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PREDICTORS OF RESILIENCE FOR MILITARY PERSONNEL DEPLOYED IN THEATER OF OPERATIONS

PhD Thesis Extended Summary

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INTRODUCTION

The asymmetric warfare specific to the current geopolitical context exposes military personnel to demands which have a high degree of complexity, ambiguity and danger, radically changing the rules of engaging in conflict.

Under the pressure of the frequent deployments of the military in theaters of operations, obtaining and maintaining the operational capacity of the unit for as long as possible is a desideratum of any military organization.

In this context, the focus of preparation for combat has acquired new characteristics, focusing both on raising the level of combat through specific training (actions consisting of simulating tactical-operational situations, such as attacks with improvised explosive devices) and maintaining the mental functionality of the military under conditions of repeated exposure to adversity.

To achieve this goal, both at an organizational and at an individual level, specialised literature highlights that an important role is played by resilience, as it leads to supporting the optimal functionality of the military in the context of frequent deployments.

The implementation and adoption of the concept of resilience, as an essential aspect in the selection and coaching process, is the basis for the transition from a classic model of intervention, focused on disease, to a model more appropriate to the needs of members of the military organization, focused on prevention, maintenance and strengthening the psychological health of the personnel.

The present research focused on identifying the protective factors specific to military resilience, in order to improve the system used in the selection of military personnel to be deployed in theaters of operations, in order to meet organizational requirements while protecting their integrity and psychological health.

In order to achieve the objective of this doctoral thesis, the focus will be on individual resilience. The study of individual resilience in recent decades highlights the dynamic way in which it is approached, through the convergence of several areas, such as: **personality** (Werner, 1900), **motivation** (Ryan & Deci, 2000; Weiner, 2011), **coping strategies** (Campbell-Sills, Cohen, & Stein, 2006; Park, 2010), **social cognitions** (Bandura, 1989) or **existentialism** (Frankl, 1969; Maddi, 2004).

Individual resilience has been defined over time in several ways. Despite a universally accepted definition of resilience (Wald, Taylor, Asmundson, Jang, & Stapleton, 2006), many of them share some common attributes, including *the power to endure some type of traumatic stress or adversity*. Some definitions focus on the idea of coping, which results in a return to basic operating levels, while others emphasize the idea of growth (Connor, 2006; Punamaki, Qouta, El Sarraj, & Montgomery, 2006; Tedeschi & Calhoun, 2003; Tedeschi & Calhoun, 2004) or even reconfiguration and development (Fredrickson, Tugade, Waugh, & Larkin, 2003), beyond the basic operating level.

Recognizing the lack of consensus around a single definition, for the purpose of this doctoral thesis, the following working definition will be used: ***"resilience is the ability to adapt successfully in the presence of risk and adversity"*** (Jensen & Fraser, 2005).

I have chosen this definition for several reasons. Firstly, it includes *the concept of capacity and that of process,* the idea of adapting to and experiencing stressful situations. Secondly, the definition implies the existence of some protective factors associated with the process of adapting to adversity, and last but not least, this definition lends itself to conceptualizing results in a positive way (psychological health and power), to the detriment of a negative one (mental illness and weakness) (Luthar, Cicchetti, & Becker, 2000).

Specialised literature highlights the presence of several protective factors associated with resilience, such as: **self-esteem** (Fergusson & Michael, 1996), **self-efficacy** (Rutter, 1987; Sinclair & Wallson, 2004), **optimism** (Connor & Davidson, 2003; Taylor & Seeman, 1999), **self-control** (Cederblad, Dahlin, Hagnell, & Hansson, 1994), **locus of control** (Block & Block, 1980), **the power of ego** (Cassela & Motta, 1990), **confidence** (Higgins, 1994), **perseverance** (Mrazek & Mrazek, 1987), **flexibility** (Flach, 1988), **active coping** (Block & Kremen, 1996), **robustness** (Wagnild & Young, 1990) and **social support** (Iacoviello & Charney, 2014).

At the same time, Condly (2006) emphasizes that there are different levels of interaction of protective factors that must be pursued in order to understand their relationship with resilience, from the individual to the environment. Within the literature, they are divided into three levels: *1. individual level factors*: personality characteristics, talents, skills; *2. social level factors*: family, relationships in the social environment; *3. societal level factors*: community, school, culture (Condly, 2006; Greenberg, 2006; Olsson, Bond, Burns, Vella-Brodrick, & Sawyer, 2003).

In a military context, there are studies on resilience which support the facts presented above. A recent report by Bowen and Martin (2011) succeeded in dividing resilience into two groups of factors: *intrinsic* (individual factors) and *extrinsic* (family and community factors). Intrinsic individual factors include: coping, positive emotions, positive thinking, realism, and behavioral control. External factors include: emotional and social ties, as well as support, cohesion and connection within the family, the military unit and the community. These factors go beyond the context of personality traits and include the interaction between the individual, their life experience and their current situation.

One of the models used in the military environment, which is in line with the theoretical part presented above, is the military demand-resource model (MDR). Military specialists use this model to identify the main factors responsible for optimal mental preparation for combat (Bates et al., 2010). In the military demand-resource model, three variables are followed, which interact to lead to this desideratum, namely demands, internal resources and external resources. The optimal interaction between them promotes the development of resilience and the improvement of professional performance.

Based on the theory of the military demand-resource model and adopting its structure, this research aims to investigate the protective factors of military resilience in the context of their participation in missions in theaters of operations.

Thus, the demands will target the three stages of the deployment cycle, namely mission preparation, the mission itself, and social and family reintegration.

The resource environment will remain divided into two categories: internal resources and external resources, but for a better understanding of the impact and contribution of each protective factor, the composition of the categories will undergo certain adjustments. Thus, within internal resources, protective factors are divided into four categories: cognitive factors, emotional factors, personality traits and coping mechanisms, and the category of external resources includes factors specific to each stage of the deployment cycle. In addition to these categories, demographic factors, age and level of education/studies were also taken into account.

Based on the above, the doctoral thesis consists of five studies. **Study I** will aim to investigate the construct validity of the CD-RISC-25 resilience scale on a specific military population; **studies II, III and IV** will investigate the predictive value of each category of factors: demographic, cognitive, emotional, personality traits, coping mechanisms and factors specific to mission preparation, resilience and its

dimensions, in the three stages of the deployment cycle, namely pre-mission, actual mission and post-mission, and **study V** will monitor the fluctuation of resilience over time during the three stages of the deployment cycle, and identify those predictors of resilience that can be assessed even from the selection stage.

CHAPTER I

The extent of the involvement of the Romanian armed forces in international conflicts and the importance of maintaining an adequate level of mental and physical training

The contemporary world continues to face a wide range of conflicts, spread in several regions, despite the interventions and approaches of international organizations that aim to resolve conflict situations that have arisen in inter-state relations.

In order to identify and implement lasting solutions in conflict resolution, it was necessary for all regional actors to come together and establish peace as a common stake, respecting the fundamental principles of the Charter of the United Nations (UN), an international organization whose purpose is to ensure world peace, respect for human rights, international cooperation and the enforcement of the provisions of international law.

As a result, all European Union (EU) security actions have been aligned with UN objectives and interconnected with the policies of the United States of America (USA) and those of its partners around the world. For the EU, the partnership with the North Atlantic Treaty Organization (NATO) is proving to be an irreplaceable foundation, based on common history and responsibilities in crisis management.

In this geopolitical context and in order to respect the commitments that Romania has assumed as a member of the international community, the soldiers of the Romanian Army participate in international missions to fight terrorism, to support peace or provide humanitarian aid, which may be coalition-style or conducted under the umbrella of NATO, EU and UN.

The process of selecting the soldiers to be deployed in an area of operations is strictly regulated by the Ministry of National Defense. In order to be able to participate in missions carried out under the umbrella of NATO, EU or UN, members of the Romanian military must simultaneously meet several conditions. Mental and physical health are the most important criteria for inclusion in a unit.

The selection process is organized in three stages: initiation of the selection, development of the actual selection, completion of the selection and submission of reports on the status of the organization for the mission (art. 17 of M.101/2011). The selection itself is based on elimination criteria and ranking criteria, so candidates who do not meet the elimination criteria are rejected and the admitted candidates are ranked based on the score obtained in the other tests.

It is important to emphasize that the first step in the selection for the mission and the first elimination criterion is the psychological and psychotechnical evaluation of the military, this activity being performed within a maximum of ten days from the start of the actual selection. The evaluation is performed by a commission specially designed for this purpose, composed of military psychologists, with the right to practice freely. Thus, we can note the importance given to psychological aspects and the need for continuous improvement of the techniques and methods used in psychological selection for the mission.

The psychological aspects covered in the mission selection process refer, among others, to the identification of the level of resilience and its protective factors. This approach is essential for identifying military personnel who, at an individual level, can maintain an adequate level of functionality without combat capability being affected.

The final goal of this approach is to select those military personnel who demonstrate all the characteristics necessary for multiple engagement in successive missions, in order to meet institutional needs, while maintaining their mental and physical health.

In order to have adequate assessment and mission selection tools, it is necessary to understand the psychological demands that the soldiers are subjected to during a deployment cycle.

The pre-deployment stage

Fully understanding the risks in conflict areas, the complexity of the tasks to be performed, and the need to ensure the success of the mission, military organizations carry out a series of activities aimed at raising the level of combat of the soldiers to be deployed in theaters of operations. These activities are usually carried out for a period equal to or longer than the deployment period, but this may also vary depending on the type of mission and the deployment area.

The general purpose of deployment preparation is to increase the level of immersion of the soldiers in the future operational environment from a mental, physical, technical-operational and cultural point of

view. At this stage there are two major objectives, namely the psychological and the physical training of each individual.

During the period of preparation for deployment, the aim is to gradually increase the soldier's fighting capacity, strengthening confidence in themselves and in the team, developing team spirit and increasing the level of technical-operational training. All this will ensure that the fighter benefits from better mental comfort, which will allow them to act as rationally and efficiently as possible in order to achieve the success of the mission, with risks of human losses among his own forces as small as possible.

From a psychological point of view, this stage aims to increase resilience by creating a positive attitude towards violence in war, strengthening confidence in their own strength and that of the collective, developing a positive perception of their level of training, strengthening positive emotions and creating group cohesion.

The deployment stage

The actual deployment is the most demanding stage from a mental and physical point of view. This stage involves capitalizing on the entire training of the soldier, mobilizing all personal resources, becoming aware of the commitment that must be made to fulfill the mission and ensuring the physical protection of each soldier.

Successful fulfillment of the mission involves knowing the operational environment, as well as understanding it and finding solutions to optimize it, in order to achieve the final goal. Starting from the basic mission of the structure deployed in the theater of operations, the effort is focused on accomplishing key tasks which have been received or deduced, while maintaining the permanent operational capacity of the staff and the available technology.

At this stage the imminent danger to physical integrity and the risk of professional failure become real. These aspects, combined with the rigors and restrictions of the military environment, trigger a mixture of emotional feelings difficult to define and of varying intensities, which must be managed consciously, deliberately and as scientifically as possible by military personnel in order to maintain their operational capability. Knowing one's own psychological mechanisms as well as understanding those of one's colleagues, subordinates or commanders are, along with empathy, the main strengths that will ensure the success of the mission and a productive dynamic within the group. At this stage it is very important for the

soldier to develop that emotional competence necessary to effectively manage obstacles in the deployment environment.

That is why both individual and team resilience play a vital role in the way military actions are conducted. Soldiers on the battlefield must use all the protective factors they have to be able to adapt quickly and effectively to the new challenges created by the deployment environment, the tasks received and the conduct of colleagues.

The post-deployment stage

Although it seems counterintuitive, adapting to the "good" is sometimes as difficult as adapting to adversity. During exposure to stressors in the mission, certain rational and emotional mechanisms, conscious or semi-conscious, are activated and embedded deep within the soldier. Thus, disconnecting them and connecting those for normal demands often proves difficult. Poor management of this action can have significant negative effects.

It is also important to emphasize that at this stage soldiers must abruptly abandon the strategies used during the mission, mechanisms which had helped them be resilient to the specific conditions of combat, and adopt, as soon as possible, new strategies specific to normal living conditions, in order to also become resilient in the context of family and social adaptation and reintegration. These strategies are usually diametrically opposed, which is why this stage becomes challenging and demanding for both the soldier and their family.

To prevent unwanted effects, three stages are used for the social and family reintegration of soldiers.

The first stage is the decompression period and usually takes place in a risk-free, but military-specific area, immediately after leaving the conflict area, before reintegration into the family environment. The second stage is reintegration into the family environment. This takes place after returning home, in the place of origin, during the post-mission rest leave. The third stage is reintegration into the professional environment and takes place once work begins again.

The post-deployment stage aims to "decelerate" the pace of the soldier to the speed and working conditions of less demanding environments in their units of origin and to switch their combat settings into settings for coexistence in the familial, social and professional environment.

The importance of resilience in the military environment

Resilience is important for the military environment because it leads to maintaining the optimal functionality of the soldiers in the context of frequent deployments in theaters of operations. Promoting and developing resilience in this military context helps both to maintain the mental health of the soldiers and to protect the health and wellbeing of their families.

An appropriate approach to resilience in the military environment is particularly important because it can lessen the soldiers' fear of being stigmatized for the need to receive help in solving mental or behavioral problems. Although steps have been taken to address this type of problem, the organizational climate within units unwittingly continues to promote cultural attitudes and beliefs that inhibit the recognition of psychological problems and the search for mental health care (Tanielian & Jaycox, 2008).

In this context, the emphasis on strengths, such as vigor, stress management mechanisms or the available resource environment, has great potential to help military personnel receive the help they need, without fear of being judged. Moreover, the prevention approach, which emphasizes strengths rather than weaknesses, is inherently less stigmatizing than traditional, treatment-oriented interventions.

CHAPTER II
Conceptual delimitations

Resilience

Initially, the term resilience was used in the field of engineering and referred to the physical strength of materials. In this context, Merriam-Webster defines resilience as "the capability of a strained body to recover its size and shape after deformation".

The idea of physical resilience was later extrapolated to psychological resilience. The scientific study of psychological resilience emerged in the 1970s as a result of research showing that some children had surprisingly normal developmental trajectories despite being raised in extreme poverty and other adverse circumstances (Bonanno & Mancini, 2008; Garmezy, 1991; Werner, 1995). In this context, the term "invulnerable" has been replaced by the term "resilience", giving rise to a new theory (Ramirez, 2007).

Currently, there are a number of facets of resilience in the social sciences literature (Marino, 2014), such as social resilience (Cacioppo, Reis, & Zautra, 2011), academic resilience (Banard, 2004), community resilience (Pooley, Cohen, & O`Connor, 2006) or family resilience (Walsh, 1996, 2002a, 2006).

In order to achieve the objectives of this doctoral thesis, the focus will be on individual resilience. The study of individual resilience in recent decades highlights the dynamic way in which it is approached, through the convergence of several areas, such as: personality (Werner, 1900), motivation (Ryan & Deci, 2000; Weiner, 2011), coping strategies (Campbell-Sills, Cohan, & Stein, 2006; Park, 2010), social cognitions (Bandura, 1988) or existentialism (Frankl, 1969; Maddi, 2004).

Individual resilience has been defined over time in several ways. Despite the lack of universal acceptance of a definition for resilience (Wald et al., 2006), many definitions share some common attributes, including the power to withstand a particular type of traumatic stress or adversity. Some definitions focus on adaptive coping that results in a return to basic functioning levels, while others emphasize the idea of growth (Connor, 2006; Punamaki et al, 2006; Tedeschi & Calhoun, 2003; Tedeschi & Calhoun, 2004) or even reconfiguration and development (Fredrickson et al., 2003), beyond the basic operating level. Another approach indicates that there are a number of factors that contribute to the resilience process (Lightsey, 2006; Luthar, 2006; Masten, 2001; Reivich, Seligman, & McBride, 2011) in order to achieve the desired result, such as: self-esteem (Fergusson & Michael, 1996), self-efficacy (Rutter, 1987; Sinclair & Wallson, 2004), optimism (Connor & Davidson, 2003; Taylor & Seeman, 1999), self-control (Cederblad et al., 1994), locus of control (Block & Block, 1980), power of the ego (Cassela & Motta, 1990), confidence (Higgins, 1994), perseverance (Mrazek & Mrazek, 1987) and flexibility (Flach, 1988).

Recognizing the lack of consensus around a single definition, for the purpose of this study, we use the following working definition: “resilience is the ability to successfully adapt in the presence of risk and adversity” (Jensen & Fraser, 2005).

I have chosen this definition for several reasons. First, it encapsulates the concept of capacity and that of process, the idea of adapting to and experiencing stressful situations. Also, in accordance with specialised literature, it lends itself to conceptualizing the results in a positive way (psychological health and strength), to the detriment of a negative one (mental illness and weakness) (Luthar et al., 2000).

Resilience in the military environment

The current armed conflicts present much more variety and a much higher degree of complexity for the soldiers, compared to the demands of previous wars.

Today's military actions are carried out against non-state actors (terrorist groups, organized crime, etc.), take place over a long period of time, which requires the soldiers to carry out successive missions, are complemented and enhanced by an increased flow of information, which is often uncertain and ambiguous and, from a psychological point of view, involve extreme demands (Bartone, 2006; Burke, Pierce, & Salas, 2006).

Against this background, there was a need to create a comprehensive model for evaluating military personnel performing missions in theaters of operations (Mullen, 2010; Land, 2010).

The proposed military demand-resource model (MDR) is the result of research conducted by a multidisciplinary team composed of soldiers, psychologists, doctors and researchers from other fields, who studied the literature to identify the main factors underlying optimal mental training for combat (Bates et al., 2010).

MDR was built by integrating the theory of resource conservation (Hobfoll, 1989) with the resource-demand model of the workplace (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001), theories which argue that resources and demands must be constantly and continuously monitored in order to be able to ensure the necessary conditions for fulfilling the demands imposed by the professional context.

In the military demand-resource model, three variables have been identified that interact to lead to the desired result, namely demands, internal resources and external resources. The optimal interaction between them favors the development of resilience and the improvement of professional performance (figure 1).

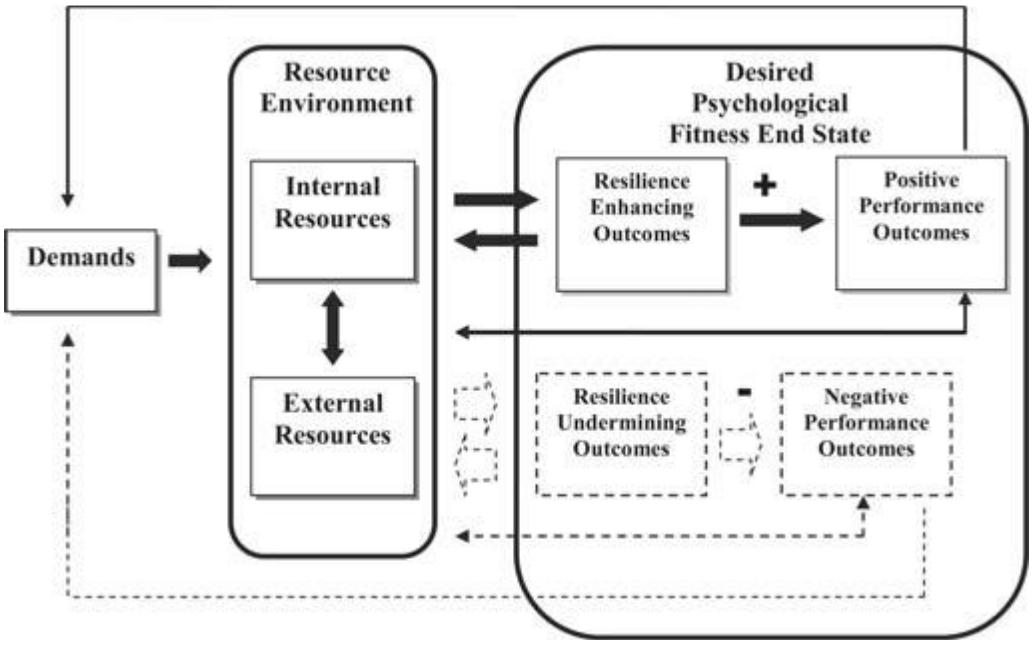

Figure 1: Demand-resource model (Bates et al., 2010)

Demands address those aspects of the environment that involve the expense of physical, psychological, social or spiritual resources. Fully understanding these demands and starting from the general list of resources proposed by Hobfoll & Lilly (1993), the MDR model proposes to divide the resource environment into internal resources, which belong exclusively to the individual, and external resources, which relate to the familial, socio-professional and cultural environment. Both categories of resources are necessary for any soldier to be able to achieve the objectives of the mission, to meet the challenges of the deployment environment and at the same time, to maintain a state of wellbeing, development and personal growth.

Based on the theory of the military demand-resource model and adopting its structure, this research aims to investigate the protective factors of the soldiers' resilience in the context of their participation in missions in theaters of operations. Thus, the demands will target the three stages of the deployment cycle, namely mission preparation, the mission itself, and social and family reintegration.

The resource environment will remain divided into two categories: internal resources and external resources, but for a better understanding of the impact and contribution of each protective factor, the composition of the categories will undergo certain adjustments.

Thus, within internal resources, protective factors are divided into four categories: cognitive factors, emotional factors, personality traits and coping mechanisms, and the category of external resources includes factors specific to each stage of the deployment cycle.

In addition to these categories, demographic factors were also taken into account, namely age, marital status and the level of education/studies.

The following table presents the internal and external resources, psychological constructs which are studied in this paper.

Table 1. Psychological dimensions studied

Resource environment	**Factor category**	**Psychological dimensions**
Internal resources	Cognitive factors	Attitude towards war
		Attitude towards corporal punishment
		Attitude towards legal violence
		Attitude towards intimate violence
		Rational beliefs about oneself, others and life
		Accepting oneself
		Self-efficacy
	Emotional factors	Positive emotions
		Negative emotions
		Emotional distress
		Dispositional optimism
	Personality traits	The search for sensations
		Sociability
		Activism
		Strength of character
	Coping mechanisms	Problem-oriented coping
		Avoidance coping
		Socially-oriented coping
		Emotion-oriented coping
External resources	Factors specific to the	Number of missions
		Seniority in the Army

	pre-deployment stage	Life events
		Relationship with the family in which they grew up
		Deployment training and preparation
		Pre-deployment combat experience
		Deployment concerns
	Factors specific to the deployment stage	Number of missions
		Seniority in the Army
		Life events
		Relationship with the family in which they grew up
		Deployment training and preparation
		Deployment environment
		Combat experience
		Post-combat experience
		CBRN exposure (nuclear, biological and chemical agents)
		Concerns during deployment
		Family/friends support
		Military unit support
		Relationships during deployment / Harassment
		Concerns about family life
	Factors specific to the post-deployment stage	Number of missions
		Seniority in the Army
		Life events
		Family/friends support
		Family relationships

CHAPTER III

Research aims and methodology

1. Aims

The present paper aims to identify the specific predictors of soldiers' resilience during a cycle of deployment in the theater of operations. For this purpose, the doctoral research was divided into five studies.

Study I - Psychometric properties of the Connor-Davison CD-RISC resilience scale: preliminary data on a Romanian military population, aims to validate the CD-RISC-25 resilience scale on a specific military population.

Study II - The role of protective factors in explaining the resilience of the soldiers in the pre-deployment stage, aims to highlight the predictors of military resilience in the pre-deployment stage and has as its aims:

- investigating the predictive value of each category of factors: demographic, cognitive, emotional, personality traits, coping mechanisms and factors specific to mission preparation, for resilience in the pre-deployment stage;
- exploring the predictive value of each category of factors on the two dimensions subsequent to the resilience of the pre-deployment stage.

Study III - The role of protective factors in explaining the resilience of the soldiers in the deployment stage, aims to highlight the predictors of military resilience in the deployment stage and has the following aims:

- investigating the predictive value of each category of factors: demographic, cognitive, emotional, personality traits, coping mechanisms and factors specific to mission preparation, for resilience in the deployment stage;
- exploring the predictive value of each category of factors on the two dimensions subsequent to resilience in the deployment stage.

Study IV - The role of protective factors in explaining the resilience of the soldiers in the post-deployment phase, looks at the post-deployment stage of the mission cycle and has as aims:

- investigating the predictive value of each category of factors: demographic, cognitive, emotional, personality traits, coping mechanisms and factors specific to mission preparation, for resilience in the post-deployment stage;
- exploring the predictive value of each category of factors on the two dimensions subsequent to resilience in the post-dislocation stage.

Study V- Investigating resilience and its predictors during an entire deployment cycle, aims to track the fluctuation of resilience over time, during the three stages of the deployment cycle, and identify those predictors of resilience that can be assessed as soon as the selection phase.

2. Research methodology

Participants

These studies involved samples of convenience, consisting of active male and female soldiers from an operationalized unit, who were assigned to participate in a mission in the theater of operations in Afghanistan. The soldiers in this unit are from all weapons / specializations (infantry, artillery, engineering, CBRN, transmissions, intendance, vehicles, etc.) and from all hierarchical categories (officers, non-commissioned officers, military foremen and professional graded soldiers), the samples being based on their willingness to participate in the studies by expressing individual consent, after explaining the purpose of this research, the manner of conduct, ensuring the anonymity of the answers and the confidentiality of the information obtained.

To determine the need for participants in each study, the Gpower 3.1.9.7. software for Windows was used.

For study I, two samples were used. A sample of 434 male soldiers, aged 24 to 50 years (M = 34.83, SD = 6.14), used for exploratory factor analysis, and a sample of 679 military participants, of which 605 were men and 74 women, aged between 18 and 59 years (M = 38.37, SD = 9.07), to perform confirmatory factor analysis.

The sample of the second study consisted of 157 soldiers, with an average age of M = 34.83 (SD = 6.17). Of these, 63.7% are married, 31.2% are single and 5.1% are divorced. Most of the soldiers have completed secondary education, namely 73.2%, and 26.8% have higher education.

The third study involved 193 soldiers, with an average age of M = 34.79 (SD = 6.35). Of these, 64.8% are married, 35.6% are single and 4.6% are divorced. Most of the soldiers, namely 71.5%, have completed secondary education, and 29.5% have higher education.

In the fourth study, the sample consisted of 133 soldiers, with an average age of M = 33.89 (SD = 5.55). Of these, 61.7% are married and 38.3% are single. Of these, 75.2% are high school graduates and 24.8% have higher education.

The sample for study V consists of 50 male soldiers, with an average age of M = 33.16 (SD = 6.23). Of these, 52% are married, 42% are single and 6% are divorced. Most of the soldiers have completed secondary education, namely 79.6%, and 20.4% have higher education.

Tools

1. Connor-Davidson resilience scale

The scale was created in order to measure resilience, conceptualized as the accumulation of personal qualities that allow an individual to successfully cope with adverse situations. The tool is made up of 25 items, which participants are asked to answer on a five-step Likert scale.

2. Scale of attitude towards violence

The scale was created to measure how violence is perceived, starting from the idea that attitudes towards violence can be thought of as a distinct individual variable, encompassing both cognitive and affective components and imprinting how we evaluate alternative situations and courses of action.

3. Scale of attitudes and beliefs

This scale was built to measure irrational beliefs. It consists of 72 items, numbered from 5 to 76, arranged in a matrix consisting of three factors: "cognitive processes", "content areas" and "phrasing mode".

4. The questionnaire of unconditional acceptance of oneself

The scale was built to measure one's unconditional acceptance.

This tool is made up of 20 items, which participants are asked to answer on a seven-step Likert scale. The author highlights a good internal consistency of the questionnaire with an Alpha Cronbach of 0.73.

5. Scale of self-efficacy

This scale was built to measure one's self-efficacy, that is, one's belief that one's own actions may be or are responsible for the success of a particular activity.

6. Inventory of positive and negative emotions

Being one of the most used tools for assessing affectivity, the inventory was created in order to identify pure markers of either positive or negative emotions. The inventory consists of 20 words that indicate different emotional feelings, grouped into two distinct categories: positive emotions and negative emotions.

7. The dispositional optimism test

Initially, the scale was created to assess individual differences in mood optimism. The revised version of the test is a way of measuring the optimism construct, conceptualized as a bipolar construct, having at one extreme the optimistic attitude, and at the other extreme the pessimistic attitude (Lai, Cheung, Lee, & Yu, 1998).

8. The affective distress profile

The scale was constructed to measure dysfunctional and functional negative emotions, as well as positive emotions. It is made up of 39 words that indicate different emotions, grouped into three distinct categories: worry/anxiety, sadness/depression, and positive emotions.

9. The Zuckerman-Kuhlman personality questionnaire

This questionnaire was designed to define the basal factors of personality, presented in a model in which personality traits relate to their genetic basis (Zuckerman, Kuhlman, Joireman, Teta, & Kraft, 1993).

10. The scale of perseverance in a task

The scale measures perseverance in a task and preferences for long-term goals. GRIT involves the search for challenges, the desire to overcome all obstacles, showing a sustained effort and maintaining interest over the years for the set goals despite failure, adversity or moments of stagnation.

11. Coping Strategies Questionnaire

The questionnaire investigates the ways in which a person responds to stress. The initial inventory consisted of 53 items, grouped into 14 subscales, to which the author adds seven more items, three for the substance abuse subscale and four to create a new subscale called humor (Fontaine, Manstead, & Wagner, 1993).

12. Inventory of risk and resilience related to the deployment of military personnel in theaters of operations 2

The inventory aims to assess the factors that have long-term implications for the mental health of military personnel participating in missions in theaters of operations. The first version of the inventory (King et al., 2006) aimed to highlight the complexity of the factors which influence the soldiers participating in missions in theaters of operations.

It consists of 17 scales seen as distinct risk and resilience factors: 2 pre-deployment factors, 12 deployment factors and 3 post-deployment factors.

Procedure

Data collection took place in three phases:

- collection phase one: 10 days before the deployment to the Afghanistan theater of operations, after the end of the mission preparation phase;
- collection phase two: 5 days after repatriation from the theater of operations Afghanistan, after completing a mission of approximately 9 and a half months;
- the third phase of collection: 5 months after returning from the mission, after the end of their leave and resuming their professional activity.

These three phases overlap on the stages of a deployment cycle (pre-deployment, actual deployment and post-deployment) of any soldier performing a mission in the theater of operations.

A set of tests was created for each stage of the deployment cycle. These sets of tests have a common base of tools and questionnaires specific to each stage of the deployment cycle, and have an informed consent form on the front page. The common tests are: CD-RISC-25, ATVS, ZKPQ Questionnaire, ABS-2, COPE, GRIT Scale, LOT-R, PANAS, PDA, SES, USAQ and ERQ.

Regarding the particularities of the test set used, the 17 scales of DRRI-2 (Deployment Risk and Resilience Inventory) were used, distributed for each specific stage, as follows:

- in the first phase of collecting the questionnaires: life events before deployment, relationship with the family in which they grew up, training and preparation for the deployment, exposure to combat and worries related to the mission;

- in the second phase of collecting the questionnaires: life events before deployment, relationship with the family in which they grew up, training and preparation for deployment, environment in which they were deployed, exposure to combat, post-combat experiences, exposure to chemical, biological, radiological and nuclear agents, concerns about the mission, support from family/friends, unit support, relationships during deployment/harassment, concerns about family and life, and family events;

- in the third phase of collecting the questionnaires: life events before deployment, relationship with the family in which they grew up, exposure to combat, life events after deployment, support after deployment and family life after deployment.

For all three stages, the test sets were administered with pencil and paper, the average duration of completion being two hours. For the evaluation sessions, the soldiers were organized in groups of 15 people each, and the administration of the test sets was performed in the presence of the researcher.

CHAPTER IV

Original research contributions

Study I: Validation of the Connor-Davison CD-RISC-25 resilience scale on a Romanian military population

The main purpose of the research is to investigate the construct validity of the CD-RISC scale 25, on a specific military population. The results show that this scale is a reliable psychometric tool for assessing resilience, with a high internal consistency that can be applied to a military population.

The initial factorial structure proposed by Connor and Davison (2003), with five factors, does not replicate on this sample of Romanian soldiers. The data showed that CD-RISC is a two-dimensional tool rather than a multidimensional tool for this population.

Thus, the exploratory factor analysis suggests the retention of a two-dimensional model with 14 items, and the confirmatory factor analysis claims that this two-dimensional model fits well with the data.

The exploratory factor analyses carried out in this study suggest that items 3, 6, 7, 9, 13, 21, 22, 23, 24 and 25 are not part of the resilience construct. In the initial version of the CD-RISC scale 25, items 3 and

9 make up the “spiritual influence” factor, and items 13, 21 and 22 make up the “control” factor. As the results show, for Romanian military personnel, spiritual influences and control, as conceptualized by Connor and Davison, are not structural components of resilience.

These results are in line with several studies on the psychometric properties of CD-RISC 25. Some research shows that the factorial structure of CD-RISC 25 varies depending on the cultural context of the studied population (Ionescu, 2013) and the five-factor factorial structure of CD-RISC 25 is not maintained in all cultures (Velickovic et al., 2020).

For example, in a Swedish sample, the authors showed that the remaining model excludes items 3 and 9 that form the “spiritual influences” from the initial model (Velickovic et al., 2020). Similar decisions were made by researchers in Australia and Spain, where their final model did not include all items from the original model (Burns & Anstey, 2010; González, Sierra, Martínez, & Martinez-Molina, 2015).

Based on research conducted in Iran, Khoshouei (2009) highlights a factorial structure with 4 factors, namely: "motivation", "self-confidence", "tenacity" and "adaptability", without the dimension of "spirituality".

Yu and Zhang (2007) also pointed out that in their sample, the dimension of spirituality is not a factor of resilience, as presented by the authors of the CD-RISC 25 scale.

In research on a South African sample, Jorgensen and Seedat (2008) also highlight a factorial structure different from that described by Connor and Davison (2003), composed of three dimensions: tenacity, adaptation and spirituality.

Conclusions

The results show that in this specific military sample in Romania, CD-RISC 25 is a valid two-dimensional scale, composed of 14 items. The scale produces a total score of resilience, based on two factors: "self-efficacy and perseverance in the face of challenges" and "decision-making skills in risk situations".

Moreover, this study highlights the idea that “spiritual influence” and “control”, as defined by Connor and Davison (2015), are not part of the construction of military resilience.

The scale of resilience, adapted and validated on the military population, will be hereinafter referred to as CD-RISC-14-v-military and will be used in the studies in this paper.

Study II: The role of protective factors in explaining the resilience of the military in the pre-deployment stage

The objectives of the study were to investigate the predictive value for each category of factors: demographic, cognitive, emotional, personality traits, coping mechanisms and specific, in explaining the variance of resilience assessed in the mission preparation stage and exploring the impact of each category of factors on those two dimensions of resilience: "self-efficacy and perseverance in the face of challenges" and "decision-making skills in risk situations".

The results of the study are presented for each category of factors. First, the relationship between the category of factors and resilience is presented, and then the relationship between the same category and the subsequent dimensions of resilience is explored.

Out of the category of cognitive factors, perceived self-efficacy, attitude towards war and attitude towards legal violence are positively associated with resilience at this stage. Therefore, the more the soldiers perceive themselves as effective in preparing for the mission and consider war and legal violence to be necessary and justified, the more resilient they may be.

Increased confidence in one's ability to cope with the stressors specific to the deployment environment, to effectively solve obstacles generated by that context, increases the resilience of the military to this type of stressors. The main aim of the process of psychological preparation for the mission is to develop the mechanisms and psychological processes necessary for the soldiers to cope with the stress generated by the actions carried out in the theaters of operations. In this context, we can say that the soldiers who perceive violence as a possible, necessary and legitimate way to solve problems, use this belief as a coping mechanism to become more resilient, which could make them more efficient in managing violence in the deployment environment.

The results are consistent with the literature, which emphasizes the importance of a positive and stable perception of self-efficacy in creating a strong sense of self-esteem (Benight & Bandura, 2004; Rutter, 1985; Garmezy, Masten, & Tellegen, 1984; Gillespie, Chaboyer, & Wallis, 2007; Skodol, 2010), a feeling that is positively associated with adaptive and prosocial behaviors (Bonannno et al., 2007; Maddi, 1999), as well as with increased resilience (Mak, Ng, & Wong, 2011; Mancini & Bonanno, 2009).

Statistical analyses within the proposed regression model indicate that the contribution to the prediction of resilience by the category of cognitive factors is significant and with an average effect size. However, none of the cognitive factors is a significant predictor of resilience in the pre-deployment stage.

The contribution of the category of cognitive factors in explaining the variance of the dimensions subsequent to resilience is statistically significant and of low intensity. Similar to the results obtained for resilience, cognitive factors are not predictive of its dimensions either.

From the category of emotional factors, positive emotions are positively associated with the resilience assessed at this stage. Therefore, an increased level of the soldiers' resilience in the preparation phase of the mission is associated with a predominance of positive emotions.

Statistical analyses within the proposed regression model indicate that the contribution to the prediction of resilience in the pre-deployment stage brought by the category of emotional factors is significant, but of low intensity. However, positive emotions are a significant predictor of resilience in the mission preparation stage. Thus, it is expected that the soldiers who mainly experience positive emotions will develop greater resilience during the preparation for the mission.

The identification of positive emotions as a predictor for resilience in the pre-deployment stage is consistent with the studies of researchers Benetti and Kambouropoulos (2006) and Liu, Wang, & Li (2012) showing that resilience is associated with facilitating positive emotions and mitigating negative ones.

Regarding the contribution of the emotional factors category in explaining the variance of the two dimensions subsequent to resilience, there is a significant difference. If for the dimension of “self-efficacy and perseverance in the face of challenges” emotional factors have a statistically significant and high-intensity contribution, and positive emotions represent a significant predictor at this stage, the dimension of “decision-making skills in risk situations” does not correlate with any emotional factor.

Out of the categories of personality traits and coping mechanisms, activism, the search for sensations and problem-centered coping are positively associated with resilience.

Soldiers who exhibit activism and the pursuit of sensations as personality traits, and those who tend to use predominantly problem-centered coping, tend to be more resilient during mission preparation. Their need to undertake mainly stimulating and challenging activities, combined with their ability to not get stuck when faced with obstacles, but on the contrary, to focus on finding solutions, makes them more resilient in the context of a process of learning and self-improvement, specific to pre-deployment.

Statistical analyses within the proposed regression model indicate that the contribution to the prediction of resilience in the pre-deployment stage brought by the categories of personality traits and coping mechanisms is insignificant.

Regarding the dimensions following resilience, the contribution of the categories of personality traits and coping mechanisms remains insignificant.

From the category of factors specific to the pre-deployment stage, training and preparation for the deployment, life events and relationships with the nuclear family are positively associated with resilience in this stage.

Burgo (2012) shows in his book that the family environment we encounter after birth plays an important role in shaping the adults we will become. He argues that adults from dysfunctional backgrounds fear new and unusual experiences, a fear that makes them resist risk-taking, hesitate when they have to give up familiar aspects in favor of the unknown, or avoid forming new relationships. All of these aspects can lead to the idea that a supportive family environment can be associated with an increased level of resilience in adult life.

The present research reinforces this idea and shows that there is a positive association between nuclear family relationships and the soldier's resilience during mission preparation. Thus, a supportive environment during childhood can lead to increased resilience by developing self-confidence and the ability to withstand "emotional storms" (Winnicott, 2014).

Statistical analyses within the proposed regression model indicate that the contribution to the prediction of resilience in the pre-deployment stage brought about by the categories of specific factors is significant and has a medium-intensity effect. The results also indicate that factors specific to life events, training and deployment preparation are significant predictors of resilience at the mission preparation stage.

Thus, military personnel who have effectively managed difficult life events and who consider themselves properly prepared and trained to cope with a mission are expected to develop greater resilience in the mission preparation phase.

The identification of a significant interaction effect between resilience and the predictor of life events is consistent with the results of the study by Seguin, Turechi and Lesage (2006). Their research highlights a negative association of stressful life events with resilience, explained by the idea that the sum of hardships in one's life result in a real process of erosion and inefficient adaptation.

Although in this paper exposure to stressful life events is positively associated with resilience, these results do not disprove the literature. The soldiers who participated in the present study overcame the few critical events they reported by using effective adaptation strategies, which led to increased feelings of self-efficacy, avoidance of mental erosion and the reporting of an increased level of resilience.

The identification of training as a predictor of resilience is consistent with the principle of positive psychology, which shows that education focuses on developing behavioral regulation skills, positive behavioral goals, and positive motivation during learning (Blunt & Psychl, 2000; Dweck, 2012; Parks & Guary, 2009; Ryan & Deci, 2000). The premise of this principle is that various psychological skills are developed through active involvement in overcoming challenging/stimulating experiences (Marino, 2014).

In a training program, exposure to challenging events is required of students. Thus, by creating borderline situations and exposing the soldiers to them within a tactical framework, this facilitates personal growth (Taylor, 1997) which helps the individual to change their perception for the purpose of psychological maturity (Kegan, 1982).

Thus, the more effective the soldiers consider the training program to be and the more successful they are in achieving its training objectives and tasks, the more resilient they become.

The contribution of the category of specific factors in explaining the variance of the dimensions subsequent to resilience is similar and statistically significant for the dimension of "self-efficacy and perseverance in the face of challenges". For this dimension, training and deployment preparation are still significant predictors. The “risk-making skills” dimension correlates significantly only with life events and retains this factor as a significant predictor.

Regarding the contribution of each category of factors on resilience, the results show that a significant contribution to the prediction of resilience in the pre-deployment phase is made by cognitive factors, emotional factors and factors specific to mission preparation.

Conclusions

In conclusion, of the five categories of factors investigated, cognitive factors, emotional factors and mission-specific factors have a significant contribution in explaining the variance of resilience at this stage and the proposed model explains one third of the variance of resilience in the pre-deployment stage.

Of all the factors introduced in the regression model, positive emotions, life events, training and deployment preparation are significant predictors of resilience at this stage.

Therefore, it can be said that soldiers with a high level of resilience in the mission preparation stage are described as people who have effectively managed multiple life events, experience mostly positive emotions and perceive mission preparation as useful and effective.

By investigating the predictive value of each category of factors on the two dimensions of resilience, it can be observed that for the dimension "self-efficacy and perseverance in the face of challenges" cognitive, emotional and specific factors have a significant contribution in explaining its variance. The proposed model explains 36% of the variance of this dimension and the significant predictors are positive emotions, avoidant coping, and training and deployment preparation.

For the "decision-making skills in risk situations" dimension, the categories of cognitive and specific factors have a significant contribution in explaining the variance. The proposed model explains 16% of the variance of this dimension, and life events are the significant predictor.

Study III: The role of protective factors in explaining the resilience of the soldiers in the deployment phase

The objectives of the study were to investigate the predictive value for each category of factors: demographic, cognitive, emotional, personality traits, coping mechanisms and specific, in explaining the variance of resilience during the mission and exploring the predictive value of each category of factors on the two dimensions of resilience: "self-efficacy and perseverance in the face of challenges" and "decision-making skills in risk situations".

The results of the study are presented for each category of factors. First, the relationship between the category of factors and resilience is presented, and then the relationship between the same category and the subsequent dimensions of resilience is explored.

From the category of cognitive factors, perceived self-efficacy, unconditional acceptance of oneself and rationality are positively associated with resilience during the mission and the attitude towards legal violence is negatively associated with it. The more rational the soldiers are, the more realistic and positive is the image of their own worth, and the more they perceive themselves as performing within the unit and no longer seek to justify their actions through the legitimacy of violence, the more resilient they can become during deployment.

In this context, the anticipation of positive results in the actions taken, due to the knowledge and skills possessed, can lead to increased resilience, results which are in accordance with the literature (Bandura, 1982; Simons, 1994).

Statistical analyses within the proposed regression model indicate that the contribution to the prediction of resilience by the category of cognitive factors is significant and has a big effect. Consistent with this result, the cognitive self-efficacy factor is a significant predictor of the mission stage resilience.

Thus, it is expected that the soldiers who are confident in their personal ability to employ the cognitive and motivational resources necessary for the successful accomplishment of the given tasks will develop a greater resilience during the mission.

These results are in agreement with the studies of Collishaw et. al. (2016) which show that self-efficacy prospectively predicts resilience. This general positive perception on one's ability to cope with stress and adversity (Benight et al, 1999; Bandura, 1977) is directly linked to resilience (Connor & Davison, 2003; Hegberg & Tone, 2015).

The contribution of the category of cognitive factors in explaining the variance of the dimensions subsequent to resilience is statistically significant for both dimensions. The dimension of "self-efficacy and perseverance in the face of challenges" is positively associated with perceived self-efficacy, unconditional acceptance of oneself and rationality, and negatively associated with attitudes towards legal violence. Cognitive factors have a statistically significant and high-intensity contribution in explaining the variance of this dimension. The dimension of "decision-making skills in risk situations" is positively associated only with perceived self-efficacy, and the contribution made is statistically significant but of low intensity. In the same vein, perceived self-efficacy is a predictor for both dimensions.

From the category of emotional factors, optimism and positive emotions are positively associated with mission resilience and negative emotions and distress are negatively associated with it. Therefore, a high level of resilience in soldiers during the mission is associated with a high level of optimism, a predominance of positive emotions and a low level of distress.

The results are supported by the research of Klohnen (1996), Masten (2001) and He, Cao, Feng, Guan and Peng (2013) which showed that resilient individuals have a number of common traits. They are described as always optimistic, feeling that life is full of hope, and curious and open to new experiences. It has also been found that people with a high resilience use positive emotions to alleviate psychological stress

by reversing the negative impact of negative emotions or distress (Tugade & Fredrickson, 2004; Zautra, Johnson, & Davis, 2005).

In a military environment, resilience has been negatively correlated with some of the negative effects of combat stress, such as suicide, depressive symptoms, or alcohol-related problems (Green et al, 2010).

Statistical analyses within the proposed regression model indicate that the contribution to the prediction of resilience brought about by the category of emotional factors is not significant. However, emotional distress is a significant predictor of mission-level resilience.

The contribution of the category of emotional factors in explaining the variance of the dimensions subsequent to resilience is statistically significant, but of low intensity, for the dimension “self-efficacy and perseverance in the face of challenges”. This is positively associated with optimism and positive emotions and negatively with negative emotions and distress. Although the dimension of "risk-taking decision-making skills" is positively associated with positive emotions, the contribution of this category of factors is not statistically significant in explaining the variance for this dimension of resilience.

From the categories of personality traits and coping mechanisms, activism, sociability, task perseverance and problem-centered coping are positively associated with resilience.

Soldiers who exhibit activism and sociability as personality traits and tend to use mostly problem-centered coping tend to be more resilient during the mission. Their need to be active, always connected with those around them and concerned with finding solutions to all the impediments they face, makes them more resilient in the restrictive, over-demanding, full of uncertainties and unknown environment specific to deployment.

Statistical analyses within the proposed regression model indicate that the contribution to the prediction of resilience brought about by the categories of personality traits and coping mechanisms is insignificant.

Regarding the dimensions following resilience, the contribution of the personality traits factor category is insignificant for both dimensions. However, the personality trait "task perseverance" is a significant predictor in explaining the dimension of "self-efficacy and perseverance in the face of challenges" in the deployment stage.

Coping mechanisms do not make a statistically significant contribution to explaining the subsequent dimensions of resilience.

From the category of specific factors, nuclear family relationships, family support, unit support, training and deployment preparation are positively associated with resilience at this stage, while seniority in the military, post-combat exposure, and concerns about deployment and family are negatively associated with it.

Soldiers who have had functional relationships with their parents, who feel that they have the support of family and comrades during the mission and who perceive themselves as trained and prepared for the mission, tend to be more resilient during deployment. Also, soldiers who have less seniority in the military system, who are less exposed to post-conflict events (collecting the wounded after a bombing) and who worry little during the mission, either for their family or for their own safety, tend to be more resilient at this stage.

Statistical analyses within the proposed regression model indicate that the contribution to the prediction of resilience by the category of specific factors is significant and has a big effect. Consistent with this result, deployment training and preparation is a significant predictor of mission-level resilience.

Thus, military personnel who have the support and encouragement of their comrades during the mission and who consider themselves properly prepared and trained to meet the requirements of the deployment environment are expected to develop greater resilience during the mission.

A study by Fredrickson and Losada (2005) showed that positive military experiences create a psychological atmosphere capable of maintaining the wellbeing of the soldier even in the presence of stressors specific to the military environment. These results validate the idea that a positive perception of training and deployment preparation is a significant predictor of resilience at the deployment stage.

The contribution of the category of specific factors in explaining the variance of the dimensions subsequent to resilience is similar and statistically significant for the dimension of "self-efficacy and perseverance in the face of challenges". This is positively associated with nuclear family relationships, family support, unit support and deployment training and preparation, and negatively associated with the number of missions, military seniority, deployment environment, post-combat exposure, and family and deployment concerns. Among these factors, family support, training and preparation for deployment are

significant predictors of the "self-efficacy and perseverance in the face of challenges" dimension in the deployment phase. This emphasizes the importance of social support at this stage, of the mission itself.

The role of social support in increasing psychological wellbeing as well as in diminishing the negative effects of stressful life events is robust and well argued in the field of military psychology (King et al., 1998; Pietrzak, Goldstein, Malley, Johnson, & Southwick, 2009b; Solomon & Mikulincer, 1990). Functional relationships with others diminish stress, provide necessary emotional support, and facilitate wellbeing (Beehr, 1985). In the military, part of social support is unit support. Thus, emotional support between peers facilitates increased group cohesion (Limbert, 2004). Support can also be provided by military leaders. They have the ability to instill in soldiers the motivation to be persevering, optimistic and creative when faced with challenges (Arnold, Barling, & Kelloway, 2001). However, lack of leadership can diminish the level of resilience of the soldiers (MacIntyre, Charbonneau, & O'Keefe, 2013).

Conclusions

In conclusion, of the five categories of factors investigated, only cognitive factors and factors specific to the deployment environment make a significant contribution in explaining the variance of resilience at this stage, and the proposed model explains almost half of the variance of resilience in the deployment stage.

Perceived self-efficacy, emotional distress, training and deployment preparation are significant predictors of resilience at this stage.

Therefore, we can affirm that the soldiers with a high level of resilience during the mission are those who consider that they have received adequate training, who are confident in their personal abilities to achieve success in their activity and who experience mainly positive emotions.

By investigating the predictive value of each category of factors on the two dimensions of resilience, we can observe that for the dimension of "self-efficacy and perseverance in the face of challenges", the categories of cognitive, emotional and specific factors have a significant contribution in explaining dimension variance. The proposed model explains 54% of the variance of this dimension and the significant predictors are perceived self-efficacy, attitude towards legal violence, task perseverance and training and preparation for deployment.

The variance of the dimension of "decision-making skills in risk situations" is mainly explained by cognitive factors and a significant predictor is perceived self-efficacy.

Study IV: The role of protective factors in explaining the resilience of the soldiers in the post-deployment stage

The aims of the study were to investigate the predictive value for each category of factors: demographic, cognitive, emotional, personality traits, coping mechanisms and those specific to socio-familial reintegration, in explaining the variance of resilience in the post-deployment stage, and to explore the impact of each category of factors on the two dimensions of resilience: "self-efficacy and perseverance in the face of challenges" and "decision-making skills in risk situations".

The results of the study are presented for each category of factors. First, the relationship between the category of factors and resilience is presented, and then the relationship between the same category and the subsequent dimensions of resilience is explored.

From the category of cognitive factors, perceived self-efficacy, unconditional acceptance of oneself and rationality are positively associated with resilience in the post-deployment stage.

In the context of family and social reintegration, soldiers who are more rational, more confident in their own ability to employ resources in order to meet demands and who have a realistic and positive image of their own worth become more resilient. In order to be able to suddenly give up the strategies used during the mission and to develop, as soon as possible, new strategies specific to normal living conditions, the soldiers use reason and self-efficacy as motivational factors, which have the role of guiding the soldiers towards achieving the proposed goals, namely adapting to the home environment.

These results are in agreement with the study of Petros, Opacka-Juffry and Huber (2013) which show that there is a positive correlation between self-efficacy and resilience. It is thus suggested that anticipating a positive outcome can improve an individual's chances of successfully coping with adversity, in other words, of becoming more resilient.

Statistical analyses within the proposed regression model indicate that the contribution to the prediction of resilience by the category of cognitive factors is significant and has a big effect. Consistently with this result, perceived self-efficacy is a significant predictor of post-deployment resilience.

Thus, the soldiers who use rational thought schemes, who are confident in their own strengths and ability to face any challenge, are expected to develop greater resilience during the process of social and family reintegration.

The contribution of the category of cognitive factors in explaining the variance of the dimensions subsequent to resilience is statistically significant for both of them. The dimension of "self-efficacy and perseverance in the face of challenges" significantly correlates statistically with five cognitive factors, namely: rationality, perceived self-efficacy, attitude towards bodily violence, attitude towards intimate violence and unconditional acceptance of oneself, while the dimension of "decision-making skills in risk situations" significantly correlates statistically only with perceived self-efficacy.

Consistently with previous results, which showed that self-efficacy is a predictor of resilience at this stage, this factor is also a predictor of its two subsequent dimensions.

From the category of emotional factors, optimism and positive emotions are positively associated with resilience at the stage of social and family reintegration, and negative emotions and distress are negatively associated with it. Therefore, a high level of resilience in soldiers after returning home is associated with a high level of dispositional optimism, with a predominance of positive emotions and a low level of distress.

The results are consistent with the literature (Tianqiang et al., 2015), which supports the idea that a high level of resilience is associated with predominantly experiencing positive emotions and increased life satisfaction, while a low level is associated with depression, anxiety or negative emotions.

Statistical analyses within the proposed regression model indicate that the contribution to the prediction of resilience by the category of cognitive factors is significant and with an average effect. However, none of the emotional factors is a significant predictor of post-deployment resilience.

The contribution of the category of specific factors in explaining the variance of the dimensions subsequent to resilience is statistically significant only for the dimension of "self-efficacy and perseverance in the face of challenges". This is positively associated with optimism and positive emotions, and negatively with negative emotions and distress, while the dimension of “decision-making skills in risk situations” significantly correlates statistically only with positive emotions. In accordance with these results, optimism and negative emotions are predictors of the "self-efficacy and perseverance in the face of challenges" dimension.

From the category of personality traits, activism and sociability are positively associated with resilience. Soldiers whose personality traits include activism and sociability tend to be more resilient in the post-deployment stage. Their need for general employment, the preference for varied and sustained work,

the existence of a high level of energy in carrying out daily activities and the need to constantly interact with others make them more resilient in the context of social and family reintegration.

Statistical analyses within the proposed regression model indicate that the contribution in the prediction of resilience brought about by the category of personality traits is statistically significant, but of low intensity. However, activism as a personality trait is a predictor of resilience at this stage.

The contribution brought by the category of personality traits in explaining the variance of the dimensions subsequent to resilience is statistically significant only for the dimension "self-efficacy and perseverance in the face of challenges". This is positively associated with activism and sociability, and activism is still a significant predictor as a personality trait. The dimension of "decision-making skills in risk situations" significantly correlates statistically only with the personality trait of sensation-seeking, but this is not a predictor for the dimension.

Coping mechanisms are not associated with post-deployment resilience and do not make a significant contribution to explaining it. Similarly, to the results obtained for resilience, coping mechanisms are not associated with its subsequent dimensions.

From the category of specific factors, post-deployment support of family/friends and relationship with the family are positively associated with resilience at this stage.

Thus, the more the soldiers develop functional relationships within the family and perceive support from those close to them, the more resilient they become in the post-deployment phase.

Previous studies support the idea that the environment plays an important role in combating stress. Collishaw et al. (2007) and Rutter (1979) showed that strong and stable relationships help people who have been exposed to severe trauma to maintain their psychological wellbeing. An increased level of cohesion within the family thus facilitates positive adaptation and leades to greater ease in the process of family and social reintegration (Greeff & Human, 2004).

Statistical analyses within the proposed regression model indicate that the contribution to resilience prediction by the category of specific factors is not significant, but the specific factor of post-deployment family/friends support is a significant predictor of post-deployment resilience.

Thus, it is expected that the soldiers who feel support from family and friends after returning home from the missio will develop a greater resilience in this stage of socio-family reintegration.

Post-deployment social support, in particular the support of family and friends, can improve the functionality of the individual by facilitating adaptation to effective coping strategies (Holahan et al., 1995). Studies focused on war veterans have shown that strong social ties can reduce PTSD symptoms (Charuvastra & Cloitre, 2008; Tsai, Harpaz-Rotem, Pietrzak, & Southwick, 2012) and high perceptions of social support are positively associated with increased resilience (Bonanno, 2004; Bonanno et al., 2007). In several studies that looked at post-deployment military resilience, social support has been mentioned as a critical component of resilience and adjustment to the new environment (Hourani et al., 2012; Cunningham et al., 2014).

The contribution of the category of specific factors on the dimensions subsequent to resilience is statistically significant only for the dimension "self-efficacy and perseverance in the face of challenges". This is positively associated with post-deployment family/friends support and post-deployment family relationships, while the "decision-making skills in risk situations" dimension is significantly correlated statistically only with post-deployment family/friends support.

Conclusions

In conclusion, three of the five categories of factors investigated, namely cognitive factors, emotional factors, and personality traits, make a significant contribution to explaining the variance of resilience at this stage, and the proposed model explains one third of the variance of resilience in the post-deployment stage.

Perceived self-efficacy, activism as a personality trait, and the post-deployment support of family/friends are significant predictors of resilience at this stage.

Therefore, we can affirm that soldiers with a high level of resilience in the socio-familial reintegration stage are described as active people, with a preference for varied and sustained work and high levels of energy in carrying out daily activities, who have confidence in their own ability to face challenges and feel support from their loved ones.

By investigating the predictive value of each category of factors on the two dimensions of resilience we can observe that for the dimension of "self-efficacy and perseverance in the face of challenges" the categories of cognitive, emotional factors and personality traits have a significant contribution in explaining their variance. The proposed model explains 41% of the variance of this dimension and significant predictors are negative emotions, optimism and activism as a personality trait.

For the dimension of “decision-making skills in risk situations” the category of cognitive factors and personality traits have a significant contribution in explaining its variance. The proposed model explains 16% of the variance of this dimension and the only significant predictor is the personality trait of sensation-seeking.

Study V: Investigating resilience and its predictors during an entire deployment cycle

This study provides the data needed to build an efficient selection system by identifying resilience predictors at all stages of the deployment cycle, which can be measured as early as the selection phase. Thus, on the one hand, the aim was to investigate the fluctuation of resilience over time in the three stages of the deployment cycle, and on the other hand, significant predictors of resilience were identified that can be measured in the pre-deployment stage. To this end, two groups of soldiers have been set up, one consisting of soldiers who are simultaneously highly resilient in all three stages, namely pre-deployment, deployment and post-deployment, and a group of soldiers who have a constantly low level of resilience, to compare the two groups from the perspective of the protective factors evaluated in the pre-deployment stage.

This research shows that resilience changes over time - even when measured as a personality trait, the fluctuation of resilience is evident due to the particularities of each stage of the deployment cycle, as environmental challenges activate different protective factors. Resilience is not a personality trait or a composite set of static factors, but a complex process that involves an interaction between distinct protective factors.

We can assume that the outcome of the adjustment process varies depending on the strategies of differentiated adaptation, the reassessment of the situation and one's own emotions, as well as how the person uses the available resources to reintegrate and restore homeostasis.

Specific personal traits make a difference even in a very homogeneous population who has been specially selected and trained. Thus, attitude towards legal violence and sociability as a personality trait differentiate between the group of highly resilient soldiers throughout the deployment cycle and the rest. Also, the factors of the Lazarus model are used by the soldiers to adapt to different challenges, such as

training versus combat versus family life, because they offer flexibility, and so an opportunity to be resilient.

Numerous factors have been identified which do not discriminate highly resilient soldiers from the least resilient, such as: self-acceptance, positive and negative emotions, optimism, seeking sensations, grit, all kinds of coping, rationality, perceived self-efficacy, military experience, perceived threats, and concerns about future deployments in theaters of operations. A possible explanation would be the homogeneity of the sample and the fact that all soldiers have already gone through a selection process and have been validated as eligible to participate in missions in theaters of operations. The only differences highlighted by this study are sociability as a personality trait, the attitude they have towards legal violence and how they perceive distress.

CHAPTER V
Discussion and final conclusions

The present research focused on the identification of protective factors specific to military resilience, in order to improve the selection system to meet the specific requirements of the military organization, while protecting the integrity and psychological health of individuals.

Under the pressure of frequent deployments of the soldiers in theaters of operations, obtaining and maintaining the operational capacity of the unit for as long as possible is a desideratum of any military institution. In this context, the focus of the selection for the mission is on identifying the soldiers capable of achieving high performance in combat, while maintaining functionality and mental health in adverse conditions.

The use of the concept of resilience as a starting point in the restructuring of the selection process creates the necessary foundation both for fulfilling the organizational objectives and for satisfying individual needs.

Resilience has been defined in several ways over time. Regardless of the conceptualization, what they have in common is the idea of exposure to adversity (Marino, 2014) and the fact that they essentially focus on three distinct directions that refer to the individual's ability to return to basic levels of functioning, development and reconfiguration of the individual beyond from the initial level of functioning (Mancini &

Bonnano, 2009) or to the procedural aspect of resilience that implies the existence of protective factors (Lightsey, 2006; Luthar, 2006; Masten, 2001; Reivich et al., 2011).

To argue the topic of this doctoral thesis on resilience in the military, we used the definition ***"resilience is the ability to adapt successfully in the presence of risk and adversity"*** (Jensen & Fraser, 2005). The motivation for this choice was based on the fact that the definition includes the idea *of capacity* and that of *process* in the context of adversity and, implicitly, the existence of protective factors that act upon resilience.

The military model that is consistent with this theoretical exposition is the military demand-resource model (Bates et al., 2010). In this model, three interacting variables are followed to identify the main factors underlying optimal psychic preparation for combat, namely demands, internal resources and external resources.

Based on the theory of the demand-resource military model and adopting its structure, the present research investigated the predictive value of each category of protective factors in explaining the resilience of the military during an entire deployment cycle.

Overall, the studies in this paper have made a number of theoretical and methodological/practical contributions.

Starting from the need to choose an appropriate tool for measuring resilience, study I focused on investigating the construct validity of the CD-RISC-25 resilience scale on a specific military population.

The results show that this scale is a reliable psychometric tool for assessing the resilience of the military, with a high internal consistency ($\alpha = .91$).

The initial factorial structure proposed by Connor and Davison (2003), with five factors, does not replicate on this sample of Romanian soldiers. The data showed that CD-RISC-25 is a two-dimensional tool rather than a multidimensional tool for this population. Thus, the exploratory factor analysis proposes the retention of a two-dimensional model with 14 items, and the confirmatory factor analysis shows that this two-dimensional model fits well with the data. The new scale, hereinafter referred to as CD-RISC-14-v-military, produces a total resilience score based on two factors: "self-efficacy and perseverance in the face of challenges" and "decision-making skills in risk situations".

Study II aimed to investigate the predictive value of each category of factors in explaining the resilience of the first stage of the deployment cycle. In the pre-deployment stage, training and professional

development activities are mainly carried out, which have the role of testing the physical and mental limits of the soldiers. The psychological demands specific to this stage are: family isolation, living in the barracks, carrying out bureaucratic activities, the intensity of training and its routine nature that leads to fatigue.

The results show that soldiers with a high level of resilience in the mission preparation stage are described as people who have effectively managed multiple life events, experience mostly positive emotions and perceive mission preparation as useful and effective.

The results of this study are consistent with the literature and support the idea that resilience is strongly associated with positive emotions (Tugade, Fredrickson & Barret, 2004), with a positive perception of military experiences (Fredrickson & Losada, 2005), in this particular case with mission preparation and efficient management of stressful life events (Seguin,Turechi & Lesage, 2006).

In conclusion, the research results show that in the pre-deployment stage positive emotions, life events, training and deployment preparation are significant predictors of resilience.

Study III aimed to investigate the predictive value of each category of factors in explaining the resilience of the second stage of the deployment cycle. The actual deployment is the most demanding stage from a mental and physical point of view. At this stage, the imminent danger to physical integrity and the risk of professional failure become real instead of hypothetical. Poor living conditions, exposure to CBRN (nuclear, biological or chemical agents), exposure to kinetic action, missile attacks on the military base, high risk of injury or death, and the inability to effectively manage family problems are major stressors within the actual deployment in the theater of operations.

The results show that the soldiers with a high level of resilience during the mission are confident in their personal abilities to achieve success in their activity, consider that their mission preparation was adequate for real demands and effectively manage the effects of distress.

The research results are in line with the literature and show that anticipating positive results in actions taken (Bandura, 1982; Simons, 1994) and a positive perception of how you were prepared for deployment (Taylor, 1997; Kegan, 1982) are positively associated with resilience, while the negative effects of combat stress, such as suicide, depressive symptoms, or alcohol-related problems (Green et al, 2014) correlate negatively with it.

In conclusion, the research results show that in the deployment stage, perceived self-efficacy, emotional distress, training and deployment preparation are significant predictors of resilience.

Study IV aimed to investigate the predictive value of each category of factors in explaining resilience in the last stage of the deployment cycle. The post-deployment stage involves the process of social and family reintegration of the soldier, and specific demands result from other types of psychological stressors which generate frustration, such as changing socio-professional status. Thus, from a person with a key role in the team, validated by senior military and civilians, the soldier returns to a common role, perceived as insignificant and unsatisfactory professionally. Also, the antagonistic opinions and attitudes of their life partner regarding the different aspects of family life, from financial management to intimate life, in turn have a high potential to generate tension within interpersonal relationships.

The results show that soldiers with a high level of resilience in the socio-familial reintegration stage are described as active people, with a preference for varied and sustained work and high levels of energy in carrying out daily activities, who are confident in their own ability to face challenges and who feel the support of those close to them.

These results are in agreement with the studies of Collishaw et. al. (2016) which show that self-efficacy prospectively predicts resilience. This general positive perception on one's ability to cope with stress and adversity (Benight et al, 1999; Bandura, 1977) is directly linked to resilience (Connor & Davison, 2003; Hegberg & Tone, 2015). The literature also shows that strong and stable relationships help people who have been exposed to severe trauma maintain their functionality and wellbeing (Collishaw et al., 2007; Rutter, 1979) by facilitating adaptation to effective coping strategies (Holahan et al., 1995).

In conclusion, the research results show that in the post-deployment stage, perceived self-efficacy, activism as a personality trait and the post-deployment support of family/friends are significant predictors of resilience in the social and familial reintegration stage.

Studies II, III and IV showed that intrinsic factors are necessary, but not a sufficient condition for resilience (Eisen et al, 2014), and environmental factors, in particular those specific to each stage of the deployment cycle, play an important role in predicting the resilience of military personnel participating in missions in theaters of operations.

The results also show that three of the five categories of factors studied, namely the categories of cognitive, emotional and specific factors, are relevant in explaining resilience throughout an entire deployment cycle. It is thus observed that the predictors of resilience at each stage are part of the three

categories of factors, namely cognitive, emotional and specific, but are particular to the specific requirements of the stage (table 44).

The following table presents the results of studies II, III and IV in order to be able to follow and identify the differences and similarities between them more easily.

Table 44. Synthesis of the results of studies II, III and IV

	Pre-deployment	**Actual deployment**	**Post-deployment**
		ΔR^2	
Demographic factors	.02	.03	.00
Cognitive factors	**.11****	**.27***** - self-efficacy (B = .35, p <.001)	**.21***** - self-efficacy (B = .23, p <.05)
Emotional factors	**.05**** - positive emotions (B = .284 p <.05)	.03 - distress (B = - .18, p <.05)	**.07***
Personality traits	.01	.00	**.04*** - activism (B = .24, p <.001)
Coping mechanisms	.01	.01	-
Factors specific to the pre-deployment stage	**.12**** - life events (B = .22, p <.05) - training and deployment preparation (B = .28, p <.01)	**.09**** - training and deployment preparation (B = .20, p <.05)	.04 - family support (B = .20, p <.05)
R^2 total	**.32**	**.44**	**.36**

*p < .05; **p < .01; ***p < .001

During mission preparation it is necessary for soldiers to experience predominantly positive emotions and to have a positive perception of training and how it is conducted, because the focus of this stage is to recreate the combat environment and provide the soldier with the framework to be effective in solving professional tasks, but without the pressure of imminent danger.

The mission stage is the central focus of the deployment cycle, the purpose for which the military institution invests the necessary training for the selected military personnel to participate in external missions. In order to achieve the expected results while maintaining optimal functionality, at this stage it is important that the soldiers feel confident in their personal ability to achieve success in the activity, prepared in terms of skills needed to cope with the real demands of the deployment environment, and able to effectively manage the effects of distress.

In the socio-familial reintegration stage, the three relevant categories are preserved, but another facet of personality is revealed. This stage is different from the first two because the focus is no longer on achieving professional goals, but rather shifts to strengthening interpersonal relationships. We thus observe that a stable factor such as activism as a personality trait becomes a predictor of resilience at this stage, along with a sense of self-efficacy and family support.

These results reinforce the idea that each stage of the deployment cycle presents different psychological challenges and demands and requires that the study of resilience be customized, results which are consistent with the study by Condly (2006), Greenberg (2006) and Olsson et al. (2003), who point out that there are different levels of interaction between risk and protection factors that must be recognized in order to understand resilience. The factors identified by them were defined on three levels within the literature, namely: individual level factors (personality traits, talents, skills), social level factors (family, social and professional relationships) and societal level factors (community, school, culture).

In addition to these results, Study V investigates the fluctuation of resilience over time throughout the three stages of the deployment cycle and completes the data needed to build an efficient selection system by identifying resilience predictors at all stages of the deployment cycle, which can be measured as soon as the selection stage.

The present research proves that resilience changes over time during the three stages of the deployment cycle. This fluctuation of resilience is obvious and significant between the pre-deployment stage and the actual deployment, as well as between deployment and post-deployment, due to the particularities of each stage of the deployment cycle, as environmental challenges activate different protective factors.

By comparing the group of highly resilient soldiers in all three stages of the deployment cycle with the group of low resilience soldiers, from the perspective of protective factors measured in the pre-deployment stage, it was highlighted that the attitude towards legal violence, the perception of emotional distress and sociability as a personality trait are significant predictors of resilience in all three stages of the deployment cycle.

A number of factors have also been identified which do not differentiate highly resilient soldiers from the least resilient, such as positive and negative emotions, optimism, sensation seeking, grit, all kinds of coping, rationality, perceived self-efficacy etc., and a possible explanation would be the homogeneity of

the sample and the fact that all the soldiers had already gone through a selection process and had been validated as eligible to participate in missions in theaters of operations. The results show that the only real differences are some basic personality traits, such as sociability, the attitude towards legal violence and how they perceive distress.

The results of these studies provide the theoretical framework needed to implement an efficient selection system from both an organizational and personal perspective. The need to create a selection system that integrates all the protective factors associated with resilience in all three stages of the deployment cycle comes from the desire to have soldiers able to repeatedly expose themselves to the demands of a mission in the theater of operations, without their mental and physical integrity being affected.

Thus, within the selection process, those protective factors that have demonstrated stability in predicting resilience throughout an entire deployment cycle, such as personality traits, attitudes toward legal violence and distress, may play a decisive role in obtaining a positive notice for participation in missions. Also, the protective factors of resilience that can be improved through coaching programs, such as self-efficacy, optimism, perception of social support etc. are valuable because their level distinguishes between soldiers who can increase their resilience in a short time and those who are not prepared at all for being deployed.

In the context of war-related trauma, highly resilient military personnel are able to make the most of internal resources (eg, robustness, self-efficacy, self-esteem) and external resources (eg, social and family support, unity cohesion) to mitigate the negative impact of adversity.

Conclusions

This research shows that resilience changes over time - even when measured as a personality trait, the fluctuation of resilience is evident due to the particularities of each stage of the deployment cycle, as environmental challenges activate different protective factors. Resilience is not a personality trait or a composite set of static factors, but a complex process that involves an interaction between distinct protective factors.

The research results add an additional argument to the idea that protective factors cover three levels: individual, social and societal. For each stage of the deployment cycle, predictors of resilience were identified, specific to that stage. In the pre-deployment stage, significant predictors of resilience are positive

emotions, life events and displacement training and preparation. Within the actual deployment, significant predictors are perceived self-efficacy, emotional distress and deployment training and preparation. In the socio-familial reintegration stage, perceived self-efficacy, activism as a personality trait, and the post-deployment support of family/friends are significant predictors of resilience. These results suggest that, both in the selection process and in coaching and intervention activities, specific protective factors must be followed for each stage.

Cognitive, emotional and specific factors significantly influence resilience in all stages of the deployment cycle, a result that can be capitalized both in a process of psychological selection of military personnel to be deployed in a theater of operations, and in the implementation of psychological training topics aimed at increasing the level of resilience of the military, so that they are prepared to respond to organizational demands and needs.

Within the selection process, it is recommended to follow the existence of less malleable protective factors, such as personality traits and self-efficacy, and in mission preparation and coaching sessions, it is advisable to implement topics aimed at improving malleable protective factors, such as emotional and specific factors.

The results of this research support the creation and implementation of a new system for the selection and training of Romanian soldiers assigned to participate in missions in theaters of operations.

Limitations and directions of investigation

The current results must be interpreted while bearing certain limitations in mind. Firstly, we used a sample of convenience that cannot be considered representative of the entire military population and with a relatively small number of subjects, relative to the number of variables used.

Second, in the present study, there is no gender discrimination of participants. The fact that the sample was composed mainly of male subjects requires caution when interpreting the results.

Thirdly, the lack of measurements aimed at the health of the soldiers, the effectiveness in combat or the effectiveness in social reintegration at a certain time after the end of a deployment cycle urges caution in generalizing the results.

Also, the lack of integration in research of a follow-up stage, by performing resilience measurements after an interval of more than 5 months from the end of a deployment cycle, limits the interpretation of the results in terms of prediction.

Future research should take these limitations into account, so that the results obtained have a greater relevance for science in general and for military science in particular.

Thesis contributions

The results of this doctoral thesis make significant theoretical contributions in explaining resilience in a military environment. These results support and provide additional arguments regarding protective factors which are important for resilience within a specific military environment, namely cognitive, emotional and specific factors of a deployment cycle.

Studies II, III and IV also clarify the predictors of resilience for each stage of the deployment cycle and provide clear directions for prediction and intervention at each stage.

The applied contributions of this paper aim at changing and implementing a new selection system and provide clear directions for intervention programs.

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