources. The hypotheses were that at postintervention (T2), there would be significant differences between the intervention group and the control group regarding well-being. Specifically, at postintervention (T2), military gendarmes in the intervention group would report a lower level of perceived stress (**H1.1**), a significantly increased resilience, (**H1.2**) and (**H1.3**) an increase in the perception of available adaptive resources compared to those from the control group. We also expect that, these significant differences between the intervention group and the control group regarding stress (**H2.1**), resilience (**H2.2**) and available resources (**H2.3**) would be maintained at a 3-month follow-up (T3).

6.2. Method

6.2.1. Participants

The study was conducted on a sample of 98 military gendarmes. The average age of the participants was 37 years ($M= 37.06$; $SD= 9.54$), and the average length of military service was 13 years ($M= 13.79$; $SD= 8.94$). Of the study participants, 95.91 % were men and 4.08 % were

women. As we present in the procedure section below, the participants were randomly assigned to two groups: intervention ($n=48$) vs. control ($n=50$). In the intervention group, the average age was 39.02 years ($M= 39.02$; $SD= 8.81$), with an average length in military service of 15.72 years ($M= 15.72$; $SD= 9.29$), and in the control group, the average age was 35.18 years ($M= 35.18$; $SD= 9.91$), with an average length in military service of 11.94 years ($M= 11.94$; $SD= 8.27$).

6.2.2. Intervention

MRTR was developed to provide military gendarmes with quick, accessible and effective intervention. The program includes elements from previous interventions applied in the military environment, and was developed based on the principles of positive psychology, cognitive-behavioural psychotherapy and meditation components of mindfulness-based stress reduction developed by Kabat- Zinn (1990). To reduce dropout rates, MRTR was explicitly designed with a limited number of sessions, held bimonthly, conducted at the military's home unit and featured flexibility in scheduling work meetings, taking into account current missions. MRTR involves the teaching and practice of stress-reducing and resilience-building skills and techniques, including both knowledge transfer and hands-on activities, group discussions, role-play or applied exercises. The study examines the effectiveness of the program, both in terms of reducing perceived stress and increasing the perception of adaptive resources and increasing resilience. MRTR is a psychological training program that includes ten sessions, structured in five modules and approximately ten hours of psychological training, intended for military gendarmes, held under the coordination of the psychologist officer. The duration of a work session is approximately one hour.

The content and structure of the program include the following modules: (1) Stress and resilience concepts and characteristics; (2) Cultivation of military values and principles; consolidation of problem-solving strategies; (3) Identifying and developing strengths and resources; (4) Strengthening interpersonal relationships and (5) Developing communication skills and individual development plan.

6.2.3. Procedure

A randomized controlled trial approach with two parallel groups was used. Participants were eligible for the study if they met the following criteria: (1) aged between 18-45, (2) have a current psychological assessment, (3) they carried out specific missions of anti-terrorist intervention and/or specific actions to ensure and restore public order and safety. Following the presentation of the MRTR objectives, the modules and the time projection of the activities, the

military personnel were invited to expressed their intention to participate. After the presentation of the objectives of the study and the content of the sessions, 104 military gendarmes expressed their intention and gave their consent to participate. Initially, a random assignment of the military gendarmes was made by drawing lots: 52 in the intervention group and 52 in the control group. Thus, 104 numbered tickets (1 vs. 2: 1- intervention group; 2- control group) were mixed in a bowl. Each soldier chose a number, corresponding to the group of which he/she will be a part of the study. Four military personnel from the intervention group and two from the control group dropped out at baseline, after the initial assessment. Thus, 48 military gendarmes remained in the intervention group and 50 in the control group. The attrition rate at baseline was 5.76% of all randomized military personnel.

The study was conducted over a period of 8 months. The 5-month Military Resilience Training (MRTR) was followed by a program effectiveness evaluation three months apart. Testing of the participants was conducted at three time points: pre-intervention in October 2022 (T1, before the intervention), post-intervention (T2, at the end of the psychological training program) in March 2023, and follow-up (T3- follow-up 3 months after program completion) in June 2023.

6.2.4. Measures

The *Connor and Davidson Resilience Scale (CD- RISC*, Connor & Davidson 2003) was used to measure resilience among military gendarmes. The Cronbach's α coefficient for this study is 0.945 for time point T1, 0.936 for time point T2 and 0.918 for time point T3.

The *Military Life Scale (MLF*, Zohar et al, 2004) is the tool used to measure both the level of perceived stress and the adaptive resources of military gendarmes. (a) The *Stress Level Measurement Scale (STRESS)* is built from 67 items and measures the level of stress perceived by military personnel in the last month through a 6-point Likert scale. (b) *The scale measuring adaptive/supportive resources (ARS)* consists of 25 items that refer to the adaptive resources of the military, measured on a 6-point Likert scale. The Cronbach's α coefficient for this study is 0.923 at time T1, 0.828 at time T2, and 0.793 at time T3.

6.2.5. Data analysis plan

Data were analyzed using SPSS® software, version 28 (IBM Corporation, Armonk NY; USA). First, a descriptive statistical analysis was performed, calculating means, standard deviations and continuous frequencies for all study variables.

Pearson correlations were calculated for the study variables between time points T1, T2 and T3. Differences in demographic characteristics between the intervention and control groups were assessed using chi-square tests for discrete variables and independent samples t-tests for

continuous variables. The differences between the intervention group and the control group for study variables were assessed using independent samples t-tests.

A two-way mixed analysis of variance (ANOVA) with repeated measures (stages) was conducted to examine the main effects of group (intervention vs. control), time (pre-intervention, post-intervention, follow-up) and the group x time interaction with corresponding effect sizes (Cohen's f^2) (Cohen, 1988). To determine the effects of the intervention, the mean differences between the intervention group and the control group (preintervention and postintervention, preintervention and follow-up or preintervention and follow-up), we used the Bonferroni test. Using Cohen's d , effect sizes were classified as large ($d > 0.80$), medium ($d > 0.50$) or small ($d > 0.20$) (Cohen, 1988). Group changes between baseline and post-intervention, baseline and follow-up, and postintervention and follow-up were tested using paired-sample t-tests. In group effect sizes (Cohen's d), mean differences between measurements were calculated.

6.3. Results

6.3.1. Preliminary analyses

In the intervention group a longer length of military service was observed and in the control group a higher level of social integration. The results highlight the fact that the analysis was carried out between two comparable groups of military gendarmes, both in terms of demographic characteristics and in terms of resilience, stress and adaptive resources. At baseline, differences between the responses of military personnel from the intervention and control groups were assessed. The results show that soldiers who are part of the intervention group reported a higher level of resilience, as well as a lower level of stress and adaptive resources, compared to military gendarmes in the control group.

6.3.2. The effects of the intervention

At the level of the intervention group, following participation in the MRTR, a decrease in perceived stress, an increase in resilience, as well as an improvement in the perception of available adaptive resources were found.

6.3.2.1. Stress

Two-way mixed analysis shows a significant main effect of the group, indicated by significantly different mean stress scores between the intervention group and the control group. The analysis shows that there is no significant difference between the intervention group and

the experimental group at T1. At post-intervention and follow-up, the average stress score obtained by the intervention group decreased significantly compared to the score of the control group. The mean effect size was medium at post-intervention ($d = 0.49$) and follow-up ($d = 0.58$). Multiple pairwise comparisons using the Bonferroni test, at each time point of measurement, indicate that the intervention group's stress decreased significantly at post-intervention (T2) compared to baseline (T1), at follow-up (T3) compared to baseline (T1) (Table 18). There was no significant effect between postintervention (T2) and follow-up (T3).

6.3.2.2. Resilience

The two-way mixed Anova showed a significant main effect of group, indicating that mean resilience scores were significantly different between the intervention group and the control group. It was observed that the mean scores between the intervention group and the experimental group were not significant at baseline (T1). At post-intervention (T2) and follow-up (T3), the mean resilience score of the intervention group was significantly higher compared to that of the control group, with a medium effect size at post-intervention ($d = 0.53$) and at follow-up ($d = 0.49$). Multiple pairwise comparisons using the Bonferroni test, at each time point of measurement, indicate that the resilience of the intervention group increased significantly at post-intervention (T2) compared to baseline (T1) and at follow-up (T3) compared to baseline (T1). In the intervention group, resilience increased from baseline (T1) to postintervention (T2) and from baseline (T1) to follow-up (T3). There was no significant effect between postintervention (T2) and follow-up (T3), indicating that the effects obtained at postintervention were maintained at follow-up.

6.3.2.3. Adaptive resources

Regarding adaptive resources, two-way mixed Anova revealed a significant main effect of group, indicating that mean scores on adaptive resources are significantly different between the intervention group and the control group. The analysis showed that the mean scores between the intervention group and the experimental group were not significant at baseline (T1). At post-intervention and follow-up, the average score of adaptive resources of the intervention group increased significantly, compared to that of the control group, with a large effect size at post-intervention ($d = 0.99$) and at follow-up ($d = 0.91$). Multiple pairwise comparisons using the Bonferroni test, at each time point of measurement, indicate that the adaptive resources of the

intervention group increased at post-intervention (T2) compared to baseline (T1) and at follow-up (T3) compared to initially.

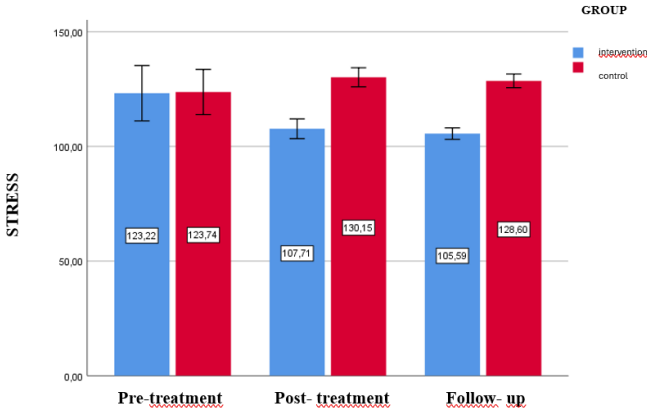


Figure number 9. Stress changes over time and in both study groups

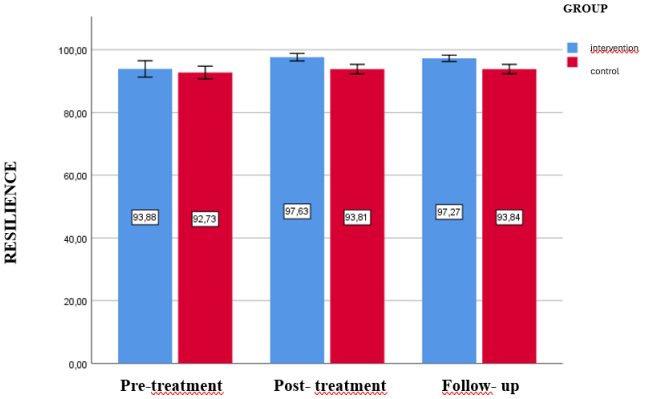


Figure number 10. Changes in resilience over time and in both study groups

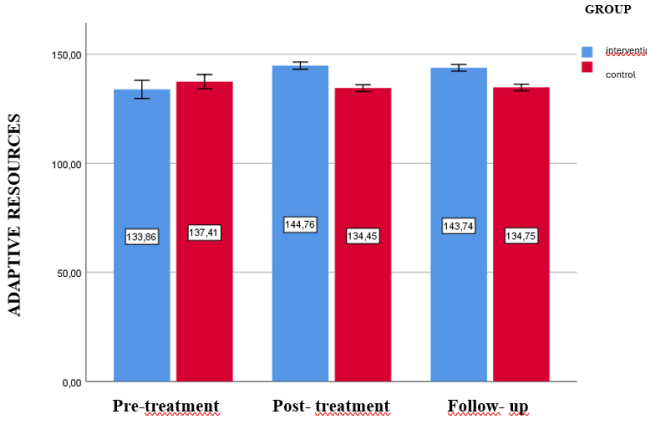


Figure number 11. Changes in adaptive resources over time and in both study groups

6.4. Discussions

Through the established hypotheses, we aimed to verify the MRTR's effectiveness at the level of perceived stress, resilience and adaptive resources post-intervention, including the three-month follow-up.

Our findings indicate that military gendarmes experienced a lower level of perceived stress following participation in the psychological training program. The effects of the intervention were of medium intensity. Analysing the results obtained on the subscales, we can see that the decrease in the global stress result is due to the improvement in the perception of military tasks and responsibilities and of relationship with authority. Participating military gendarmes felt more able to successfully perform difficult professional tasks. Consistent with previous research, soldiers who feel better prepared are much better able to cope with operational burdens (Renshaw, 2011), and perceived stress is reduced.

Military gendarmes enrolled in MRTR experienced an improvement in resilience post-intervention, that was maintained at a three-month follow-up. No changes were found in the control group. The positive effects of the program in increasing resilience can be attributed to several causes. On the one hand, the ability of military gendarmes to accept and incorporate program information and experiences generated an increase in functional adaptability (O'Brien, 1998). On the other hand, similar to previous research, resilience was built by administering the program in a setting similar to adverse situations, addressing difficult situations in professional activities, but at a time interval after exposure to stressors (Luthar et al., 2000). The program also includes multiple modules, consistent with previous research that states that new information is better internalized if it is repeated and practiced multiple times (Walton, 2014). Not least, the intervention addressed a population vulnerable to negative experiences of stress, and this population may respond especially positively to such programs (Belsky, 2016).

This present research provides evidence regarding the effectiveness of a MRTR program by increasing the perceived usefulness of available adaptive resources. A very large effect of MRTR was obtained in the development of gendarmes' personal schemas, such as confidence in personal values, ability to manage dangerous situations and develop varied interests, as fundamental elements for the development of resilience. This is of particular significance because previous research has shown that mental and emotional reactions to external situations and events are the fundamental source of stress (Flood & Keegan, 2022). The second aspect of adaptive resources, significantly improved in the training activity, is represented by the perception of the support received from family and partners. Cohesive and strong families are

a resource that supports military resilience in the face of stressors because they are based on shared beliefs that facilitate problem solving, growth and healing.

6.5. Strengths and limitations

This present research has several strengths. First, the psychological training program was not based on a single theoretical orientation, but integrated the person-centered approach, as well as cognitive-behavioural and positive psychology approaches (Faris & van Ooijen, 2012). Second, the psychological training program was focused on strengthening a combination of interdependent skills, starting from the information provided by the literature. The obtained results offer important perspectives for professional activity. Third, the relatively short duration and the content of the covered information were very attractive to the participating military gendarmes. More importantly, the main evaluative strength of RTCs is that each group is generally balanced in all characteristics, with any imbalance occurring by chance (Hewitt et al, 2010), ensuring the comparability of the groups in terms of outcomes attributable to the intervention.

However, some limitations should be noted. First, the data were collected through self-reporting questionnaires. Future studies may look at other ways of investigating and/or using information collected from multiple sources, such as colleagues or bosses. The use of self-reporting data in the case of military gendarmes may lead to desirable responses, either out of fear of stigmatization or out of a desire to avoid possible negative consequences for military careers. Additionally, the study findings should be interpreted and generalized with caution given the small sample size. Last but not least, the length of military service of the intervention group was higher than that of the control group.

CHAPTER 3. Conclusions

The context in which military gendarmes carry out their activities is very varied. Missions are characterized by specific requirements and threats, complex objectives, invisible enemies and political sensitivities. Law enforcement involves dealing with individuals from all walks of life, as well as prompt and effective action in a hostile environment. Certain aspects characteristic of military service, such as separation from family and friends, frequent travel and austere living conditions, place an additional psychosocial burden on these personnel, families and contribute to the stress and tension felt in everyday life (Lee et al., 2013).

The present research provides significant practical contributions. First, it guides mental health specialists working in military units to develop specific interventions to strengthen resilience and develop the internal resources of military gendarmes, such as work engagement and perceived self-efficacy. The interventions can be supported by the managers of military organizations, with whom an organizational climate based on mutual social support and work commitment can be strengthened. The results offer perspectives for the recruitment activity and periodic psychological assessment, in the sense of identifying personnel who present vulnerabilities in social support, effective communication or relationship skills, as well as towards the development of specific intervention strategies on these dimensions. The studies emphasize the effectiveness of the psychological training activity and provide an example of a specific intervention, useful in increasing resilience and reducing perceived stress. Psychological training becomes an essential component in the activity of military gendarmes. This facilitates dealing with stressors, awareness of difficult situations, energy management or decision-making. MRTR has proven to be an affordable, effective and rapid intervention tool useful in strengthening military resilience.

Based on the results obtained, but also on the limits, we can make the following suggestions regarding future research: to solve the issue of self-report, future research could consider including data from other sources (co-workers, superiors), as well as utilizing other investigation methods (observation). Also, further research can be oriented towards the development of longitudinal or experimental studies to investigate the stability of resilience and psychological well-being over time, the variables that maintain their role as internal/external resources, and the causalities in the relationships between them. Future studies can be carried out on the basis of samples also represented by the populations of other structures active in the field of public order and safety. Based on the MRTR model, future research can be directed towards the development and analysis of the effectiveness of other psychological training programs, which address both reducing the impact of stress factors and increasing the perception of the internal and external resources of the military gendarmes.

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